

**NAKURU IRRIGATION ACCELERATION PLATFORM (IAP)
& CLIMATE & WATER SMART AGRICULTURE CENTRE
FINAL TECHNICAL REPORT**

Period: 1st March – 15th November 2019



Sun Culture Sales Agent Training



Kilimo high students - drip irrigation lesson



Harvesting potato trial field day



NASFA field day at Kasambara, Gilgil

Submitted to: SNV Kenya and SWA Partners

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Turasha river bed, Gilgil in Mar 2019



Seeds of Gold Farmers Clinic on 9 Nov 2019 @ CaWSA-Centre

Executive Summary

Nakuru County is beautiful and an important water conservation area as it lies at the center of the rift valley in Kenya. It has the Aberdare escarpment on the east and Mau escarpment on the west which are natural water harvesting landscapes. Despite its great potential for water conservation and irrigation use, little is being done as evidenced by the expanding gulleys, rising water levels in Lake Nakuru and Elementaita which disrupts the saline ecosystem for flamingoes and other animals. This is a serious problem as the water becomes saline and cannot be used for domestic or irrigation. Yet this water can be easily harvested and used for irrigation. By 2015, only 13.5% of the 1.342 million ha potential irrigable land had been developed in Kenya (National Irrigation Policy, 2017). Hence the demand for farmer- led and market based irrigation development.

In January 2017, the Nakuru Irrigation Platform (IAP) was formed by stakeholders of the irrigated value chain in Nakuru County to improve the irrigated agriculture sector. The IAP consisted of small and medium size farmers and their organizations, private sector, the County Government and state agencies and research and academic institutions. IAP received financial and technical support from the Smart Water for Agriculture (SWA) program and members. The SWA program was implemented by a consortium of five organizations – SNV Kenya, Meta Meta, Practica, Aqua for All and KIT funded by the Embassy of the Kingdom of the Netherlands. It is hosted by Egerton University, Njoro, Kenya under the coordination of Prof. Anthony Kibe. The platform facilitator is Rahab Ngumba.

Part I of this report presents the IAP report for the past three years. The IAP used various forums and events to create awareness, demonstrate and support farmers and partners in their efforts to improve conservation and water and energy (Solar) use efficiency while increasing productivity and incomes. In total the IAP reached over 6,000 farmers directly.

Part II of this report presents the CaWSA-Centre results for year 1. To scale up the successes and ensure sustainability of the IAP's work, Egerton University and partners created the Climate and Water Smart Agriculture (CaWSA) – Centre in January 2019. The CaWSA- Centre is a Centre of excellence for Community, Student and Industry engaged learning. It carries out research, training, outreach work and publishes and disseminates knowledge.

Although the SWA funding is ending in December 2019, the IAP host and partners are confident that the work of the platform will continue. Most of the private sector partners have committed to continue co-funding IAP activities. The County Government has demonstrated its commitment by participating in all the events, co-financing some activities and recently appointed an irrigation focal person with an agribusiness background. The formation and support of Farmer Cooperative Unions in strategic value chains – potatoes, apiculture, dairy and poultry through the NALIG (World Bank) project will help strengthen input and output market systems and increase the voice of farmers. The cooperative model was tested as strategy for hosting farmer field days and creating access to inputs and markets and proved more efficient than working with farmer groups. We supported eight model farmers who will continue to demonstrate the impact of using Smart Water Solutions (SWS). The sections below highlights the achievements, sustainability strategies, challenges and recommendations and way forward for Nakuru IAP and CaWSA-Centre.

PART I: NAKURU - IAP REPORT

Introduction

This is a final technical report for the Nakuru Irrigation Acceleration (IAP) hosted by Egerton University, Kenya between January 2017 and November 2019. The IAP is a multi-stakeholder platform consisting of small and medium size farmer and their organizations, private sector, state agencies, research and academic institutions that came together to improve water productivity in Nakuru County. This report has two parts - Part one is the IAP report for the three years and part two is an inception report for the Climate and Water Smart Agriculture (CaWSA) – Centre for year 1.

The challenge we sought to address

Due to climate change, rainfall is sometimes delayed and reduced or in excess causing havoc for farmer depending on rain feed agriculture. Although the rain water can be harvested for domestic and agriculture use, this is not been done to optimal levels. Irrigated agriculture is perceived by many small and medium scale farmers as expensive and the preserve of large scale farmers or government projects. Many farmers were not aware of the many smart water solutions that existed that could help reduce their production cost while increasing their water and yield productivity. Access to market was a key challenge as most farmers produced during the rainy season which lead to a glut in the market and low prices. Access to financial services (credit and insurance) was a key constraint to expanding the farmer enterprises. The irrigated agriculture policy environment was not very supportive. For example as at May 2018, the Nakuru County, the Ministry of Agriculture, Livestock and Fisheries did not have a budget allocation for irrigation.

The Intervention Strategies

One of the solutions proposed by the Smart Water for Agriculture program was the Irrigation Acceleration Platform (IAP). The Nakuru - IAP was constituted as a County-Level multi-stakeholder platform (MSP). A multi-Stakeholder platform (MSP) is made up of private sector, state agencies, research institutions and civil society organizations including farmer organizations (KIT, 2018). This report discusses the process we used to form, run and scale up the Nakuru IAP as well as the results, challenges, lessons and recommendations. The main objective of an MSP is to identify key constraints and solutions in the value chain of focus and to take advantage of existing opportunities. An effective platform can be strategic in facilitating policy and institutional reform, improving access to markets and financial services. Hence, with concerted efforts of committed stakeholders, it can be

effective in stimulating the irrigated agriculture sector growth that is needed to achieve Vision 2030 and Kenya's prosperity.

It is the hope of the project team authors that other projects will build on our results and learn from our experiences. On our part, as the IAP host, we will continue to strengthen the partnerships built and create new ones to help in further scale up the impact of the Nakuru IAP. We will collaborate closely with the National irrigation acceleration platform (N-IAP) to give impetus to cross county learning and policy dialogue processes.

Phase I: Initialization of the Nakuru IAP (2017)

One of the outcomes of the SWA program was a vibrant multi-stakeholder platform that would improve the performance of the irrigated agriculture sector by promoting Farmer-led and market based solutions. Egerton University was selected to host and coordinator was appointed through a competitive process. A facilitator for the Nakuru IAP was recruited. The team of two was trained by staff from the Royal Tropical Institute and SNV Kenya. Baseline studies were done by SWA team that identified irrigation clusters, key issues and propose solutions and potential partners. Next was to identify and meet the strategic partners and invite them to initial platform meetings. The IAP team visited the selected irrigation clusters to build partnership with the farmer groups and understand the unique need of each cluster while building capacity on Smart Water solutions (SWS). Over six SWS technology demonstrations, field days and trade fairs were held reaching 500 SME farmers.

Phase II: Running the Nakuru IAP (2018)

In January, 2018, the Nakuru IAP team scouted for additional opportunities, strategies and solutions that could help increase the impact of the platform and SWA. Some of these included: identification of other irrigation clusters such as Ndarugu Irrigation CBO along Njoro River that was co-financed by the University, collaboration between the Nakuru IAP and the Community Action Research Program Plus (CARP+) funded by RUFORUM and MasterCard Foundation, co-funding of activities by private sector, state agencies and County Governments and expanding networking to tap into ongoing initiatives in the County among others.

In April 2018, during a Joint planning meeting between IAP and CARP+ project partners, the stakeholder present committed to co-invest in a County level farmer education day. The organization of such a large event, involving many private sector and state partners' required new skills set. This new approach coincided with the end of phase reporting and new proposal development phase which made it easy to change strategies. In May, 2018, the IAP coordinator and

newly recruited facilitator held a strategic meeting with the new CECM for Agriculture, Livestock and Fisheries. Although the CECM did not have a budget for Irrigation, she committed to support the platform and to explore future funding opportunities. The CECM, Dr. Immaculate Maina kept her word and attended over 6 IAP co-funded activities in 18 Months.

On 22nd June the joint Potato and Irrigation Systems Farmer Education Day was held at Egerton University with over 350 participants, 14 paying exhibitors who contributed 50% of the budget. At the end of the day, the stakeholders held the first ever Nakuru potato stakeholders forum convened by the CEM agriculture. This forum discussed the opportunities, challenges and strategies to improve the potato value chain and later gave birth to the Nakuru County Potato Platform. Some key issues planned were completion of draft Nakuru potato strategy, organization of joint demos, field days and consolidation of various farmer training guides and better coordination of stakeholders.

In the second half of 2018, the IAP developed new partners and hosted six farmer field days, many SWS technology demos and farmer capacity building activities in partnership with the Local capacity building (LCB) provider. These efforts reached over 1,200 farmers. In November, 2018 a review meeting was held with the SWS providers to identify the strategies that worked, what didn't work and how best to position the IAP in future. Partners committed to continue co-financing IAP activities. In December 2018, the County co-invested in a FABLIST meeting for farmer leaders and private sector. The meeting resolved to address pressing issues in the French bean value chain, source for market opportunities for potatoes and horticulture produce. The County Government committed to train farmers on Market survey and linkages. It was also agreed that the quarterly Nakuru stakeholders' forum would be revived and supported by County funds. The 1st meeting was set for January 29th, 2019. To close the year, the Nakuru IAP and CARP+ project documented their experiences in an article published in the December issue of the National Potato Council of Kenya.

Phase III: Institutionalizing and Scaling up Nakuru IAP (2019)

On 16th January 2019, the Nakuru IAP and CARP+ project organized a joint planning meeting for platform partners. The annual event calendar was developed and new partners and strategies identified. In February, during the Nakuru Stakeholders forum, the calendar was expanded to include other stakeholder driven events. This was the first such meeting since devolution - credit to IAP. The meeting resolved to have an irrigation systems field day in March at Elim Farm – medium size irrigated farm during the dry season, co-sponsor six field days, strengthen the 11 irrigation demo sites (The Egerton University demo would be a Centre of Excellency on Climate & Water Smart

Agriculture), organize market linkage visits to factories, build capacity of model farmers, cooperatives and NASFA and engage in policy dialogue processes.

IAP Achievements for Phase III

The section below highlights the results realized in the scale up phase.

a) Farmer Field days

In 2019, the Nakuru IAP was able to hold more farmer field days through collaboration with other partners and initiatives as shown in table below:

Table 1: Farmer field days that the Nakuru IAP co-funded & participated in 2019

| # | Farmer Field day Focus | Lead –organizer | Date | No. of Pax |
|----|-------------------------------|---|--------------------------------------|------------|
| 1 | Elim Farm | IAP- Egerton University | 8 th March | 150 |
| 2 | RVIST EXPO | Rift Valley Institute of science & technology | 8 th -9 th Aug | 1200 |
| 3 | Potato & Irrigation Field day | CARP+ Egerton university | 3 rd August | 120 |
| 4 | Avocado farmer Ed. Day | Avocado Society of Kenya | 6 th sept | 300 |
| 5 | Irrigation field day | Model Farmer, Mr. Chesire | 11 th Sept | 120 |
| 6 | Potato & Irrigation Field day | CARP+ Egerton university | 13 th Sept | 120 |
| 7 | Baraka Farmer Field day | Baraka Agriculture College | | 500 |
| 8 | Seeds of Gold | Egerton /Nation Media | 9 th Nov | 600 |
| 9 | Water Harvesting Field Day | NASFA, Kasambara | 14 th Nov | 280 |
| 10 | Dairy & Irrigation F. day | Nakuru Fresh Dairy/IAP | 15 th Nov | 150 |
| | Total | | | 3540 |

NB: IAP, County and Citizen & Inoro TV are planning a field day on 29th Nov. targeting 1000 farmers



Dairy & Irrig. Field day hosted by co-op



Farmers learn from model farmer, Naivasha

b) Farmer Capacity Building and Solidarity Building

Farmer capacity building was done at model farmer level, sub county level – irrigation cluster and County level – Nakuru Smallholder Farmers Associations (NASFA) and Cooperative level. The IAP organized farmer exchange visits to irrigation model farmers in Naivasha, Subukia and Njoro. Farmers attended two trainings and a learning visit supported by the CaWSA-Centre. We seconded a youth representative to NASFA who assisted in update the member database, develop proposals, draft strategic plan, review of board manual and organize meetings. In October 2019 during the launch of CaWSA-C, NASFA leaders met with the CECM Agriculture and agreed to do an MOU. The final field day in 2019 was done in partnership with a dairy cooperative to test the co-funding and sustainability model.

c) Market Linkages

In 2019, farmer leaders were facilitated to visit the KDF factory in Gilgil, Njoro Canning Factory and to have meetings with Twiga foods and Sereni fries. Some farmers have taped these market opportunities and we expect to see more enrolling. We collaborated with Bloom India and Green edge digital Africa to pilot an ICT market access platform on three value chains. The agri entrepreneurs have been trained and the pilot cooperatives and farmer groups selected. The pilot will start in early 2020. The two partners have invested KES 28,000 in the meetings and trainings.

d) Financial Inclusion

The partnership with financial institutions paid off with Equity Bank providing the highest support of KES 55,000 for three events – Business lunch meeting and two field days. ECLOF sponsored IAP's participation in the Avocado farmers' education day. SunCulture – a solar irrigation technology provider was assisted to enter the market with its Pay As You Grow (PAYG) model. The financial partners provided financial literacy training in all events they attended. They were also able to follow up clients recruited or finance in previous years.

e) SWS technology demonstration

Egerton University signed an MOU with SunCulture. SunCulture provided a rain maker 2 solar irrigation kit and trained 10 graduates as sales agents. The IAP provided support to the sales agents to promote the solar pump during field days and on farm demonstrations. This strategy enabled the IAP to reach more farmers and sell solar pumps. Due to the promising potential SunCulture has opened an office in Nakuru in November 2019. Despite the many promotions, the adoption of the Rain Maker 2 and future pumps is low compared to Uasin Gishu and Nyanza respectively. Hence, the

IAP has created partnership with Cloride Exide, Fintech and Davis and Shirtliff who have cheaper pumps.



New irrigation partner – Fintech display



Millicent, intern at Baraka College field day

f) Documentation and Knowledge Sharing

The IAP documented business cases and shared these widely. The platform results were shared in various for a such as the global community engaged learning conference in Ghana, National Irrigation Acceleration platform events and website, SWA program close out meetings, RUFORUM Annual general meeting in Ghana (Dec. 2019) and many others. We did a video documentary on CaWSA-Centre with Standard Media to be aired on KTN farmers TV.

g) Policy Dialogue and Reform

The IAP team and partners used very event to promote water harvesting, use of solar pumps and increased investment in the irrigation sector. Despite this little progress was made in terms of policy papers and increased budget allocation. However, County leadership led by the CECM Agriculture committed to continue exploring opportunities and resources to support the sector. A staff was assigned to work closely with the IAP to ensure scale up lessons and its sustainability.

More success was realized by the potato platform which the IAP supported. In February 2019, Egerton University and IAP partners participated in reviewing and validating the New Irish potato regulations which were enacted in June 2019. NASFA and two potato cooperatives were appointed to represent farmers in finalization of the regulations. The new regulations require that potato producers registered with the County Government, aggregate and sell their produce to registered transporters and traders. It also passed that potatoes will be traded by weight and the largest package should not exceed 50kgs. These regulations are expected to improve coordination of production and marketing as well as give farmers better prices. It will also assure that quality and traceability standards are maintained.

In April 2019, NARIGP project and the County Government convened the 2nd potato stakeholder’s meeting at Midland hotel. The stakeholders appointed Egerton University to chair the Nakuru potato platform assisted by a secretary and treasurer. The Platform leaders were asked to develop a terms of reference and to convene the platform meetings. The Nakuru IAP Facilitator has been representing Prof. Kibe in these Potato platform meetings which are funded by the NALIGP (World bank/GOK) project. To strengthen the potato producer organizations, in August 2018, the NALIGP project and Potato platform convener met with six potato cooperatives and the Nakuru Smallholder Farmers Association (NASFA) to discuss how best to improve production, storage and marketing of potatoes in County. It was agreed that the Cooperatives form a potato cooperative union. The cooperatives committed to each contribute KES 7,500 (US\$ 75) as share capital and KES 20,000 (US\$200) as savings.

The Union was formally registered in October and has over 5,350 members. Egerton University supported the Cooperative Union to develop the inclusion grant proposal to NALIG-P project which was funded KES 1.5M (US\$ 15,000) for it to increase membership and kick start operations. The Union also received a grant of KES 20M (US\$ 20,000) to establish potato storage facility in the potato growing region. Many irrigation platform farmers are represented in the Union.



Coop leaders meet in County Boardroom 2019 annual planning meeting of Nakuru IAP partners

The last Nakuru stakeholder forum for 2019 was held on 21st November at ATC convened by the County to jointly review the year and plan for 2020. The IAP had catalyzed the revival of these meetings in 2018.

Scaling-up of the Nakuru IAP

While by nature projects have a start and finish timeline, a multi-stakeholder platform should be continuous so long as members are addressing critical value chain issues and getting value through knowledge exchange, joint action and networking opportunities.

Egerton University and partners have been able to scale up MSP outreach and impact beyond set project targets. In this section, we share our experiences with other organizations that want to scale up impact through use of MSPs. These are:

1. Partner with County Government especially Ministry of Agriculture as they have the mandate to grow the sector and value chain and have contacts at the ground. The County Government also has resources to contribute. In many instances, the County Government contributed to platform activity costs in cash and/or in kind. For example, the County contributed KES 17,000 to exhibit during the Farmer education day on 22nd June 2018 and for the Nakuru potato stakeholder's forum on 22nd June 2018. It provided a courtesy bus for two farmer exchange visits and gave technical input in many activities. Since April 2019, the County has through the NALIG-P project, been able to host several platform meetings and activities.
2. Cost-share with other projects and initiatives within the host organization to realize cost efficiency and expand impact. For example, we were able to co-share platform activity costs with the Nakuru Irrigation Acceleration Platform funded by SNV Kenya, Co-ELIB center and Agro Science Park.
3. It is more effective to work with farmer cooperatives to host demonstration plots and field days and negotiate market contracts. Cooperatives have more financial and human resources more than farmer groups or model farmers, they have a large farmer outreach and have strong private sector partners and state agencies collaborations.
4. Invite private sector partners to pay for some costs and to exhibit. Over the past 1.5 years, the Nakuru Potato platform has run many activities (see below) and attracted new partners. Many private sector partners co-funded platform activities e.g. field days, others

gave free inputs and equipments. The table below highlights some of the contributions.

Table 1: Sample partners co-funding activities in 2018/19

| # | Partner | No. of Events | Cash contribution |
|----|----------------------------------|---------------|--------------------|
| 1 | County Govt. of Nakuru | 2 | KES 17,000 |
| 2 | Equity bank | 4 | KES 77,000 |
| 3 | Syngenta | 2 | KES 70,000 |
| 4 | Egerton SACCO | 2 | KES 20,000 |
| 5 | ECLOF MFI | 2 | KES 20,000 |
| 6 | KEPHIS | 2 | KES 20,000 |
| 7 | Davis & Shirtliff | 2 | KES 20,000 |
| 8 | Jubilee Insurance | 1 | KES 10,000 |
| 9 | Hi-Tech | 1 | KES 10,000 |
| 10 | Doshi Co. | 1 | KES 10,000 |
| 11 | Laser Engineering | 1 | KES 10,000 |
| 12 | G-North | 1 | KES 10,000 |
| 13 | Stockman Rosen/CIP | 1 | KES 10,000 |
| 14 | TAGDEV | 1 | KES 10,000 |
| 15 | Agventure | 1 | KES 10,000 |
| 16 | Kick Start Intern. | 1 | KES 10,000 |
| 17 | Sun culture | 3 | KES 35,000 |
| 18 | Lachlan Africa | 1 | KES 10,000 |
| 19 | Pioneer Seed | 1 | KES 10,000 |
| 20 | Co-ELIB center, Egerton Uni | 1 | KES 15,000 |
| 21 | Agro Science Park, Egerton | 1 | KES 10,000 |
| 22 | KCB | 1 | KES 5,000 |
| 23 | Euni Drip | 1 | KES 5,000 |
| 24 | Build Africa (sponsored farmers) | 1 | KES 3,250 |
| | Total | | KES 427,250 |

NB: This list does not include many partners that gave in-kind support to events and activities.

Table 2: In-kind contributions to CaWSA-Centre by partners

| # | Partner | Contribution |
|---|---------------------|--|
| 1 | Nakuru County Govt. | Hosted meetings, technical expertise, courtesy bus |
| 2 | SunCulture | Rain maker 2 solar pump |
| 3 | Frigoken | Water Pan liner, seeds |

| | | |
|----------|--|-------------------------------------|
| 4 | ADC, Agrico, Stockman Rose/CIP, Lachlan Africa | Free seedlings, technical expertise |
| 5 | Case International | potato mechanization demo |

NB: Two other projects helped scale outreach scope – CARP+ seed potato project and NARIG-P (World Bank) – Potato Value chain (2019-2022).

5. Institutional reform needed to house the MSP

From inception of the CARP+ seed potato project created synergy with the Nakuru Irrigation Acceleration platform. The two teams identified areas of synergy and did many activities jointly. In total the two projects have over 35 partners that have participated in various activities. As the two platforms matured, it become obvious that there was need to have an institutional framework within which the platforms would be anchored and operate. In March 2019, SNV Kenya and Meta Meta, gave Egerton University an inception grant (US\$ 1,219) to establish a Climate and Water Smart Agriculture (CaWSA) - Centre. The CaWSA-Centre is a centre of excellence for community, student and industry engaged learning. It offers training, research and outreach activities as well as engages in commercial production of irrigated seed and ware potatoes and rotation crops. The project teams are developing partnerships and mobilizing resources to expand the centre.

6. Use ICT and Social Media

In March 2019, the Nakuru Stakeholders agreed to create a WhatsApp group for sharing information, reports and market opportunities. This platform has made communication with multi audience easier and cheaper. We have created a website for CaWSA-Centre on the University website for more visibility and information sharing. It has information on the IAP, CaWSA-C and CARP+ seed potato projects.

PART II: CAWSA- Centre – Inception Phase Report

The frequent increase in variability of rainfall amounts and its distribution patterns, is leading to unpredictable and frequent droughts, flash floods and temperatures leading to periodic crop failure, food shortages and hunger. These occurrences’ are being attributed to Climate change (CC). Kenya receives good rainfall in good years, but it has one of the lowest surface water storage rates in the world for irrigated agriculture and livestock use - 3 m³ water use/capita/year (ICRAF 2012) which represents a huge potential to be tapped.

The **Climate and Water Smart Agriculture Centre (CaWSA-C)** was set-up in January 2019 as a joint venture of the **Nakuru Irrigation Acceleration Platform (IAP)** and **Seed Potato Value Chain (SPVC) Community Action Research Project *Plus* (CARP+)**. The establishment of the Centre in Egerton University was made possible through a competitive inception grant (8 months) from SWA program (SNV Kenya and Consortium partners). The CARP+ project funded by RUFORUM-MasterCard Foundation also provided resources; technological support was received from Sun Culture, Frigoken, ADC-Molo, Stockman Rosen/CIP; technical support from Nakuru County Government and collaborative support from Equity Foundation, ECLOF and other partners.

The CaWSA-Centre is to be a centre of excellence on climate and water smart technologies, innovations and management practices (TIMPS) in Kenya. It is a private sector and farmer-led initiative providing cutting edge skills and knowledge to students, farmers and stakeholders to enable them engage in commercial agriculture while improving their resilience to climate change.

CaWSA-C Facilities & Services

The CaWSA-C houses the Nakuru Irrigation Acceleration Platform secretariat and facilitates the development of the Irrigated value chain (IVC) as well as promoting climate smart agriculture for food, water and energy security. It promotes systematic water towers and ponds for water conservation and use. This facility is used for research and training on efficient water and nutrient use technologies, holding field days, exchange visits for showcasing existing SWS, and supporting business-2-business meetings, input and output markets development and policy dialogue.

It also implements the Seed Potato CARP+ project in partnership with farmers, students and stakeholders. It convenes the Nakuru potato platform that is mobilizing farmers to form strong and inclusive producer organizations and a County level cooperative union. The centre contributed to development of the Nakuru County potato strategy, the Irish potato 2019 regulations and set up of county potato demonstration units and farmer training and empowerment.

Our facilities and services include:

- 1) Farmers CaWSA resource and outreach centre offering:
 - Demos on water harvesting pans, solar pumps, drip, mist and sprinkler irrigation systems
 - Farmer and student-led crop and fodder demonstration and experimentation plots
 - Hydroponic, aeroponic and mechanized seed potato demonstration units
 - Short Courses, seminars, demo farm tours

- Growing and selling of fresh produce to the University Cafeterias and staff for generation of income to sustain the centre.
 - Provide internship for students and practitioners of irrigated agriculture.
- 2) Support farmer outreach, training and producer organizations by linking them to relevant service providers that strengthen their productivity.

CaWSA-C 2019 results

The CaWSA-Centre was able to train and reach over 1052 students and 786 farmers and stakeholders in 2019 as shown in the result matrix below:

| Result Area | Results |
|-------------------------------------|---|
| Equipping the centre | In addition to equipment provided by SWA program, we dug a large water pan, installed a pan liner from Frigoken, rain maker 2 solar pump from SunCulture, water tank and stand, drip line extension, water meters, tensiometer, EC-PH meter, rain gauges. Run off water pathways and bunds were constructed by Dry Land Resource Management Course students |
| Resource centre/ secretariat | We recruited a CaWSA-C demo farm manager for 8 months (July 2019 – Feb 2020) and an admin assistant (co-shared with CARP+ project) for 6 months. We bought a laptop, camera, Wifi, External drive for use in centre. |
| Research Trials | <ul style="list-style-type: none"> . 3 X student research projects on irrigated potato apical rooted cuttings and cabbage (12 students) . 2 X students agribusiness projects on French beans in partnership with Frigoken (15 students) . 2 X farmer-led potato trials: one on 9 potato varieties and another on potato mechanization (1 acre). The results were disseminated in farmer field days and to Nakuru stakeholders forum (see field days section) . We planted 3 acres of canola demo for crop rotation . 1 X organic farming demo plot |
| Irrigated crop demos | <p>We planted various crops for student and farmer learning: carrots, cabbage, celery, arrowroots, spinach, kale, zucchinis, butter nuts, sagetti, Amaranth, beans, pumpkins, Lucerne, lupins, desmodium and other crops.</p> <p>We have sold the vegetables to ARC hotel, catering department/mess and staff and canola to Agventure. Total sales is KES 105,000</p> |
| Farmer training | <ul style="list-style-type: none"> . 20 X farmers and extension staff trained on vermicomposting and composting on 8th Oct. 2019 . 25 X farmers and extension staff trained on organic farming at Baraka Agriculture training on 30th Oct. 2019 . 23 X Farmers and extension staff visited Karen Organic Farmers Market in Nairobi on 26th Oct. 2019 to explore starting a similar market in Nakuru. . 180 X Individual and farmers groups visited the centre (some from Kiambu County) |
| Student training | <ul style="list-style-type: none"> . 95 X students participated in SWS training including drone technology (by Third Eye) for crop stress surveillance during the CaWSAC launch . 120 X students trained on irrigation management during the NASFA organized field day at Kasambara on 14th Nov 2019 |

| | |
|---------------------------------------|---|
| | <ul style="list-style-type: none"> . Over 250 X student on practical training in field 7 visited the centre . 310 X high school parties visited the centre to learn (6 schools) . 250 X students and staff reached during the Agriculture week - The centre exhibited and gave a talk |
| Market Linkage | <p>Organized 2 meetings for farmers on:</p> <ul style="list-style-type: none"> . 13 X farmers and extension staff attended Organic farming planning meeting in partnership with Organico, County and Kenya organic farmers network (KOAN) . 15 X Strawberry farming in partnership with IC Net funded by JICA <p>Linked the CaWSA-C with University catering units to pilot test the sustainability model</p> |
| Farmer Outreach | <ul style="list-style-type: none"> . 240 farmers and stakeholders attended the 2 Irrigation and Potato field days held at potato flowering and harvesting stage – funded by CARP+ project . 100 X farmers visited the CaWSA-Centre during the Seeds of Gold Farmers Clinic on 9th Nov. 2019 |
| CaWSAC Launch | <ul style="list-style-type: none"> . 170 X farmers, students, stakeholders attended the centre launch on 1st Oct. by CECM agriculture, DVC – Research and Extension and SWA team leaders. |
| Visibility and publicity | <ul style="list-style-type: none"> . The CaWSA-C website was setup and is under final review (http://ferd.egerton.ac.ke/) . A documentary on the centre was done by Standard media and will be aired on KTN Farmers TV |
| Stakeholder Support | <p>Through the Nakuru IAP and Nakuru Potato platform, the Centre has the support of the County Government and private sector. Egerton University has an MOU with the County to set up an Ago-industry Park in 200 acres.</p> |
| Internal Institutional Support | <p>The University management has committed to support the CaWSA- centre as an income generating and experiential learning centre based on a business plan. The team will develop the business plan in the coming months.</p> |

CaWSA–C Pictorial



Farmers after planting irrigated potato trial plot



Farmers listen to Potato trial findings in Lab 2



CaWSA-C manager explains the organic farming demo Elite Students group plants French beans @CaWSA-C

Phase II Plans

Going forward, the CaWSA-C is growing crops to train students and farmers and raise some income as well as seeking support from like-minded partners. The centre has resources to pay two staff until June 2020. It has seed capital to support production input and labour until March 2020.

We are in discussion with some partners on potential funding as highlighted below:

A. Potential collaborators

- Corteva (Du-pont & Dow) – student internships; IFC – EA Small holder Irrigation project, World bank – potato value chain; SOCAA – food safety; Agrimech – potato mechanization and climate smart villages, Pyrethrum Co. of Kenya wants the centre to grow seeds on 5 acres.

B. Upcoming projects and partnerships

KCSAP (World Bank) validation of Potato TIMPs in Nyandarua, Nyeri and Elgeyo Marakwet Counties (2020 – 2021)

Challenges and Recommendations

We faced some challenges in setting up, running and scaling the Nakuru IAP. We have not been able to establish strong partnerships with NGOs. NGOs are useful collaborators in reaching more farmers and engaging in policy advocacy. Going forward, we plan to build strategic partnerships with NGOs to expand scale.

The grants was disbursed in 4 phases of 8-9 Months each. The process of report writing and new grant application and approval took time. This notwithstanding, the imprest application and accounting processes at the University also took time. Hence, some valuable time was

lost due to these two processes. At times, Prof. Kibe was forced to pre-finance some activities to ensure commitments to partners were honoured. In future, we recommended a longer period grant and more efficient internal systems at the University.

Now that the Nakuru Irrigation Acceleration Platform funding has ended, we do not have resources to pay the platform facilitator who doubled up as potato platform facilitator. We are exploring partnerships and funding to pay the platform facilitator and other personnel and for activities in 2020 and beyond.

We are yet to see a vibrant and well-funded farmer-led irrigation sector in Nakuru County and Kenya. There is need to customize the national irrigation and the climate change policies to Nakuru County. There is scope for the County and devolved funding instruments to invest in irrigated agriculture. The IAP plans to continue addressing these challenges.

Future Priorities of Nakuru IAP & CaWSA-Centre

The Nakuru IAP & CaWSA-C priorities for coming months and next year are outlined below:

1. Resource mobilization

As the funding for Nakuru IAP and the Climate and Water Smart Agriculture (CaWSA) – Centre from SNV and SWA partners comes to an end, the project teams will strengthen existing partnerships as well as seek new partnerships and funding opportunities.

2. Market linkages

The platform will continue to support farmer cooperatives and organizations to strengthen existing relationships with market off takers and develop new ones for improved prices to stimulate increased production. We will explore pathways to work with Njoro Canning, KDF Factory and Sereni fries for them to increase production so that they can create a pull factor for quality food produce.

3. Increased productivity

We will explore partnership with Agrimech and Twiga foods to support mechanization of the CaWSAC production processes.

4. Food Safety and traceability

We will partner with organizations working on food safety and traceability such as the Society for Crop Agribusiness Advisors (SOCAA) of Kenya to address these issues.

5. Use of ICT to improve VC efficiency

Nakuru IAP has partnered with Bloom India and Green Edge digital Africa to pilot an ICT platform that will link farmers to input and output markets using a smart phone enabled ICT system. Already agriprenuers have been trained and pilot cooperatives identified. The pilot will start with potatoes, cabbage and Avocado value chains in 4 sub-counties. We will continue to explore other ICT solutions that will improve efficiency of the seed and ware potato value chains.

6. Youth Engagement

Through the CaWSA- Centre, the University will continue to train students and farmers on irrigation and SWS. In the partner communities, we will continue to encourage youth to identify local business and job opportunities such as solar technology resale agents, spraying services, transport, agribusiness, etc. We will continue to explore partnerships with other actors that furthers this agenda.

Financial Report

As outlined above, we exceeded the targets set out in the contract with SNV due to the generous support of the IAP partners. We now request for reimbursement of the balance of 25% retained at SNV of KES 583,337. We attach the financial report and invoice for reference.

References

KIT, 2018. *Smart Water for Agriculture: Irrigation acceleration Platform Guidelines. Creating and facilitating stakeholder collaboration for accelerating farmer-led irrigation development.* Amsterdam: Royal Tropical Institute, KIT.

Egerton University, 2018. *Nakuru IAP Phase II Technical Report.* Nakuru

Egerton University, 2017. *Nakuru IAP Phase I Technical Report.* Nakuru

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