



Sustainable Transition to Entrepreneurial Production
in Agriculture through Upgrading

Work Package 3

Participatory Strategy / Scenario Development and Implementation (NETFUND/ NARO)

Authors

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Task 3.3: Participatory development of alternative agricultural transformation pathways (WUR)

**Participatory identification of agricultural transformation pathways
in Bunyangabo District, Uganda**

October 2019

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Jomo Kenyatta University of Agriculture and Technology (JKUAT), Kenya

National Environment Trust Fund (NETFUND), Kenya

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Participatory identification of agricultural transformation pathways in Rwimi sub-county, Bunyangabo district, Uganda

STEP-UP Stakeholder workshop Bunyangabo, 24-25th October 2019

1. Introduction

1.1 The STEP-UP project

Sustainable intensification of agriculture provides a potential pathway to meet the growing demands for food on a global level. However, in practice adoption of many promising SI solutions remains disappointing, amongst others due to poor linkages to input and output markets and high investment risks. In the STEP-UP project, we aim to implement and assess sustainable intensification (SI) and market linkage (ML) strategies to enable small farm enterprises (SFEs) to step up towards food and nutrition security, sustainable development and income generation. The project focuses on banana and mango food value chains in Uganda and Kenya. Uganda is the leading banana-producing country in Africa, with the East African highland banana (EAHB) cultivar a staple to an estimated 10 million Ugandans. The banana marketing relies on complex food value chains (FVC) and is challenged by poor infrastructure.

STEP-UP aims to identify and implement strategies to upgrade production, processing and marketing of cooking banana (matooke) in two districts of Uganda: Rwimi and Bunyangabo. However, stakeholders engaged in banana value chains in these two districts may have diverging views on the desired future. Participatory scenario development and impact assessment are therefore powerful tools to guide discussion and convergence of views on the necessary interventions enabling (agricultural) transformation pathways towards such a future. At the start of the STEP-UP project, a multi-stakeholder workshop is planned in both districts to establish a shared vision, to identify the steps needed to reach that vision, and to select relevant indicators that could measure the project's progress towards the vision. The first workshop was held on 12-13 September 2019 in Rwimi; the second workshop on 24-25th October 2019 at Rwimi's sub-county headquarters in Kakinga. This report deals with the workshop in Rwimi.



1.2 Workshop objectives

The workshop had the following objectives:

1. Participatory visioning of a desired future for agriculture and the matooke value chain in Rwimi sub-county
2. Exploring obstacles and opportunities for reaching the vision
3. Identifying interventions for STEP-UP and other stakeholders that could lead to the vision
4. Participatory selection of relevant indicators that could track the progress towards the vision

1.3 Methods used in the workshop

Participatory visioning

- Timeframe: next 10-20 years
- Visioning:
 1. Agriculture in Rwimi in a sustainable future
 2. Matooke value chain in Rwimi in a sustainable future
- The aim is to identify elements of a sustainable future that all stakeholders can agree on; hence to develop one common vision.

Backcasting

- Identification of obstacles to reach the vision of a sustainable matooke value chain (within broader farming context)
- Identify opportunities to overcome the obstacles. Distinguish between internal (STEP-UP and partners) and external opportunities.
- Identify priorities and concrete interventions for STEP-UP

1.4 Workshop participants

Stakeholders along the matooke value chain in Rwimi: farmers, cooperative chair, matooke exporter, model farmers and scaling agents of Banana Agronomy project, processor (juice), transporters, traders, LC3 chairman Rwimi and the project implementing partners. A full list of participants is given in Annex 1.



2. Workshop opening

The chairperson LC3 represented by councillor local council 5 Mr. Bahira Atanas thanked all participants in their respective dignity particularly the project implementing partners for having brought the new project to people of Rwimi sub-county. He requested the sub county stakeholders for positive interaction towards the project objective. He finally declared the work shop opened.

Next, dr. Götz Uckert from ZALF (Germany) thanked all participants for their spared time in attending the workshop. He gave a brief introduction of STEP-UP and its meaning.

3. Key results of the workshop

3.1 Participatory visioning

Dr. Esther Ronner from Wageningen University (The Netherlands) introduced the ideas of participatory visioning (Fig. 1). The aim of was to arrive at a common vision for farming and the matooke value chain in Rwimi sub-county. Participants were encouraged to dream big at this stage, and freely exchange ideas about their desirable future. The timeframe used for the visioning was the next 10 to 20 years.



Fig. 1: Participatory visioning and backcasting as introduced to stakeholders in Rwimi (Source: <https://www.naturalstep.ca/abcd>)

In a first exercise, participants discussed the question: “What will farming in Rwimi look like in a sustainable future?” Three groups were formed, each focusing on different sustainability domains: economic/ food security, environmental and social. These domains were agreed upon with the STEP-UP project team during the kick-off workshop in December 2018. Participants wrote down their hopes or wishes for the future, and finally selected the five most important elements for the vision of farming in their domain.

In a plenary feedback session, the groups presented their top-five elements for the vision of farming to the rest of the group (Table 1).

Table 1: Top 5 elements of a sustainable future for agriculture in Rwimi sub-county

	Economic/ Food security	Environment	Social
1.	Banana is main enterprise, other crops are grown in support and contribute as food crops (e.g. maize, millet, beans, groundnut)	Enforced laws and policies that relate to environmental protection	Equal right on production and planning, decision making at household and community levels
2.	Integration of crops and livestock (risk spreading, availability of manure).	Better farming practices such as mulching, proper use of pesticides.	School drop outs will be reduced, no child labour and children have right to education.
3.	Farming will remain, but next to other jobs	Better waste management	Equal accessibility of resources (land, loans, role sharing between women and men).

4.	Processing and value addition to banana and other crops	Energy alteration such as solar, bio gas, charcoal stove etc.	Youth and women are equipped with skills, jobs, value addition by the governments and NGOs
5.	Sensitisation of cooperatives to produce marketable produce (organized joint production, products meeting (export) quality standards)	Educate children who will not resort to environmental degradation	Networking and transparency in the food value chain

The top-three topics for the economic/ food security group were considered most important, as all of them contributed to strengthening the banana enterprise on a farm.

Next, the groups did the same exercise but zooming in on the matooke value chain and again presented the top five in a plenary session.

Table 2: Top 5 elements of a sustainable future for the matooke value chain in Rwimi sub-county

	Economic/ Food security	Environment	Social
1.	Cooperatives (branches) at every sub-county	Practicing agro-forestry	Decide together for matooke production which leads to income and is equally shared fairly among family members
2.	Constant production throughout the year through irrigation	Recycling banana waste to re-use as manure	Women empowered in banana value chain (need skills, more likely to re-invest money in farm than men)
3.	Well-equipped extension services at sub-county level	Water harvesting for future use during dry season	Educate youth entrepreneurship e.g. seed multiplication, brokers input dealers and value addition
4.	Value addition e.g. flour, wine and juice	Ploughing back certain percentage of taxes from banana traders to environmental conservation	NGO and government implement policies and standards that affect banana value chain (e.g. good varieties, quality produce, access and control to resources, loans/ starting capital)
5.	Establishment of marketing collection/ centres at strategic locations, combined with cold storage rooms and refrigerated trucks		NGOs make follow-ups on the implementation of banana project
6.	(Food security) Diversity of food crops next to banana enterprise		

The economic/ food security group added a sixth topic related to food security. The environmental group only listed a top 4. The need for water during the dry season through water harvesting or irrigation was mentioned by both groups. Other than that, the groups covered a wide variety of topics in the different domains.

3.2 Backcasting: moving backwards from the vision to the present

In the afternoon, participants were introduced to backcasting: the identification of the steps needed to reach the established vision (Fig. 2). The backcasting exercise was done for the vision of the matooke value chain only; as the focus of the STEP-UP project.

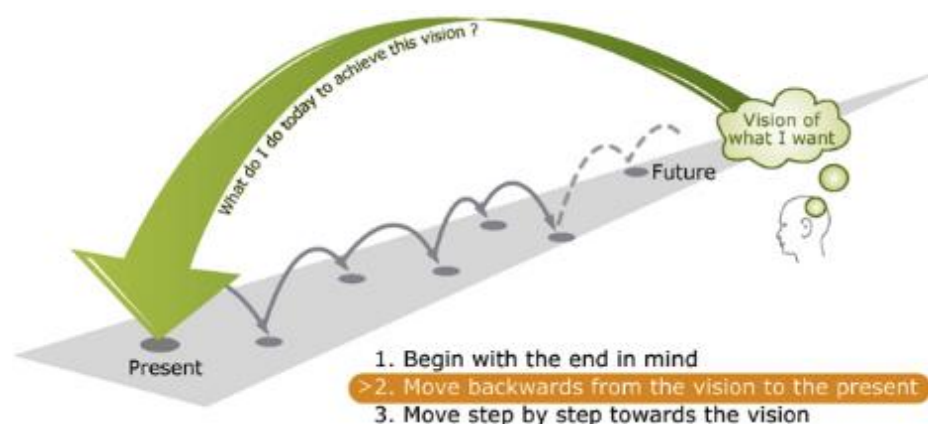


Fig. 2: Backcasting: which steps are needed to reach the vision?

(Source: <https://www.naturalstep.ca/abcd>)

3.2.1 Identification of obstacles to reach the vision for a sustainable matooke value chain

The backcasting started with the identification of obstacles that could arise when aiming to reach the vision. These obstacles were directly linked to the top-five elements of the vision for the matooke value chain (Table 3).

Table 3: Elements of the vision and obstacles for reaching the vision of a sustainable matooke value chain in Rwimi for the economic, food security, environmental and social domain

Elements	Obstacles
Economic	
1. Cooperatives (branches) at every sub-county	<ul style="list-style-type: none"> Not all farmers earn enough money to be able to join a cooperative Political interference Lack of motivation to join cooperative because of insecurity about functioning of the cooperative Poor management skills Poor funding situation of cooperatives/ lack of access to credit
2. Constant production throughout the year through irrigation	<ul style="list-style-type: none"> Huge investment required No political will to install irrigation, and even when there is a plan the implementation may be poor Risk of vandalism, thieves Not all farmers have access to nearby water sources
3. Well-equipped extension services at sub-county level	<ul style="list-style-type: none"> Lack of government investment in extension: a large population needs to be served by few extension officers Need to pay for services (e.g. transport, fees) even though officers are already paid --> corruption Lack of private extension services

4.	Value addition e.g. flour, wine and juice	<ul style="list-style-type: none"> • Lack of market • Lack of skilled manpower • Lack of money to invest
5.	Establishment of marketing collection/ centres at strategic locations, combined with cold storage rooms and refrigerated trucks	<ul style="list-style-type: none"> • Lack of funds • High costs of electricity for cold rooms • Seasonal price fluctuations • Lack of infrastructure (roads, electricity) • Lack of cooperatives to compete with or avoid middle-men
6.	(Food security) Diversity of food crops next to banana enterprise	<ul style="list-style-type: none"> • Lack of enough land • Change in mindset required to use small pieces of land wisely • Lack of individual commitment
Environment		
1.	Practicing agro-forestry	<ul style="list-style-type: none"> • Lack of knowledge on agro-forestry, and on right species for agro-forestry • Limited land /land fragmentation
2.	Recycling banana waste to re-use as manure	<ul style="list-style-type: none"> • Lack of knowledge on making compost and composite manure • Competition from inorganic fertilizers • Fear to spread diseases that come from banana waste • Labour intensive
3.	Water harvesting for future use during dry season	<ul style="list-style-type: none"> • Lack of funds to buy water harvesting equipment (tanks) • Farmers lack exposure to the techniques
4.	Ploughing back certain percentage of taxes from banana traders to environmental conservation	<ul style="list-style-type: none"> • Lack of government policies for ploughing back tax money • Lack of organised groups to ask for tax plough-back
Social		
1.	Decide together for matooke production which leads to income and is equally shared fairly among family members	<ul style="list-style-type: none"> • Cultural believes, norms or stereotypes on land access, control, decision-making and sharing benefits fairly
2.	Women empowered in banana value chain (need skills, more likely to re-invest money in farm than men)	<ul style="list-style-type: none"> • Lack of awareness on rights by women e.g. land access, control, participation in food value chain and other resources
3.	Educate youth entrepreneurship e.g. seed multiplication, brokers input dealers and value addition	<ul style="list-style-type: none"> • Limited opportunities for youth to become trainers • Mobilisation of youth is difficult in banana value chain (look for fast money, not interested in attending trainings)
4.	NGO and government implement policies and standards that affect banana value chain (e.g. good varieties, quality produce, access and control to resources, loans/ starting capital)	<ul style="list-style-type: none"> • Failure to implement policies and standards due to limited staffing

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- | | |
|---|---|
| 5. NGOs make follow-ups on the implementation of banana project | <ul style="list-style-type: none"> • Lack of ownership by local partners /negative attitude of producers |
|---|---|
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3.2.2 Identification of opportunities to overcome the obstacles

On the second day of the workshop, we went into the identification of opportunities to overcome the obstacles in reaching the vision for the matooke value chain in Rwimi. As there were similar, cross-cutting obstacles, the obstacles were regrouped into obstacles related to production, processing/ value addition and marketing (NB: these categories correspond with the value chain segments identified during the STEP-UP kick-off workshop in December). New groups were formed around these three categories, and each group picked out the three main obstacles in their view. The groups listed opportunities that would help the overcome the obstacles, and possible interventions. Then, the groups rotated (two rounds) and added to the findings of the first group (Table 4).



Table 4: Main obstacles, opportunities and interventions for the matooke value chain in Rwimi

Obstacle	Opportunity	Potential interventions
<i>Production</i>		
1. Lack of funds to buy irrigation or water harvesting equipment	<ul style="list-style-type: none"> • Availability of water 	<ul style="list-style-type: none"> • Organize Village Savings and Loan Associations (VSLAs) to purchase water harvesting tanks • Engage in income-generating activities (poultry, pig rearing, etc.) • Lobbying at government • Formation of groups/ associations to access agricultural loans • Use underground water tanks or ponds made from polyethylene sheets to reduce costs
1. Lack of well-functioning extension services	<ul style="list-style-type: none"> • Existence of organized groups • Availability of model farmers • Availability of scaling agents under NARO 	<ul style="list-style-type: none"> • Lobbying at government to recruit more extension agents and to provide motivation for scaling agents • Employ extension agents through STEP-UP • Refresher training for scaling agents (or model farmers to become scaling agents) • Promote farmer visits through existing organized groups
2. Lack of knowledge on agro-forestry + species	<ul style="list-style-type: none"> • Presence of nursery bed operations 	<ul style="list-style-type: none"> • Identify species that work well in banana • Training on agro-forestry and recommended species

Obstacle	Opportunity	Potential interventions
	<ul style="list-style-type: none"> Awareness of benefits of agro-forestry 	<ul style="list-style-type: none"> Exchange visits Introduce species at existing nurseries Promoting demonstrations of agro-forestry in banana to act as windbreakers Intercropping of banana with high value crops (vanilla, hot pepper, etc.) Promotion of integration of crops, animals and agro-forestry
3. Limited re-use of banana waste on farm	<ul style="list-style-type: none"> Availability of banana waste Awareness on importance re-use of waste 	<ul style="list-style-type: none"> Training on compost-making Training on use of banana waste for charcoal briquettes Value addition to banana fibres (e.g. bags, mats, baskets)
Processing/ value addition		
1. Lack of skilled manpower and money to invest in processing	<ul style="list-style-type: none"> Presence of technical persons e.g. NARO 	<ul style="list-style-type: none"> <i>[pre-condition: introduction of varieties suitable for juice/ beer]</i> Formation of groups Support from the government in accessing loans Trainings in agro-processing, agro-business and production Increase in production of beer varieties like Kisubi and Phia.
2. Women lacks awareness on rights (participation in value chain skills)	<ul style="list-style-type: none"> Local market available for juice 	<ul style="list-style-type: none"> Trainings Group formation Sensitization
3. Difficult to mobilise youth		<ul style="list-style-type: none"> Sensitization of youth
Marketing		
1. Lack of well-functioning cooperatives	<ul style="list-style-type: none"> Existing banana cooperative union at district level Commercial officers available at sub-county and district levels Supportive government policies on cooperatives Cooperative concept is not new among farmers (several NGO and government programs e.g. Uganda cooperative alliance (UCA), Cooperative at Ministry of Trade) 	<ul style="list-style-type: none"> Skilling cooperative managers and members Mobilising existing groups to elevate into primary societies Link existing groups to banana cooperative union Link CDOs with the groups and other government and non-government agencies that are promoting cooperatives Understanding market needs to guide enterprise selection and production among the cooperatives Intergrate gender balance into cooperative management and membership

2. Lack of cold-storage/ refrigerated trucks	<ul style="list-style-type: none"> • Some traders already use cold storage/ refrigerated trucks • Supportive government policies e.g. the Agri-red, legs • Agriculture credit facilities 	<ul style="list-style-type: none"> • Mobilise farmers to work in groups and raise funds to construct sheds • VSLAs • Taking advantage of government programs
3. Lack of good roads for transport	<ul style="list-style-type: none"> • Existence of Buringi Bwansi: people have already mobilised themselves to clear some bad roads • Road graders at the district that local governments can hire • Already focus on village road networks due to tourism opportunities 	<ul style="list-style-type: none"> • Lobbying at local government to provide machines and funds to work on village roads



The two first groups discussion production-related opportunities and interventions agreed that irrigation and water harvesting were the main topics to focus on. The third group, however, insisted that a lack of extension services was the number one obstacle. Hence, they focused on this topic. And even the first groups agreed that when they would have money available, irrigation would not be their first priority to invest in. The processing/ value addition group agreed that the only market for processed products would be banana juice/ wine/ beer. Other products are not really in

high demand. As juice/ beer is made from plantains rather than cooking banana, a re-introduction of these varieties would be needed. These varieties are highly susceptible to Fusarium wilt, however. This requires that they are grown on a small scale in between cooking bananas, or that resistant varieties are introduced. The identification and introduction of suitable varieties was therefore considered a pre-condition for other interventions.

3.3 Selection of potential interventions for STEP-UP

As a final exercise of the workshop, a plenary session was held whereby the opportunities and interventions identified for production, processing/ value addition and marketing were presented to the whole group. Participants were tasked to agree on the three most promising interventions for STEP-UP. Suggestions done by one of the participants were discussed, criticized and finally selected if all participants agreed that this would be a suitable intervention.



Production:

- Train scaling agents to support extension
- Training and demonstration / model farms on crop livestock integration, use of manure/re use of banana waste.
- Introduce cost-effective water harvesting techniques

Value addition and processing:

- Identify and introduce better varieties for making banana juice/ beer/ wine (plantains)
- Group formation for training
- Train in juice/ beer/ wine-making and in quality assurance

Marketing:

- Group formation and training
- Market research to guide production
- Sensitisation of groups on credit facilities, and provide linkages to credit facilities

4. Way forward and closing of the workshop

The workshop yielded fruitful discussions on a vision for the matooke value chain in Rwimi, the obstacles that we may come across when trying to reach the vision, the possible opportunities and interventions, and a final selection of the required interventions for STEP-UP. The STEP-UP team is tasked to combine the workshop results from Rwimi and Isingiro, and translate them into concrete interventions and a plan of action. A joint identification of priority interventions will facilitate the implementation and allow for comparisons between both sites.

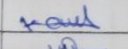
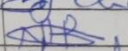
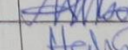
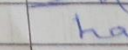
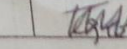
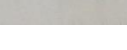

Representative stakeholders from both Rwimi and Isingiro will be invited for a meeting in Kampala, where the STEP-UP team will present four potential interventions. The invited stakeholders will vote to make of final selection of two interventions. These interventions will then be implemented.

The same meeting will serve to identify potential indicators that we can measure to track the progress towards achieving the vision, and to discuss the potential impact of the intervention on the community.

Annex 1: Participants' list

ATTENDANCE SHEET

ACTIVITY NAME DATE 25/10/2019 VENUE Rwimi

#	NAME	SEX	TITLE	CONTACT	SIGNATURE
	Rahireia Athanasi	m	Farmer	0782958698	
	Kanyandekwe Innocent	m	Agric. Officer	0773 916 455	
	Monday Edson	m	Business	0774 885774	
	Iyamsingizwe Wilson	m	Blom / Farmer	0780 409 881	
	Iugume Gladys	F	farmer	0772 833 628	
	Kebimungi Channing	F	Farmer	0786 243 829	
	NGONZI JAMILA	F	Farmer	0785 775 891	
	KAMVHANON MOSES	M	scaling Agent	0777 836 858	
	Ndasira Rachael	F	Trader	0755 964 145	
	ATUHEIRWE DENISON	m	Scaling Agent	0782 259 316	
	BYARUTANGA EVARISTO	m	Farmer	0782 294 560	
	TRACUMISIZWE EDISON	m	Trader	0705 092 485	
	Rwalekale Bntason	M	Farmer	0788 646 102	
	KENEMA Federesi	F	Farmer	0777 014 993	
	Wesley Buckens	m	SLC speaker	0789 266 675	
	MBABAZI ATULAND	M	Farmer	0779 089 949	
	Kunibira Halima	F	farmer	0785 763 746	
	Kanguzuye Moses	M	CPLHUI	0772 311 388	
	NAKACHA HAANA	F	Farmer	0778 507 722	
	BIRUVGI GERIANDE	F	Farmer	0775 116 616	

