



Developing the Nakuru County Potato Sector through Multi Stakeholder Collaboration

Kibe A.M. (Faculty), Kamande A. (MSc Student), Ngumba R. (Platform Facilitator)

Is food security a real problem in Kenya or is it just about shortage of one staple commodity - Maize? Whether real or imagined, the problem of food shortage is a national issue which has been a frequent talking point by the President of Kenya. It is one of the big four agenda of the current government alongside manufacturing, affordable health and housing. Food grain imports to meet the food deficit are now over 65 percent for wheat and rice, 20 to 30 percent for maize. Kenya has high potential to produce quality potatoes to address food security.

Growth of the potato sector in Kenya has been slow. This is attributed to lack of a conducive policy environment and effective regulations for actors along the potato value chain. The Kenya's National Potato Strategy 2016-2020 is general in nature and does not address county specific challenges.

In 2013, the Ministry of Agriculture and Irrigation services were devolved to county level necessitating development of policy instruments to guide local investment and implementation of interventions as well as give confidence to potato actors.

Constraints in production

Despite its many advantages, potato has a number of unique challenges that are associated with other vegetatively propagated crops (VPC) such as cassava, banana, arrow roots, and sweet potatoes. These include: perishability, bulkiness, high disease incidence, high cost of managing diseases and pests; and development of clean plant parts for propagation.

Nakuru has favourable weather conditions and fertile soils to produce potato. However, yield is still low at 8 tonnes per hectare compared to its potential of over 20 tonnes. Some of the key causes of low productivity are:

- i. Recycling of seeds or use of poor-quality seeds. Only 2.5 percent of the 600,000 small holder potato farmers in Kenya and Nakuru (29,000) in particular, have access to high quality (certified) seed. Certified seeds are clean for planting and of the varieties demanded by the market, that is, processors and restaurants. The issue of shortage and high cost of certified seed potato is yet to be fully addressed. This is largely because the Kenya Plant Health Inspectorate Services (KEPHIS) has certified only a few institutions. Majority of other seed producers sell clean seed or farmer selected seeds which sometimes have copyright issues.

Some facts about potato

In Kenya, potato produces more than five (10 t/ha) times per unit area over maize (1.7 t/ha) or wheat (2 t/ha), which are the main food grain crops in Kenya. Potato has one of the highest calorie levels per unit gram amongst the energy giving foods in the world. Nakuru County is the 2nd major potato producing counties in Kenya, after Nyandarua. Others are Uasin Gishu, Elgeyo Marakwet and Bomet.

Potato matures in three to four months compared to maize (five to eight months) and wheat (four to six months), making it easier to cultivate in short seasons. It is a high value crop providing income to farmers and other value chain actors when consumed fresh or processed. Potatoes are easy to cook and process compared to other grains. This ensures a ready market demand in both rural and urban areas.

The County has three factories processing potatoes: Njoro Cannery, Sereni fries and Kenya Defence Forces factory. Twiga Foods is a social enterprise that sources potatoes and other crops from the County. These agro processors have created market opportunities for small scale potato producers.

- ii. Agro input suppliers lack storage capacity for the bulky seed potato that customers require for planting. Hence selling of potato seeds is left to farmers. Potato farmers have limited access to improved production technologies and little knowledge on how to improve productivity for example use of fertiliser, agro chemicals, soil testing and irrigation.
- iii. Lack of income. Farmers may not have adequate resources to do proper potato crop management such as mounding, spraying, weeding and crop rotation.
- iv. Potato storage and aggregation facilities. Farmers do not have proper storage that can extend the shelf life of the potatoes which forces them to sell at harvest time. Ware potato traders also lack storage facilities to increase potato shelf life so that markets like restaurants and processors can buy them in fresh condition. Construction and maintenance of cold storage facilities is costly.
- v. Inadequate potato processing factories. This has led to losses due to the perishable nature of potato tubers. Ready markets are therefore necessary for the producer to minimize wastage and guarantee higher income.
- vi. Preference of processors. Some processors prefer varieties that are not commonly produced by farmers, while some fast food restaurant chains import potatoes arguing that local producers do not meet required standards. The seed potatoes for these varieties are expensive to buy and are only available from select seed merchants.

Unstructured markets: Potato traders locally known as 'brokers' are middle-men. They work in cahoots with transporters to form market gatekeeper cartels. A farmer cannot sell his produce directly in the fresh produce market. These brokers buy by size and not weight at farm gate. The more potatoes they can pack in a bag, the cheaper it is for them. They pack potatoes in extended bags weighing more than 100 kg called cutter 1, cutter 2, cutter 3, which increases the volume and weight of the potato beyond the standard 90 kg bags. These extended bags damage tubers and leads to rotting. Some progressive traders and processors now buy by weight which is more profitable for farmers. The policy to have potatoes sold in 50 kg bags was stopped when traders went to court and got a court injunction, stopping its implementation.



Photo: An extended potato bag bagCutter

Intervention

In September 2017, Egerton University and partners launched the seed potato Community Action Research Project plus (CARP+). The Seed Potato CARP+ is a four-year project funded by MasterCard Foundation through the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). It aims to:

- Enhance access to high quality seed potato,
- Improve productivity and income of small-holder farmers in Nakuru County; and to
- Develop a multi-stakeholder platform in the County to develop a Nakuru Potato Strategy to help improve value chain governance and performance and address the constraints identified above.

The design of the CARP+ project was unique and innovative in that it included key policy making and regulatory institutions as strategic implementing partners. These included the National Potato Council of Kenya (NPCK), Nakuru County Government (Ministry of Agriculture), Agriculture Development Center (State seed potato merchant), Baraka Agriculture College and Nakuru Small Holder Farmers Association (NASFA).

In January 2018, Egerton CARP+ project signed a Memorandum of Understanding (MOU) with NPCK whose mandate is to develop national and county strategies, policies and regulations to support potato farmers and their groups to access markets. The Council is also expected to develop policy briefs on emerging issues, lobby and advocate for inclusive policies and participate in reviewing training modules. It has an online platform where farmers can access information related to potato and seed potato production and markets. There is a well-connected group of farmers and other actors in the potato sector vital for networking. In May 2018, Egerton University signed a collaboration MOU with new County government of Nakuru to support agriculture development.

The potato strategy development process

Since 2018, CARP+ has collaborated with stakeholders to draft the Nakuru County potato strategy. The stakeholders include National Potato Council of Kenya (NPCK), Nakuru County Governments; SNV; farmer groups represented by NASFA, cooperatives and other interest groups and organizations. Development of the Nakuru Country potato strategy was a participatory process. CARP+ has been instrumental in mobilising stakeholder forums to ensure its completion.



The policy making process began with a meeting between the County Executive Committee Member (CECM) for agriculture and the CARP+ project team led by the principal investigator. The meeting agreed to have the County director of agriculture prepare an initial draft. This was adopted as a first draft. A subsequent

two-day meeting chaired by NPCK chief executive officer was held in Naivasha to prepare the second draft. The national potato and Nyandarua County potato strategies were used as references to structure the Nakuru draft. Stakeholder groups were assigned sections which they developed for inclusion in the draft. Amendments were made to align the draft to the aspirations of stakeholders. Another workshop held in Agriculture Training Centre (ATC), Nakuru to further improve the document to a third draft. This draft was further reviewed on 27th February 2019 at ATC, Nakuru.

There is need to:

- Strengthen institutional, legal and regulatory framework.
- Establish and/or strengthen potato production platforms that coordinate potato value chain development initiatives in Nakuru County (public-private sector linkages).
- Increase funding for seed and ware production, research, extension, storage, processing and marketing.
- Allocate adequate land for seed bulking and enhance seed potato multiplication by producer groups to make seed affordable.
- Improve infrastructure to lower transportation cost.
- Promote the construction of appropriate on-farm seed and ware potato storage facilities.
- Increase production by promoting good agricultural practises (GAP) e.g., fertilizer use, irrigation, planting high quality seed potato, effective management of diseases and pests etc.
- Develop market information systems for all key actors along the value chain.
- Promote formation of producer and marketing organizations to compete effectively in marketing.
- Enhance skills capacity of farmers and other actors.
- Improve and strengthen research-extension-client training linkages.
- Improve harvesting and post-harvest handling management.
- Promote potato value addition and improve marketing.

Upholding Seed Potato Standards

From the beginning, the project engaged KEPHIS which is mandated to ensure that seed potato producers meet all requirement stated in the seed and varieties Act Cap 326 and plant protection Act Cap 324. KEPHIS inspected the seed potato production processes at ADC Molo, Baraka Agricultural College and Egerton University to ensure that standards were met. Egerton University and Baraka Agricultural College are undergoing the certification process as seed potato producers by KEPHIS. They have both successfully made the first bulking of seed potato.

Building capacity of seed potato producer groups

In February 2019, CARP+ project staff and students were trained by NPCK on how to conduct organization capacity assessment of seed potato producer groups. The training included a field level assessment of the Kasambara Bidii producer group in Gilgil. It is

expected that the team will assess the other producer groups and support them to develop capacity development plans.

Market system development

CARP+ project uses the value chain development approach. Hence several strategies were used to create market linkages for seed and ware potatoes. Seed farmers were linked to ware potato producers. The partnership with NPCK enabled farmers to learn about and access Twiga foods, while SNV Kenya created a link to Sereni Fries processors. Egerton University's catering department also bought ware potatoes from some of the seed producers.

Policy dialogue platforms

The CARP+ project team members participated in several policy dialogue platforms at local, national and regional levels. The project has supported various County level education and trade fairs to improve knowledge and skills of farmers and actors while creating business linkages. Below is a highlight of some of the events.

Local level platforms

Nakuru Potato Stakeholder Platform

On 24th June 2018, the Nakuru County, Chief Executive Committee Member (CECM) Ministry of Agriculture, Livestock and Fisheries convened a Nakuru potato stakeholder's forum at Egerton University. This was a round table forum at the end of the Farmer Education day on potato and irrigation cropping systems. The forum shared information, mapped out actors in County and what they were doing, identified gaps and priority issues in potato value chain and tasked the County to coordinate the stakeholders.

In October 2018, Nakuru potato stakeholders held a meeting to plan on joint potato demonstration sites to be established in eight sub-counties. Each of the sites would use the farmer field school methodology and activities would culminate in a farmer field day. In February 2019, the 17 partners: four seed merchants, three fertilizer companies, eight agrochemical companies, County government and Egerton University formed a private sector driven platform that committed to contribute to the demonstrations and field days. Seven committee members were nominated to guide the process. Egerton was asked to chair the team based on its experience in facilitating the Nakuru Irrigation platform.

Irish potato regulations policy forums

By working closely with NPCK and the County government, CARP+ partners have participated in the County public participation forums on the packaging of the national potato regulations, 2019. The regulations provide for: registration of potato producers (small and large), aggregators, traders and processors, food safety and traceability standards, potatoes to be sold in bags of not more than 50kgs. The final public consultation meeting for Nakuru County took place on 27th February 2019 endorsed the regulations and appointed five delegates to the national forum. The team consists of Nakuru Smallholders Farmers Association, a potato cooperative and three private sector players. After the national forum, the regulations were gazetted by the Cabinet Secretary for Agriculture and Irrigation in April 2019 and submitted to parliament for legislation

Stakeholder's annual planning meeting

Nakuru County government convened an agriculture sector stakeholder meeting on 23rd January 2019 for members to share their annual plans to help create synergy and avoid duplication. During the meeting, SNV Kenya announced that it was launching a five-year climate smart agriculture project with a focus on potato value chain in the County.

National level platforms

The CARP+ project teams have participated in several national level events to promote the importance of potato as a food security crop.

National Food Security Task Force

The Vice Chancellor of Egerton University appointed Prof. A. Kibe, Principal Investigator of the seed potato CARP+ to the Presidential National Task Force on food security. Potato is a priority crop alongside maize and rice under the big four agenda on food security. The team has sensitized value chain actors on the government's plan to promote and enhance potato production to meet the country's food security gap. The task force guided by County department of Agriculture held sensitization forums for farmers and stakeholders in Elburgon, Molo and Mau Narok and the Nakuru agricultural market.

Online Platforms

CARP+ project has generated various knowledge and policy products that have been disseminated on the Egerton website and the NPCK platform. In December 2018 CARP+ produced an article that was published in the Potato magazine by NPCK. The CARP+ project teams were trained by Hope Consult on case study development in February 2019. They produced six cases studies that will be published on the online platforms. The cases will also be used as teaching and learning aids. It is expected that additional cases will be produced in future.

Regional level platforms

The CARP+ project has pushed the potato agenda beyond the Kenyan borders through partnerships and participation in various forums for example:

RUFORUM Bi-Annual Conference 2018: The CARP+ project team participated in the 2018 Ruforum Bi-annual conference held in Nairobi in October 2018. The conference theme was "Aligning African Universities to Accelerate Attainment of Africa's Agenda 2063". The CARP+ students presented 11 posters and five extended abstracts from the baseline survey, field days and potato fairs, seed potato activities with farmers and students' research activities.

Regional Seed Systems Forum: Through the CARP+ project, Egerton University has developed partnership with the International Potato Center (CIP). The Centre recognizes the University's contribution to policy reform and innovation in the seed potato value chain. On 11th and 12th February 2019, CIP invited Egerton to a stakeholder forum which brought together regional (Kenya, Tanzania, Malawi, Mozambique, Zimbabwe & USA) stakeholders. They deliberated on "Opportunities for shaping the future of seed systems for vegetatively propagated crops: Policy, regulation and gender considerations."

Results

Policy making is a complex process that takes time. Fortunately for the CARP+ seed potato project, through partnerships we realized some early results over the last 16 months.

- As at the time of developing the CARP+ potato project in 2017, potato was not one of the priority crops in Nakuru County. The engagement of key County staff in the research and development of the proposal, generated evidence that the sector had great potential to increase farmer incomes and food security. Today, potato is one of the five priority value chains of the County alongside pyrethrum, dairy, fish and avocado.
- In addition to the six seed potato demo plots that the project has supported, the County government has supported 24 additional demo plots.
- The County included construction of two potato storage facilities in its 2018/19 budget.



- Egerton University gave NPCK a sub-grant to facilitate participatory development of the Nakuru County Potato draft strategy. This has been subjected to three stakeholder drafting and review processes. A validation workshop and is now being finalized. The draft potato strategy and investments in the potato value chain have given new investors confidence to invest in the sector. In late 2018, SNV (Netherlands Development Organization) made a strategic decision to support the potato value chain through its new five-year climate smart agriculture program.
- The public participation review process of the potato packaging draft regulations allowed for the public to interrogate the draft and give inputs. This has paved way for draft regulations on producing, packaging, trading and processing of potatoes now awaiting legislation by parliament. These public discussions have inspired the need to develop a similar policy for sweet potato.
- Market development process has started and some farmers have sold potatoes by kilograms to Twiga foods, Sereni Fries and the KDF factory. These companies have contracted some farmers in 2019.
- Participation in county, national and regional platforms created awareness on the potential of the potato value chain and enhanced knowledge and skills of farmer and students.
- CARP+ project created synergy with the irrigation platform to hold quarterly platform meetings and events.

- Egerton University is developing partnerships and proposals to set up commercial seed and ware potato production units in its Agro Science Park to scale up CARP+ project work.
- CARP+ project team through partnership with the irrigation platform now have a strong network of financial service providers that can be leveraged to support the potato value chain.

Challenges

The CARP+ project team faced few challenges in the policy forum agenda.

- AgriProFocus Kenya had been identified as a strategic partner through its online platform that would have enabled the project team to reach and influence more farmers to consider potato farming as a business. However, the available budget was not sufficient for the AgriProFocus team to travel to Nakuru. Hence the project team contracted NPCK to provide the national platform which they did effectively. AgriProFocus Kenya have raised funds to host a youth forum in the County in May 2019.
- The development of strategy and policies is a time-consuming process. Balancing the time demand of external processes with regular faculty work is difficult.

Lessons

The lessons shared in this section are useful for community action research projects that plan to engage in policy dialogue, institutional reforms and seed value chain development.

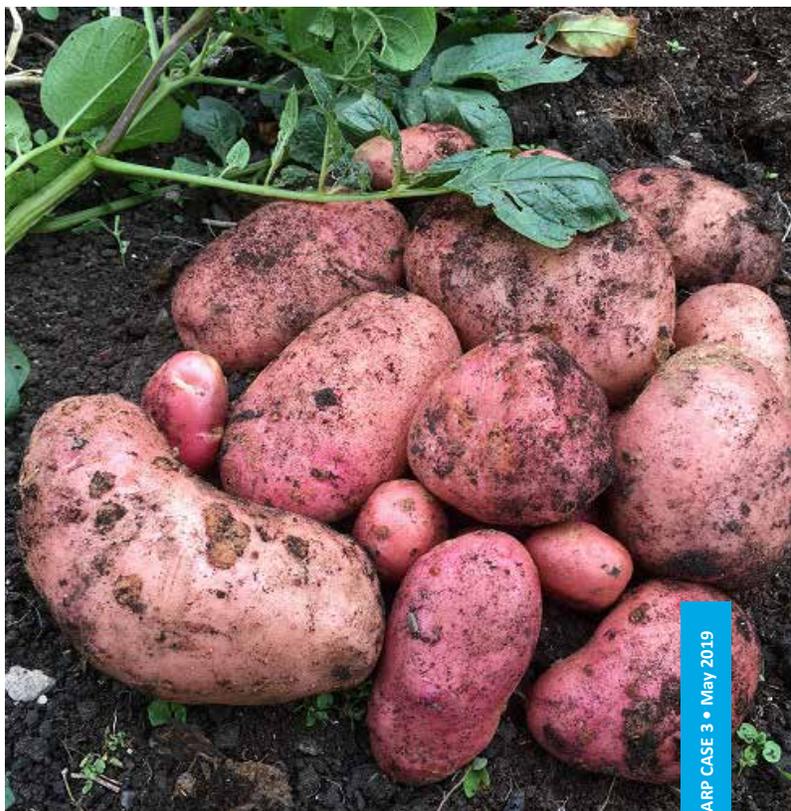
- By tapping on partner expertise, CARP+ has developed a draft strategy in eight months, participated in more events than targeted and set up 24 additional potato demo sites.
- By creating synergy between the CARP+ and irrigation acceleration platform project, CARP+ held platform meetings and events to reach more farmers and stakeholders.
- With good coordination, one project can be used to complement another. Using the irrigation platform funds, a demo plot (20x20 meters) was set up and is now used by 4th year students to grow potato apical cuttings for their final year project.
- The Nakuru Potato strategy draft is a good reference document that sub-national stakeholders can use to develop their own.
- The seed potato value chain development experience at Egerton is useful for research teams interested in developing seed systems for vegetatively propagated crops in Africa.

What remains to be done?

- The Nakuru County Potato Strategy draft needs to be finalized and adopted. It will be translated into action and proposals enforced through the establishment of county level systems and organizations.
- The National Assembly legislation of potato regulations needs to be fast tracked through lobbying to ensure it is passed.
- Potato market system development that includes; construction of cold storage facilities, processing industries and formal farming contracts, will encourage higher production. This will also reduce exploitation of farmers and post-harvest losses. Linking farmers to markets outside the county will spur growth

in the sector, creating employment at various stages along the value chain. This will eliminate brokers and increase incomes at producer level. Increased incomes of ware potatoes will empower farmers to buy quality seed.

- There is need to explore ways to certify more seed merchants and especially small holder seed potato farmers to increase access of quality seeds in rural areas. Egerton and its stakeholders will continue engaging KEPHIS and other stakeholders on this process
- Quarterly stakeholder platforms and other fora will be used to enhance synergy among value chain actors to promote increased potato production for improved food security and income.
- In partnership with the County and other stakeholders, CARP+ project plans to scale out training through the demo sites using farmer field school approach and support more farmers to be seed merchants.
- CARP+ project team will use its networks to partner with financial institutions to improve seed potato enterprises' access to financial services. From July 2019, the national and County government will launch a potato insurance scheme where the state will pay 40% of the premium and the farmer 60%. CARP+ project will collaborate with this initiative.



CARP CASE 3 • May 2019

For more information contact:

Prof. Anthony Kibe

Principal Investigator

Seed Potato Value Chain CARP+ Project

Egerton University

P.O. Box 536-20115 Egerton- Njoro, Kenya

Email: akibe@egerton.ac.ke, carp.potato@egerton.ac.ke