

Innovation platforms for agricultural development case studies: The Mukono-Wakiso innovation platform in Uganda case study –Facilitator's digest with speaker's notes

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for the Humid
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All sections below relate to corresponding sections in the workshop plan and in the presentation.

The texts referring to the slides can be either retold or read out loud by the facilitator, depending on their facilitation experience and/or other circumstances.

1. Situation in the region

Slide 2: Problems in the Victoria Lake Crescent zone

In the Lake Victoria Crescent zone of central Uganda, farmers have been struggling with increasing poverty and malnutrition due to low agricultural yields.

They face many challenges every day, such as:

- pests
- diseases
- fake agricultural inputs
- poor access to markets
- post-harvest losses
- infertile soil

As farm production in the region is rain dependent, it is already being affected by climatic change.

Slide 3: The Mukono-Wakiso district

- Mukono and Wakiso are two districts where Humidtropics has one of its field sites in the Lake Victoria zone of Uganda.
- This periurban area is highly populated which reduces the acreage used for agriculture and threatens food security.
- Both districts have a booming business of real estates with many city entrants opting to construct houses. This, in turn, increases competition for the land uses and exerts pressure on natural resources such as forests and wetlands.
- The districts are close to Kampala, the capital city of Uganda, which provides a big market opportunity for farmers' produce.
- Despite the business opportunities, both districts have high youth unemployment close to the national average of 62%, which poses a challenge and at the same time an opportunity for innovation platforms.
- The Lake Victoria Crescent zone, where Mukono and Wakiso are located, is largely dependent on a banana-coffee farming system. Productivity and the relative importance of this system have significantly reduced over the past decades. Development projects and extension office have largely adopted a value chain approach encouraging farmers to specialize in sole crop production. Climate change is increasing the animal and crop disease/pest burden in the area, leaving farmers' enterprises vulnerable to climate and price shocks.

2. Protagonist one: How the IP helped the farmer

Slide 5: Our protagonist – challenges

Mr Kigoonya Augustine from Mukono district was working as a shop attendant in a suburb of Kampala where he earned SHS 300,000 per month. He decided to return to farming.

'I was spending all the money on food, transport and rent and would have to run back to my father for some financial help.'

He started with sole crops of beans, which he lost due to seasonal changes. Then tried maize sole crops from which he also did not earn much due to price fluctuation. He later decided to diversify with a number of crops: banana, tomato, maize, sweet potato and beans and as result he is reaping more.

Slide 6: Our protagonist – how the IP helped

He says that before the support from Humidtropics he only grew tomato. Now he is able to grow various vegetables for home consumption and sale. He has incorporated fodder trees in his plot to help with nutrient recycling and is using the fodder for mulching vegetables and bananas.

'I now earn SHS 1.5-2 million at the end of one season and don't spend on food because I have banana, maize, sweet potato and vegetables to sustain my family. I get manure from my father's poultry but I am hoping to own chickens to have ready access to manure and eggs. I have also received training on system integration and natural resource managements from Humidtropics and decided to get my own poultry to better use my fodder from the fields.'

3. Integrated farming system

Slide 7: Integrated farming system

Crops and trees are produced within a coordinated framework. The waste products of one component serve as a resource for the other.

Slide 8: Integrated farming system

The incorporation of the livestock, crops and tree farming system provides an opportunity to improve sustainable access to income and nutrition by spreading risks. This also sustains the natural resource base through nutrient recycling, erosion control and pollination.

Improving on-farm fodder availability throughout the year is feasible and can be done by planting fodder trees such as Calliandra, and reusing crop residues from vegetables, bananas and sweet potatoes.

Additional information

Due to the limited farm size in Mukono and Wakiso, livestock is often kept under zero grazing, and farmers rely on additional feeds/fodder from outside the farm, at least for part of the year. This makes livestock keeping an expensive enterprise.

Researching which systems work best for farmers is an opportunity for the platform to involve different research organization to answer farmers' questions.

4. Formation of the Mukono-Wakiso IP

Slide 11: Formation of the Mukono-Wakiso IP

To support farmers, in 2013 the CGIAR Humidtropics research program initiated four innovation platforms (IPs) in Uganda.

The Mukono-Wakiso platform, which focused on farmers' production, marketing and strengthening their local capacities, was formed in early 2014 by the following organizations:

- the local government
- Volunteer Efforts for Development Concern (VEDCO)
- International Institute for Tropical Agriculture (IITA)
- National Agriculture Research Institute Organisation (NARO)
- Mukono Zonal Agricultural Research Institute (MUZARDI)
- Makerere University

5. Strategies and activities of the IP

Slide 12: Strategies and activities of the IP – helping farmers

1. Selection and validation of entry points

Makerere University guided the platform members to select pressing needs of the farmers in line with the Humidtropics intermediary development outcomes (IDOs). All members were grouped under each IDO and identified the three most pressing issues:

- limited land for agriculture
- declining soil fertility
- climate change

Then they decided what system combinations they should take on to address these issues:

- Vegetables featured strongly in almost all identified systems as they mature and sell quickly which makes them a fast income generating activity. They also provide opportunities for women and youth in the district.
- The platform agreed on an integrated system of crops, livestock and trees including banana, vegetable, poultry, agroforestry (with main focus on fruit trees) and piggery.
- CGIAR centres with local organizations carried out rapid surveys among the farmers to validate the integrated system selected.

2. Field trials

A series of research for development activities (R4D) were initiated in response to the platform's needs:

- situation analysis
- baseline survey
- market survey
- agro-biodiversity survey

The platform started field activities with trees provided by ICRAF. The following agroforestry trees were selected

- Albizia
- Graveria
- Eucalyptus
- Mangoes

These trees were selected for the following reasons:

- soil fertility improvement
- provision of fodder
- provision of timber
- provision of fruits
- Eucalyptus was preferred because it provided fast income for the farmers

3. Research experiments

The platform conducted research on integrated soil fertility management to understand how farmers can utilize manure and crop residues to improve soil productivity.

Bio-slurry and chicken manure are evaluated to validate recommended rates and to determine the response of various vegetables to each manure.

One of the platform members, Uganda Christian University, is leading other partners in finding solutions using on-station experiments to better advise the farmers.

The experimental research and some other activities were funded with resources from the Humidtropics cluster 4 grant.

4. Training of farmers - Capacity building

The platform organized training on:

- Integrated systems operation at production level to empower the farmers to identify synergies among different activities at plot and farm levels.
- Value addition and marketing to help farmers manage their business better.
- Business planning to help farmers get ideas of how they can move their enterprises into money making ventures and increase profitability.
- Nutrition to emphasize the importance of eating a balanced diet and to encourage them to integrate the crop-livestock-tree system to increase access to different foods.
- Irrigation to help farmers continue production during the dry spell using water from fish ponds.

The irrigation training was particularly important for the periurban farmers whose vegetables fetch a better market in dry season.

Slide 13: Strategies and activities of the IP – linking farmers to market

5. Linking farmers to the market

Situation overview:

- Middlemen offer very low prices and don't allow farmers to penetrate the markets once they make efforts to do so.
- Markets are disorganized and there are weak linkages between the producers and the buyers.
- Perishability of most of the products forces farmers to sell cheaply to middlemen for fear of produce rot and wastage.

Farmgain Africa engagement and strategies

A consultancy firm, Farmgain Africa, was chosen to help link farmers to the market. They specialize in agri-business, market information and agro-enterprise development. The organization identifies traders who can work with farmers at the available scale and capacity to provide a market for their different products. The organization encouraged farmers to use local market opportunities before they venture outside. As a result, farmers from Wakiso are buying sweet potato vines for planting from Mukono farmers.

To identify gaps, Farmgain visited farmers to understand their market arrangements and models. The organization is trying to draw up memoranda of understanding or contractual arrangements between farmers and big buyers on behalf of the platform.

Brainstorming meetings with farmers are held to understand short and long-term market strategies for the farmers' products. Traders (the middlemen) have been engaged in platform market activities to see how the middlemen can offer farmers better prices for their produce. The discussion minutes are later shared via Dropbox.

6. Protagonist two

Slide 15: Our protagonist – challenges

Ms Beckie Nakabugo, a professional designer who loved farming and returned to it after giving up her job in Nairobi.

She consulted the local community before choosing her enterprise and began with piggery succeeding with 100 animals raised in periurban area, which is a very big achievement. Being inadequately informed about possible challenges related to piggery she soon lost all her pigs due to swine fever.

Then she tried nuts seeing potential profits (SHS 4,000 for 1 kg) but she soon realized that the people she employed to shell the nuts kept going away with half a kilo in their clothes.

Slide 16: Our protagonist – how the IP helped

Beckie admitted she learned a lot with Humidtropics training.

'I have learned to love farming, not looking at it as a punishment. Now I know how to calculate profitability of my business and to invest and get money from my enterprise. I liked the interactions with other farmers under Humidtropics. One farmer dealing with tomatoes told me that a certain variety does not perform well on newly opened ground. Had I met these farmers before I would not have made the loss that incurred after buying 4 kg of Asila tomatoes each at SHS 500,000 and none of these germinated partly because I mixed the fertilizer with the seed at planting.'

7. Impact of the IP on the region

Slide 17: Impact of the IP on the region

- Vegetable activities on the platform have increased the participation of youth in platform activities.
- Young people are going back to farming in central Uganda because of quick money from vegetables.
- The IITA board of trustees selected two young people to attend the 'agripreneur' youth training in Ibadan, which is leading to creation of a fully fledged youth program in Uganda.
- The platform's efforts to help farmers with markets has increased the interest of various stakeholders in the platform activities.
- Farmers are participating fully in all platform activities all the time.
- The platform's operations in the Mukono-Wakiso districts improved networking and increased market opportunities for farmers.
- Communication between platform stakeholders is improving. The platform members have WhatsApp groups on which they share information and events.

8. Challenges

Slide 18: Challenges

The success of this platform is limited by the following constraints:

- Coordinating different actors to participate actively and continuously in the integration process.
- Creating win-win situations for more private sector engagement as their involvement is still low at the moment.
- Difficult to have a research organization interested in the platform activities and to offer funding as they have their own core research areas.
- Local partner organizations attending meeting often expect transport refunds.
- Providing lunches and teas during the meetings becomes a burden.
- Focusing on different commodities at the same time and finding funding for it is a challenge. The integration with poultry and piggery is still on the waiting list. Farmers are interested in livestock incorporation in their crop system but there is no organization to provide these as was the case with AVRDV and ICRAF who provided seed kits and tree seedlings.

9. Next steps

Slide 20: Next steps

- Develop demand-driven research systems to continuously offer clear recommendations on integrated farming
- Include ministers as part of the scaling team
- Increase policy engagement and fundraising
- Develop proposals for funding to expand research on the system integration processes
- Strengthen monitoring and evaluation that will support fast track performance, better reporting and multilevel data capturing to track changes in knowledge

10. Takeaways

Slide 22: Takeaways

- In the Lake Victoria Crescent zone of central Uganda, farmers have been struggling with increasing poverty and malnutrition due to low agricultural yields.
- The Mukono-Wakiso IP challenged this issue by helping the local farmers to implement integrated farming system on their farms.
- The incorporation of the livestock, crops and tree farming system provides an opportunity to improve sustainable access to income and nutrition by spreading risks. This also sustains the natural resource base through nutrient recycling, erosion control and pollination.
- Together with its partners the IP carried out extensive research for development activities, offered training sessions for members and helped to link farmers to market.