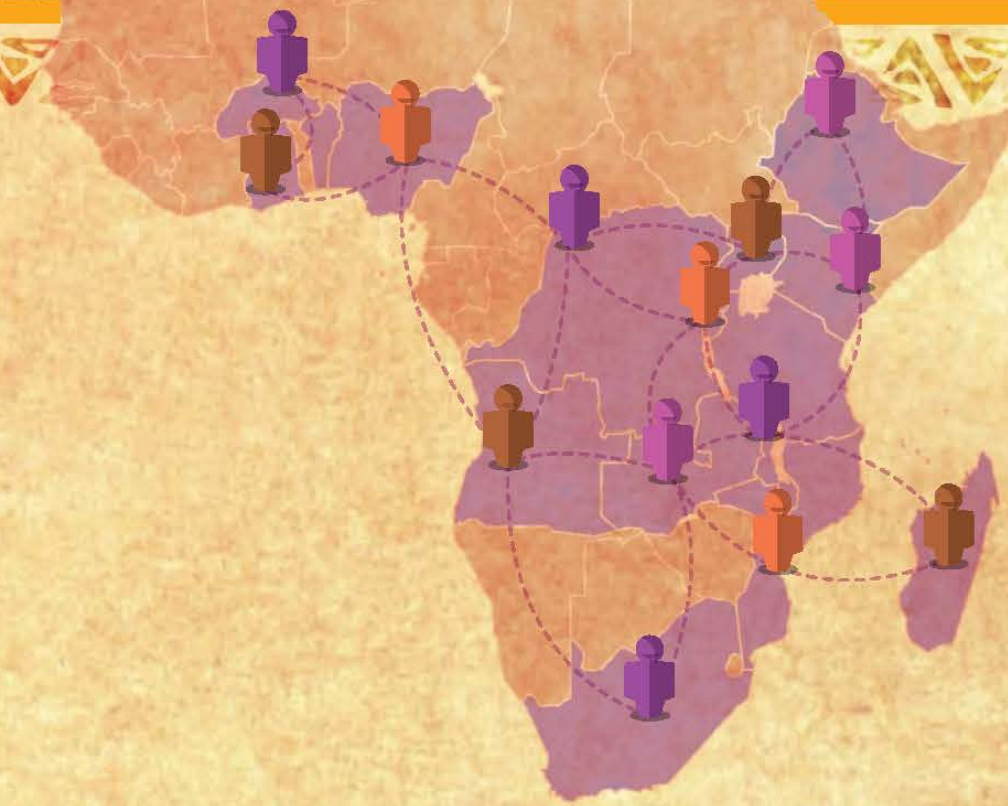
Sweetpotato Seed Systems and Crop Management Community of Practice



SPHI
Sweetpotato for Profit and Health Initiative

Regional Technical Support Platform for East, West, Central and Southern Africa

9th Consultation: Engaging youth for improved sweetpotato seed and root production

Hotel Villa Portofino in Kigali, Rwanda

May 15-17 2018

Compiled by Faith Njoki Njunge and Bernice Wairimu ; Edited by Margaret McEwan

Correct citation:

International Potato Center. 2018. Minutes of the Ninth Annual Sweetpotato Seed Systems and Crop Management Community of Practice Meeting, held 15 – 17 May 2018 at the Hotel Villa Portofino in Kigali, Rwanda. Compiled and edited by Faith Njoki Njung'e Bernice Wairimu and Margaret McEwan for the SASHA Project, Nairobi, Kenya. 33 pages

Acknowledgements
This work is undertaken as part of the CGIAR Research Program on Roots, Tubers and Bananas (RTB). The CGIAR Research Program on Roots, Tubers and Bananas (RTB) is a partnership collaboration led by the International Potato Center implemented jointly with Bioversity International, the International Center for Tropical Agriculture (CIAT), the International Institute of Tropical Agriculture (IITA), and the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), that includes a growing number of research and development partners. RTB brings together research on its mandate crops: bananas and plantains, cassava, potato, sweetpotato, yams, and minor roots and tubers, to improve nutrition and food security and foster greater gender equity especially among some of the world's poorest and most vulnerable populations. www.rtb.cgiar.org

Cover photo: Field visit to Paola Giriwanyu farm, an agri-business graduate and CIP's youngest female Decentralized Vine Multiplier operating in Nyarugunga marshlands of Nyarugenge sector in Nyarugenge District, Rwanda. (Photo credit: Donata Kiiza)

Table of Contents

Acronyms

BDF	Business Development Fund
CBO	Community Based Organizations
CIP	International Potato Center
CoP	Community of Practice
CRS	Catholic Relief Services
DVM	Decentralized Vine Multiplier
ICT	Information and Communication Technology
IPM	Integrated Pest Management
KEPHIS	Kenya Plant Health Inspectorate Service
LSU	Louisiana State University
NCPN-SP	National Clean Plant Network for Sweetpotato
NGO	Non-governmental Organization
NSCG	National Sweetpotato Collaborators Group
NT	Net Tunnels
OFSP	Orange-fleshed Sweetpotato
P	Phosphorous
QDS	Quality Declared Seed
RAB	Rwanda Agriculture and Animal Resources Development Board
RTB	Roots, tubers and bananas
RYAF	Rwanda Youth in Agribusiness Forum
SASHA	Sweetpotato Action for Security and Health in Africa
SOSPPA	Soroti Sweetpotato Producers and Processors Association
SPHI	Sweetpotato for Profit and Health Initiative
SS	Seed systems
SSA	Sub-Saharan Africa
TC	Tissue Culture
WTP	Willingness to Pay
ZARI	Zambia Agriculture Research Institute

Executive summary

The Sweetpotato for Profit and Health Initiative (SPHI) Seed Systems and Crop Management Community of Practice held its 9th consultation meeting on 15-17 May 2018, at the Hotel Villa Portofino Kigali, Rwanda. The theme of the meeting was 'Engaging youth for improved sweetpotato seed and root production'.

The meeting was attended by 55 participants from 12 countries (Ethiopia, Kenya, Uganda, Tanzania, Ghana, Nigeria, Malawi, Mozambique, South Africa, Burkina Faso, the United States and Rwanda). These participants were drawn from organizations such as National Agricultural Research Institutes (NARIs), Non-government Organisations (NGOs), universities and representatives from youth organisations.

The meeting was officially opened by Dr. Charles Bucagu, the Director General, Rwanda Agriculture and Animal Resources Development Board (RAB). In his remarks, he noted, "Rwanda's vision for agricultural transformation and development is to achieve food security and attaining per capita income of US$1240 by year 2020. As the average age of farmers in Rwanda is 55 years old, we cannot move forward and faster without working with the most energetic wing of our labour force, the youth".

The keynote address was delivered by Jean Baptiste Hategekimana, Chairman, Rwanda Youth in Agribusiness Forum (RYAF). His remarks highlighted 'Challenges and opportunities: Youth involvement in the agriculture sector in Rwanda'. He noted that "We want the youth to be organized under platforms to ease their access to capacity building training and financing opportunities".

One of the highlights from the meeting was a talk show with youth who shared their motivation and engagement in sweetpotato seed and root enterprises (Paola Giriwanyu, Serge Ganza, Francine Uwibambe, Mubaraka Habimana, and Francoi`s Nshimiyimana and their challenges and opportunities in the sweetpotato seed and root production in Rwanda.

Dr Jan Low presented the progress made by the SPHI. This is a multi-partner, multi-donor initiative that seeks to reduce child malnutrition and improve smallholder incomes in 10 million African families by 2020 through the effective production and expanded use of sweetpotato in 17 SSA countries. In total, 4,490,100 households reached by January 2018.

The format of the meeting incorporated different approaches that were designed for interactive and discussion on the key topics.

Two poster sessions were held on three different themes:

- **Theme A: Advances in production, conservation and multiplication of virus-tested planting material (included varietal evaluation).**
- **Theme B: Management of biotic and abiotic constraints in sweetpotato seed production.**
- **Theme C Part 1: Building gender-responsive seed systems and promotion, marketing and dissemination of quality sweetpotato seed.**

Learning Journey

During the learning journey, participants had an option of visiting Paola Giriwanyu, an agri-business graduate and CIP's youngest female Decentralized Vine Multiplier (DVM) operating in Nyarugunga marshlands of Nyarugenge sector in Nyarugenge District, Rwanda or Serge Ganza, one of CIP's successful Decentralized Vine Multipliers (DVMs) in Kamonyi District, which is 20 kms away from Kigali city.

Introduction and objectives of the meeting

The SPHI Seed Systems and Crop Management Community of Practice held its 9th consultation meeting on 15-17 May 2018, at the Hotel Villa Portofino Kigali, Rwanda. The theme of the meeting was 'Engaging youth for improved sweetpotato seed and root production'.

Seed Systems CoP meeting participants in Villa Hotel Portofino in Kigali, Rwanda (photo: F. Njunge/CIP-SSA)

The meeting was attended by 55 participants from 12 countries (Ethiopia, Kenya, Uganda, Tanzania, Ghana, Nigeria, Malawi, Mozambique, South Africa, Burkina Faso, the United States and Rwanda). These participants were drawn from organizations such as National Agricultural Research Institutes (NARIs), NGOs, universities and representatives of youth organisations.

The meeting was officially opened by Dr. Charles Bucagu who is the Director General Rwanda Agriculture and Animal Resources Development Board (RAB). In his remarks, he noted, "Rwanda's vision for agricultural transformation and development is to achieve food security and attaining per capita income of US$1240 by year 2020. As the average age of farmers in Rwanda is 55 years old, we cannot move forward and faster without working with the most energetic wing of our labour force, the youth".

The format of the meeting incorporated different approaches that were designed for interactive and discussion on the key topics.

During the meeting, two poster session were held on three different themes:

- **Theme A: Advances in production, conservation and multiplication of virus-tested planting material (included varietal evaluation).**
- **Theme B: Management of biotic and abiotic constraints in sweetpotato seed production.**

- **Theme C Part 1: Building gender-responsive seed systems and promotion, marketing and dissemination of quality sweetpotato seed**

Highlights from the Sweetpotato for Profit and Health Initiative (SPHI)

Jan Low, SPHI Co-Lead and Principle Scientist (CIP-Kenya)
Presentation link; https://goo.gl/LoMFDb

Dr. Jan Low addressing the participants

SPHI is a multi-partner, multi-donor initiative that seeks to reduce child malnutrition and improve smallholder incomes in 10 million African families by 2020 through the effective production and expanded use of sweetpotato in 17 SSA countries. The Sweetpotato Action for Security and Health in Africa (SASHA) project is a 10-year project among 26 partners led by the International Potato Center that will develop the essential capacities, products and methods to reposition sweetpotato in the food economies of Sub-Saharan Africa. It serves as the foundation for the broader SPHI.

Since the launch, there has been a lot of progress. One of the greatest achievements is breeding in Africa for Africa. 'Accelerated' sweetpotato breeding approach to produce varieties in 3-4 years instead of 7-8 years. Many breeders are working on seed systems as well to ensure that new varieties are disseminated. It is important for seed systems researchers to have continuous interaction with the breeders to get the most improved varieties to farmers and to give breeders feedback about how the varieties are doing in the field.

1 Session 1: 'Engaging youth for improved sweetpotato seed and root production'

Moderator: Kirimi Sindi (CIP-Rwanda); Rapporteur: Martin Chiona (ZARI-Zambia)

1.1 Keynote Jean Baptiste Hategekimana (Chairman, Rwanda Youth in Agribusiness Forum (RYAF)

Jean Baptiste Hategekimana, Chairman, Rwanda Youth in Agribusiness Forum (RYAF) gave a keynote on 'Challenges and opportunities: Youth involvement in agriculture sector in Rwanda'. In his address the following was noted;

- Dealing with issues on nutrition and food security
- Using key lessons from other countries
    - Implement lessons learnt from other countries to improve agriculture in Rwanda
- Internship is critical to their work. Interns spend some time working with the forum to gain practical skills.
- Engaged with different nodes of value chains
    - Breeding
    - Seed production
    - Processing
    - Utilization
- Endeavour to create employment
- Address climate change issues
    - Sweetpotato adapts to the soils and climate of the country
    - Sweetpotato can be grown throughout the country
    - Deal with soil restoration and making soil productive
- The Forum challenges the youth to engage in agriculture
    - Create environment for the youth to find a stake in the forum
- 75% of the challenges are not related to cash availability but technical skills. Hence, 416 sectors have an agronomist and extension services are provided
- Depend on partnerships to create hope in the regions by creating markets for the farmers
    - Provides opportunities for specialization to the youths
    - Facilitates exchange visits

1.2 Talk Show: 'Our stories: Youth engagement in sweetpotato seed and root enterprises'

DVMs: Serge Nganza (Private DVM), Mubaraka Habimana (Private DVM), Regis Umurengenzi (CARL Group), Poala Giriwanyu (Private DVM), Francoi`s Nshimiyimana (Celinno Ltd)
Host: Aime Ndayisenga;
Translation: Jean Claude Nshimiyimana
Note taker: Donata Kiiza

The youth talk show comprised of five youths (Serge Nganza, Mubaraka Habimana, Regis Umurengenzi, Poala Giriwanyu, Francoi`s Nshimiyimana) who are either DVMs or youth involved in OFSP processing. The theme for the talk show was, '**Youth engagement in sweetpotato seed and root enterprises**'. Participants briefly shared their journey to success in vine multiplication business and OFSP value addition as well as highlighting the challenges facing each of them.

1.1.1 Achievements

DVMs testified to have registered remarkable earnings from selling vines which has helped them to either acquire more land for farming, build houses, open new businesses and increased their working capital.

Youth talk show in progress

- **Serge Nganza,** has been a DVM for about 10 years. His lucrative business has been able to meet the growing demand by producing clean planting material over the years. 60% of the earnings from selling vines enables him to run other related projects like multiplying banana seeds, pineapple and cassava.
- **Paola Giriwanyu,** being a female youth in agriculture she has been able to access greater opportunities. Last year, she participated in the Youth Connect Africa Summit that took place in Rwanda where she presented her project proposal among many others that were up for competition. As a DVM of OFSP clean planting material, Paola has been offered marshland by the government in Mageragere sector in Nyarugenge district where she will be growing vegetables and fruits as it is her plan to venture into horticulture.
- **Mubaraka Habimana**, has found a stable market in Democratic Republic of Congo where he sells OFSP leaves which are eaten as vegetables by Congolese. Mubaraka shared that ever since he got the market for the leaves, demand has always been high. Mubaraka who was referred to as 'the rich man of all the panelists' testified to having found OFSP vine multiplication profitable than any other business he had ever done since there is less costs of production involved.
- **Francois Nshimiyimana,** owner of CELINNO Ltd, makes different bakery products like biscuits using OFSP puree. He testified to increasing his clientele as well as income ever since he started using OFSP as a major ingredient in his products. His clients love to eat the products due to the Vitamin A component in the puree and less sugar.

1.1.2 Challenges

- Regis owner of CARL Group Company that deals in bakery, uses OFSP puree as one of the ingredients. He pointed out that lack of proper policies that support youth in agriculture in Rwanda was a challenge. Regis also mentioned that with the rising demand for their products, more technical skills in processing are needed to enable them to make more products that are competitive on the market. He also added that if there could be some incubation centers where students could practically learn baking skills, this would improve on the success of their business.
- Lack of packaging materials was also raised as a major challenge for the youth involved in value addition.

- Lack of enough capital has also been a challenge to many youths to implement their projects.

1.3 Evolution of youth in agriculture in Rwanda: seed and root production as a business – experiences from RAB and CIP

Jean Ndirigwe (RAB-Rwanda) and Jean Claude Nshimiyimana (CIP-Rwanda)
Presentation link ; https://goo.gl/dyiSos

Some of the key highlights were:

- Youth in Rwanda ranges from 14-35 years old
- 75% of the youth are found in rural areas
- Agriculture is characterized by an aging population
- Youths are not interested in agriculture as it is perceived not to provide quick income
- Youth have a negative mindset on agriculture as is deemed appropriate for the poor and uneducated

Rwanda sweetpotato project designed to change perceptions and persuade youth to engage in agribusiness.

1.4 Discussion

What challenges are you facing with Seed Certification?
Answer: Failure by some farmers to adhere to the standards. e.g. quality and quantity of the vines.

You have indicated having 80 DVMs, where is the market?
Answer: We work with stakeholders to estimate seed demand. Hence, we produce for the available market.

Who produces quality seed?
Answer: Farmers do with technical support from RAB and CIP

What makes youths to choose sweetpotato vine business and not other enterprises?
Answer: Youths can respond. However, organizations working with youths have sensitized and persuaded the youths to consider sweetpotato seed production as a business.

Any figures on root production?
Answer: Not presented here. However, roadside markets for sweetpotato roots have been established to stir production.

1.5 Panel Discussion: Experiences with capitalizing on opportunities for youth engagement in agribusiness

Panel speakers: Zacharie Manirarora (Catholic Relief Services), Theophile Mudenge (Catholic Relief Service), Sina Gerard (Urwibutso Enterprise), Alimas Hakizimana (USAID-Rwanda) & Joseph Okalebo (SOSPPA-Uganda)
Translation: Jean Claude Nshimiyimana (CIP-Rwanda)
Note taker: Donata Kiiza (CIP-Rwanda)

Youth aged between 16 to 35 years were the focus of this discussion.

The discussion revolved around three key points;

- Who are these youths we are talking about?
- How can we get youth interested in agriculture?
- What are the challenges hindering youth engagement in agriculture?

Joseph Okalebo: According to different countries, cultural norms have a hand in shaping one's aspirations especially for the youth. Example in Uganda, most of the urban youth go for white collar jobs while the rural youth end up in agriculture.

Zacharie Manirarora: In the past, there were stereotypes that women should not be involved in agriculture. But with the help of government education facilities in agriculture, youth have chances to acquire knowledge, invest in agri-business and make it a career. The youth are slowly changing their concept on agriculture and have started to invest in agriculture.

Sina Gerard: Talk on '**the value of sweetpotato to Rwandans and other regions**'. Sina Gerard has over the years aimed at being innovative in that every year he introduces a new product in the market. He produces biscuits using OFSP puree and water thus creating employment for many youths. He plans to introduce juice made from orange-fleshed sweetpotato. Sina, also started a technical agriculture college to help the future generation acquire skills in agriculture and agribusiness.

His community stereotyped sweetpotato to be a poor man's crop, hence grew up with the same mind-set, but this changed after he travelled to Europe and saw that sweetpotato farming is done in large scale in Europe.

How he works with the youth

To help the youth acquire knowledge in agriculture, he set up a technical agriculture college. The college provides scholarships to the needy youth. He also provides the youth with internships at his factory where they get practical skills. The students also interact with farmers and help in building capacity of the farmers concerning the production of OFSP.

Which policy interventions can be made?

Theophile Mudenge

- There is need to build capacity of youth in agriculture.
- Creating market linkages by engaging the commercial institutions to invest in the youth.
- Policy on employment focusing on youth. For example, Business Development Fund (BDF) which facilitates the youth in agriculture. There are also platforms that have been created to link and bring together youth engaged in agriculture such as RYAF and Youth ConneKt which provide youth with different experiences and opportunities to acquire financial and other technical support needed in a business.
- Capacity building boards facilitating youth to have practical skills that can help them venture in agriculture.

Joseph Okalebo

- Despite the many benefits in agriculture the youth do not consider agriculture as a business or a career. The youth are not also interested in agriculture content in the media. The media should rebrand the agriculture content to attract more youth.
- Engaging in agriculture should be done in such a way that it is business oriented through engagement of different markets.
- Improve enabling environments like access to finance.

Sina Gerard

- Agriculture has been considered as a practice for the poor. However, efforts to consider agriculture as a business are bearing fruits and more youths are slowly adapting the practice.
- There is a need to make agriculture a profit-oriented sector. This will have many youths joining the sector.
- Find strategies to cut down the post-harvest loses.
- The sector needs more investors in the market linkages and value addition to create more demand for the sweetpotato.

Discussion

How do the youth acquire land since there is lack of exclusive rights to land in Rwanda?

One of the panel members responded by saying that there is no lack of land because Rwandans can use ancestral land. He also added that today, with a good business/project proposal, the government may provide the marshlands for agriculture. When organized in co-operatives, one can be able to access the marshlands too. There is also a possibility of paying lease for land to cultivate.

2 Session 2a: Examining the science – recent findings on sweetpotato seed and root management

Moderator: Robert Mwanga (CIP-Uganda); Rapporteur: Reuben Ssali (CIP-Uganda)

2.1 Poster Session: Theme A: Advances in production, conservation and multiplication of virus-tested planting material (includes varietal evaluation)

A poster session in progress

2.1.1 Sandponics

New findings

- Using pig manure (organic) as a source of nutrients for sandponics. **Implications:** we can lower the cost of vine production and integrate sweetpotato piggery and silage in one business model
- There is no decrease in the number of cuttings from a ratoon crop. **Implication** we can target to have vines available throughout the year
- There is a higher multiplication rate in sandponics. I**mplication** we can multiply large number of cuttings in a short time.

Research gaps (and responsibility)

- Chicken manure could be an alternative source of nutrients; **Martin Chiona**
- Chicken manure + pig manure; **Martin Chiona**
- Inorganic+ pig manure; **Martin Chiona**
- Nutrient analysis of pig/chicken manure; **Martin Chiona**
- Alternative methods of disinfecting organic manure; **Martin Chiona** and **Bramwel Wanjala**
- Effect of diet on the nutrient composition of pig manure
- Times and frequency of cutting; **Luis Gonzaga, Martin Chiona, Phabian Makokha (Reuben Ssali** to standardize the protocol and share)
- Analysis based on the growth habit of the varieties; **Chifundo Kapalamula/Kennedy Masamba**
- Effect of temperature on vine multiplication (cold/warm season) HOBOS for Malawi, Mozambique and Zambia.
- Beds vs pots; **Luis Gonzaga and Martin Chiona**

Recommendations

- Costing the production of sandponics system (**Srini Rajendran to schedule recall data**)
- Everyone to prepare the experimental design, area,

2.1.2 Varietal evaluation; increasing vine multiplication rates

New findings

- There are two new OFSP candidates for release in Ethiopia. They have been selected after on-farm evaluation in different agro-ecologies
- The candidate varieties have higher dry matter and yield than the OFSP released variety- Kulfo
- Incorporation into the breeder's evaluation criteria assessment of multiplication parameters such as vine length. at different altitudes is a good innovation

What are the implications for sweetpotato quality seed multiplication at different stages (pre-basic, basic) and, or farmer multipliers of different types?

- In Ethiopia, if resources are limiting, they can produce good seed of all classes at high altitude
- The two OFSP candidate varieties should be cleaned and multiplied for Ethiopia
- New OFSP varieties with high dry matter will be released

Research gaps

- There is need for more validation on the effect of staking on vine length and other parameters
- There is need for wider screening of many OFSP clones/ varieties for effect of altitude on vine yield potential
- Management of the experiment on staking is lacking- experiment was set up in buckets, nutrient management is not presented etc.

Recommendations

- Need a plan for promotion of new OFSP varieties in Ethiopia
- Need to screen more sweetpotato varieties for effect of altitude on vine length

- Efforts to maintain planting material free from disease in Ethiopia are critical. As vine production is low at high altitudes

2.1.3 Triple S

Observation on sprouting

Potential for sprouting differs from variety to variety:

- Identify the genes to control the expression of sprouting (short dry seasons), non-sprouting (food), and delayed (longer dry seasons). Moisture content and harvesting age affect varietal sprouting

Research gaps

- Sand as media (Further investigation needed)
- Based on field observations fine textured sand results into rotting and cemented roots due to poor respiration
- Develop tools for early stage germplasm screening on sprouting
- Develop pre- and post-harvest sprout control technology

Implication

- Triple S method fits under QDS positive selection
- Offers farmers in drier areas opportunity to produce their own material
- It is killing the business of DVMs because farmers produce their own materials. It competes with the existing DVMs
- Building evidence on seed degeneration for various varieties to know how long farmers can re-cycle roots for use in Triple S

Recommendations

- Genetic and physiological basis for sprouting needs to be understood
- Group the best 100 varieties of Africa based on Triple S performance

2.2 Theme C Part 1: Building gender-responsive seed systems and promotion, marketing and dissemination of quality sweetpotato seed

2.2.1 Institutionalization of SP seed value chains

New findings

- Marketing strategy e.g. social media, motor bike flaps, wheel covers
- Branding of material from seed multiplication, farmers to consumers
- To ensure that the right varieties are multiplied and disseminated
- Seed classes for sweetpotato in some countries e.g. Rwanda, Burkina-Faso

Implications for sweetpotato quality seed multiplication at different stages

- Tracking quality through branding and packaging
- Ensuring varieties remain true to type

- Labelling of seed classes at the different stages

Research gaps

- Impact assessment on effectiveness of awareness raising interventions
- Formalizing the value chain from seed to root production
- Gender research
- Post-harvest management i.e. branding and packaging of vines

Recommendations

- Effective marketing strategies to balance supply and demand
- Public-private partnerships to enhance production

2.3 Root-based testing for sweetpotato viruses

Prof Christopher Clark, Louisiana State University (LSU – USA)
Presentation link; https://goo.gl/ZoXuhz

Prof Clark shared with the meeting that the original motivation to develop the seed system in the US was to manage sweetpotato mutations which were causing close to 42% yield losses. Currently, virus like SPFMV, SPV1 and SPV2 are now the major concern. Louisiana State University (LSU) has developed a multiplex PCR to overcome the challenges of cumbersome method of grafting on Ipomoea setosa. The multiplex PCR is more reliable when the nucleic acids are extracted from the root, the high virus expression eliminates any chances for false negatives.

2.4 Assessing efficiency of different methodologies in sweetpotato sample processing and virus detection

Kwame Ogero (CIP-Tanzania)
Presentation link; https://goo.gl/J4ZoDj

Kwame Ogero highlighted how current sample collection methods using silica gel and liquid nitrogen could be adapted for extracting nucleic acids from the roots even without having the specialized equipment in Prof. Clark's lab. He illustrated his results using amplifications from PCR and qPCR of nucleic acids extracted from root samples collected with silica gel and liquid nitrogen. When using silica gel ensure that the entire sample is well exposed for good results.

2.5 Regional sweetpotato support platforms for virus clean up and testing to produce clean plants

Florence Munguti (KEPHIS) and Bramwel Wanjala (CIP-Kenya)
Presentation link; https://goo.gl/8K5cJH

Florence Munguti and Bramwel Wanjala enlightened the meeting that the current collaboration of CIP with KEPHIS was developing tools like ClonDiag and LAMP which will help in managing the 10-quarantine virus of the more than 25 viruses known to exist in Kenya.

Germplasm management KEPHIS-CIP

- Collection of 800 Sweetpotato varieties from Africa and around the world
- Conserved as *in vitro* and *in vivo*

- Support breeders and researchers by providing superior material for
    - Improvement/evaluation/research
    - Improved nutrition
    - Virus/weevil resistant
    - Drought tolerant/water efficient

2.6 Discussion

Question: Mariam Quain wanted to know from Prof. Clark which of the two systems grafting on setosa or multiplex PCR was more efficient for diagnostic.

In response Prof. Clark said that their lab time was the biggest constraint with the grafting method. The multiplex PCR is more reliable due to the high titre in storage roots. You avoid false negatives.

Question: Marian Quain also wanted to know why Kwame was drying the samples in the lamina flow which is likely to be slower that the desiccation from silica gel?

Kwame clarified that when the root samples are manually crushed you get a paste instead of a fine powder that is obtained when crushing leaves. The lamina flow was another way of improvising to drive off the moisture.

Question: Marian Quain still wanted to know what defines the 100 best bets because what is best today can be the worst tomorrow.

Bramwel Wanjala clarified that a selection criterion was developed by the breeders to some up with the 100 best bet varieties. Jan further clarified that the breeders needed to justify why we needed to keep all that germplasm some of which was rarely used.

Question: Jude Njoku wanted to know why KEPHIS was using both thermotherapy and meristem culture in cleaning up varieties

Bramwel Wanjala said that chances of eliminating the virus are higher with a double treatment.

3 Session: Preparation for the learning journeys

Moderator: Margaret McEwan (CIP-Kenya); Rapporteur: Rosemary Kihiu (CIP-Kenya)

All participants were asked to select one of the two learning journeys. After the participants had selected their preferred learning journey they were split into three groups. Each group came up with a set of questions that they would like to have answered during the learning journey.

4 Session: Examining the science - 2

4.1 Rotation of sweetpotato and rice for quality seed production: preliminary findings from Agoro, N. Uganda

Presenter; Gerald Kyalo (CIP Uganda)
Moderator: Jan Low (CIP-Kenya); Rapporteur: Florence Munguti (KEPHIS)
Presentation link; https://goo.gl/eBQ9Ha

Highlights were presented from a study experiment on rotation of rice with sweetpotato, in Uganda. The varieties used for sweetpotato were Naspot 11, Naspot 10 and Ejumula. From the results, it was established that the rotation had significant effect on yields in that there was increase in yield for both rice and sweetpotato; but there was no significant effect on weevil infestation.

For the relation between rotation and sweetpotato virus incidences, it was found that over the four cycles of rotation there was no significant difference since the starting materials were clean, and it was a low virus pressure area.

It was also established that sweetpotato –rice rotation meant that the purity of rice seed was higher since there were fewer volunteer rice plants emerging, compared to when rice was followed by a fallow period.

Results from the economic analysis show that there is a statistically significant difference in mean profit ratio between rotation and control. The comparison of net profit ratio by treatment and control shows that net profit ratio in the treatment was higher by 0.43 than in the control group. This is a significant and positive difference. The results also indicate that net profit significantly and positively increases when the number of rotations per season increase.

The results compared with the results of similar studies in Vietnam and Madagascar. This was found to be a learning lesson that can be replicated in other countries because of the benefits.

4.2 Learning journeys and next CoP topics

Moderator: Jean Claude (CIP-Rwanda) and Catholic Relief Services (CRS)

4.2.1 Paola Giriwanyu Decentralized Vine Multiplier

Presentation link; **https://goo.gl/fv35AX**

Background

Paola Giriwanyu is an agri-business graduate and CIP's youngest female Decentralized Vine Multiplier operating in Nyarugunga marshlands of Nyarugenge sector in Nyarugenge District.

The 24-year old joined vine production in August 2017 and does vine multiplication on 0.7 hectares of land. After having this idea, Paola wrote a project proposal which she presented at the sector requesting for land on which she can implement her project. Luckily enough, she was permitted to operate on the above 0.7hectare marshland till today.

Participants during the learning journey at Paola's farm

In 2016 during her stay as an intern in International Potato Center (CIP) Rwanda, under the agronomy and seed systems department, Paola developed the love for growing Orange-fleshed sweetpotato after learning its income and nutrition value towards the local people.

Therefore, she chose to become a DVM to help increase vine production and access to clean planting material by smallholder farmers in Rwanda.

Learning points

- Power of business plan to get land and implement sweetpotato activities in Kigali
- Being a young lady was an advantage
- No need to have everything to start business
- Exposure to internship could be a way to motivate and train jobless youth to create job.

Research questions

- Identification of best management practices for vine multiplication in marshland

Action points

- Refresher course on agronomy and disease and pest management (Rwanda)
- Strengthen the linkage of sweetpotato value chain actors (Rwanda)
- Demonstration of cooking approaches of different orange fleshed sweetpotato varieties

Topic for on-line discussion

- How can the youth involvement be sustained in vine multiplication business? (Damien Shumbusha (RAB Rwanda)

4.2.2 Serge Ganza's farm in Kamonyi District-Group 1

Presentation link; https://goo.gl/Bwpeya

Background

Serge Ganza, is one of CIP's successful DVMs in Kamonyi District which is 20 kms away from Kigali city. The 34-year old began multiplying OFSP vines since 2008 with DONATA project till today. With a background of agronomy and rural development, he was exposed to knowledge on agriculture while he worked as a technician with different organizations over the years and developed a passion for agriculture.

In Kamonyi District, Gacyurabwenge sector, Nkingo cell in Nyamugari village, he farms on 0.15ha located on Kigali-Butare highway. His total farm size is around 10 ha but most of this land is located on the hillside. He has another 4 hectares in Gisagara District, Southern province where he does extensive OFSP vine multiplication.

Key learning points

- Serge, shows a very good working relationship with other actors e.g. partnerships with RAB, CIP, CRS, and One-acre fund among others and has benefited from this partnership greatly
- Serge is open minded to continuously learn and try out new things, walks out of his comfort zone to achieve his results.
- He has worked within the reality of his context i.e. knowing that Rwanda has no natural resources beyond land for agriculture
- He has mitigated risk by diversification from reliance on one crop
- He has a strong market analysis helping him know what to produce when
- He has several marketing strategies using technology to reach out to a wider market base e-isoko[1], home delivery to expand market

[1] *E-isoko an online e-commerce shop*

- He values quality for sustainability of his business to the extent that he gets clean planting material from RAB each season
- Serge supports the community around him through reasonably priced planting material (Rw 3 per 3 nodes cutting) to ensure root production throughout the year and uplifting socioeconomic status of the community
- He values skilled staff efficient running of the business e.g. hiring agronomist at the farms, an accountant and IT specialist and he continues to build their capacity
- He is trying to introduce new technology in the area e.g. organic manure, small machines, cooling room, library/resource centre
- He continues to look for opportunities for partnerships and business that can easily integrate to achieve his vision, e.g. seeking for a bank loan to build a processing factory

Challenges

- Drought
- Pests and diseases
- Unpredictable markets, land and financial constraints among others, but this did not stop him from forging his way forward
- He is now an example of a youth who started small without much resources and built his way into a successful business, providing employment for many and improving livelihoods for his community.

Implication of the visit to different types of farmers

- Farmers get support from scientists on finding the best solutions in the crop production
- Such an enterprise is expensive for the poor farmers
- You can start from small scale and build up to a viable sustainable business
- If youth are empowered with the necessary tools they can be successful in agriculture

Research questions

- Need for breeders to come up with more acceptable varieties in response to market demand
- Breeders should follow up on the adoption of their varieties
- Further research on best agronomic practices e.g. affordable field testing, control of weeds
- Research on better/effective methodologies on raising awareness

4.2.3 Serge Ganza's farm in Kamonyi District - Group 2

Presentation link; https://goo.gl/bk91F5

Key learning points

- He has diversified into other crops such as banana, cassava, mangoes, orange and lemon, which are also in demand.
- To address sustainable supply of products he is strengthening relationships within the community by giving access to extension services and agro-inputs.
- He is trying to strengthen the food value chain through ICT.
- Educated youth can make better agri-preneurs.
- Delivers farmers' produce directly to consumers which improves efficiency of the value chain.

Participants during the learning journey at Serge's factory

- He mobilizes the youth into cooperatives and helps them to change their mind-sets towards agribusiness
- Sources material from reputable source and follows up with inspection and rotation
- Use of roadside markets to promote and increase uptake of OFSP

Research questions

- How is the trend in the number of individual customers and how can this be increased?
- How does free vine distribution by institutional customers affect sustainability of vine business?
- Can increase volume of roots purchased by processing industry increase willingness-to-pay (WTP) for quality vines by farmers?

Action points

- Sam Namanda (CIP-Uganda): Explore the idea of setting up collection centers/selling points in communities where we work
- Martin Chiona (ZARI-Zambia): Survey his community for opportunities that can be exploited in agribusiness
- Gonzaga Luis (IIAM Mozambique), Alcade Nshimiyimana (YEAN-Rwanda), Florence Munguti (KEPHIS): Encourage young people in to start vine business
- Marian Quain (CSIR-Ghana), Rajendran Srini (CIP-Kenya), Kwame Ogero(CIP-Tanzania): Explore ICT tools in marketing
- Mihiretu Cherinet (CIP-Ethiopia): Revise business plan of seed multiplier cooperatives to ensure sustainability

Topic for online discussion

What can be done to increase purchase of seed among individual farmers?

5 Session: Examining the Science

Moderator: Jude Njoku (CIP-Nigeria); Rapporteur: Marian Quain (CSIR-Ghana)

5.1 Recap

The meeting started with discussions on labelling of planting materials. What transpires in the various countries were highlighted by representatives. The major systems were that CIP has been in the driving seat providing labels for DVMs. However, critical is what happens after the project. It is therefore critical that at the various national levels, the plant inspectorate Divisions have trained personnel and there should be a national label that should be used. The various responsible Government agencies must set up the guidelines and multipliers therefore must follow set out guidelines.

5.2 Bridging the Gap – Introduction to Scaling theory

Presenter: Marc Schut IITA and RTB
Presentation link; *https://goo.gl/7Ueuye*

His presentation outlined the science of scaling which include education, politics, infrastructure, private sector involvement and government to affect policies. There is the need to have innovations well packaged as scaling is time and space bound.

During the discussion Dr. Jan Low described the case of OFPS where she highlighted the need to have the proof of concept by working with the appropriate experts before the system was easily scaled up and out. It was also clarified that donors use stepwise approach from Discovery to Proof of concept,

objective etc. to work with researchers on scaling. Scaling was identified to be requiring special expertise and this should not be left solely in the hands of the research scientist.

5.3 Update of RTB Scaling Triple S PLUS project & videos

Presenter Margaret McEwan (CIP-Kenya)
Presentation link; https://goo.gl/3pwYQw

Margaret McEwan made a brief presentation on the triple S technology in Ethiopia and Ghana and indicated that efforts on scaling are currently on going. Flip charts, guidelines and handouts have been produced and are being translated into the various local languages as well as Portuguese.

5.4 Poster session two Theme B: Management of biotic and abiotic constraints in sweetpotato seed production

Are there new findings for the sub topic- what are they?

- CLONDIAG is cheaper, faster and able to detect many viruses
- White medium is working well in conservation of virus tested sweetpotato planting material and can replace MS medium
- Interaction of phosphorus and viruses. Preliminary findings show that application of phosphorus improves vine production and root initiation

Implications for sweetpotato quality seed multiplication at different stages

- Findings on miniscreen houses and net tunnels in Uganda might affect scaling up of net tunnels- but smallholder DVMs might not afford miniscreen houses because they are expensive
- Improvement in vine testing will improve capacity to test viruses and increase availability of clean planting materials at community level

Research Gaps

- Compare white medium with ¼ MS medium
- Number of vines produced in net tunnels – why the decline?
- Performance of net tunnels in different soil types – randomize the net tunnels
- Factors in net tunnels that boost vine production

Recommendations

- Need to take the work on Phosphorus up to root production in the field
- Net tunnels vs open field multiplication – randomize according to soil types
- Work on irrigation is good for climate change research and should be continued
- ClonDiag needs to be scaled out to other countries
- Provide recommendations on amount of water to use for irrigation under different regimes
- More interactions and communications between people doing research on similar topics

5.5 Theme C Part 2: Building gender-responsive seed systems and promotion, marketing and dissemination of quality sweetpotato seed

Way forward on marketing strategies

Stakeholder meetings, participating in the national shows, involving more youth through youth organization, early child development programs and government partners, social media and ICT.

How to improve the role of youth in the seed system

Need for revising selection criteria for selection of DVMs; need for selecting more progressive DVMs; participating and collaborating with more youth organizations to formulate groups.

Seed classification needs to be clearly indicated and need for increasing purchasing power among individuals

There are clear seed classification and pricing strategy exists for various players

Why DVMs are dropping in Western Kenya? What are the strategies to improve?

There is a strong need for improving gender balance to increase the sustainability of the vine business.

What are factors that contributes on gender differences related to marketing index in Nigeria?

Basically, sweetpotato is traditionally managed by women, but it is interesting to see the factors that contribute to women and men involvement when it is commercialized

What are the traditional promotional activities which had impact? How are they quantified?

Generally, national shows are cost effective and more people participate which attracts more awareness about quality planting materials and increases purchasing power of farmers.

The WTP was low for vine, how do you like to scale up for the commercial activities?

Since farmers source planting material from their own source and usage of quality planting materials is a new concept among farmers, it requires huge promotional and awareness about quality planting materials among farmers.

5.6 Organization of sweetpotato seed system in Rwanda and on-farm seed management practices

Presentation by RAB
Presentation link; https://goo.gl/SVQc1w

The lack of sustainable seed systems is one of the key constraints to improving sweetpotato productivity in sub-Saharan Africa (SSA) (Ian Barker et al., 2009).

Seed systems need to provide farmers with planting material:

- In sufficient quantities
- At the right time
- Of an appropriate physiological state, vigour and health
- Of superior genotypes appropriate to the farmer's purposes, and
- At an affordable price (Gibson et al, 2011)

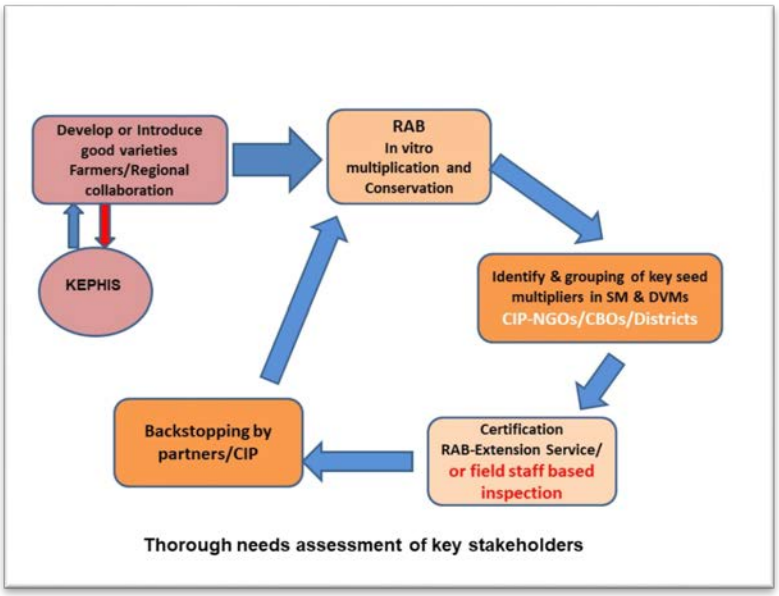


Figure 1 Rwanda SP model of seed system

Challenges in Rwanda seed system

1. Get right varieties for end-users (DVM/FGs)
2. Increase skills of DVMs in SP Seed Production & other modules (IDM&IPM)
3. Net-Tunnels & MNT technologies management by DVMs and CBOs /NGOs
4. Implementation of Rwanda sweetpotato seed standard
5. Many people want to be DVMs
6. Only 4 inspectors dedicated to all crops.
7. How long is the transition from informal to formal seed system?

5.7 National Clean Plant Network (NCPN-SP)

Prof Christopher Clark, Louisiana State University (LSU – USA)
Presentation link; https://goo.gl/LVJRJg

NCPN establishes, administers, and manages a network of collaborating clean plant centres and programs specializing in plant pathogen identification and therapy.

To do this, NCPN identifies and supports a small but appropriate number of stakeholder focused, nationally oriented clean plant centres that serve as centralized, cost effective hubs to diagnose and 'clean' plant material and provide foundational services to industry and States.

NCPN-SP: Accomplishments

- Developed virus testing protocols collaboratively
- Production of clean stock increased
- Outreach efforts begun 'Benefits of Virus Tested Planting Stock' fact sheet
- Unified proposal 2018-19

5.8 Lessons learnt from the US NCPN

Kwame Ogero (CIP-Tanzania)
Presentation link; https://goo.gl/iCswcy

Interacted with key USA sweetpotato stakeholders by participating in the following meetings:

- National Sweetpotato Collaborators Group (NSCG) National Annual Conference held on January 19 – 21, 2018 in Wilmington, North Carolina.

- National Clean Plant Network for Sweetpotato (NCPN – SP) Tier 2 Governing Body Meeting held on January 21, 2018 in Wilmington, North Carolina.
- 2018 Winter Sweetpotato Production Meeting organized by Mississippi State University's Clean Plant Center and held on February 23, 2018 in Pittsboro, Mississippi.

Conducted a desktop review on the organization of the NCPN – SP to get an insight on its contribution to sweetpotato production, the role of the federal and state governments, influence of growers on research prioritization and economic sustainability of the model of the National Clean Plant Network for Sweetpotato (NCPN – SP).

Lessons drawn

- Governments have an important role to play in establishment of sustainable seed systems for sweetpotato
- Efficient coordination among various seed system stakeholders is essential in ensuring availability and access to clean planting material for sweetpotato
- Production of clean planting material for sweetpotato does not require sophisticated TC facilities

5.9 Discussion

There is the commitment by the USA government devoting funds annually to the production of clean planting materials. It was noted that farmers are educated on the need for clean planting materials for enhanced production. The need for minimum TC facility was emphasised. It was clear that most of the bulking of planting material is done in the screenhouse to reduce the cost of production. Farmers also use the internet in the USA to obtain critical information. The NCPN is also tasked to develop a business plant so that the network will be functional when government funds run out.

Jean Ndirigwe also clarified that RAB has two TC laboratories with thermotherapy facilities which are yet to be functional. Hence, currently, RAB relies on KEPHIS for clean TC materials.

Annexes

Meeting Evaluation

The Sweetpotato seed system and Crop Management CoP meeting was held on the 15-17 May 2018, at Kigali, Rwanda. Participants were requested to evaluate the quality of the sessions and the general logistics that went into setting up the meeting. The evaluation was conducted using a written questionnaire and analyzed using statistical software called STATA Version 14.1. A total of 38 participants responded to the evaluation.

The age of the participants ranged from 27 to 64 years. One of the respondents did not provide their age. Majority of the respondents were male 68%, while female respondents were 32%. Majority of the participants were from research organizations (76%). While the rest from NGO and private organizations. The three-day meeting had an attendance of 84% on the 1st day and 95% on both 2nd and 3rd day.

Majority of the participants said that the meeting completely met their expectations, while 55% of the participants said that most of their expectations were met. 80% of the participants felt that the quality of the meeting in terms of technical content was at least good. 95% of the participants felt that the meeting organization was either good or very good.

For session 1 of the meeting 76% of the participants felt that the talk show with young entrepreneurs was useful while 79% felt that session 2 on youth engagement in agribusiness was useful. For the poster presentation sessions, 87% of participants rated quality and usefulness of the poster session 1 (Theme A: Advances in production, conservation and multiplication of virus-tested planting material (includes varietal evaluation) and Theme C Part 1: Building gender-responsive seed systems and promotion, marketing and dissemination of quality sweetpotato seed as good or very good.) Whereas 86% of participants rated at least good or very good for the poster session 2 (Theme B: Management of biotic and abiotic constraints in sweetpotato seed production and Theme C Part 2: Building gender-responsive seed systems and promotion, marketing and dissemination of quality sweetpotato seed.)

95% of participants participated in the field journey. 80% of them rated the journey good or very good.

Participant's listed two parts of the session that were most useful to them. 'Examining the science' – recent findings on sweetpotato seed and root management and youth talk show emerged the top best sessions. These sessions received 30% and 12% votes respectively. More than 30% of participants felt that they had learnt issues related to virus indexing and cleaning planting materials. More than 27% of participants felt that youth involvement can make a change in the agribusiness environment. 18% of the participants felt that they learnt more about the scaling theory. 9% of the respondents suggested that more time should be allocated to discussions in the future.

Below is a list of all the areas suggested for improvement:

1. More time to discuss technical progress on sandponics, Triple s. Follow-up with evidence on marketing strategies.
2. Issues about packaging, transportation and processing in the seed system
3. Invite if possible more people from other parts of the world like Europe, Asia so that they can share with us their experience in producing clean seed and presence of virus
4. Poster session - They were too many and hence there was a less focus.
5. Member of CoP should come with new update | improvement made in one year
6. a. Learning journeys should be conducted in the afternoon b. Meetings should strictly end at 5 p.m. each day. c. Leave some time for people to visit the city and see new things.
7. To limit on the activities and allocate more time on discussions
8. How to balance the gender in sweetpotato activities

9. Full day for field visit
10. Issues related to effective ways of packaging, labelling and transportation of virus to farmers from DVMs.

Meeting Agenda

Sweetpotato for Profit and Health Initiative-
Regional Technical Support Platform for East, Central and Southern Africa
Sweetpotato Seed Systems and Crop Management Community of Practice:
Ninth Consultation- "Engaging youth for improved sweetpotato seed and root production" 15-17th May 2018, Kigali, Rwanda
PROGRAMME

TIME	SESSION	Responsible
Monday 14th May: Arrival of CoP participants		
Day 1: Tuesday 15th May Moderator Kirimi Sindi; Rapporteur: Faith Njung'e		
7.45- 8.00	**Registration**	Donata Kiiza, Bernice Wairimu, and Emily Ndoho (CIP)
8.00 – 8.30	**Introductions and objectives of meeting**	Jean Ndirigwe, (RAB) Margaret McEwan (CIP)
8.30 – 8.45	**Highlights from the Sweetpotato for Profit and Health Initiative (SPHI)**	Jan Low, SPHI Co-Lead and Principle Scientist (CIP)
8.45 – 09.15	**OFFICIAL OPENING**	Dr. Charles Bucagu, DDG. Rwanda Agricultural Board
Session 1: "Engaging youth for improved sweetpotato seed and root production". Moderator: Kirimi Sindi; Rapporteur: Martin Chiona		
09.15 – 09.45	**Keynote: "Challenges and opportunities: Youth involvement in agriculture sector in Rwanda"**	Jean Baptiste Hategekimana, Chairman, Rwanda Youth in Agribusiness Forum (RYAF)
09.45 – 10.45	**Talk Show: "Our stories: Youth engagement in sweetpotato seed and root enterprises"**	**DVMs:** Paola, Serge, Francine, Mubaraka, Daniel Muzungu **Host:** Aime Ndayisenga; **Translation**: Jean Claude Nshimiyimana **Note taker:** Donata Kiiza
10.45 – 11.30	**GROUP PHOTO and COFFEE BREAK**	Faith Njunge Media interaction with Guests of Honour and Talk Show participants
11.30 – 11.45	**Presentation: "Evolution of youth in agriculture in Rwanda: seed and root production as a business – experiences from RAB and CIP"**	Jean Ndirigwe (RAB) and Jean Claude Nshimiyimana (CIP)
11.45 – 13.00	**Panel Discussion: Experiences with capitalizing on opportunities for youth engagement in agribusiness**	**Panel discussants:** Zacharie Manirarora, Theophile Mudenge, Sina Gerard, Alimas Hakizimana (Rwanda) & Joseph Okalebo (SOSPPA-Uganda) **Translation**: Jean Claude Nshimiyimana **Note taker:** Donata Kiiza
13.00 – 14.00 Lunch		
Session 2a: "Examining the Science – recent findings on sweetpotato seed and root management". Moderator: Robert Mwanga; Rapporteur: Reuben Ssali		
14.00 – 15.15	**Poster session 1:** Theme A: Advances in production, conservation and multiplication of virus-tested planting material (includes varietal evaluation) Theme C Part 1: Building gender-responsive seed systems and promotion, marketing and dissemination of quality sweetpotato seed	See guidance sheet
15.15 – 16.00	**Poster session plenary feedback**	4 groups x 10 minutes
16.00 – 16.15	**Tea and coffee beak**	
16.15-17.15	**Advances in virus indexing: root based tests.** Prof Christopher Clark, Louisiana State University (LSU – USA)	a) Prof Christopher Clark on root-based tests – 15 min b) Kwame on N. B. Fellowship work on viruses – 10 min c) Presentation by KEPHIS and CIP on the role of regional sweetpotato support platforms for

TIME	SESSION	Responsible
		virus clean up and testing for the production of clean plants– 15 min d) Discussion – 10 minutes
Session 3: Preparation for the Learning Journeys. Moderator: Margaret McEwan; Rapporteur: Rosemary Kihiu		
17.15 – 17.45	**Group work: preparation for learning journeys**	Groups 1 and 2: Serge Ganza Groups 3 and 4: Paola Giriyanu
17.45	**Wrap up for day**	
18.30	**Cocktail/Reception and video showing**	
DAY 2: Wednesday 16th May: Learning Journeys		
06.30 – 07.15	**Breakfast**	
08.00	**Departure**	
09.00 – 12.00	**Learning Journey field visit**	**CIP Rwanda and Rosemary Kihiu**
13.00 – 14.00	**Lunch at hotel**	
14.00 -14.45	**Group reflections and write up on learning journeys**	Groups 1 and 2: Groups 3 and 4:
Session 4: Examining the Science- 2 Moderator: Jan Low; Rapporteur: Florence Munguti		
14.45 – 15.15	**Rotation of Sweetpotato and Rice for quality seed production: preliminary findings from Agoro, N. Uganda.**	**Gerald Kyalo (CIP-Uganda)**
15.15 – 16.15	**CoP: communication and learning**	**Rosemary Kihiu (CIP)**
16.15– 16.30 Tea/Coffee break		
16.30- 17.00	**Plenary: group feedback on learning journeys, next CoP topics**	Moderator: Jean Claude and CRS Groups 1 and 2: 15 minutes Groups 3 and 4: 15 minutes
17.00	Wrap up for day	
DAY 3: Thursday 17 th May: Session 5: Examining the Science- Moderator: Jude Njoku Rapporteur: Marian Quain		
08.00-08.15	**Recap**	
08.15 -09.15	**Bridging the Gap – introduction to scaling theory** **Update of RTB Scaling Triple S PLUS project & videos**	**Marc Schut (IITA and RTB 5.4)** **Margaret McEwan, Sam Namanda, Mihiretu Cherinet, Erna Abidin**
09.15 – 10.15	**Poster Session 2:** Theme B: Management of biotic and abiotic constraints in sweetpotato seed production Theme C Part 2: Building gender-responsive seed systems and promotion, marketing and dissemination of quality sweetpotato seed	
10.15-10.45	**Poster feedback in plenary**	
10.45 – 11.15	**Coffee and tea break**	
11.15-11.45	**National Clean Plant Network (NCPN- USA) – what can we learn: Prof. Chris Clark (LSU), Jean Ndirigwe (RAB) Kwame Ogero (CIP**	a) Presentation by RAB on organization of SP seed system in Rwanda and on-farm seed management practices – (15 min) b) Presentation by Prof Chris Clark on NCPN-SP – (15 mins)
11.45-12.15	**National Clean Plant Network (cont.)**	c) Kwame Ogero: lessons learnt from the US NCPN – SP – 10 min d) Discussion – 10 min
12.15 – 13.00	**Evaluation and wrap up of CoP meeting**	Srini Rajendran and Jan Low
13.00 – 14.00	**Lunch and participants departure: Thursday afternoon & evening**	Donata Kiiza, Emily Ndoho.
14.00- 16.00	**Afternoon option for SPKP and top tips for photos**	Faith Njung'e

Participant's List

Seeds systems meeting participants list Kigali Rwanda, 14th-17th, May, 2018										
No	First Name	Last Name	Gender	Title	Institution	Address	Country	Telephone	Mobile	Email address
1	Arcade	Nshimiyimana	M	Chairperson	Youth Engagement in Agri Networks (YEAN)	Kigali-Rwanda	Rwanda	0788-845-727	250 788845727	anshimiyimana@yeanrwanda.org
2	Akimanishatse	Faustin	M	Agriculture production manager	Urwibutso Enterprise	Po Box 3566 Kigali	Rwanda		250 788 555 666	akimanifaustin@gmail.com
3	Alimas	Hakizimana	M	Social inclusion Manager	PSDAG/ USAID	KG 684 St, No19. Kacyiru, Kigali	Rwanda		250 788 573 774	ahakizimana.contractor@rti.org
4	Bernice	Wairimu	F	Program Specialist	CIP	P.O. Box 25171, 00603 Nairobi	Kenya	25423697795		b.wairimu@cgiar.org
5	Beyene	Demtsu Tessema	M	Senior Researcher/ Biotechnologist	Tigray Agricultural Research Institute (TARI)	P.O. Box 2070, Makele	Ethiopia		+251 914 702887	beyene.demtsu@gmail.com
6	Bramwel	Wanjala	M	Research associate	CIP	P.O. Box 25171, 00603 Nairobi	Kenya		254 722408246	b.wanjala@cgiar.org
7	Chifundo	Kapalamula	F	Research associate	CIP Malawi	P.O. Box 31600, Lilongwe 3, Malawi	Malawi		265 998268143	C.kapalamula@cgiar.org
8	Damien	Shumbusha	M	Associate Research Fellow	Rwanda Agricultural Board (RAB)	5016 Kigali Rwanda	Rwanda	250 7322800572	250 788459957	dshumusha2@gmail.com
9	David	Talengera	M	Director	BioCrops (U) Ltd	P.O Box 3016, KLA, Uganda	Uganda	+256 756 454 849	+256 772 695 250	dtalengera@yahoo.com
10	Donata	Kiiza	F	Communication Intern	CIP	Po Box 6801, Kigali	Rwanda	782629555	+250 782629555	donata.kiiza@cgiar.org
11	Emily	Ndoho	F	Project Accountant	CIP	P.O. Box 25171, 00603 Nairobi	Kenya	+254 020 422 3603	+254 736 544 905	E.ndoho@cgiar.org
12	Erna	Abidin	F	Regional Seed Systems Specialist and Sweetpotato Breeder	CIP	P.O. Box 3785	Ghana		233 243 976894	p.abidin@cgiar.org
13	Faith	Njunge	F	Communication officer	CIP	P.O. Box 25171, 00603 Nairobi	Kenya		+254 726 545794	f.njunge@cgiar.org
14	Florence	Munguti	F	Officer in charge	KEPHIS	49421-00100 NAIROBI	Kenya		0 720805493	fmunguti@kephis.org
15	Gerald	Kyalo	M	Agronomist / Senior Research Officer	CIP	PLOT 47, NTINDA II ROAD, P. O. BOX 22274, Kampala	Uganda		+256 774 431623	gerald.kyalo@cgiar.org
16	Gerard	Sina	M	Owner, Sina Gerard enterprises	Urwibutso Enterprise	P.O. Box: 3652, Kigali, Rwanda	Rwanda	250 788 302 999	+250 788 305 111	info@sinarwanda.com
17	Jan	Low	F	Sasha Project Manager & SPHI Co-Leader	CIP	P.O Box 25171, Nairobi, Kenya	Kenya	+254 20 422 3601	+254 733 411010	J.low@cgiar.org
18	Jean	Ndirigwe	M	Sweetpotato Plant Breeder	Rwanda Agricultural Board (RAB)	P.0 Box 7032, Kigali	Rwanda	+250 727 800 154	+250 788 527 320	ndrick3@gmail.com
19	Jean Baptiste	Hategekimana	M	Chairperson, RYAF	Rwanda Youth in Agribusiness Forum (RYAF)	Kigali-Rwanda	Rwanda	0788-530-417	0788-530-417	inforyaf@gmail.com
20	Jean Claude	Nshimiyimana	M	Seed System Officer/Agronomist	CIP (Rwanda)	Po Box 6801, Kigali	Rwanda	+250 788 639417/ 788 500053	+250 788 639417/ 788 500053	J.nshimiyimana@cgiar.org
21	Jean Francois	Nshimiyimana	M	Managing Director	Celinno Ltd	Karongi district, Rwanda	Rwanda	250 788617746	250 788617746	nshifr@yahoo.com
22	Joana	Menomussanga	F	Agronomist	CIP Mozambique	FPLM avenue 2698 maputo	Mozambique	258 827060395		joana.menomussanga@gmail.com
23	Joanne	Adero	F	Research assistant	NACRRI	PO BOX 7084 Kampala	Uganda		256 773623166	jnn_adero@yahoo.co.uk

Seeds systems participants list Kigali Rwanda, 14th-17th, May, 2018										
No	**First Name**	**Last Name**	**Gender**	**Title**	**Institution**	**Address**	**Country**	**Telephone**	**Mobile**	**Email address**
24	Joseph	Okalebo	M	Coordinator	SOSPPA- Soroti Sweet potato producers and producers and processor association		Uganda		256 782 966648	ssospa2012@gmail.com
25	Jude	Njoku	M	Coordinator - Sweetpotato Program/ Country Agronomist - Rainbow Project	CIP/ National Root Crops Research Institute (NRCRI)	Nyanya Outstation FCT, Abuja Nigeria, PMB 7006, Umuahia,	Nigeria		+234 803 5479261	jcnjoku@yahoo.com
26	Kennedy	Masamba	M	Agricultural Research Scientist	DARS	Bvumbwe Research Station, P.O Box 5748, Limbe, Malawi	Malawi		+265 995754512	kenedymasamba@gmail.com
27	Kirimi	Sindi	M	Country director	CIP	Po Box 6801, Kigali	Rwanda	+250 787 113357	+250 787 113357	k.sindi@cgiar.org
28	Kwame	Ogero	M	Regional Research Associate	CIP, C/O Lake Zone Agriculture Research and Development Institute (LZARDI)	P.O Box 1433, Mwanza	Tanzania		+255 689 457 461	K.ogero@cgiar.org
29	Luis	Gonzaga	M	Agriculture engineering	IIAM	Avenue FPLM NO.2698 Mavalawe,B Maputo	Mozambique		258 847483486	madroba@gmail.com
30	Margaret	McEwan	F	Research Leader, RP-3	CIP	P.O. Box 25171, 00603 Nairobi	Kenya	+254 020 422 3611	+254 733 681155	M.mcewan@cgiar.org
31	Marian	Quain	F	Senior Research Scientist head of lab	CSIR-Crops Research Institute	P.O Box 3785, Kumasi, Ghana	Ghana	+ 233 3220 60389	+233 267 443639	marianquain@hotmail.com
32	Martin	Chiona	M	Team Leader, Principle Researcher	Root and Tuber Improvement Program, Zambia Agricultural Research Institute (ZARI)	Mansa Research Station, P.O BOX 710129, Mansa	Zambia		+260 977 125692	martinchiona@yahoo.com
33	Mary	Ndomba	F	Agricultural Research officer	Sugarcane research institute	Po box 30031 Kibaha	Tanzania	255 654296595		maryndomba@gmail.com
34	Mihiretu	Cherinet	M	Research associate	CIP	c/o ILRI, PO Box 5689 Addis Ababa, Ethiopia	Ethiopia		+251 935 923781	m.cherinet@cgiar.org
35	Mubaraka	Habimana	M	Private vine multiplier	Private DVM	Rubavu-Rwanda	Rwanda	250 788-265-338	250 788-265-338	mubriomar@gmail.com
36	Paola	Giriwanyu	F	Vine multiplier	Private DVM	Gasabo-Rwanda	Rwanda	250 783-285-328	250 783-285-328	paolagiriwanyu@gmail.com
37	Placide	Rukundo	M	Scientist research fellow	Rwanda Agricultural Board (RAB)	PO BOX 5016 Kigali	Rwanda	250 78612423	250 732800368	rukundoplacide@gmail.com
38	Regis	Umurengezi	M	CEO	CARL GROUP	Gikondo-Rwanda	Rwanda		250 788 412 550	carlgroup.info@gmail.com
39	Reuben	Ssali	M	Plant Breeder Associate	CIP	Ntinda II Road, Plot 47 P.O Box 22274, Kampala	Uganda		+256 702 362692	R.ssali@cgiar.org
40	Robert	Mwanga	M	Sweetpotato Breeder	CIP	Ntinda II Road, Plot 47 P.O Box 22274, Kampala	Uganda	+256 312266250-3	+256 772825725	R.mwanga@cgiar.org
41	Rosemary	Kihiu	F	Communication, KM and Reporting	CIP	P.O. Box 25171, 00603 Nairobi	Kenya	+254 20 422 3636	+254 722 751884	r.kihiu@cgiar.org
42	Sam	Namanda	M	Senior Research Associate	CIP	Ntinda II Road, Plot 47 P.O Box 22274, Kampala	Uganda		256 772419112	s.namanda@cgiar.org
43	Seraphine	Uzamushaka	F	Agronomy Intern	CIP	Po Box 6801, Kigali	Rwanda	'+250 782507750	+250 782507750	S.uzamushaka@cgiar.org
44	Serge	Ganza	M	Vine multiplier	Private DVM	Kamonyi-Rwanda	Rwanda	0788-408-269	0788-408-269	serge.ganza@gmail.com
45	Some	Koussao	M	Sweetpotato Breeder	INERA		Burkina Faso		226 76615894	koussao@hotmail.com
46	Srini	Rajendran	M	Regional Research Agricultural Economist	CIP	Old Naivasha Road, ILRI Campus, P.O. Box 25171, 00603, Nairobi	Kenya	+ 254 (20) 422 3685	+254 711 033 685	srini.rajendran@cgiar.org

Seeds systems meeting participants list Kigali Rwanda, 14th-17th, May, 2018										
No	**First Name**	**Last Name**	**Gender**	**Title**	**Institution**	**Address**	**Country**	**Telephone**	**Mobile**	**Email address**
47	Theophile	Mudenge	M	Market Development Specialist	Catholic Relief Service (CRS)	2nd Floor, Chadel Building #KN 78 St/# 2|Kigali-Rwanda	Rwanda		250 788 380490	theophile.mudenge@crs.org
48	Wogayemu	Abele	F	Research coordinator	SARI		Ethiopia		911711769	wegayhu98@yahoo.com
49	Zacharie	Manirarora	M	Agricultural advisor	Catholic Relief Service (CRS)	2nd Floor, Chadel Building #KN 78 St/# 2|Kigali-Rwanda	Rwanda	250 7883 85152	250 7885 61618	wegayhu98@yahoo.com

The **Sweetpotato for Profit and Health Initiative (SPHI)** is a 10-year, multi-donor initiative that seeks to reduce child malnutrition and improve smallholder incomes through the effective production and expanded use of sweetpotato. It aims to build consumer awareness of sweetpotato's nutritional benefits, diversify its use, and increase market opportunities, especially in expanding urban markets of Sub-Saharan Africa. The SPHI is expected to improve the lives of 10 million households by 2020 in 17 target countries.

SASHA
Sweetpotato Action for Security and Health in Africa

CIP
INTERNATIONAL POTATO CENTER
A CGIAR RESEARCH CENTER

CGIAR
RESEARCH PROGRAM ON
Roots, Tubers and Bananas

WWW.SWEETPOTATOKNOWLEDGE.ORG