



Embassy of the Kingdom of the Netherlands



Masterclass Report National Irrigation Acceleration Platform

“Smart Finance for Smart Water Solutions”

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Venue: SNV Office, Ngong Road, Nairobi

SWA is
implemented by:



KIT



PRACTICA
FOUNDATION

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Masterclass Background and Program

Smart Water for Agriculture (SWA) is a 4 year program implemented by a Consortium of partners that consist of SNV Kenya, MetaMeta, The Royal Tropical Institute (KIT), Practica Foundation and Aqua for All. The program aims to improve food security through optimized water availability and efficiency by small and medium farmers and businesses. SWA promotes more effective irrigation development jointly with farmers, and interaction, joint learning, coordination and cooperation among stakeholders involved in the development of farmer-led irrigation.

To address the issues of water stress in Kenya and to ensure the uptake of irrigation solutions among smallholder farmers, the SWA program in collaboration with WARREC, the Water Research and Resource Center of Jomo Kenyatta University of Agriculture and Technology, has set up the National Irrigation Acceleration Platform (NIAP). NIAP is a multi-stakeholder consultation framework, which aims to initiate, support and scale innovations around smallholder irrigation in Kenya.

On 12th April 2018, WARREC and SNV had organized a workshop “Promoting Farmer-led and Market based Smart Water Solutions for improving smallholder irrigation in Kenya”. The workshop brought out the key developments in the smallholder irrigation sector and challenges faced by the different stakeholders in upscaling Smart Water Solutions (SWS) in Kenya.

Based on the feedback from the workshop, “Access to Finance” has emerged as the biggest challenge faced by the smallholder irrigation value chain actors.

While the Kenyan finance ecosystem has an evolved landscape of service providers including 160 licensed SACCOs, 9 microfinance banks, 23 credit-only MFIs and 43 banks, there are critical gaps in serving different segments of the irrigation value chain, from the smallholder farmers to technology enterprises, distributors, retailers and related agribusinesses.

There is still a reluctance from financial service providers (FSPs) to invest in smallholder irrigation because of perceived high risks of agriculture related to weather unpredictability, pest & disease outbreaks, low entrepreneurial attitude of many farmers, price fluctuations of crops, poor infrastructure, and poor market information. Farmers are also not able to demonstrate good decision making skills around irrigation technology adoption, business management practices, etc. that provide a track record and illustrate their capacity to become bankable.

It is also acknowledged that irrigation and smart water use is one of the essential ways of reducing risks in agriculture, making farming less rainfall dependent and more profitable. However, adopting or acquiring smart water technology means that irrigation technology providers need capital to reach the smallholder farmers. However, these enterprises usually fall into the ‘missing middle’ in agricultural finance. This is a result of being seen as too small and too risky to most FSPs, who resort to high collateral requirements that these enterprises often don’t have or charging inflated ‘risk premium’ interest rates that are unaffordable.

The Smart Water for Agriculture program has undertaken a study to link the supply and demand side of access to finance, which provided some practical recommendations to improve

Notes from Workshop Stakeholder Group – Financial Institutions:

- Issues around access to finance - perceived versus real risks;
- Support development of new financing products focused on farmer-led irrigations given high R&D costs and risks;
- Access of all FI to funds at reasonable rates to allow lending to farmers at lower rates, possibly through creation of common “Pool of Funds”;
- Improving linkages between FI and service providers.

financial access for the irrigation value chain actors in Kenya, specifically the smallholder farmers.

Recommendations:

- “Savings” as a means of financial inclusion should be promoted amongst groups. This will reduce the cost of borrowing.
- Explore leasing as an option from leasing companies and the minimum amount that can be availed and repayment options under this arrangements
- A re-financing model be explored between commercial banks and rural financial intermediaries such as KCB, Equity, Cooperative Bank etc.
- Explore inter-linked financing mechanisms with input, technology suppliers, insurance companies and other FSPs.

SWA program has also been using its innovation and investment fund to support qualified FSPs to reduce their risks and facilitate swift supply of credit to specific target groups identified by the program.

Based on the program experiences so far and the recommendations from the study and first NIAP workshop, it is clear that scaling-up investments will require innovative finance mechanisms and models. This can be achieved only through partnerships among stakeholders in the irrigation value chain.

WARREC and SNV-SWA therefore, invited key national level stakeholders involved in financing smallholder irrigation development to a master class to share knowledge and experiences around emerging finance models in agriculture finance, and jointly develop potential financial models that could unlock opportunities in financing the smart water technologies and solutions in Kenya.

The master class was designed to share insights from the project and gather inputs and information from the stakeholders and build consensus through discussions in breakout groups. The expected outcomes of the master class were:

- To develop an understanding of the smart water solutions for smallholder farmers in Kenya and the main issues hampering the uptake of these solutions
- Development of new financing models that could increase access to credit for scaling the uptake of smart water solutions
- Improving linkages between financial service providers, impact investors and smart water solution providers

Program:

Time	Agenda	Facilitator
9:00	Registration	NIAP Secretariat
9:30	Opening Remarks and Introductions <ul style="list-style-type: none"> • Welcome by SNV Country Director – Mr. Jeen Kootstra • Introduction to the SWA Program – Eng. Sebastian Oggema • Introduction to WARREC and NIAP – Prof. Bancy Mati 	Prof. Bancy Mati, WARREC
9:45	Opportunities around Smart Water Solutions – SWA Studies and potential Decision Making Tools	Ms. Jackline Muturi, SNV
10:00	Is the smallholder irrigation sector investment ready?	Ms. Florence Kariuki, SNV
10:15	Case Presentation: Bio-digester Finance Africa	Mr. Bert van Nieuwenhuizen, SNV
10:45	Tea Break	
11:00	Discussion - Unlocking opportunities for investments in Smart Water Solutions	Ms. Sheena Raikundalia, Intellecap
13:00	Wrap-Up and Lunch	Prof. Bancy Mati

Presentations and Q&A

Prof. Bancy Mati, Director of WARREC, welcomed the participants to the workshop and facilitated a round of introductions from all the participants. After introductions, she invited the SNV Country Director, Mr. Jeen Kootstra to give a brief welcome address.

Opening Remarks by SNV Country Director, Mr. Jeen Kootstra

In his opening remarks, Mr. Kootstra welcomed the participants to the workshop and registered his appreciation for the Smart Water for Agriculture (SWA) program and the NIAP as their contribution will help to promote irrigation in Kenya. Mr. Kootstra urged the participants to engage with honesty in regard to the issues of finance and water solutions aimed at promoting irrigated agriculture in the country.

Introduction to the SWA program by SWA Program Manager, Eng. Sebastian Oggema

This presentation was followed by a presentation from Eng. Sebastian Oggema, the SWA program manager. In his remarks Mr. Oggema introduced the SWA program and gave a brief break down on the objectives of the masterclass. He categorically stated the focus of the masterclass as a blue print that integrates finances and technology to mitigate risk in small scale farming. He further articulated that:

- Irrigation is about mitigating risk on investment and the SWA project tries to address irrigation risk by using and promoting smart water technologies
- To address risk, investments are paramount and access to finance is one way of reducing/mitigating that risk
- Promotion and use of appropriate technologies helps to promote appropriate investments
- Information dissemination is also key in promoting irrigation in Kenya and strategies to promoting information sharing need to be embraced

He concluded his remarks by underscoring on the need to come up with a model of how to foster and link sustainable financing to promote irrigation in Kenya, especially smallholder irrigation.



Eng. Oggema presenting the SWA Program



Prof. Mati's presentation on NIAP

Introduction to WARREC and Background to National Irrigation Acceleration Platform by Prof. Bancy Mati, Director of WARREC

In her presentation, Prof. Mati introduced the Water Research and Resource Center (WARREC) giving its objectives, mission vision as well as elaborating on WARREC's collaboration with SNV's Smart Water for Agriculture (SWA) program. She introduced the participants to the National Irrigation Acceleration Platform (NIAP) which was launched on 12th April, 2018 whose aim is to provide a "Platform" for knowledge sharing, learning and sharing of synergies to

advance actions that promote and advocate for smallholder irrigation in Kenya. Prof. Mati stated that the forum was organized to seek an understanding of smart water solutions for smallholder farmers in Kenya, and the main issues hampering the uptake of the smart water technologies by the farmers, including costs and risks as well as exploring opportunities for development of new financing models that could increase access to credit for scaling up the uptake of smart water solutions. She further articulated that the masterclass on smart finance is an NIAP's milestone which will help in building capacities of the platform members around challenges in uptake of smart water solutions and solutions to overcome the challenges. She registered JKUAT-WARREC and SNV's commitments in moving the platform to greater heights and urged for support from the stakeholders in this journey of trying to promote smallholder irrigation in the Country.

Opportunities around Smart Water Solutions – SWA: Studies and potential Decision Making Tools by Ms. Jackline Muturi, SWA Technical Advisor

In her presentation, Ms Muturi gave a brief breakdown on the status of irrigated agriculture in Kenya from a research perspective. She further explained on the Smart Water Agriculture (SWA) program activities aimed at increasing access and uptake of smart water solutions as well as the lessons learned and challenges faced. Citing from a research survey Jackline pointed out that:

- There is high demand for smart water solutions.
- Farmers highly believe in testimonials from other farmers.
- Farmers are not keen on keeping records which hinders them from getting financial support from financial institutions.
- It takes significant financial effort to adopt a smart water solution
- Access to finance hinders farmers to adopt smart solutions
- Technology suppliers are willing to set up demonstrations even at their cost

Concerns raised by the floor:

- Market linkages for the smallholder farmers is key for adoption of irrigation solutions
- Off-season production reducing the need for huge investments in storage solutions

“Is the smallholder irrigation sector investment ready?” By Ms. Florence Kariuki, SWA Access to Finance Advisor

Ms Kariuki began her presentation by articulating the SWA project targets; SWA envisages improving access to finance by reaching 20,000 SME, 50% women, develop appropriate mechanisms for SWS customized products and services, as well as developing financial innovation in consultation with FIs and stakeholders. She further articulated on:

- Need for solutions that are affordable and accessible to promote irrigation.
- Suitable models to help farmer's access finances for smart water technologies.

To the question on “if smallholder irrigation sector in Kenya is investment ready”, Florence pointed out that yes the sector is ready for the investment but cited the following that need to be addressed to further improve the sector:

- Allocate risks differently
- Match finance streams rather than integrate businesses
- Create social return as second revenue stream
- Create workable and sustainable finance models to enable farmer's access finances for smart water solutions
- Create partnerships that are not yet created /not taking off Policy –Irrigation Act 2017

She mentioned the key short, medium and long term activities that SWA program is interested to undertake to improve access to finance for smallholder farmers to enable them to adopt smart water solutions.

Short to Medium term:

- Focus on improving bankability for SMEs (farmers and suppliers)

- Documentation of success stories that directly relate investment in irrigation to economic benefits to SME farmers
- Embark on a study to establish the real commercial benefits (Return on Investment) that solely arise from investment in irrigation
- Embark on development of a refinancing model concept
- Align/Map out product/ market combinations and possible funders/investors/partnership

Long term:

- Development of an integrated finance model in which the success of SWA is integrated into a system.
- This potentially includes: different value chain actors, appropriate technologies, a digital platform, leasing, financial literacy, outcome payment solutions

Concerns raised by the audience:

- What is done to address issues of reaching critical mass – aggregating produce for markets
- Role on intermediaries on irrigation financing
- Why farmers may not be willing to take up credit facilities for smart water solutions – issues of internal credit structuring



Ms. Kariuki presenting on access to finance Mr. van Nieuwenhuizen Presentation on BFA

Business Case Presentation: Bio-digester Finance Africa (BFA) by Bert van Nieuwenhuizen, Chief Technical Officer, Africa Biogas Partnerships Program (ABPP), SNV

Mr. van Nieuwenhuizen introduced Biodigester Finance Africa Ltd which aims to providing a clean energy and agriculture investment solution for smallholder farmer households in rural Kenya, through the dissemination of bio-digesters as a climate smart energy and agricultural solution for small holder farmers in Africa and developing sustainable -commercially viable- bio-digester markets in collaboration with The Africa Biogas Partnership Program (ABPP). He presented a business case on how Biodigester Finance Africa Ltd is working to achieve their objective of de-risking investments in biodigesters. Operational de-risking is enabled through the ABPP program.

Concern raised by the floor:

- Possibility of processing slurry for use in kitchen gardening in towns
- How risks are mitigated and incentives that may woo farmers to be the risk takers
- Demand for biogas that can interest investors to support the initiative
- Impacts of emerging technologies
- How do we “collateralise” the finance

These presentations encouraged questions from the audience and helped in giving a direction to the breakout sessions that followed after the break.

Unlocking opportunities for investments in Smart Water Solutions: Breakout Groups

In smaller groups, participants discussed the following two key questions:

- **How do we envision a workable finance model?**
- **What are the concrete action points based on the proposed solutions?**

The groups were randomly selected and each group had about 8 participants. The groups had about 45 minutes for discussions and it was followed by a plenary feedback session that continued for another half hour.

The plenary feedback session provided a quick synthesis of discussions from the breakout groups and this was facilitated by Ms. Sheena Raikundalia from Intellecap.

Photos from the group discussions:



How do we envision a workable finance model?		
Group 1	Group 2	Group 3
<p>Formal lending</p> <ul style="list-style-type: none"> Supplier needs to lend and recover their loans Tripartite arrangements between farmers, tech providers and financiers – where farmers pay 25% for the product; FI's provide 75% (with guarantee from market actors); Tech provider guarantees buy-back of the product <p>Pay-as-you-go models</p> <p>Integrated value chain financing</p>	<p>Secured Markets</p> <ul style="list-style-type: none"> Reach to low hanging fruits High value crops to be targeted Availing technical assistance to support initiatives Have forward contracts Designing financial products that are friendly to the farmers <p>Integrated ICT solutions for data collection</p> <ul style="list-style-type: none"> Data collection points Accurate and verifiable Access of the data Sourcing data 	<p>Use of a sustainable financing model - the vendor-led model</p> <p>FI's lend to SACCO's, who in turn lend to farmers with guarantee from off-taker/market (eg. Frigoken). Farmers use the loan to pay the tech providers, use the product and sell produce to the off-takers.</p> <p>FI's lend to a credit facilitator, who lends to tech provider. Tech provider has an agreement with the off-taker. Off-taker has agreements with farmers, who use the equipment and sell produce to the off-taker. Off-taker makes payment to tech provider.</p>
What are the concrete action points based on the proposed solutions?		
Group 1	Group 2	Group 3
<ul style="list-style-type: none"> Guarantee performance of technology provided Have a buy back or replacement policy Provide training to farmers on financial literacy and management Provide a pricing and payment plan to farmers (by the tech providers) Commitment Reliable water source Ready market of produce Understanding legal contracts 	<ul style="list-style-type: none"> Build partnership with stakeholders Provide a conducive environment for stakeholders to work together Create working groups 	<ul style="list-style-type: none"> Success stories- demonstration to show working models Capacity building for key stakeholders in financing and technology provision including end-users (farmers) Data sharing

Other points noted from the group discussions were:

- As the number of value chain actors increase, the revenue points also keep increasing – increasing the overall cost to the farmer
- Lack of information/data to the investors on return on investments creates distrust
- It is better to showcase success in one value chain – start with the off-taker and work backwards

Wrap-Up and Way Forward

In her concluding remarks, Prof. Mati, NIAP facilitator noted that the group discussions very much confirmed the need to come up with financial models for upscaling the adoption of smart water solutions amongst smallholder farmers in Kenya. The next steps were agreed to be as follows:

- The organizers will send across all the presentations to the participants at the earliest
- The organizers will prepare the workshop report and share with all in the next few weeks
- The participants will reach out to the organizers (WARREC or SNV) for any requirement they have around creating financial models for SWS. The organizers can support in facilitating more masterclasses, workshops or B2B meetings
- Participating organizations to volunteer their time for a working group for coming up with one or two financial models as NIAP
- Participants to suggest to the organizers other organizations that need to be included in this initiative

After further processing of the workshop results and matching recommendations with available resources, the organizers will communicate again with all for their further interest and possible contribution to shaping the NIAP and its activities.

The workshop was closed with a vote of thanks by Prof. Bancy giving a recap of the NIAP workshop and its deliberations. She also pointed out that an irrigation platform had been missing in Kenya but formation of NIAP had bridged the gap and thanked all the participants and facilitators.

Feedback from the participants on the masterclass format

Ms. Vandana Thottoli, IAP advisor of the SWA program requested the participants for a quick feedback on this first Master Class and its format, what worked and what should be changed using meta-cards.

From the notes, the following points were noted:

- The workshop was overall well organized.
- Profiling of the issues in the smallholder irrigation sector were well brought out during the presentations.
- More time needed to be given to the interactive sessions and discussions. Time allocated was not sufficient.
- There is a need to include more data-driven case studies that will help in supporting the discussions.
- Highlight success stories from the program.
- Need for more focused discussions on the topic of finance to create buy-in of investors and financiers (suggested at least one meeting per month).

About the Organizers

WARREC – JKUAT

JKUAT is an Institution of higher learning established in Kenya under the Universities Act No. 42 of 2012, through the JKUAT Charter signed on 1st March 2013. The University's objectives and functions include inter alia, to provide directly or indirectly, or in collaboration with other institutions of higher learning; facilities for quality training, research and innovation in agriculture, engineering, technology, enterprise development, health sciences, social sciences and other applied sciences, and integration in teaching, research and effective application of knowledge and skills to the life, work and welfare of the citizens of Kenya. JKUAT has established the Water Research and Resource Center (WARREC) as a center of excellence for research, science, technology and innovation in the broad fields of the water sector.

SNV

SNV is a not-for-profit international development organization, working in Agriculture, Energy, and Water, Sanitation & Hygiene. Founded in The Netherlands in 1965, SNV has built a long-term, local presence in 38 countries across Asia, Africa and Latin America. SNV's global team of advisors work with local partners to equip communities, businesses and organisations with the tools, knowledge and connections they need to increase their incomes and gain access to basic services – empowering them to break the cycle of poverty and guide their own development.

Annex: List of Participants

Name	Job Title	Company
Ms. Rose Makenzi	Food Security and Water Policy Officer	Embassy of the Kingdom of the Netherlands (EKN)
Ms. Sheena Raikundalia	Senior Advisor	Intellectap
Mr. Sakti Mukherjee	Coverage Director, Kenya	CDC Group
Ms. Noelle Kiluva	Partnership Officer - Water Resources Group 2030	Kenya 2030 WRG / IFC
Mr. Maurice Oduor	Sr. Asst. Director	Ministry of Agriculture and irrigation
Mr. Michael Mbaka	Senior Innovations Specialist	Financial Sector Deepening (FSD Kenya)
Mr. Jackson Echoka	Manager - AFC Risk Unit	Agricultural Finance Corporation (AFC)
Ms. Julie Nyawir	Credit Officer	Agricultural Finance Corporation (AFC)
Mr. John Amimo	Program Coordinator	African Rural and Agricultural Credit Association (AFRACA)
Ms. Agnes Manthi	Business Development Officer	Root Capital
Mr. Patrick Ekwam	Value Chain Finance Officer	MESPT
Mr. George Macharia	Head Of Agriculture Credit	Equity Bank
Mr. Abraham Olefa	Manager Agribusiness	KCB
Mr. Samuel Tobiko	Senior Marketing Officer	Juhudi Kilimo
Ms. Betty Simiyu	Marketing and Business Development Officer	ECLOF
Mr. Alex Kiragu	Relationship Manager Agribusiness	Rafiki
Mr. David Mukaru	Head of Business Development	FAULU
Mr. Kitonga Muli	Green Energy Project Coordinator	KUSCCO
Mr. Zakayo K. Ngetich	Head Of Agribusiness	Sidian Bank
Ms. Beatrice Cheruiyot	Agribusiness Manager	National Bank
Ms. Thithi Kinyanjui	Business Development Officer	Acre Africa
Mr. Ron Yariv	Business Development Manager	Amiran Kenya
Ms. Hanna Dohrenbusch	Head of Corporate Affairs	Sunculture
Prof. Bancy Mati	NIAP Facilitator and Director WARREC	WARREC - JKUAT
Mr. Wycliffe Nyang'au	NIAP coordinator	WARREC - JKUAT
Ms. Charity Gichobi	NIAP Associate	WARREC - JKUAT
Mr. Patrick Amunavi	Communications Officer	JKUAT
Mr. Jeen Kootstra	Country Director	SNV
Mr. Timothy Ranja	Sector Lead - RE	SNV
Ms. Mary Njuguna	Sector Lead - Agriculture	SNV
Mr. Bert van Nieuwenhuizen	Chief Technical Advisor - Africa Biogas Partnership Program	SNV
Mr. Sebastian Oggema	Project Manager, SWA	SNV
Ms. Jackline Muturi	Technical Advisor, SWA	SNV
Ms. Florence Kariuki	Access to Finance Advisor, SWA	SNV
Ms. Vandana Thottoli	Advisor, Multi-Stakeholder Platforms, SWA	SNV
Ms. Bibiana Wanalwenge	Communications Officer	SNV