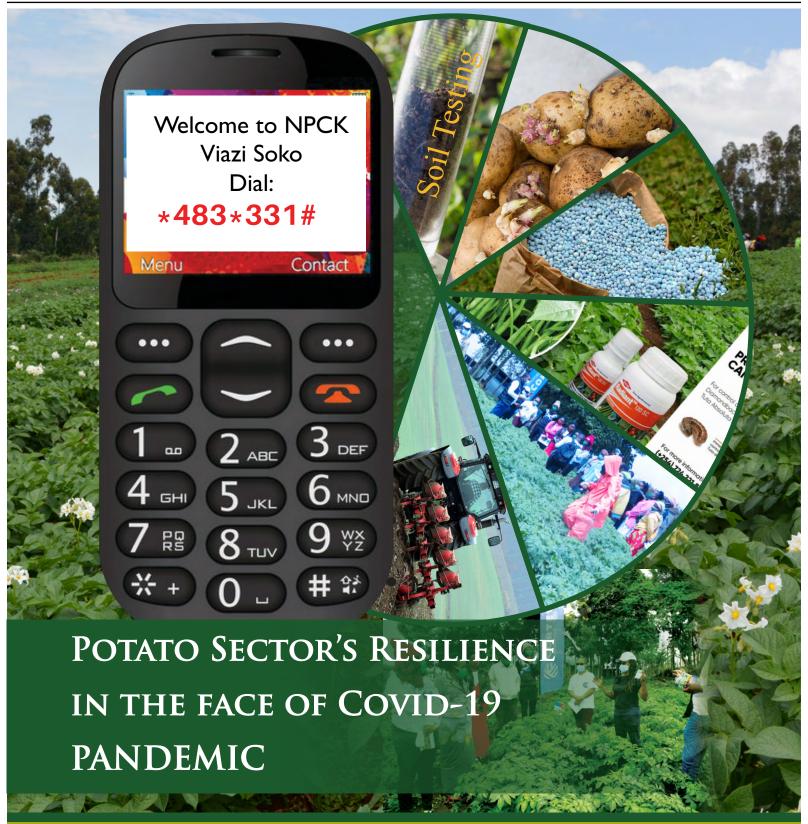
# THE POTATO

# MAGAZINE KENYA

Issue No.5 2020



- Potato council conducts sucessful training despite COVID-19 Pandemic
- Addressing the Bandwagon
   Effect in the Subsector
- Viazi Kings: Supporting Farmers with market Linkage.





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Potato Council Moves to Lessen COVID-19 Effects on the

Subsector

Access to Useful Information is now at Farmers' Fingertips

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Increasing Yield in the Face of Climate Change

Potatoes in Kajiado! Pg 32

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020 has been a tough year to all of us. The outbreak of Covid-19 and the subsequent measures taken by the government to curb its high rate of transmission in the country had an immediate and direct consequences to most aspects of our lives; socially, financially, mentally and even to our physical health. The potato sector was not spared; our potato calendar was

altered with many events including the National conference and regional potato fairs being postponed or cancelled while potato processors and fast food eateries and restaurants experienced drastic reduction of businesses with some being forced to shut down temporarily. Likewise, extension services, transportation and trading of potato in open air markets were adversely affected.

In the face of these challenges, potato stakeholders came together to seek solutions. The results of this partnership forged during this period are nothing short of amazing as outlined in some of the stories herein.

I am also glad to note that the creation and dissemination of new technologies went ahead albeit with new approaches to fit in with the Covid-19 situation which included adhering to prevention guidelines provided by the Ministry of Health. County farmer field demonstrations were held in eight counties, Viazi Soko Digital Platform (e-commerce ecosystem for the potato subsector) was successfully upgraded with better capabilities and the National Potato Strategy (2021-2025) was developed among other achievements.

A good number of articles represent experts' opinion on the directions the sector should take on different aspects such as on climate resilient potato farming and ways of increasing quality seed potato in the country. There are also some interesting light reads like potato fun facts and recipes.

In all, the magazine has continued to live up to its mandate of highlighting major milestones in the potato sector while educating and showcasing opportunities and innovations in the industry.

I would like to pass our gratitude to the State department of agriculture, national government agencies, county governments, development partners and all our members at large who we worked together with to get solutions and stick to the path of subsector transformation during the tough period of Covid-19 crises.

I humbly welcome you to read the many interesting and informative articles in this 2020 Potato magazine.

Enjoy the read and stay safe!

# Thankyou

Wachira Kaguongo, CEO National Potato Council of Kenya



# Potato Council Conducts Successful Farmer Training Despite COVID-19 Pandemic

pandemic slowed down and even led to the cancelling of most events in the 2020 potato sector calendar of events and the agriculture sector at large, the National Potato Council of Kenya (NPCK) managed to join hands with other partners to hold potato farmer field demonstrations and trainings.

The training was conducted in five counties namely Uasin Gishu, Bomet, Narok, Nyandarua and Nyeri and took place between 20th and 25th July of the 2020. Specifically, they were held in Ainabkoi, Ndaraweta, Enabelibel, Kinangop, Kieni East, Kieni West and Olkalou sub-counties with the aim of improving potato productivity through adoption of good agricultural practices and better technologies. The training entailed arming farmers with recommended practices such as soil testing services, apical cuttings technology, seeds selection and use of quality varieties/certified seeds. They



were also trained on crop nutrition, crop protection and spray service provision.

During the trainings, COVID-19 preventive measures such as social distancing, wearing of masks, sanitization and temperature checks using thermoguns were observed. Farmers were taken through three sessions in groups of 15 to avoid overcrowding in line with the

Ministry of Health guidelines. In addition, the training protocols during the Covid-19 period developed earlier by NPCK were followed.

The planning of the activities begun in April 2020 after the Council partnering with the Molo branch of the Agriculture Development Corporation, Agrico EA, CIP, Corteva Agriscience, Cropnuts and Yara East Africa Ltd to set up seven demo sites in the counties. The events were officially graced by the local administration and officials from county departments of agriculture. About 300 participants attended the training.

Farmers were grateful to receive the trainings at a time when most similar events had been cancelled. Similar trainings are being planned for early 2021 in Nyandarua, Meru, Nakuru, Narok, Bomet and Elgeyo Marakwet Counties.

By Henry Chemjor, Value Chain Manager—NPCK





# German Agency Supports Counties' Campaign against Spread of COVID-19

IZ has been supporting counties to combat the spread and effects of Covid-19. This has been through the Nutrition Sensitive Potato Partnership Project (NuSePPP) which has been promoting essential nutrition, hygiene and households' food production in Nyandarua, Bungoma, Elgeyo Marakwet and Trans-Nzoia Counties. The support comes at a time when Kenya has rolled out a nation-wide campaign to not only stop the spread of the disease but also to lessen its negative impacts on citizens. GIZ support to the three counties is vital in the prevention of the new deadly infectious disease which is highly contagious and it's mainly spread from person-to-person. COVID-19 is passed when an infected person coughs or sneezes and droplets of saliva or discharge from their nose reaches uninfected person. It is therefore important that the people practice respiratory etiquette, keep social distance and observe personal hygiene and especially washing hands with soap and water. The role of good nutrition to strengthen

immunity against pathogens cannot be overstated. To address this, the counties have been assisted to effectively spread preventive messages to scale up awareness in the community. It had been observed that the demand for soap had increased and therefore the need make the same at home to reduce the cost. It was therefore agreed that home economists with the necessary expertise would train community health workers who would in turn train the community health volunteers, bodaboda (or motorcycle) operators and farmers in farmers field and business schools. The community health volunteers took up soap making as a potential income generating activity. A total of 3,988 families were armed with these skills and messages.

In addition, local radio stations were involved in spreading the same information reaching 10 million listeners across the country. The trainers and farmers were given personal protective gear including face masks and hand sanitizers to

protect them as they continue with their activities while keenly observing the protocols and guidelines from the ministry of health. As many as 125 health workers and 2, 520 community health volunteers in the four counties were trained on how to facilitate the sensitization on Covid-19. Besides this, a total of 313 group leaders were sensitized in order to educate their group members. Dr. James Karitu, Nyandarua CEC Agriculture, thanked GIZ saying that this would help increase the productivity of potatoes for farmers and hence contribute to raising their incomes while addressing National food security. "On behalf of the County Government, I wish to thank you together with all other partners. We value and appreciate the support and look forward to continued cooperation from the County Government and all the partners".

By Kevina Wangai, Technical Advisor Nutrition-GIZ



Farmers Undergoing Training on soap making in Nyandarua County to improve hygiene. Giz also donated Masks and Sanitizers to the farmers.



# Potato Council Moves to Lessen COVID-19 Effects on the Subsector

he devastating impact of the Coronavirus outbreak and the measures taken by the government to curb its high rate of transmission among the public had a huge impact on the potato sector and the entire agriculture in 2020. All value

chain players experienced a set of new challenges arising directly or indirectly from this pandemic.

For one, companies and organizations had to take precautionary measures in line with the government directives with some being forced to put some of their operations or projects on hold. Most events on the potato calendar were postponed or cancelled including the 2020 National Potato Conference and the North Rift Region Potato fair that were to be held last May and June, respectively. Meetings and seminars were held electronically via platforms such as Zoom

and Microsoft Team. Currently, NPCK staff members are working from home and meetings are being held via teleconferencing.

As the general public practiced self- isolation and social distancing, potato processors such as fast foods and restaurants experienced drastic reduction in number of customers with some opting to shut down indefinitely. Further, open air markets, where most potatoes are traded also experienced disruptions of their operations while some such as Kisumu and Eldoret open air

markets were closed temporarily by the their local authorities.

Through partnership with the Kenya National Chambers of Commerce and Industry, NPCK and partners successfully lobbied the government to open the markets and train market actors on precautionary measures and good

to developed transport vehicle pass (i.e. Stickers) for potato traders which enabled them to transport the commodities in and out the restricted counties. The partners also successfully lobbied for the agricultural service providers such as extension officers to be

recognized as e s s e n t i a l s e r v i c e providers. This enabled them to move freely even during past curfew hours.

Moreover, there were claims of increase in farm input prices by unscrupulous agro-vets who intended to take advantage o f t h e precarious situation. To address this, the Council worked with farm input

providers and manufactures in an effort aimed at informing farmers on the recommended retail prices of the inputs and to ensure famers were not exploited during the period.

As the Covid-19 virus continues to be amongst us, the Council and its partners are continuously assessing the situation and will be addressing the challenges as they arise. Stay safe, stay healthy!

Henry Chemjor, Value Chain Dpt-NPCK



VEHICLE PASS
A MEMBER OF NATIONAL POTATO COUNCIL OF KENYA

Sample of Vehicle pass issued by NCPK & HCDA for potato traders in Nairobi

hygiene so that they can continue business in safer environments.

Following the dusk to dawn curfew, transportation of the crop was, for some time, restricted to day-time only resulting in less supply to the markets. This was before the government declared food crops as essential commodity that could be transported past the curfew hours. In efforts to support farmers to access markets and supply of foods in the locked counties, NPCK partnered with the Horticultural Crop Development Authority (HCDA)



# Viazi Kings: Supporting Farmers with market Linkage.

iazi Kings is a private company registered under the laws of Kenya. The company's main business includes buying, selling and distributing inputs, seed and ware potatoes. It is a privately owned company in the food sector primarily involved in buying, sorting, packing and distribution of potatoes from rural to urban areas and sourcing potato planting materials of all kinds (seed potato, mini-tubers, micro-tubers, true potato seeds and cuttings) to supply to farmers. The company is also involved in sourcing and supplying to farmers farm inputs and services. The company is also involved in training farmers, offering advisory services and providing other necessary supports to actor and players along the potato value chain.

Viazi kings mainly buys ware potatoes from registered farmer groups and cooperatives in potato producing counties such as Nyandarua, Narok, Eldoret, Bomet, Elgeyo Marakwet, Laikipia, Nandi, Meru and Nyeri Counties. The company seeks to create a new niche in the industry by establishing itself as the 'king of potato' in all aspects. The company is closely working with NPCK. Viazi Kings has supported different farmers and farmer groups with market linkage and offers them

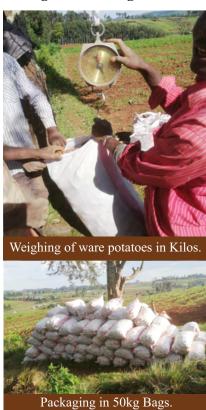


Farmers during harvesting of Dutch Robin in Bomet. After harvesting, the sorting and aggregation of Dutch Robin is done

competitive prices and therefore contributing to the growth of the farmers' incomes.

For Market linkage contact Viazi Kings at 0792589216 or e m a i l u s a t : viazikingsltd@gmail.com

By: Catherine Mutaba, Manager-Viazi Kings







VIAZI KINGS LIMITED



Viazi kings limited



@Viazi kings limited

www.viazikingsltd.com





# GIZ Establishes Partnerships to Enhance Growth in the Potato Value Chain

he onset of the Covid-19 pandemic has presented Kenya and other parts of the world with serious challenges. Agriculture is among the sectors that have been largely affected. This has not spared the continued operation of the GIZ-funded Nutrition Sensitive Potato Partnership Project (NuSePPP) that operates in four counties of Nyandarua, Bungoma, Elgeyo Marakwet and Trans Nzoia).

Despite the numerous challenges, the project managed to reach out to more than 1,200 farmers through a collaborative working relationship with players in the private sector involved in input supply. In this regard, GIZ partnered with Yara East Africa and Corteva Agri Science not only on fertilizer provision and crop protection but also equipped farmers with knowledge on good agricultural practices (GAPs) during the period.

In the same spirit, GIZ also partnered with CIP in training five youth groups in Nyandarua County on seed production. CIP supported each group with rooted apical cuttings that covered a quarter acre each while GIZ supported the training carried out by Mr. James Nderui, a youthful seed producer. This was aimed at enabling young people to take up seed production within the potato value chain with a goal of generating income.

Lastly, GIZ also worked with Sereni Fries, a potato processing company, in training farmers on aggregation and marketing of their produce. With restriction on movements and closure of major marketplaces within the country, Sereni Fries made available to farmers a well-coordinated and organized approach to marketing. The company also provided them with the much-needed market under contract farming.

By Vincent Odero
Vincent Odero is the Coordinator,
NuSePPP- Nyandarua County



Apical Cuttings in Nyandarua County.



# Healthy Snacking During COVID 19 Pandemic

When snacking cannot be avoided, select healthy snacks and consume in moderation to avoid excessive eating. Being at home for too long can lead to excessive snacking, which could lead to overweight and obesity. All snacks should therefore be healthy and consumed in small portions.

Examples of healthy snacks

\*Fresh whole fruits

\*Dried fruits

\*Milk (fresh or fermented)

\*Milk shakes (no added sugar)

\*Fresh fruit juices- made from fresh fruits with no added sugar.

\*Fruit smoothies (no added sugar)

\*Nuts (e.g. groundnuts, cashew nuts)

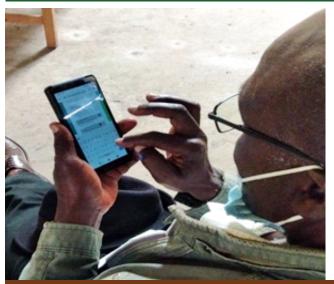
\*Seeds (e.g. sesame, pumpkin)

\*Popcorn from maize, sorghum and amaranth seed (not sugar coated)





# Access to Useful Information is now at Farmers' Fingertips





A farmer accessing Viazi Soko platform services via smartphone (left) A phone screen of a farmer registered successfully using the USSD short code (right)

he long-running inability of potato farmers to access useful and credible information they require will be a thing of the past following the inauguration of a web-based and mobile apps that offer ready-to-use information on various aspects of potato farming.

Dubbed Viazi Soko Platform, the App as well as the USSD Platform were developed by the National Potato Council of Kenya (NPCK) and partners to address various challenges faced by farmers and other stakeholders in the potato subsector. They provide an efficient way of accessing quality farm inputs and services such as certified seeds, appropriate fertilizer and approved agrochemicals. Other information on offer include spray services, soil testing and mechanization services among other requirements.

Using the USSD Service, farmers are able to raise questions and receive instant responses on what they require for potato production. In addition, the webbased and Mobile App platform enables them to place orders for

farm inputs, receive seven days' accurate weather forecasts, extension services on good agricultural practices, pest and disease advisory services and whatever else they need to improve their productivity and profitability.

The platform allows farmers to book seeds for the subsequence growing seasons which can be delivered to their selected drop points on agreed dates. The Council is in the process of identifying and mapping drop points for farm inputs ordered through the platform and collection centers for marketing ware potatoes. In addition, NPCK is recruiting and training farm service providers (FSPs) who will be supported through Viazi Soko digital platform to explore various business opportunities in the potato value chain. Among the business opportunities available especially for the youth, are spray services, soil sampling, aggregation of input orders and scouting for ware potato for marketing.

To access the information, farmer can register into to the platform through USSD short code service by dialing \*483\*331# or through web-

b a s e d p l a t f o r m v i a www.npckviazisoko.com Similarly, they can download the Viazi Soko android App from the Google Play store

Henry Chemjor, Value Chain Manager-NPCK

**66 Dubbed ViaziSoko** 

Platform, the App as well as the USSD
Platform were developed by the National Potato
Council of Kenya
(NPCK) and partners to address various challenges faced by farmers and other stakeholders in the potato sub-sector.



# **VIAZI SOKO DIGITAL PLATFORM**

# ABOUT THE PLATFORM It enables farmers to:

- a) Query and receive feedback on seed potato information
- b) Book and order of seeds for the next season,
- Access to potato recommended fertilizers and approved agrochemicals
- d) Access to soil testing, mechanization and spray services,
- e) Access to extension and advisory services on GAPs,
- f) Access to pest and disease advisory services,
- g) Access to weather information and forecast In order to access the above services, you need to register onto the viazisoko digital platform

The platform is available in three forms;

- a) USSD Short code service
- b) Android App
- c) Web based

### **USSD SHORT CODE SERVICE**



### a) Registration

- 1) Dial \*483\*331# on your mobile phone.
- 2) Select option 10 "Register"
- 3) Enter your details to complete registration

(County, Sub county/ Constituency, Ward and Full names).

Note: After completion of registration, you will receive a confirmation text.



### b) Querying For Seed

- 1) Dial \*483\*331# on your mobile phone.
- 2) Select option 1 "Seeds Query".
- 3) Select category (i) Seed size 1 or size 2
- (ii) Cuttings (iii) Minitubers.
- 4) Type the seed potato variety you are looking for and confirm.
- 5) The query will return 3 records closest to your location and summary information

will be sent on SMS (Seed Company,

## b) Seed Booking

### 2) Select option 2 "Seeds Booking"

- Select category (i) Seed size 1 or size 2 (ii) Cuttings (iii) Minitubers.
- 4) Type the seed potato variety you want to book.
- 5) The query will return 3 records closest to your location and summary information of the seed you can book is sent on SMS (Seed Company, location, contact person and contacts).





Note: You need to complete the seed booking process through Viazi soko-App or Web-based.

### c) Weather Udates

- 1) Dial \*483\*331# on your mobile phone.
- 2) Select option 3 "Weather Details".
- 3) Option 1 gives weather/ Forecast for the ward you are registered in.A 7 days weather forecast will be sent via an SMS
- 4) Option 2 gives Weather/ Forecast for other regions. Fill in the details for the specific region i.e.
  County, Sub-county, and Ward

## d) Farm Service

- a) Dial \*483\*331# on your mobile phone.
- b) Select option 4 Farm Services"
- c) Select option 1 Soil Testing"
- d) Select county;
- e) Option 1 for the county you are registered in
- f) Option 2 for other regions. Type in the name of the county.

Note: You will receive an SMS with the details of the soil testing agents within the region.

#### 2. Spraying

- a) Dial \*483\*331# on your mobile phone
- b) Select option 4 Farm Services".
- c) Select option 2 Spraying".
- d) Select county;
- e) Option 1 for the county you are registered in
- f) Option 2 for other regions. Type in the name of the county.

Note: You will receive an SMS with the details of the 3 sprayin service providers within the region.

### 3. Mechanization

- a) Dial \*483\*331# on your mobile phone.
- b) Select option 4 "Farm Services".
- c) Select option 3 "Mechanization".
- d) Select county;
- e) Option 1 for the county you are registered in
- f) Option 2 for other regions. Type in the name of the

Note: You will receive an SMS with the details of the Mechanization Service Providers within the region



PotatoFarm Services:

Select Category

3. Mechanization

1 ... 2 ABC 3 DEF

4 GHI 5 JKL 6 MND

1. Soil Testing

2. Spraying

0. Go Back

## e) Farmer Groups



- 1) Dial \*483\*331# on your mobile phone
- 2) Select option 5 "Farmer group".
- Search the name of your group or the contacts of the chairperson and request for joining

Note: Through the Web-based and Android App, the chairpersons can manage the members of the group.

They can remove or add a new member

#### Manage your account

- 4) Dial \*483\*331# on your mobile phone
- 5) Select option 6 "my Account" then update your

## f) Ussd To Web-based Or Android App

A farmer registered through USSD (\*483\*331#) does not need



to register again in Android App or Webbased to access the services. They just need to login on web-based platform or Android App by;

#### ) Clicking on "Login" option

- 2) Select "Recover My Password" option.
- ) Enter the phone number used in USSD registration.
- Click on "Recover Account" then enter the verification code sent to the phone number used during USSD registration.
- 5) Set/enter a Password. (Should be 6 character)
- 6) Click on 'Change My Password' option.
- Login into your account using the registered phone numberand the password.

### 2. ANDROID APP

- I) Download and install the ViaziSoko App from the Google play store. (Search npck viazisoko on Google play store)2. How to register using Android App
- To access the services you need to register, click on the icon on the upper left side of the screen to access the service window, then select register and fill in all the information required (full name, mobile number, password, county, constituency, ward, year of birth, size of the farm, crop farmed and animal reared).
- ii) Enter the verification code received via SMS.
- iii) Login to your account using the phone number and the password used during registration. (The phone number should always start with 254)
  - 3. Accessing services on the app

Click on the icon on the upper left side of the screen to access the services window

You have to login in order to access shop, seed booking and disease and pest services

- a) About
  - Click on about to see the summary about the platform and its functions.
- b) Weather
- Click on weather on the dash board then select county, followed by constituency and ward.





**NPCK Platinum members** 

- ii) Click on search and all the information on weather will be displayed on the screen.
- c) Shop
- Click on the shop, then click on the service/product you want to shop e.g. seeds, soil testing etc.
- ii) Click view details on the product selected to see the available stock and the price.
- iii) On the box next to "add to cart" add the number of bags/ items you want to purchase

then click on cart icon on the upper right

 Then click on check out to get the LIPA NA MPESA option side of the screen and add the collection point details.

NOTE: To shop means looking for product/ service which is readily available and you can buy on spot.

- Click on seed booking option then click on filter by category to see the available seed category of your choice (seed tubers size 1 & 2, mini tubers, cuttings).
- ii) Click on view details to see the available stock and the price per 50kg bag, then click on the box next to add to booking cart and add the number of bags you want to book.
- iii) Click on cart icon on the upper right side of the screen, add the collection point details then click on check out to get the LIPA NA MPESA option. To login you MUST be registered
- Click on seed booking option then click on filter by category to see the available seed category of your choice (seed tubers size 1 & 2, mini tubers, cuttings).
- ii) Click on view details to see the available stock and the price per 50kg bag, then click on the box next to add to booking cart and add the number of bags you want to book.
- iii) Click on cart icon on the upper right side of the screen, add the collection point details then click on check out to get the LIPA NA MPESA option.
  - e) Extension
- Click on extension icon to access the extension services
- ii) They are inform of short video clips on GAPs

#### f) Pest and diseases

- I) Click on Disease and Pest icon to access theservice
- ii) Click on create new post to enable upload or take a photo
- iii) Allow your GPS location in your phone on
- iv) Take the photo of the pest or diseased crop & upload

Note: You can as well upload photos from your phone gallery previously taken

#### 3 WEB-BASED

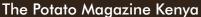
- Access services through Web-based platform

  I) Go to your browser i.e. Chrome, Mozilla Firefox,
  - Operamini, etc. and search www.npckviazisoko.com
- ii) Then this will lead you to NPCK Viazi soko portal

Note: The procedure for accessing services through Web-based platform is the same as for the Android App shown above.

For more details on requirements and procedure contact NPCK marketing department through

Phone: 0799739578/0712338633 Email: npck@npck.org





2020 Edition



# **Growth & Innovation at Agrico**

s part of the growth and innovation taking place in 2020, Potato Services
Africa Limited (PSA) has been able to get additional production sites for potato seed multiplication. In an attempt to better serve our markets, we have opened up an additional 46 ha of land at a Kabarak where potato seed multiplication can be done.

Trading under the name Agrico EA, the company has further invested in drip irrigation infrastructure, which will enable it grow seed off-season and ensure that enough seed of each variety shall be available for the market during the peak seasons of March-April and September-October. In this regard, the company has

experimented with potato production under irrigation at a farm in Mogotio, Baringo County, right under the equator and reported an average yield of about 40 tons per hectare or 16 tons per acre. The results beat the myths that potatoes can only grow in cool, high altitude areas.

The irrigation infrastructure was set up with support from Amiran and will help to mitigate the impact of climate change on seed production.

Although our core business is certified potato seed production and sales, we are alive to the fact that to be able to succeed, we must have a broader scope towards development of the entire value chain.

# Year round seed production & sales

Thanks to its elaborate infrastructure, PSA is now able to supply the certified seeds from Agrico EA all year round. Earlier investments included specialized climate controlled warehousing facilities at Highlands, the seed multiplication farm which has a capacity to store a maximum of 3,500 metric tons of seed (that is 3.5 million kilograms of potatoes) per season. Added to this is the further expansion into Kabarak Farm meaning that nothing is now stopping PSA from ensuring seed can be availed to farmers all year round. This enables farmers who also have access to irrigation infrastructure or are in areas that



receive all-year-round rains to also grow potatoes off-season under contract with an off-taker.

# Video tutorials for agronomical support

With COVID-19 coming to Kenya early last year, the team at PSA quickly realized that the limitations imposed on travelling and on large gatherings stood to hinder our work in

supporting the farmers through agronomy extension and farmer field days. We grappled with the issue of how to effectively reach out to thousands of farmers with technical support without meeting them physically in the field. To go around this major hurdle, we produced video tutorials on

profitable potato

farming in Kenya. This has

helped the Agrico experts to keep on rendering agronomical support to smallholder farmers despite the COVID-19 restrictions. In the videos, the company's agronomist takes farmers through each critical step of potato farming, including farm preparation, planting, growing and harvesting.

We believe that having short video clips that can easily be shared through modern media is the way to go given good mobile phone penetration in Kenya, availability of relatively good internet across the country, and that Agrico EA's customers are highly fragmented and geographically spread.

Feedback is slowly trickling in; farmers love the visual aid the video offers, and that they can keep referring back to the tutorials whenever they need to do so, rather than being in the field and consuming all information at once

### Partnerships with stakeholders

During the course of last year, PSA has formed or intensified partnerships with key players in the value chain for purposes of offering

value addition to its customers. This

Alliance program which is an effective way to integrate the value chain and help connect farmers purchasing Agrico varieties to relevant markets; and,

PSA partnered with the NPCK's Viazi Soko platform to ensure last mile delivery can more easily be done through organized bulk purchasing.

Despite COVID-19 and its inevitable



has aided in offering linkages between farmers and quality input suppliers, off-takers and markets, financing solutions, and access to mechanization services. Some of the highlights of our partnerships in 2020 include the following:

We undertook 70 demo-sites at farmer level with Syngenta Foundation East Africa in Nyandarua and Narok counties and reached at least 2,000 farmers. We continue to work with hub managers and network facilitators to solve last mile distribution;

PSA participated in NPCK's potato demos with various value chain partners in 6 key potato growing counties for both April – August and October – January seasons;

· We joined the Farm to Market

impact on Kenya's value chain, we plan to continue working on various partnerships with key players such as Yara and Bayer Crop Protection in 2021.

Through this innovative solution, Agrico EA has shown its dynamic capacity to keep learning and growing. Our ambitious goal remains to support Kenyan farmers to effectively improve profitability in potato farming. We believe that this will not only enable Kenya's potato value chain to continue to develop but will also boost food security in our nation.

For more info, email us on info@agrico.co.ke or call us on 0741788380

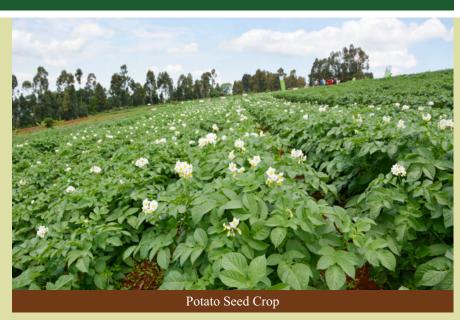
Ms. Corien Herweijer, Business Development Manager-Agrico Potato Services Africa



# Persistent seed potato shortages and what can be done about it

here has been inadequate supply of quality (read certified) seed in Kenya for decades. The current national certified seed potato production is about 2% of the requirement; the rest comes from informal systems which are often of low quality. (Seed potato production and certification guidelines: KEPHIS, 2016). Tissue-culture technologies and related investments in multiplication of mini-tubers proved insufficient to produce more. Until a few years ago 98% of the seed planted was farm-saved. Result: everdecreasing yields and increased disease pressure. Yields decreased from 21.2 t/ha in 2008 to 8.6 t/ha in 2018 (FAOSTAT), making it one of the lowest yields in Africa. Poor yields cannot be blamed entirely on quality of farm-saved seeds; also small sizes of farming land making rotation difficult, poor farming practice and inadequate investment power to improve soil fertility and control diseases are causes of low yields. It is well known that prolonged use of the same seed base increases potato disease pressure especially when farm saved seed goes from farm to farm. There is an increasing volume of studies reporting a frightening number of diseases being widely distributed in the potato growing areas (Bacterial Wilt, Late Blight, PCN, Blackleg just to mention a few).

This poisonous mix of the inadequate supply of certified seed, poor management practices amongst small-scale farmers that make up the bulk of potato producers and unmanaged disease pressure explains why the potato subsector is still struggling despite its agricultural potential, despite



the fact that potato is the number 2 food crop and despite the investments in the sector.

How bad is the seed shortage? Let's look at some figures:

- The Kenya Big 4 agenda targets a potato production of 2.5 million tons per annum;
- This would require 500,000 tons of (certified) seed assuming that a huge majority of the producers are small-scale producing low yields with an average of 12.5 tons/ha very optimistic figure!;
- Most subsistence farmers will not have the means or motivation to purchase certified seed. It is assumed that for the next decade only 10% of all the required seed planted will be certified when available. Hence a projected annual demand of 50,000 tons. This percentage will undoubtedly grow once the subsector becomes more market-oriented and perceived as commercial oriented rather than subsistence activity.
- The current estimate of certified seed that is marketed is 5,000 ton (mainly produced by three large-scale seed growers). This leaves a seed gap of 45,000 tons of certified

seed per annum (covering both the LR and SR). A Technoserve study of 2018 estimated the seed gap at 23,000 T/annum.

With a possible yield of 25 tons of marketable seed per hectare, Kenya urgently needs another 1800 hectares of seed production per annum. This amount is roughly 4 times the current size of land under commercial seed production.

Though much seems to have been done, currently there is little evidence that effective and economically viable investments towards the development of such farming enterprises AND the availability of required basic seed are being taken care of.

What IS being done?

The mainstream thinking on seed production in the potato subsector follows three lines:

1. Investments in National and County government institutions to produce basic seed through tissue-culture and multiplication through ADC and farmer groups. This line of action has prevailed over the past 50 years. In most countries however, with rapid development



of the seed potato sub sector, it is the private sector that has a leading role in seed production, further enhanced by stimulating government policies. The main role of government (or an institution set up under government supervision) is independent control of seed quality and seed certification.

2. Engagement of small-scale farmers and farmer groups in seed business. Farmers are provided with basic seed and trained to produce seed. However sustainability of these businesses remains a challenge as accessing breeder seed, investing in storage and disease free land is still a thorny issue. Use of 'clean seed' (produced under GAP but not certified by KEPHIS) may be better than use of average farmsaved seed but there is no guarantee that it is free of disease.

3. Use of apical cuttings promoted for use by small scale farmers to produce their own seed. This technology is still under scrutiny when it comes to its potential for commercial certified seed production.

One has to ask the question whether this model can neutralize

the above mentioned poisonous mix of an overwhelming inadequate supply of certified seed, poor management practices, little investment power of smallscale farmers, and unmanaged disease pressure.

What can ALSO be done?

Since 2012 the Kenya Government has partnered with the Netherlands Government to allow import of basic seed with the purpose of skipping the lengthy process of producing the starter material, and instead immediately start producing C1 -C3 seed. Results: 34 Dutch varieties of seven Dutch companies are registered in Kenya. Appropriate varieties are now available for table consumption as well as for chipping and crisping allowing the potato processing industry to grow. Import since 2014 however is still very low. Currently only one company (PSA: Potato Services Africa better known as Agrico) imports basic seed and multiplies once or twice before bringing it to the market as certified seed. PSA is about to become one of the biggest seed producer in Kenya. Contrary to expectations other Dutch

companies have not yet entered into joint ventures with Kenyan partners to emulate the PSA example. They are still testing the waters.

There are a few early lessons we can draw from the PSA/seed import model:

- 1. Private investment in commercial seed production seems to work. The recently established business produces and sells a large volume of seed but is still not able to meet the growing demand for certified seed;
- 2. Large scale seed production seems the norm for success: large tracts of land for rotation, huge investments in mechanized agriculture, huge storage capacities and investment in marketing and distribution channels yields success;
- 3. Growing seed potatoes is NOT the same as growing ware potatoes; it is an expertise that grows gradually and needs to be invested in. The bigger the farm the more expertise they can purchase.

With both PSA and Kisima farms as the biggest private seed potato producers, Kenya is currently estimated to produce 10% of the



Certified Seed Potato at Agrico Facilities ready for Sale.



assumed certified seed demand (see the section on figures above). Conclusion: there is still a huge shortage of certified seed with all the negative implications for the development of the sector.

A crisis demands thinking outside the box. As food for thought, it's worth considering the following sweeping statements:

Seed potato production is marketdriven. Demand for specific varieties comes from consumers and processing industry. It is ONLY the private sector that is flexible, conscious and economydriven enough to be able to produce the required (basic) seed in a viable and sustainable manner. Seed potato production is big and specialized business requiring specialized expertise and investment power. These are NOT characteristics of small scale farmers. Leave the seed production to large-scale farmers in order to get sufficient certified seed at affordable prices for smallscale ware producers. Due to large scale production and efficient management practices, seed yields are high and consequently the cost price of certified seed per ton is competitive. This makes it possible to offer certified seed at affordable prices;

If one is in short supply of goods, IMPORT! It happens all over. The subsector needs basic seed badly. Importation of seed will supplement what other seed systems are contributing to the overall achievement of target seed demand. The Netherlands export 800,000 tons of seed per annum to 80 different countries worldwide. Apparently there is something positive about Dutch varieties and the quality of seed. IMPORT and multiply on Kenyan soil to supply the system with certified seed, boost potato production with high yields, and decrease disease pressure.

Instead of subsidizing Government institutes only, big private companies should also benefit from government subsidies (such as import tax waivers, tax rebates and subsidized loans). The purpose justifies the means because the subsector needs seed!

By Nico Rozemeijer, Manager of the Kenya/Netherlands Seed Potato Development Project

Seed potato production is big and specialised business requiring specialised expertise and investment power.

# **Hanse Storage Solution**

The potato cold store that works without electricity





# Proven solution for post-harvest losses

For the first time in Kenya, small & medium farmers can store potatoes while minimizing post-harvest losses. Cold storage builder Hanse AgroStore has designed a solution suitable for the East African climate and market: a sustainable storage facility which allows potatoes to be stored for several months with very limited losses (no rotting, no sprouting), and without the need for electricity, not even solar or wind energy.

## Storage of potatoes up to 5-6 months without electricity



### Proven storage results

- Shangi 2 months
- Unica 5 months
- Rudolph 5 months

Hanse AgroStore Africa | Contact us at Tel: +254 721 475 111 | +31 617 927 453 (Whatsapp) | +31 111 641 333 | info@hanseagrostore.com

Simple to buildEasy to operateNo electricity

necessary
• Affordable

• Low maintenance

High return on

investment



Name	Town	Contacts	Varieties	
ADC-Molo	Molo	0721202565 , adcmolo@gmail.com	Shangi, Sherekea, Dutch Robjin, K. Karibu, K. Mpya, Bvumbwe, Asante, Desiree, mavuno, Tana, K. Sifa, Tigoni,	
KALRO-Tigoni	Limuru	0712456653, karitigoni@yahoo.com	Shangi, Tigoni, Unica, Kenya Karibu, Arka, Sherekea, Kenya . Mavuno	
Agrico East Africa	Kabarak	0742844207,info@agrico.co.ke	Arizona, Destiny, Manitou, Markies & Rudolph	
Kisima Farm	Timau	0789458376,potatoes@kisima.co.ke	Asante, Farida, Sagitta, Taurus, Challenger, Panamera, Zarina, Voyager, Shangi, Kenya sherekea, Dutch robijn, Rodeo, Unica, Desiree	
Singus Enterprises	Molo	0722691245,	Shangi, Dutch robjin, Unica	
Suera Farm	Oljoro'orok	0706-186579, Suera.flowers@gmail.com	Musica, Lady Amarilla	
Egerton University Seed Unit	Njoro	0723079623, jngash02@gmail.com	Shangi, Dutch robijn, Sherekea, Kenya Karibu	
Stockman Rozen Ltd	Naivasha	0720-603990 info@srk.co.ke	Apical cuttings & mini-tubers of Shangi, Unica, Konjo, Dutchrobjin, Wanjiku, Asante e	
GTIL	Lower Kabete	0729 852403 kae@africaonline.co.ke	Dutch Robijn,Shangi and Konjo	
Gene Biotech seeds LTD	Isinya	0739-532993,narayanimanatan@yahoo.com	Shangi	
Clabham Investment Itd	Mau Narok	0710607935 , bonifacetoday@yahoo.com	Shangi, Dutch Robijn	
Spring valley (Moiben)	Moiben	0723916161	Shangi, Dutch robijn,	
Aberdare Technology Ltd	Muranga	+254716177086	Shangi, Dutch Robijn	
Sigen Hortipruse Ltd	Elgeyo Marakwet	0728621222	Shangi, Dutch Robijn	
Kevian Kenya seeds	Kiambu	0701830699	Dutch varieties, Tornado, Infinity and Imagine	
Savannah Fresh Hort. Farmers' Cooperative Society Ltd	Meru	0708347959	Asante, Sherekea, Sagittal, Taurus, Challenger, Panamera, Unica, Dutch robjin, Konjo and Voyager	
Baraka Agricultural College	Molo	0724775769	Shangi, Kenya Kabribu, Dutch robijn	
Kenya Highland Seeds	Nairobi	0706 825555, Peter.francombe@khs.co.ke	Royal, Sarpo Mira	
Starlight Cooperative society	Molo	0721109200	Shangi and sherekea	
Freshcrop Ltd	Nyandarua	0727230484, chrisgasperi1@gmail.com	Shangi	
Kimingi Farm	Nyandarua	0781431222, 0726107722	Shangi	
Bubayi products Ltd	Kitale	0735488001, 0722599419	Shangi and Dutch robijn	
NYS Tumaini	Olkalou	0720036271	Shangi, Dutch robijn, Unica	
Taita Papa	Wundanyi	0726007669/0735402986	Shangi	
Agripom Kenya Ltd	Molo	0723111205, rkimanya@agripom.com	Shangi	
Jancota Limited	Olkalou	0714756608, nderui44@gmail.com	Shangi, Unica, Wanjiku, Dutch robijn	
Utopian Supplies Kenya Ltd	Rironi	0725240133, Stephen@utopiangroup.co.ke	Shangi	

# Seed Potato Production and Certification Process

# Registration as a seed merchant /grower

To produce seed potato, one can register as a seed merchant at Ksh75, 000 with an annual renewal fee of Ksh10, 000 or as an out-grower of a registered seed merchant at Ksh500 with an annual registration of Ksh300. Tin the seed merchant registration form (SR1 on the KEPHIS website) and submit to KEPHIS with the prescribed fees shown in 'a' above

# Preparation for planting

Soil testing must be conducted by KEPHIS to test for Bacterial Wilt and Potato Cyst Nematode (PCN) before planting. The cost for testing for Bacterial Wilt and PCN is Ksh3, 000 and Ksh1,000 respectively. Identify

the source of your basic seed. Outgrowers are advised to have an MOU with the seed merchant for the assurance of getting the quantity of basic seeds they want. Ensure isolation distance between the seed crop and other potato crops A seed crop shall be separated from neighboring ware potato crops or those whose sources are unknown by distances of: 100 meters for breeders, Pree basic and basic seeds and 50 metres for certified seed classes I, II and III

# Inspection

A Regulation Form (serialized booklet issued by KEPHIS) and submit to KEPHIS. Application should be done not more than 30 days

after planting. The following details are captured in the SR5 form: The acreage planted The history of the land where the seed has been planted {what crops you have planted in the last 3 seasons, etc} and related information will be needed. Class and origin/source of the seed used(Label-proof of origin); lot number of seed used Date planted Approximate date of harvesting Species and variety

# **Field inspections**

Once the forms are received by the KEPHIS inspection unit, they are arranged based on the planting dates to enable them schedule for field inspection accordingly. Timingof field inspection is important to ensure that inspectors are able to check for:



Isolation distance between the seed crop and other potato crops

Morphological characters for trueness to type of the variety and for off-types

Symptoms and incidences of specified diseases

A minimum of 2 field inspections are done. More inspections may be included if the seed multiplier does not comply with instructions given during certification.

First field inspection is done when the crop is flowering or at canopy cover for non-flowering varieties or at tuber initiation. Isolation, off types and diseased plant levels are identified guided by the Seed and Plant Varieties Act (CAP 326) and the seed multiplier advised on what to do.

Second field inspection is done at tuber development stage. The inspector verifies that problems identified during the 1st inspection have been dealt with. Cost of each field inspection is Ksh430 per hectare (Ha) and a minimum fee of Ksh1, 935 per seed field plus a mileage fee of Ksh58.50 per km.

## **Pre-harvest inspection**

After dehaulming, KEPHIS takes a sample of tubers (400 tubers per Ha) to test for Bacterial Wilt. If Bacterial Wilt is absent from the sample, then the seed multiplier is allowed to harvest and grade their seed.

For seed fields less than 0.5 ha, a sample representing 1% of the total plant population is taken.

Testing for Bacterial Wilt: a sample will be taken from each variety (if you grow more than 1 variety) and from each seed field if your seed fields are scattered.

## Post-harvest inspection

Lot inspection is done to ensure that grading has been done properly as per the two recommended sizes (Size I i.e. 28 to 45 mm and Size II - 45 to 60 mm)

and that no damaged potatoes or diseased tubers have been included.

If grading has been done properly then the seed multiplier applies for the number of labels needed:

Label specifies potato variety, seed size, net weight, seed generation, lot number, date of sealing, region grown; so multiplier applies according to what they have.

Label cost Ksh15 per label at a minimum cost of Ksh 990

Sealing and labeling is the final stage done by KEPHIS

Seed merchant is now free to sell their certified seeds.

NB:The seed grower should be knowledgeable in potato production and should have adequate sorting, grading and storage facility approved by KEPHIS. For more information, please contact:

The Managing Director, KEPHIS, 0709 891 000, director@kephis.org, www.kephis.org









# Quality, certified seed for potato farmers across East Africa

HZPC, CIP & KALRO varieties available as follows:

Asante Rodeo
Challenger Sagitta
Desiree Shangi
Dutch Robijn Sherekea
Farida Unica
Panamera Voyager
Taurus Zarina







For more information, kindly email us at potatoes@kisima.co.ke or call 0716 968 766 www.kisima.co.ke



# Potato Recipes.



## **Crispy Potato Wedges**

Ingredients:
4 large potatoes
Chopped rosemary leaves
I tablespoon of cooking oil
2 pinches of salt
Half tablespoon pepper
A spoonful of margarine

#### Directions:

- I. Clean the potatoes and cut into wedges/ chips with skin on.
  - 2. Boil them in salty water until they are cooked 3/4 way.
  - 3. Drain them off and once again ensure they are not fully
  - 4. On a hot pan, start cooking the potatoes with little oil.

    The idea is to let the potatoes

brown on the first side then slowly turn each piece.

- $5.Add\ a$  small amount of margarine and quickly toss them.
  - Season with pepper, dry herbs like rosemary and mix thoroughly.



## MINI POTATO PIZZA

#### Ingredients:

8-12 small potatoes
4 large onions
2 spoonful of cooking oil
I small garlic clove that is minced
8 mini naan (Oven baked flat bread)
2 cups of grated cheese
2 tablespoons of
minced rosemary
Salt

#### **Directions:**

- I. Pre heat the oven to 400°F.
- 2. Slice the onions and potatoes into thin slices.
- 3. In a small bowl, mix the cooking oil and the minced garlic.

  Brush the mixture onto the naan breads.
  - 4. Top with the grated cheese, onions and potatoes so that they overlap slightly and form a thin layer.
    - 5. Season with salt and rosemary.
  - 6. Drizzle a little cooking oil onto the pizzas and bake for 15 minutes or until the potatoes are well cooked.
    - 7. Remove from the oven and serve as desired.



# Increasing Yield in the Face of Climate Change



# CRAFT Climate Resilient Agribusiness



utritional value, versatile use, high yield and relatively short growth periods of 90 -120 days has made the potato one of Kenya's most important food. Progressively, it has become a valuable source of cash for small-scale farmers, cooperatives, small and medium entrepreneurs, input suppliers and processors. Studies estimate that the potato sub-sector generates employment for over 800,000 farmers with an estimated 2.5 million people employed at various level of the value chain: in inputs, production, marketing, processing, trade and consumption. Despite the economic potential, yields in Kenya are sub-optimal, partially attributed to the effects of climate change erratic rains, floods, droughts and declining soil fertility. In addition to varietal applications, pests and diseases, ultimately, these constraints result in declining quantity produced and quality of potatoes required by consumers, aggregators and processors.

The average potato yield in Kenya is eight tonnes per hectare, significantly lower than other African countries and global

benchmarks of 20-40 tonnes per hectare. Poor yields compromise smallholder farmer profitability and industry competitiveness. While the highlands where potatoes are cultivated tend to have sufficient rain, its irregularity adversely affects yields especially when rain fall decreases during crucial growing stages of the crop. Unmet crop water requirements at critical growth stages is further aggravated by poor farming practices such as shallow bed preparation, failure to plant in ridges, use of both inappropriate and inadequate quantities of fertiliser than is recommended and use of poorquality seeds and instances, selection of varieties unsuitable to specific agro-ecological conditions. Furthermore, deficient farmer knowledge and availability of expert guidance continues to expose smallholder farmers to more risks, eroding food security and overall crop resilience to climate change.

Conventional potato production management practices such as use of inorganic fertilizers and inorganic pesticides to improve soil fertility and control pests and diseases generate a significant **SNV** 

amount of land-use greenhouse gases (GHGs): carbon dioxide (CO2), nitrous oxide (N2O) and methane (CH4), making agriculture one of the highest emitters of GHGs. Like any other agriculture production system, potato production faces three major intertwined challenges: low productivity, climate vulnerability and GHGs generations that require a 'triple win' approach to address these challenges. The triple win approach includes sustainable productivity, adaptation to climate change and mitigation and/or removal of GHGs emissions which can be delivered through Climate Smart Agriculture (CSA).

Transforming the subsector into a more competitive and robust industry requires improvement of information management, crucial for production. The use of certified seed, optimization of high-quality inputs, disease control, improved storage and marketing infrastructure, organizing and strengthening groups and cooperatives for collective procurement and market linkages and adoption of CSA approaches have the potential to ensure the industry grows. Furthermore, creating awareness at county level and sector support actors, institutions and farmers is essential in ensuring growth of the subsector in the new governance structure. These ambitions define the objectives of the Climate Resilient Agribusiness for Tomorrow (CRAFT) programme.

https://snv.org/project/climate-resilient-agribusiness-tomorrow-craft

## **About CRAFT Project**

CRAFT is managed by SNV Netherlands Development Organisation in partnership with Wageningen University and Research, CGIAR's Research Program on Climate Change, Agriculture and Food Security, Agriterra, and Rabo Foundation, with funding from the Netherlands

facilitate the scaling of climatesmart investments in the value chains.

Some of the adaptive strategies with potential to benefit the entire value chain that the project is promoting through the SMEs include the use of certified seeds. The other strategies are; provision of climate and weather information, digitization of value chain processes, soil

discussions with multiple private sector partners to support similar initiatives.

In addition, in partnership with NPCK, the national and county governments and other private sector, CRAFT has developed training materials (manual and aid) with climate change focus. The training material incorporates climate smart agriculture aspects in





A photo showing farmers earthing up a potato field

Ministry of Foreign Affairs. The overall project goal is to contribute towards increased availability and accessibility of climate resilient food for the growing population by partnering with private businesses to catalyze the sector transformation

# Our Approach

The project uses a private sector approach to promote inclusive and resilient growth in agricultural food value chains with Potato as one of the value chains. Co-investment with the private sector is one of the key strategies identified by the CRAFT project to achieve sustainable results. Through its Climate Innovation and Investment Facility (CIIF), the project supports performance-based grants through the private sector. SMEs and their contracted farmers are supported by the project through a combination of Climate Smart Agricultural practices and technologies, interventions to de-risk and

management (correct fertilizer application, ridging, hilling, terracing, mulching), water management (rainwater harvesting, micro-irrigation systems), crop management (crop rotation, intercropping, integrated pest management, postharvest handling techniques and storage), agroforestry, energy management (modern renewable energy sources e.g. solar powered irrigation systems) and institutional arrangements (access to finance, market and crop insurance through private sector).

# Partnership roles

To date, CRAFT has so far signed partnership agreement with Sereni Fries Ltd with a potential reach of over 2,500 farmers. Through this initiative, Sereni Fries will incorporate enhanced practices within its supply chain to increase adoption of climate smart agricultural practices. CRAFT is in

farmer training to support farmer training which will ultimately ensure that farmers increase productivity despite the impacts of climate change. Finally, CRAFT is working with NPCK to introduce a profitability assessment tool designed to determine the efficacy of introducing climate change practices within the entire potato value chain whist reducing food loss and waste and greenhouse gas emissions.

By Oscar Nzoka, Bibiana Wanalwenge and Sebastian Wanjala Oggema

CRAFT has developed training materials (manual and aid) with climate change focus.

\*The writers serve as Innovations Advisor, Communications Adviser and Program Manager for CRAFT in Kenya.



# The ultimate potato growing solutions

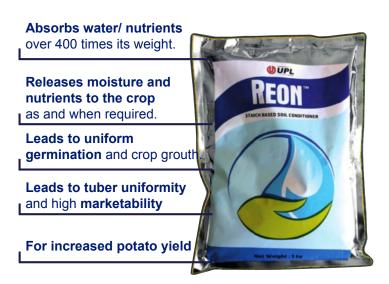
The difference is clear



# For Vigor, High Yield & Marketability



STARCH BASED WATER / NUTRIENTS ABSOBENT







Good crop coverage, for good and increased disease control

Disperses very fast and completely in water, no residues left

**No dust**, easy to measure, safe for use

High quality packaging









# Guidelines for monitoring quality of certified seed potato

Potato yields are affected by several factors of which the most important one is the quality of seed used. The average yield increase from the use of good quality seed ranges from 30 to 50 percent compared to farmers who use recycled seeds. Farmers face challenges getting certified seed potato since seed production has remained low at less than four per cent of the national requirement. Low seed production is due to challenges such as few numbers of certified seed multipliers and the cost involved in multiplying. However, demand for certified seed potato is growing with increasing awareness on the importance of using certified seeds. To guarantee the quality of the seeds, potato farmers are encouraged to check the quality of certified seed before they purchase from a registered seed merchant. The seed potato packaging bag must have a KEPHIS label inside with the following information:

- a. Name of the potato variety e.g. Shangi, Unica, Sherekea, Asante etc.
- b. Seed size e.g. size I, size II, or mini-tubers
- c. Net weight (the weight should not exceed 50 Kg) e.g. 20 Kg, 50kg
- d. Certified seed generation e.g. BASIC, C1G, 2ND GEN etc.
- e. Lot number e.g. 17-17344H
- f. Date of sealing e.g. 10/23/2017
- g. Label colour: Breeders/Basic (White), C1G (Blue), 2ND 3RD GEN (Pink)
- h. The label should look like the sample below:



## Farmers are also advised to observe the following:

- 1. Purchase seed potato from registered seed producersonly.
- a. You can confirm with KEPHIS or NPCKthrough the contacts provided below.
- 2. Do not buy certified seed which has no KEPHIS label stitched to the package.
- 3. Obtain an official receipt on purchase of seed.
- 4. Keep the receipts and the label throughout the growing season for reference in case of complaints. Keep all useful evidence such as seed potato packaging, receipts, label etc.
- 5. Do not plant seed tubers that are rotten, over sprouted, damaged or mis-shapened.
- 6. Report any strange diseases, pests or any other anomaly found on certified seed potato to KEPHIS, NPCK or agricultural extension officers for mitigation/ management action
- a. The reporting should be done immediately the anomaly is discovered and should be within the growing season and affected tubers or anomaly should be preserved as evidence
- b. Do not tamper with any information on the label or interfere with the package

In case of any complaints on seed quality, farmers should contact KEPHIS and NPCK immediately on the following telephone numbers or email:

KEPHIS HQ- Tel: 0709 891 000, Email:director@kephis.org, kephisinfo@kephis.org KEPHIS Regional Offices:

Kitale -0722209502, Nakuru - 0722209503, Embu - 0728 600 092 Mombasa - 0722209501, Kisumu - 0728 607 093

NPCK-Tel: 0799 739 578, Email:complaints@npck.org



# Fun Facts about Potatoes

1. The heaviest potato weighed 4.98 kg and was grown by Peter Glaze Brook of UK. It was weighed at the National Gardening Show at the Royal Bath & West Showground in Shepton Mallet, Somerset, UK, on 4 September 2011

2. Potato chips are among the most popular snacks in the world with billions of packets being consumed every year. The word "potato" comes from the Spanish word "patata"

3. The UN approved 2008 as the International Year of the Potato. The global body believes that potato is the food for the future, which could suppress hunger in the world.

5. As a crop, potato is associated with the history of the Irish people. More than a hundred years ago, the Irish people lived exclusively on potatoes, which were their main food. In 1846, a potato brewery was destroyed by unknown fungi leading to the deaths of over 600,000 of hunger with many survivors leaving their homeland. This is known as "Irish Potato Famine"

6. French fries were first served in America in 1801

7. The potato is about 80% water and 20% solids.

8 An 8 ounce baked or boiled potato has only about 100 calories...

4. Potatoes are medicinal as they can be beneficial for minor health problems.

When chopped, they can be used to reduce pain and relieve burns on the skin.

Compiled by Thariq Muchiri, Liaison Partnership and Communication- NPCK



The World's largest Potato was grown in 2011 by Peter Glazebrook weighing 4.98kg (10.98 lb Image (courtesy of giantveg.co.uk)



# New Potato Strategy Ready for Implementation

espite challenges in the year, the potato value chain has been on a steady progress. This has been occasioned by partner activities, uptake and use of new technologies and more importantly the implementation of the National Potato Strategy (NPS) (2016-2020), both at the national and county levels.

The NPS 2016-2020 has been instrumental in providing a road map for transforming the industry. This has been through utilizing available opportunities, skills and resources while addressing key constraints. Furthermore, it is the anchor on which counties have been developing customized County Potato Strategies putting into consideration the uniqueness of each county in terms of opportunities, challenges, priorities and aspirations. However, with the lifespan of the strategy launched in 2016 coming to its five year end term in December 2020, it was important to develop a new fiveyear strategy in order to maintain and/or accelerate growth and transformation of the sub-sector.

The NPS 2016-2020 focused on achieving nine key objectives including strengthening institutional, legal and regulatory framework; promoting variety development and seed production; enhancing research in the potato industry and increasing potato production as well as improving post-harvest handling, value addition and marketing. Added to these were the objectives of promoting public-private partnership in

potato industry development as well as improving funding to the industry.

Besides the fact that the lifespan of the 2016-2020 strategy had come to an end, there were other areas that necessitated the formulation of a new strategy. These included the new developments by both the national and county governments in the subsector; new initiatives by the sector players, new technologies as well as changes in policies and regulations. Some of the emerging initiatives and concepts that need to be captured in the next strategy include aligning it to the Government's Big 4 Agenda, Agricultural Sector Transformation and Growth Strategy (ASTGS), nutrition component as well as The Crops (Irish Potato) 2019 Regulations, new technologies in seed, Warehouse Receipt System Regulations (WRSR), the tuber and tuber crops strategy, avenue for participation in World Potato Congress (WPC) and other regional, continental and international organizations.

With support from the GIZ, NPCK partnered with other key stakeholders to kick-start the process of developing the new strategy (2021-2025). Professor Hamadi Boga, PS in the Ministry of Agriculture Livestock Fisheries and Cooperatives (MoALF&C), appointed institutions to constitute the technical team that will guide the development process. These were AFA, CIP, County Governments of Elgeyo Marakwet and Nyandarua, GIZ,

JKUAT, KALRO, Kenya Netherlands Seed Potato Project, KEPHIS, MoALF&C, NPCK, and SNV.

The technical team collected comments from stakeholders in the value chain and compiled a draft which was later subjected to validation on 4th December 2020. After enrichment during validation, the draft strategy is now ready for implementation. The counties will also use it to customize and develop their own county potato strategies.

Samuel Ngari, Policy, Lobby and Advocacy Dpt-NPCK

The NPS 2016-2020 focused on achieving nine key objectives including strengthening institutional, legal and regulatory framework; promoting variety development and seed production; enhancing research in the potato industry and increasing potato production as well as improving post-harvest handling, value addition and marketing.



# Distinguishing Apical Cuttings from Stem Cuttings for Potato Seed Bulking

he rapid bulking of seed potato is constrained by the inherent low multiplication rates of the commonly available starter materials. The mini-tubers commonly used produce 3-7 tubers per unit and therefore require many generations to bulk the seed into required quantities.

Apical cuttings, which are transplants produced in a screen house from tissue culture (TC) plants and handled the same way in the field as nursery-grown seedlings, are alternative starter material for onward multiplication of certified or onfarm seed. Cuttings are planted in the field in slightly raised bed,

producing between 10 and 25 (or more) tubers per unit. The cuttings mature quickly in the field, with egg-sized tubers observed 35 to 45 days after planting in some varieties.

The apical cutting technology is especially important in bolstering seed production in areas with insufficient land for traditional seed bulking and crop rotation. Seed produced from a pical cuttings can be commercially sold after only two seasons of multiplication. Since its introduction, there has been a great interest in apical cutting technology among public and private sectors as witnessed by investments in nurseries and the

amount of cuttings bought by seed producers in Kenya and Uganda.

While all the nurseries are intended to produce the apical cuttings, many nurseries are unintentionally producing stem cuttings as a result of incorrect management of the mother plants. Thus, it is important for nursery producers and operators to understand the major differences between apical and stem cuttings. This forms the major focus of this highlight, with much attention being given to stem cuttings produced from the TC mother plants allowed to mature

### Newly released robust potato varieties in Kenya

### **VARIETY NAME**

### SPECIAL ATTRIBUTES





- Can be planted in dryer, warmer climates or mid-elevation altitudes, bulks very quickly, yields big tubers
- Resistant to Potato Leave Roll Virus, Potato Virus X and extremely tolerant to Potato Virus Y
- Dry matter 21%
- Good for french fries and table potato



- Robust and vigorous growing variety, high yielder
- Resistant to Late Blight, Potato Virus X and extremely resistant to Potato Virus Y
- Dry matter 21%
- Good for french fries and table potato



- Tolerant to heat, can be planted in warmer climates or mid-elevation altitudes
- Resistant to Late Blight and Potato Virus X
- Dry matter 24%
- Good for french fries and table potato



- Tolerant to heat, can be planted in warmer climates or mid-elevation altitudes
- Resistant to Late Blight
- Dry matter 20%
- Table potato



- Highland variety, high yielder
- Resistant to Late Blight, Potato Virus X and extremely resistant to Potato Leave Roll Virus
- Dry matter 19%
- Table potato



- Resistant to Late Blight, Potato Virus X and Potato Leaf Roll Virus
- Dry matter 22%
- Good for french fries and table potato



# Features of apical and stem cuttings

Commercial cuttings derived from apical mother plants have high productivity of between 10 and over 25 tubers; the high productivity is in the physiologically young tissue. This is driving expansion of the apical cuttings technology and is fast gaining acceptance by seed producers, with nurseries already starting to operate in major potato growing areas.

Stem cuttings are produced at the stage when the original of the mother plant is a tuber. This is the traditional way of producing mother plants or when mother plants from TC mature as is commonly seen in nurseries. When planted in the field, stem cuttings generally yield 3-7 tubers per stem.

Thus it is important to produce apical cuttings by maintaining the juvenile state of the mother plant. Allowing a mother plant to mature, by producing compound leaves, results in stem cuttings with lower productivity. Both types of cuttings are of value in seed production, with yield and sales price expectations matching the type of cutting

# Management of mother plants ensures apical cuttings

To ensure that apical cuttings and not stem cuttings are produced depends on the production process used and the physiological state of the plant. To achieve yields of between 15 and more than 25 tubers per cutting requires producing apical cuttings and not stem

cuttings. To ensure that maximum yield potential of apical cuttings is achieved has to do with how juvenile the state of the mother plant is; the more juvenile (or young) the mother plant is the greater the yield potential of the resulting cuttings.

Here are some of the facts:

• Mother plants for producing apical cuttings always originate from tissue culture plants;

The apical cutting mother plant is maintained in a juvenile state throughout the production cycle (i.e. up to 9 months) by regularly cutting back the shoots;

- A juvenile apical mother plant maintains characteristic round, simple leaves throughout the production cycle (see Fig. 1a);
- Leaves starting to compound on the mother plant signify that the plant is starting to mature (see Fig. 1b), and the resultant cuttings will not have the same yield potential as an apical cutting;
- If a mother plant has shoots starting to mature, the mother plant can be rescued by cutting back all shoots and observing if the new shoots are juvenile;
- The bottom leaves of commercial apical cuttings taken from juvenile mother plants are often simple and all round (see Fig. 2a);
- The bottom leaves of commercial cuttings taken from mature mother plants are compound (see Fig. 2b, c).
- The commercial apical cuttings must be cut with an apical tip, without cutting one long shoot into several cuttings; and,

For stem cutting, the commercial cuttings are derived from stem including a shoot or a portion of a stem, not necessarily with the apex.

# Features of quality apical cuttings

The apical cutting must be sold or transplanted at the right stage: when not too young or short, and not too old or long (see Fig. 3). If one does not have a ready market, they can transplant for mini-tuber or basic seed production.

Therefore, when looking for a good apical cutting, one needs to observe the following characteristics:

Ideally, it should be 8-12 cm high from the collar (i.e. stem at the base of the growing medium); longer cuttings are weaker and take more labour to plant as they have to plant deeper.

- Short internodes
- Strong collar and stem
- Well-developed roots, but no root bound (roots growing round and round because of too small container, as this halts plant growth)
- •Dark green leaves and turgid plant standing strong – not wilted or falling over





Fig. 1: Mother plants for producing cuttings of potato originating from tissue culture plants, (a) juvenile state and will produce apical cuttings (b) mature mother plant will produce stem cuttings. Note the simple round leaves in the apical cutting vs the compound, oval leaves in the mature stem cutting.



Fig. 2: Comparison of (a) commercial apical cutting and (b, c) commercial stem cutting, for potato

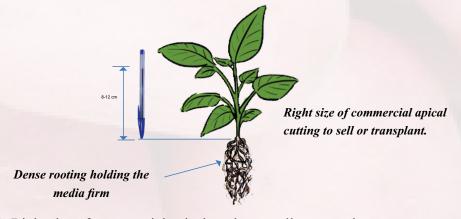


Fig. 3: Right size of commercial apical cutting to sell or transplant

\*Authors, Shadrack Nyawade & Monica L Parker are from the International Potato Center



# Addressing the Bandwagon Effect in the Subsector

he bandwagon effect is a psychological phenomenon in which people do something primarily because other people are doing it, regardless of their own beliefs, which they may ignore or override. In other words, as more people come to believe in something, others also "hop on to the bandwagon" regardless of the underlying evidence. This tendency of following the actions or beliefs of others usually occurs because individuals directly prefer to conform or because they derive information from others.

This concept can be seen in the potato subsector as far as preference of potato varieties by farmers is concerned. The most commonly grown potato variety among

farmers is Shangi. The adoption rate of this variety is very high. A few farmers cite its short dormancy period as the main reason for choosing it over other varieties. But the majority says its popularity among fellow farmers as the major reason for adopting it. So, farmer A uses it because famer B uses it too and when farmer C gets into potato farming, they will choose Shangi since farmer A and B are using it and the trend continues. This is also because farmers pass information and even the seeds (i.e. farmer saved seeds) to one another. However, rarely do farmers take time to explore and learn about other available varieties or even try them out on a small scale in order to objectively compare features of

potato varieties available in the market.

This preference of a variety simply on the basis of its popularity has resulted in the bandwagon effect in the seed potato subsector sector.

The other reason contributing to this is the fact that most farmers are unaware of other seed potato varieties. The few who are informed are reluctant to try them out as they prefer "the tried and tested" Shangi. Through this, Shangi Seed producers have been under constant pressure to meet the demand. The 2019 potato variety catalogue has 56 varieties approved by KEPHIS.

Joseph Aguk, Value Chain Dpt-NPCK

# Big Blow to Mechanization as tax is Imposed on Farm Inputs

In a push to raise revenue, treasury has imposed a 14 per cent Value Added Tax (VAT) on farm implements. The rise is contained in the Tax Laws (Amendment) Act, 2020 and is spelt out in Chapter 84 and 85 on plant and machinery used for manufacture of goods. The amendment came into effect on June 30, 2020 and affected implements such as ploughs, harrows, planters, sprayers and harvesters.

A spot check by Potato Magazine on distributors and sellers of these implements revealed that the changes have already been effected as their prices reflected the new tax. However, VAT on Tractors other than road tractors for semi-trailers will be effected on July 1, 2021.

Understandably, the government uses tax policies and laws to attract investments, facilitate productivity, engender sustainable outcomes for farmers besides creating conducive environment for businesses to thrive. However, the government ought to engage in a balancing act to ensure that its tax measures do not impede or create disincentives for the sector.

Maintaining such a balance is important because agriculture remains a high priority on the government's Big 4 Agenda, the blueprint driving Kenya's development agenda in the period between 2018 and 2022. This places achieving food and nutritional security as some of its core objectives. It needs no gainsaying to mention that agriculture is also a major source of employment, a top foreign exchange earner. Further, the sector keeps millions of citizen fed and provides, a market for

industrial goods such as pesticides, fertilizers and machinery and equipment.

It is apparent that with this new legislation, the cost charged by Mechanization Service Providers (MSP's) will rise and therefore become less affordable to most farmers. This will greatly undermine efforts made by stakeholders to spread the benefits of mechanization especially among millions of smallholder farmers. This notwithstanding, the new tax measures came at a time when farmers are reeling from devastating effect of floods, locust attacks and the economic shocks associated with the Covid-19 pandemic.

Charity Maina, Research and development Dpt-NPCK



# Corteva Agriscience Collaborates with NPCK to help Improve Yields for Potato Farmers in Kenya

otato smallholder farmers in Kenya stand to increase their yields significantly following the announcement of a collaborative initiative between Corteva Agriscience, a leading pure-play agriculture company, and the National Potato Council of Kenya. The collaboration will introduce improved technologies and show farmers how to increase potato yields using crop protection solutions, quality seed, resilient and improved varieties, pest and disease management, good hilling technologies, post-harvest management and record keeping.

Speaking during a farmer field day in Uasin Gishu County, Francis Karanja, Corteva Agriscience Sales Leader, Crop Protection in East Africa, said, "Corteva Agriscience is collaborating to help increase the productivity, incomes, and sustainable farming practices of

smallholder farmers. The products and information we share helps farmers manage potato pests and diseases, incorporate the latest advances in sustainability and technology into their daily operations."

The collaboration will provide critical field activities such as seed distribution, establishment of demonstration plots, field crop management, and training of host farmers and farmer group representatives at the demonstration plots in potato

growing regions in Kenya, where farmers have limited extension services and poor access to markets.

Since April 2020, seven demonstration plots have been planted, in Kinangop, Olkalau, Mau Narok, Bomet Central, Kieni East, Kieni West and Ainabkoi subcounties. Over 400 farmers have been trained on recommended practices such as soil testing services, apical cuttings technology, seeds selection and use of quality varieties/certified seeds, crop nutrition, crop protection and spray service provision.

The potato value chain in Kenya has remained underdeveloped for years, even though the crop is a key staple food, second only to maize. As a result, the country has been forced to import large quantities of potatoes, especially from neighboring countries like Tanzania.

Mr. Wachira Kaguongo from the Potato Council of Kenya said that the challenges facing potato farming in Kenya could only be tackled through a Public Private Partnership (PPP) by industry stakeholders to provide an integrated and coordinated approach to assist the farmers along the value chain.

He noted that farmers continued to produce low yields and of poor quality due to a combination of factors which include poor quality seeds, poor use of technology, and lack of expertise in disease management and pest control.

"Our objective at the Council is to help farmers produce high yield potential per hectare, free of diseases and pests. Our role will be to mobilize potato farmers and other stakeholders in the potato value chain to benefit from this technology and other measures



The collaboration will help farmers increase yield from 7 tons to 20 tons per hectare By Corteva Agriscience



aimed at increasing small holders' incomes," said Mr. Kaguongo.

During the trainings, COVID-19 preventive measures such as social distancing, wearing of masks, sanitization and temperature checks using digital thermometers were observed. Farmers were trained in three sessions in groups of 15 to avoid overcrowding, in line with the Ministry of Health guidelines. The events were officially graced by the local administration and county departments of agriculture. About 300 participants attended the training.

According to the Potato Council of Kenya, pests and diseases contribute to an estimated 80% reduction in production which threatens improved seed availability and food security.

"The technology we are bringing on board, which incorporates best agronomic practices, modern technology to provide scientific control of fungal diseases and safe use of chemicals is meant to help increase the potato yields per hectare in the small holdings significantly," said Karanja.

Potato contributes almost USD 30 million annually to the Kenyan economy. The sector employs approximately 3.3 million people, of which around 800,000 are smallholder farmers. Kenyan potato farmers have an average output of 7 tons per hectare compared to 50 tons per hectare in other countries. By adopting use of improved inputs and techniques, participating farmers will be able to achieve significant productivity gains and increase their potato yields from 7 tons to 20 tons.

In June 2020, Corteva Agriscience announced its 10-year commitments to advance sustainability and increase agricultural resiliency throughout the global food system. The company announced that it will, among other initiatives, provide tools and training for farmers to help increase yield on every hectare, profitability, optimize inputs, and improve climate resilience.

# **About Corteva Agriscience**

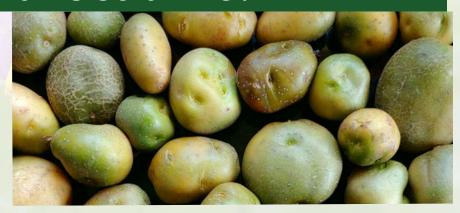
Corteva Agriscience is a publicly traded, global pure-play agriculture company that provides farmers around the world with the most complete portfolio in the industry including a balanced and diverse mix of seed, crop protection and digital solutions focused on maximizing productivity to enhance yield and profitability. With some of the most recognized brands in agriculture and an industry-leading product and technology pipeline well positioned to drive growth, the company is committed to working with stakeholders throughout the food system as it fulfills its promise to enrich the lives of those who produce and those who consume, ensuring progress for generations to come. Corteva Agriscience became an independent public company on June 1, 2019 and was previously the Agriculture Division of DowDuPont. More information can be found at www.corteva.com.

# What is Solanine?

olanine is a glycoalkaloid poison found in species of the nightshade family within the genus Solanum, such as the potato, the tomato, and the eggplant. The chemical is a natural pesticide and is meant to protect the plants from insects and germs. It is a natural ingredient of the potato, but the ingestion of higher amounts of glycoalkaloids can lead to poisoning in humans.

The following are the standard recommendations relating to the storage and preparation of potatoes in order to keep the intake of glycoalkaloids as low as possible;

Potatoes should be stored at a cool, dark and dry place;



Old, dried up, green or strongly germinating potatoes, as well as potato peels, or snacks consisting mainly of potato peelings, are not suitable for consumption;

Green parts and so-called "eyes" should be removed from potatoes;

Consumers who want to eat the skin along with the potato should take undamaged, fresh potatoes;

Potatoes should not be eaten if

they have a bitter taste;

Small children should not eat unpeeled potatoes;

People should not reuse the water in which potatoes have been boiled;

Deep-frying fat used to cook potatoes should be replaced regularly.

Compiled by Lilian Juma,NPCK-Administration Dpt



# **Potatoes in Kajiado!!**

hink potatoes, think highlands and high rainfall; this has been the mindset of many people for a long time. Arid areas are usually not associated with potato farming. In 2020 Latia Agribusiness Solutions partnered with Arysta /UPL, Baraka Fertilizer (Toyota Tsusho), Koppert Biological Systems and Potato Services Africa Ltd (Agrico EA) to challenge this mindset and showcase that potato can grow in arid and semi-arid areas under irrigation. The partners set up a potato growing project at Latia Agribusiness Solutions Centre in Isinya, Kajiado County.

From the onset, the team believed that with good agronomic practices coupled with the existing irrigation infrastructures present in many farms in Kajiado, farmers can grow potatoes profitably. The whole idea was to change the widely held myth among farmers that potatoes cannot do well in hot areas. The first field day to showcase the crop to farmers was held on 2nd December 2020.

To grow potato successfully, farmers should choose the right

seed for their region. In this case, heat tolerant varieties were chosen; Destiny, Markies, Manitou and Rudolph.

Panoramix- GR, from Koppert Biological Systems, was used to enhance tuber emergency, nutrient and water uptake as well as crop resilience. Use of REON, from Arysta/UPL, a water holding technology that holds water and soluble nutrients and reduces on wastage was used to ensure that the crop only uses moisture on demand.

During the field day, Sospeter M u t u r i, f r o m B a r a k a Fertilizer(Toyota Tshusho) reminded farmers that to grow potatoes successfully, one has to choose potato specific fertilizers that would be used at different growing stages to realize specific outputs. The company has complete nutrition package that farmers can choose from.

One big challenge farmers experience in potato growing areas is fungal disease control due to predisposing conditions. In low and mid altitude areas there is relatively less disease pressure. However, these places are ideal for

insect pest's development. The use of Vondozeb 75DG from UPL as early and late blight prevention was ideal in the project. When grown near or in alternation with solanaceous crops, insect pests like, spider mites and <u>Tuta absoluta</u>, which traditionally affect tomatoes will also affect potatoes. Therefore, the use of Evisect from UPL and use of traps from Koppert <u>B</u>iologicals was employed to control this pest.

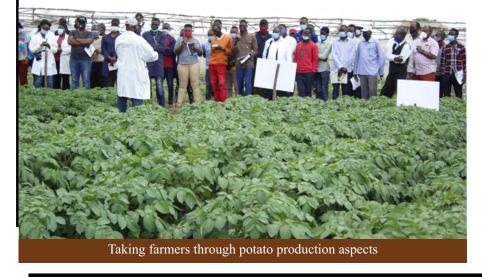
Water availability is a key success factor in potato production. However, in Kajiado, water is a scarce resource, therefore conservation becomes top priority. In the project, potato crop was grown under drip irrigation, this reduced evapo transpiration soil compaction and increases water use efficiency. REON helps to retain any excess moisture and releases it to the plant when it gets too dry.

Other key agronomic practices employed included crop rotation, soil sampling and testing as well as good crop hygiene.

Successful growing of potatoes in Kajiado County provides a good opportunity for farmers to diversify on crop enterprises grown and creates alternative income streams. The project at Latia Agribusiness Solutions will be a game changer to the farming community and interested agriprenuers.

Yes, potatoes can grow in Kajiado!

Compiled by Collins Ondako, Retail Marketing Lead –UPL Kenya





# **Our Potato Farming Nutrition Package**







Product	Key attributes	Application timing	
Multiphos	Replaces DAP or STP. Protected	At planting.	
	phosphorus for season long		
	availability. With N, Ca, Mg, S, Zn, &		
	Cu to maximize yields.		
Duramon 30	Top-dress fertilizer to replace urea or	Single top dress, three weeks after	
	CAN. Slow release Nitrogen with Zn,	transplanting, three weeks after	
	Mg and S required for photosynthesis.	transplanting.	
Vitazyme	An all-natural bio-stimulant that	Nursery stage, early in crop cycle.	
	stimulates beneficial, indigenous		
	soil microbiota. Improves soils and		
	nutrient availability		

Lachlan Kenya Limited, a leading agro-input distributor specializing in crop nutrition, crop protection, vegetable seeds and public health.

Call us regarding fertilizer programs or fungicide rotation recommendations.

**Contacts:** 



# County farmer field demonstration Exhibitors 2020/21



#### COUNTY GOVERNMENT OF BOMET

Irish Potato is one of the most important food crop in Bomet, it has high potential of addressing food insecurity, unemployment and low farm income. Production and productivity his steadily improving, this is attributed by improved access to clean and certified seeds. Land subdivision and competition by other crops is a major challenge of potato production. The County Government of Bomet collaborated with NPCK in the planning, organizing and hosting of County demo farmer training in coordination with Teganda Horticultural in Ndarawetta on 5th February 2021. The county is pushing for joint implementation of the Crops (Irish Potato) Regulations 2019 through the national government and county economic blocks I t is also in constant capacity building of value chain actors on the potato regulations and the bill before parliamentary health committee proposing banning of various agrochemicals in the value chain.

P. O. Box 19 – 20400 Bomet, Kenya Tel: 0700622866, 0715639555 Email:cec.agriculture@bomet.go.ke



#### COUNTY GOVERNMENT OF ELGEYO MARAKWET

In Elgeyo Marakwet County, the Agriculture Sector contributes 80% of the County Gross Product (CGP). The county is among the top three leading Irish potato producing counties in the country with an estimated annual production of over 240,000MT. Potato is a major source of livelihood to a huge population of the county.

Partnership with the National Potato Council of Kenya (NPCK) has been in the areas of access to potato seed and market for ware potato through the Viazi Soko Digital platform, development of county potato strategy, enforcement of the crops regulations of 2019 and the establishment of demonstration plots at Chebara ATC. The County Government of Elgeyo Marakwet collaborated with NPCK in the planning, organizing and hosting of County demo farmer training in Potato demo farmer training in coordination with Kimewo SHG in Kapyego ward which was conducted on 9th February 2021. The county is constantly capacity building its value chain actors on the potato regulations and the bill before parliamentary health committee proposing banning of various agrochemicals implementation committee in the value chain.

P.O. BOX 220-30700- Iten Email Adress:coagriculture2018@gmail.com, cdaelegeyomarkwet@gmail.com, cdaemc@gmail.com



#### **COUNTY GOVERNMENT** OF MERU

The County of Meru collaborated with the council and Katheru Commercial Village in the planning, organizing and hosting of the County farmer field demonstrations in Abo West ward on 1st February 2021in the county. The county is working together with the Council in the implementation of potato 'Crops (Irish Potato) Regulations, 2019" and in lobbying for exemption of seed potato from being subjected to cess charges. Other areas of collaboration include on Constant capacity building of value chain actors on the potato regulations and the bill before parliamentary health committee proposing banning of various agrochemicals in the value chain.

Contacts: P.O.Box 120-60200 Tel: 0728 330867 Email:agricmeru@gmail.com



#### COUNTY GOVERNMENT OF NAKURU

Irish potato is the second most important staple food crop in Nakuru after maize grown mainly by small-scale farmers in nine Sub- Counties. The crop has a high potential of addressing food insecurity, unemployment and low farm incomes due to its versatility as food and cash crop. The production and access of high quality seed remains a key challenge in the development of the potato industry.

The County Government of Nakuru collaborated with NPCK in the planning and hosting of a farmer field demonstration that was held in Turi ward, Molo Sub County on 3rd February 2021. Also, NPCK is partnering with the county in the development of the Nakuru County Potato Strategy 2021-2026 as well as in capacity building of value chain actors on the potato regulations and the bill before the parliamentary health committee proposing banning of various agrochemicals in the value chain.

Ministry of Agriculture Livestock and Fisheries P.O.Box 2870 -20100. Nakuru, Kenya Tel: 0738396939 Email:moalfnakuru@gmail.com,



moalf@nakuru.go.ke

#### COUNTY GOVERNMENT OF NYERI

Irish potato is one of the priority value chains in the county. It is predominantly commercially grown in Kieni East and Kieni west sub Counties. While it is an Krein East and Krein west sub Counties. While it is an important crop in the county, it faces several challenges including low farm productivity and insufficient agribusiness skills among farmers, poor market linkage, low participation from the youth and women in the value chain, adverse climate change effects among others.

the value chain, adverse climate change effects among others. There are several ongoing projects meant to alleviate some of the challenges in the county. They include: Agriculture Sector Development Support Programme (ASDP), The Kenya Climate Smart Agriculture Project (KCSAP) and Small holder irrigation and value addition project (SIVAP) among others. The County government supports seed potato production including the use of apical cutting innovations and has established an incubation center for the same at Wambugu ATC. The County continues to support implementation of The Crops (Irish Potato) Regulations 2019. NPCK supports the County in developing its Potato Strategy. supports the County in developing its Potato Strategy

Director Crop Resource Management P. O .Box 29 NYERI Telephone: 061- 2032938, Fax 061-2032313 Email: cdanyeri@gmail.com



#### COUNTY GOVERNMENT OF NAROK

#### DEPARTMENT OF AGRICULTURE, LIVESTOCK AND FISHERIES

The County Government of Narok collaborated with NPCK in the planning, organizing and hosting of the 2020 potato demo farmer training in coordination with Jitegemee WG in Kipiriri on 4th February 2021. NPCK is part of the county potato regulations implementation committee.

Contacts: P.O.Box 898-20500 Narok Email: agriculture@narok.go.ke



#### COUNTY GOVERNMENT OF NYANDARUA

Agriculture, being the economic backbone of the county, implies that necessary infrastructural support has to be put in place for this sector to play her rightful role. This shall include development of the showground site in Olkalou as more expansive land for research and training shall be sought. The County Government of Nyandarua collaborated with NPCK in the planning, organizing and hosting of County demo farmer training in coordination with Githiururi FFBS in Kipiriri ward on 2nd February 2021 as well as the implementation of the County Potato Strategy that is coordinated by County Potato Coordinating Unit. NPCK is part of Regulation implementation committee

The county is constantly engaged in capacity building of value chain actors on the potato regulations and the bill before parliamentary health committee proposing banning of various agrochemicals in the value chain.

Box 701 - 20303 Ol'Kalou, Kenya Tel: 0792735720, 0792735736 Email:info@nyandarua.go.ke



#### COUNTY GOVERNMENT OF UASIN GISHU

In Uasin Gishu County, Irish Potato is currently the third most important crop after maize and Wheat and the second most important food crop after maize. It has the potential for improving food and nutritional security and creating business opportunities. Its productivity is however low (6-10 tons per ha.) compared to the potential of 60 tons per hectare due to the unavailability of adequate appropriate certified seeds locally, high pest incidences and the low to medium soil fertility. The County Government of Uasin Gishu has been collaborating with NPCK, CIP and KALRO in the planning and hosting farmer field demonstrations in Ainabkoi Sub County to address the constraints. NPCK is also partnering with the county in the development the Uasin Gishu County Potato strategy and implementation of the Crops (Irish Potato) Regulations 2019 through the national government and county blocks.

Department Of Agriculture, Livestock Development and Fisheries,
County Commissioners' Offices;
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Eldoret-Kenya;
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Eldoret-Kenya; Website:www.uasingishu.go.ke





# County farmer field demonstration Exhibitors 2020/21



"Excellence in Agriculture"

ADC is a government parastatal established in 1965 through an Act of Parliament, it is mandated to maintain and produce high quality livestock for farmers and ensure adequate production of the countries seed crop for National Food Security. ADC Molo Seed established in 1979 is mandated to produce certified seed potatoes in Kenya.

Contacts: Box, 366-20106, Molo. Tel: 020 2318066 Email: adcmolo@gmail.com . www.adc.or.ke



Agrico EA - Potato Services Africa Limited sells certified potato seeds. In addition, we offer farmers training on good intensive agronomic practices for potatoes and can provide linkage with other value chain players. Our varieties for 2021 are: Arizona, Destiny, Markies, Manitou and Rudolph.

YouTube Video Tutorials: Agrico EA channel

Contacts:
Highlands Farm, Nakuru
Call Esther on 0742844207 or
Ruth on 0741788380
Email:info@agrico,co.ke
FB:www.facebook/AgricoEA

Cooper Center (Mashiara Park), Off Waiyaki Way, Kaptagat Rd Email- info@agrochem.co.ke 020 2464811, 020 2464812 +254 734447777, +254 710447777

products (pesticides) in Kenya.



Established in 1958, The Agrochemicals Association of Kenya (AAK) is the umbrella organisation in Kenya for manufacturers, formulators, repackers, importers, consultants,

AAK is also known as Croplife Kenya by virtue of being national representative of the International Agrochem Industry represented worldwide by CropLife International

distributors, farmers and users of pest control



Bayer East Africa Ltd. is a subsidiary of Bayer AG, a global innovation enterprise with core competencies in the Life Science fields of agriculture and health care. We develop new molecules for use in innovative products and solutions to improve the health of humans, animals and plants. Our Business Areas are structured through three main Divisions: Crop Science, Pharmaceuticals and Consumer Health. Crop Science has businesses in flowers, seeds, crop protection and non-agricultural pest control. We aim to help make the agricultural economy more productive. Our goal is to ensure an ample supply of high quality food, feed, fibre and renewable raw materials with a focus on generating profitable and sustainable growth through superior innovation and a customercentric approach to the market ...



The International Potato Center (CIP) was founded in 1971 as a research-for-development organization with a focus on potato, sweetpotato and andean roots and tubers. It delivers innovative science-based solutions to enhance access to affordable nutritious food, foster inclusive sustainable business and employment growth, and drive the climate resilience of root and tuber agri-food systems. Headquartered in Lima, Peru, CIP has a research presence in more than 20 countries in Africa, Asia and Latin America.

CIP has been a partner since the inception of NPCK, working together to build the potato value chain through upgrading the Viazi Soko platform, and supporting strategy, seed system and farmer capacity development.

Contacts: P.O Box 25171 – 00603 Nairobi, Tel: (254-20) 422 3602 Email:cip-nbo@cgiar.org.





Since its inception in July 2015, CFAO Agri 1td has been developing crop specific fertilizer through its brand Baraka fertilizer. Baraka fertilizer is a chemically blended, crop specific, balanced nutrition fertilizer made specifically for Kenyan Soils. We believe that each crop has its specific nutritional needs and deserves the right balance of nutrients to grow properly and sustainably. Our products have proven to be effective in increasing yield and improving soil nutrition for Kenyan Farmers country wide

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P.O.Box 10631-30100 Eldoret, Kenya.

Nairobi:

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PO Box: 3398-00506 Nairobi, Kenya.



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P.O. Box 53384-00200, Nairobi Kenya

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Crop Nutrition Laboratory Services Ltd. (CROPNUTS) is an innovative upwardly mobile laboratory run by a dedicated vibrant team. CROPNUTS provides soil testing, leaf analysis, nematology, plant, seed and root pathology, drinking water, waste water and irrigation water analysis. CROPNUTS gives recommendations and consultancy for Soil Nutrition, Soil Health, Long Term Soil Fertility, Soil Carbon sequestering, Plant and Root Health and Water Use Efficiency. CROPNUTS has over 20 years' experience in coffee fertilizer management and cater for small holders, medium and large scale coffee farmers, as well as offering NEMA approved water analysis for processing plant compliance.

Tel:+254(0)711 094 444, +254(0)736 839 933 Email:support@cropnuts.com Website: http://cropnuts.com Facebook.http://www.facebook.com/cropn utsAg/

Twitter:https://twitter.com/Cropnuts



Fresh Crop Limited has built a decentralized potato value chain, focused in growing Kenya's highest quality certified potato seed. Fresh Crop focuses on partnering with local farmers to embrace a more sustainable approach to farming while maximizing profits by working hand in hand, providing education and training, along with making the latest technologies more accessible, including mechanization and organic agrochemical programs.

Tel: +254 (0)796 511 670 +254 (0)727 230 484 Email: freshcropltd@gmail.com FaceBook: FreshCrop Limited Web:www.freshcropfarming.com





# **NPCK Registered Members**



The Fanisi technical team are fertilizer experts with more than 25 years' experience in researching and developing soil and crop specific fertilizers. In conjunction with the National Potato Council of Kenya, Fanisi has proven and demonstrated an increase in potato yields throughout the country. Farmers have healthier, bigger potatoes, greater yields and more profits. Fanisi Fertilizer is available countrywide.



Hygrotech East Africa is an Agribusiness company specialized in Hybrid Vegetable Seeds. The company has a complete range of many varieties specific to Kenyan needs from Potato Production to Fodder & Pastures.

The Company also is specialized in Spray Equipment, Agrochemical Adjuvants, Foliar Feeds and Pesticides.

Contacts: +254722205148, +254722607582, +254728607583, +254728607578. Email Address: info@hygrotech.co.ke Website:www.hygrotech.co.ke



Lachlan Kenya Limited is a leading agro-input distributor based in Nairobi, Kenya - specializing in seeds, crop nutrition, crop protection and public health.

Sunflag Industrial Park - Mombasa Road P. O. Box 49470-00100 Nairobi Tel: +254 722 209 474 Email: info@lachlanafrica.com

www.lachlankenva.com





In 1953, Omnia Nutriology® embarked on a journey that would revolutionize the agricultural landscape. The vision for our company was born from the idea that a sustainable future can be achieved by providing customers with fertilizer products produced by a company who aims to create a better world. We are excited about the future. We have the right people who are passionate about growing our diversified business. Together with our customers, we make the most of every new opportunity the future bring. By applying our minds, we will continue to find forward thinking sustainable solutions to realize our vision of building a better world.Omnia solidified its presence in East Africa through servicing the flower industry through water soluble commodities. However with a stronger in country presence Omnia aspire to grow our portfolio in Bio Stimulants and making these products available to commercial as well as small scale farmers.



CHEMICAL INDUSTRIES LTD.

Osho chemical industries Ltd is a leader in delivering the best agrochemical solutions, animal health products, public health products, and extension services to the agricultural industry in East and Central Africa. Our goal is to bring innovative agricultural products to the market through our expert sales force in every location in East and Central Africa.

Tel: 0711 045000, 0732 167000, 020 3912000, 20560 (SMS)

Whatsapp: 0704 853 383 Email: oshochem@oshochem.com . Website:www.oshochem.com



Agriculture with no borders

UPL plays a major role in the global economic growth through the development and marketing of innovative, high-quality chemical and bio-solutions necessary for today's dynamic agricultural industry. Through Open Ag policy, We provide high innovative solutions for use in various crop sectors including coffee, tea, horticulture, floriculture, cereals and maize in order to ensure optimum production. UPL has partnered with National Potato Council of Kenya to reach out to potato farmers through demonstrations, trainings and field days in various counties across Kenya. Goodman Tower, 4th Floor, Waiyaki Way

PO Box 30335 - 00100, G.P.O.

Nairobi, KENYA Tel: +254 772 958 602 www.upl-ltd.com

Tel: +254 727959950 /+254 748812851



### Knowledge grows

Yara's knowledge, products and solutions grow farmers', distributors' and industrial customers' businesses profitably and responsibly while protecting the earth's resources, food, and environment. We are the world's largest producer of ammonia, nitrates and NPKs, providing the foundation of Yara's fertilizer and industrial solutions. Our products and technologies increase yields, improve product quality and reduce the environmental impact

Contacts: Box 50949-00200 Nairobi

Tel: 0724255370 .





# **NPCK Registered Members**

	Name	Nature of business	Telephone	Email					
		Platinum							
1	Corteva Agri Science	Input Supplier- Agrochemicals	0709 142000	www.corteva.com					
2	A A A	Input Supplier- Agrochemicals	0722 624 038	enquiry.ke@upl-ltd.com					
	Gold								
3	CFAO ★★	Input Supplier-Fertiliser	206917953	barakafertilzer@gmail.com					
4	Elgon Kenya **	Crop Protection	0722403103	nelsonmaina@elgonkenya.com					
5	Pieper farms company ★★	Input supplier-seed producer	(914) 523-0445	david.zaitz@pieperfarmsllc.com					
6	Suera Ltd ★★	Input supplier-seed producer	0722 307 075	swmureithi@gmail.com					
7	Syngenta Foundation for Sustainable Agriculture in Kenya **	Development partner	0703 018000	www.syngentafoundation.org					
8	Twiga Chemicals **	Input and service Providers	0727952750	dkirimi@twiga-chem.com					
9	Yara East Africa Ltd **	Input Supplier-Fertiliser	0724 255 370	saleskenya@yara.com					
	Silver								
10	Agrico East Africa 🔭	Input supplier-seed producer	0713419782	corien.herweijer@agrico.co.ke					
11	Agricultural Development Center (ADC) Molo 🖈	Input supplier-seed producer	202318066	Paulnjuguna20@gmail.com					
12	Bayer *	Input supplier-Agrochemicals	0704 411 314	isabellah.nyandieka@bayer.com					
13	Chiromo Fertilizers Limited *	Input Providers-Fertilizers	0733 800 006	meera@fanisifertilizer.com					
14	Genetic Technologies International Ltd (GTIL)	Seed Potato Producer	729852403	kilonzojudith@gmail.com					
15	Kevian Kenya Ltd 🜟	Input supplier-Seed producer	0722 398 802	info@keviankenya.com					
16	Kirinyaga seeds 🛣	Input supplier-Seed producer	0733 944 483	james.karanja@keviankenya.com					
17	Kisima Farm Ltd 🖈	Input supplier-Seed producer	0789458376	potatoes@kisima.co.ke					
18	Koppert Biological systems	Input Supplier	0731 202 191	info@koppert.co.ke					
19	Omnia Retail 🖈	Input Providers-Fertilizers	0780441671	Ryno.Steyn@omnia.co.za					
20	Syngenta east africa 📩	Agrochemical supplier	0703018263	www.syngentafoundation.org					
		Bronze							
21	Aberdare Technology	Input supplier-Seed	0709333109	info@atlfarm.com					
22	Charvi Investment	Seed Producer	0717119009	Tejpal.singh@xflora.net,					
23	David K Maingi	Farm input-Seed Producer	0722 816 281	dkmaingi@yahoo.com					
24	FreshCrop Limited	Seed Distributor	0727 230 484	chrisgasperi1@gmail.com					
25	Gladys Maingi	Farmer	0722 828 021	gnmaingi@gmail.com					
26	International Fertilizer Development Corporation (IFDC)	Research	0706497938	joskame@gmail.com					
27	International Potato Center (CIP)	Research	(254-20) 422 3602	cip-nbo@cgiar.org					
28	Jancota Limited	Seed Producer	0714 756 608	info@jancota.com					
29	Kirimara Group -Meru	Potato Farmer Group	0721342093	florencekinoti@gmail.com					
30	Norda industries	Processor	020 236 7881/2	accounts@norda.biz					
31	OL Aragwai Farmers Co-op Society Ltd	Famer group	0722 992 305	mainaebrahim@yahoo.com					
32	Prof John Nderitu	Researcher -University Of Nairobi	0722 308 581	hurianderitu@gmail.com					
33	Redgate Ltd	Processor	0722 498 217	Jack.Kaburu@crs.org					
34	Rural Women in Agriculture Ltd	Famer group	0726 983 292	clara@ruralwomeninagriculture.com					
35	Seed Trade Association of Kenya (Stak)	Processor	020 271 3619	stak@stak.or.ke					
36	Sereni Fries	Processor	0725690901	info@serenifries.co.ke					
37	Stokman Rozen Kenya Ltd	Clean seed Producer	0720 603 990	info@srk.co.ke					
38	Tropical Heat Limited	Processor	020552640	info@tropicalheat.co.ke					
39	Viazi Kings ltd	Logistics and Makerting	+254792589216	viazikingsltd@gmail.com					
40	Wakulima Marikiti Potato Traders Associatio	Potato Traders	0723570461	Eddysenior2@gmail.com					





# **AGRICULTURE AND FOOD AUTHORITY**

Agriculture and Food Authority (AFA) was established through an Act of Parliament, the Agriculture and Food Authority Act No. 13 of 2013. The Act consolidates the laws on the regulation and promotion of agriculture and makes provision for the respective roles of the national and county governments in agriculture and relat ed matters, in line with the provisions of the Fourth Schedule of the Constitution of Kenya 2010.

Our Vision: To be a World Class Regulator in the Agriculture Sector.

**Our Mission:** To sustainably develop and promote crops value chains through effective regulation for economic growth.

### **Core Values**

Customer Focus
Teamwork
Integrity
Innovativeness
Professionalism

Our Mandate: Our Core mandate is to **Develop** and **Regulate**, and **Promote** Scheduled Crops. We specifically:

- < Administer the Crops Act 2013, and the AFA Act 2013;
- Promote best practices and regulate, the production, processing and marketing of agricultural products;
- < Collect and collate data and maintain a database; and
- < Determine research priorities in agriculture.

### **Our Contacts**

Tea House | Naivasha Road, Off Ngong Road P.O. Box 37962 - 00100 NAIROBI Cell phone: (+254)722-200556; (+254)734-600944

info@afa.go.ke

www.afa.go.ke

Our Crops Our Wealth!



# NATIONAL POTATO COUNCIL OF KENYA

he National Potato Council of Kenya (NPCK) is a Public Private Partnership (PPP) and a multi-stakeholder organization whose responsibility is to help plan, organize, and coordinate potato value chain activities and develop the subsector into a robust, competitive, and self-regulating industry. The Potato Council organizational structure enables it to draw synergies from a wide membership, representing all stakeholders and actors in the potato industry

### **NPCK'S VISION**

Potato industry is a leading contributor to increased incomes, food security, and improved welfare in Kenya.

#### **MISSION STATEMENT**

It is NPCK's mission to help coordinate and regulate Kenya's potato industry, and help improve the industry's profitability and the livelihoods of its various stakeholders.

# SPECIFIC OBJECTIVES

The NPCK Strategic Plan is anchored on six objectives:

- 1. To contribute in creating an enabling environment for effective and efficient potato value chains for growth and development of a self-regulating potato industry.
- 2. To help build a cohesive potato industry in order to promote synergies and minimize duplication for efficient use of resources through enhanced public private partnership
- 3. To promote best practices for quality standards, improved yields and enhanced value addition in order to thrive in local, regional, and global markets.
- 4. To create a platform for information management and capacity building for the various potato value chain actors.
- 5. To mobilize and effectively manage resources for the growth and stability of the organization and prosperity of the industry.
- 6. To identify and mainstream crosscutting and emerging issues within the potato industry

### **MAIN SERVICES**

Services provided by NPCK to the stakeholders include:

1. Providing forums for engage- ment, planning, networking and solution search,

- 2. Lobbying and advocating for supportive policy and legal framework,
- 3. Providing any services that will enhance businesses in the industry
- 4. Promoting adherence to regulations and adoption of good standards and best practices.

#### **NPCK**

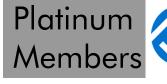
#### **MEMBERSHIP**

NPCK draws synergies from a wide membership representing all stakeholders and actors in the industry who include: Farmers, Researchers(National and international), Public institutions, Extension providers, seed producers, Traders, Processors, Regulatory agencies, Financial service providers, input providers, Ministry of Agriculture for National and County governments, Development partners and other actors and players.

NPCK has three Membership categories; Gold, Silver, and Bronze that allows engagement, services and benefits at different levels.

For more details about membership, please follow the link:www.npck.org

# **NPCK Members**







Gold Members



**syngenta** foundation for sustainable agriculture









Knowledge grows



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