

# End-line impact assessment of the 2017-2021 DGD-funded programme implemented by Rikolto

## Uganda

Country Report

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## List of abbreviations

|             |   |
|-------------|---|
| ACE         | Area Cooperative Enterprise   |
| ADE         | Aide à la Décision Economique   |
| AGM         | Annual General Meeting  |
| AMEA        | Agribusiness Market Ecosystem Alliance  |
| BDS         | Business Development Services   |
| BoD         | Board of Directors  |
| Bunambutye  | Bunambutye Area Cooperative Enterprise  |
| CSA         | Climate Smart Agriculture   |
| DIFACOS     | Doho Irrigation Farmers' Cooperative Society                                  |
| DGD         | Directorate-general for Development Cooperation and Humanitarian Aid, Belgium |
| EQ          | Evaluation Question   |
| FGD         | Focus Group Discussion  |
| FFV         | Fresh Fruits and Vegetables   |
| FO          | Farmer Organisation   |
| FS          | Farmer Survey   |
| FSC         | Food Smart City   |
| GAP         | Good Agricultural Practices   |
| IF          | Intervention Framework  |
| IWA         | International Workshop Agreement  |
| Kangulumira | Kangulumira Horticulture and Vanilla farmers' cooperative society             |
| KCCA        | Kampala City Council Authority  |
| Kwapa       | Kwapa Farmers' Cooperative Society  |
| LT          | Local Team of ADE   |
| MAAIF       | Ministry of Agriculture Animal Industry and Fisheries of Uganda               |
| m.a.s.l.    | Meters above sea level  |
| MBRFC       | Manafwa Basin Rice Farmers' Cooperative Society                               |
| MSC         | Micro-finance Support Centre  |
| MSI         | Multi-Stakeholder Initiative  |
| MSME        | Micro, Small and Medium Enterprises   |
| MTC         | Ministry of Trade and Cooperative   |
| MTR         | Mid-Term Report   |
| NGO         | Non-Governmental Organization   |
| QMS         | Quality Management System   |
| ROI         | Return on Investment  |
| RT          | Regional Team of Rikolto in Uganda  |
| PGS         | Participatory Guarantee System of certification                               |
| Sabiny      | Sabiny Agro Commodity Farmers' Cooperative Society                            |
| SACCO       | Savings and Credit Cooperative  |
| SRP         | Sustainable Rice Production   |
| Taabu       | Taabu Area Cooperative Enterprise   |
| UCA         | Uganda Cooperative Alliance   |
| UFVEPA      | Uganda Fruits and Vegetable Exporters and Producers Association               |
| UPA         | Urban and Peri-urban Agriculture  |

## Executive Summary

### Introduction

This executive summary discusses the main findings and recommendations of the end line evaluation of Rikolto's Uganda program entitled "Creating shared value for all actors in grains and horticulture value chains", implemented from 2017 to 2021. The program was funded by the Directorate-General for Development Cooperation and Humanitarian Aid, of Belgium. The program targeted smallholder farmers and aimed to contribute to the development of a dynamic, sustainable and inclusive grains and horticulture sub-sectors in Uganda, with smallholder farmers providing quality products for own consumption and diverse markets. Specifically, the program sought to develop rice, and fresh fruits and vegetable food chains in Uganda, that are sustainable and inclusive for smallholder farmers, male, female and the youth. The evaluation commenced in September 2021 and was completed in March 2022. The draft report was shared among the team of consultants, Rikolto global and Rikolto regional team, for broader feedback which was then incorporated in this report.

### Evaluation objectives

The evaluation was commissioned to measure impact of Rikolto's interventions, account to stakeholders and draw lessons for future programming. Rikolto's impact was measured at three levels: the resilience and livelihoods of farmers, the business and organizational capacities of farmer organisations, and the institutional environment. Furthermore, the evaluation assessed important issues such as: economic, social and environmental sustainability, as well as gender equity and youth inclusion in the program and spill over effects.

### Evaluation methods

To realize the stated evaluation objectives, a participatory mixed methods non-counterfactual design that combined both quantitative and qualitative approaches was used. The quantitative component facilitated the construction of resilience index of the farmer households, compilation of summary statistics of their household characteristics and livelihood activities, and determination of the changes in outcome variables between baseline and end-line. The qualitative component facilitated concrete, contextual and in-depth understanding of the program impact according to stakeholders and allowed for triangulation of information, hence, complementing the quantitative survey data. The evaluation utilized data/information from: a review of 21 project, policy and strategy documents; a survey with 245 rice farmers and 222 fresh fruits and vegetable farmers; focus groups discussions with 360 rice farmers and 172 fresh fruits and vegetable farmers; and 138 non-farmers.

### Key findings

**Livelihood:** The results indicated improvements in productivity and production of focus crops, sales through the farmer organisations at better prices, the quality and consistency of farmers' supply to the market, trust by members in their farmer organisations, bulking and collective marketing. The farmers also felt more confident to do business, mentioned that they have stronger social capital due to active participation in savings and credit schemes and for some of them, food security situation improved. On the one hand farmers appreciated all capacity building efforts through Rikolto Uganda interventions, on the other hand key challenges remain. Food insecurity is still prevalent among beneficiary farmers and more importantly, incomes declined partly due to competition from Tanzanian rice, for the case of rice farmers and partly due to the Covid-19 pandemic, for all farmers. In addition, the social performance of farmer organisations are poor regarding gender equity, youth inclusion and child labour.

*Resilience:* The impact of Rikolto Uganda interventions to strengthen farmer business performance and their absorptive capacity in case of shocks and stressors is evident. On average, farmers' **absorptive capacity** increased significantly at 1% level, between baseline (0.46 in 2017) and end line (0.95 in 2021). Farmers confirmed that the increase in absorptive capacity can be attributed to the activities in which they engaged during Rikolto Uganda's intervention, such as training in good agricultural practices and climate smart agriculture. Farmers' adaptive capacity decreased due to various social, environmental and Covid-19 related shocks. In particular, farmers indicated that low capacity to diversify their livelihood due to limited access to capital and recurrent pests and diseases, among others, undermined their adaptive capacity, and reduced their resilience.

*Farmer organisational strengthening:* Regarding the strengthening of farmer organisations into self-sustaining businesses, Rikolto Uganda played the role of coach, facilitator and match maker. Progress is reported on internal management of the farmer organisations with improvements in governance, information sharing and staff performance monitoring. Financial management also improved, especially the establishment and implementation of financial management policies, rules, regulations, procedures, information sharing, and recruitment of qualified staff and establishment of various levels of control. Rikolto Uganda also strengthened farmer organisations as business organisations by supporting them to: market collectively, access high quality business development services and offer more and better services to members. The overall SCOPE scores, as well as financial and internal management scores however, did not improve for rice farmer organisations and these scores even deteriorated, for farmer organisations in the fresh fruit and vegetable sub-sector. The lack of progress and deterioration in scope scores could be due to biases in administering the SCOPE tool but could also be due to the poor business environment in Uganda. Farmer organisational capacity has remained weak in terms of poor business mentality and a high dependency syndrome.

*Multi-stakeholder initiative and institutional level:* At institutional level, Rikolto Uganda succeeded in establishing two multi-stakeholder initiatives, with a broad range of qualified and committed stakeholders. Rikolto Uganda has used its experience of organisational strengthening and sustainable rice production to influence policy makers in other non-governmental organisations and government ministries, resulting in spillover effects through adoption of tools and methodology of Rikolto Uganda by these stakeholders. Rikolto Uganda has also initiated reflection, planning and dialogue activities which have formed the foundation for promoting sustainable food systems. Actual functioning of the multi-stakeholder initiatives, however, is still at its infancy, partly due to lack of facilitation support from government to its representatives and partly because the Covid-19 pandemic interrupted everything, especially meetings.

*Covid-19:* Overall, the Covid-19 pandemic had a negative effect on all program achievements due to restrictions of movement of people, lockdown of end markets and the overall disruption in supply chains. Rikolto Uganda's agility in supporting farmers to face the COVID-19 pandemic was low and could not effectively result into diversification into other livelihood options. Some of Rikolto Uganda's interventions in response to the pandemic however, will lead to improvements and contribute to a more resilient food system.

*Environmental sustainability:* Farmers appreciated Rikolto Uganda facilitated trainings on good agricultural practices and climate smart agriculture techniques. Most farmer organisations were aware of dangers of agro-chemicals, were recycling waste into manure and some farmer organisation business plans included environmental protection, environment management practices and the organisation's response to the surrounding nature. Rikolto Uganda also developed a strategy with district technical teams to promote

adoption of environmental sustainability tools by using the 6 themes of soil and water conservation, resource management, climate change, and biodiversity and landscape management. Through facilitating organic and PGS certification processes for some fresh fruits and vegetable farmer organisations, Rikolto Uganda implemented actions that promote sustainability.

*Gender equity and inclusion of youth:* Rikolto Uganda clearly mentions the importance of gender equity and youth inclusion in its strategy and strives for participation of these categories of beneficiaries in its activities with partners. Respondents also mentioned that there are no heterogeneous effects of Rikolto Uganda's work because Rikolto Uganda does not discriminate. Serious weaknesses, however, remain regarding real empowerment of these vulnerable categories. Women and youth percentages among beneficiaries is low mainly due to limited access to land, which Rikolto Uganda is not addressing. Specifically on gender, none of the partners offer full maternity rights in terms of pay for their female workers and, women are more involved in seasonal jobs, itself a reflection of gender pay gap.

*Upscaling efforts:* During the program period, the foundation for future upscaling has been laid by Rikolto Uganda. For instance, inclusion of the sustainable rice production approach in the national rice strategy implies that other stakeholders who will invest in the rice sub-sector in Uganda in future, will apply the method but this achievement was ad hoc. Much as Rikolto Uganda had elaborated pathways of change to achieve upscaling, there were several hindrances: no clear indicators to track upscaling work; limited budget; limited capacity to facilitate multi-stakeholder processes which are important for upscaling and; lack of a specific direct partner to promote upscaling.

*Monitoring and evaluation approach:* Over the program period 2017-2021, Rikolto Uganda realized the importance of monitoring and evaluation as an active learning tool for program staff, and will follow this approach in the new program. Several challenges experienced with monitoring and evaluation included: the complexity of the system, many tools that overlapped, some tools collected data which was not relevant for measuring progress, some tools were not adapted to the local context and data collected did not serve decision making purposes.

### *Recommendations at farmer level*

1. **Strengthen livelihood diversification:** Considering the low adaptive capacity of farmers when faced with shocks, Rikolto Uganda could either invest in supporting diversification of livelihood towards selected alternative livelihood sources when shocks occur or work in collaboration with other organisations that specialise in such support for smallholder farmers, for example IFAD.
2. **Strengthen farmer capacity in economic calculations,** particularly concerning production cost calculations and profitability of crop and cropping operations. This should also contribute to enhance their price negotiation capacities.
3. **Understand what limits women involvement in the rice chain then choose appropriate strategy:** From the beginning of the program, Rikolto Uganda had a good analysis of gender issues in the rice value chain and concluded that involvement of women in the chain was very low. Considering the patriarchal culture in the rice producing districts where a cash crop which occupies land perennially, belongs to the man, the root problem becomes access to and control over land. If this is the problem, the strategy ought to be different.
4. **Empower women to access land or seek alternatives:** Rikolto Uganda could decide to limit its interventions to supporting women participation in the provision of services to the rice sub-sector, from which they benefit directly. The other option could be to support families to increase

investments in land hire on condition that women's access to land for production, as well as control over the benefits from such plots by women is guaranteed. This could be a temporary measure combined with a medium to long term plan for supporting women out of rice production and into other livelihood alternatives which do not require land. Rikolto should always engage men in choosing the appropriate strategy.

### *Recommendations at farmer organisation level*

1. **Farmer organisation's business support:** For family farmers, the hope to build profitable and sustainable business engagements lies in collective action through strong farmer organisations. It will be important to develop a trajectory for support to each farmer organisation, towards sustainable business units. This should be based on a good analysis of specific challenges being faced in selling to specific markets, in linkage with a private buyer. Starting point should therefore, be the end market which could be supplied by the farmer organisation.
2. FOs should collectively work on **strengthening market information systems**.
3. **Child labour:** Rikolto Uganda could support farmer organisations in defining child labour issues in their context for the selected enterprises, then support them to elaborate specific farmer organisation policies and guidelines for prevention and mitigation of child labour.
4. **Gender equity and inclusion of youth:** It will be critical for Rikolto Uganda to engage farmer organisations in an in-depth and systematic gender analysis that covers participation, division of labour, decision making, then ownership and control over resources and benefits by women and youth. This will help farmer organisations to come up with effective empowerment strategies rooted in their own context, and move away from vague and contradictory messages on women and youth empowerment.
5. **Trust:** To address the problem of business development service providers making false promises to farmers, Rikolto Uganda and partners could develop a clear service quality and delivery monitoring mechanism that enables prompt trouble shooting and quick response to problems with business development service providers.
6. **Contextualization:** To improve results from its business development service policy implementation, Rikolto Uganda could engage farmer organisations in analysing the applicability of the principles they have reservations on, then agreeing on adjustments to be made in their contexts, in order to realise the intended results.
7. **Price and quality:** Grading produce is crucial in structuring markets because it transmits quality and price signals, as well as benefits which motivate farmers to improve quality. In addition to the dialogue within agribusiness cluster already initiated by Rikolto Uganda to find ways to lower the risks to both farmers and buyers, more investment could be made under the farmer organisation strengthening as business organisations, in order to support farmer organisations to grade produce in a decentralised manner, so that price negotiation is done on already graded produce.
8. **Technical assistance:** Considering the persistent problem of farmer organisation capacity to do business, the impact investment approach needs a stronger technical assistance package with farmer organisation strengthening at its core, especially on governance and management but geared towards specific market objectives. Rikolto Uganda, through its participation in the Agribusiness Market Ecosystem Alliance, should engage other interested stakeholders to search for a workable strategy to solve this problem. Previous programs had focused too heavily on farmer organisation strengthening, yet in agribusiness, the cluster approach would be more effective.
9. **Sustainable business:** Concerning weaknesses of farmer organisations to engage in sustainable business, Rikolto Uganda and indeed globally, needs to address the issues of lack of working capital

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and diversification. This should be underpinned by an in-depth analysis of the selected sub-sectors and context situation, especially cost implications for farmer organisations to sell in bulk and business ecosystem dynamics including options of buying down risk.

10. **Rice price:** Considering the declining rice prices in Uganda and the common knowledge at all levels of the rice value chain that importation of rice from Tanzania is rendering rice production in Uganda unprofitable, Rikolto Uganda might need to pose the strategic question of whether it should continue supporting rice in Uganda. This will be in line with the sentiments of the African Union that is discussing the possibility of zoning sub-Saharan African countries into agro-ecological zones, with comparative and competitive advantages of producing key food crops.

### *Recommendations at institutional level*

1. **Multi-stakeholder initiatives:** Considering the fact that MSI results are only emerging, it is necessary to **consider consolidating MSI over time**. In particular, participation of public authorities should be strengthened.
2. In synergy with its developing, Food Smart Cities work, Rikolto should **support MSI in promoting territorial food systems which would develop localised agricultural exchanges with public institutions** such as schools or administrations, or possibly also with private supermarkets, so as to shorten value chains and develop economic activity and food autonomy at a local level. Such work should be associated with **diversification of producer activities, both in terms of variety of crop and crop transformation**. This should seek both to add value and increase resilience at producer and FO level, as well as increase food security at territorial level. Secure contracts would also help producers and transformers to secure capital to invest in improved practices and equipment and support activity diversification.
3. In order to boost the functioning of the multi-stakeholder initiatives and increase chances of implementing the recommendations by various stakeholders, Rikolto Uganda might consider looking for a convenor with clout and from the public sector, for instance a relevant government ministry or University. This would encourage more commitment and support from government.
4. **Dialogue:** Considering the magnitude of the problem in the rice sector, Rikolto Uganda could initiate dialogue on the challenges within the rice platform, in order to come up with stakeholder proposed solutions for the sub-sector. Rice policy work could support tax policy proposals supporting Ugandan rice competitiveness with respect to Tanzanian rice.
5. **Government policy and Rikolto program:** Now that the government of Uganda has a wetlands protection policy, which is an opportunity for farmers engaged in sustainable rice production, Rikolto Uganda could make an analysis linking this policy opportunity with its program which is already promoting sustainable rice production with smallholder rice farmers, in order to solicit government commitment to support the sector. Rikolto Uganda could highlight the possibility of government hitting two birds with one stone by protecting wetlands as it eradicates poverty among smallholder farmers.

### *Recommendations on upscaling, monitoring and evaluation*

1. **Upscaling:** In order to promote upscaling, it is important that Rikolto Uganda is more systematic in its approach. **Rikolto should follow, capitalise and systematise the pathways of change and logics it follows to develop new business models and achieve change**. In particular, so as to promote upscaling, it is important that Rikolto Uganda elaborates clear indicators to monitor progress in this area; and select a few partners with whom to collaborate in upscaling Rikolto Uganda interventions.

The *ad hoc* pathways for upscaling, wherever they emerge should also be structured, monitored and integrated in the systematic upscaling work.

2. **Monitoring and evaluation:** Although monitoring and evaluation is considered part of the skill set of program managers and advisers, a good starting point in empowering them to take up this responsibility could be an internal refresher training. Such training could cover contemporary monitoring and evaluation concepts and tools used by Rikolto Uganda, as well as the purpose for collecting specific data, practical use of the data collected and how to effectively convert data, using well-grounded analysis and up to-date analytical tools, into usable information at various levels. Implementation of effective monitoring and evaluation by managers and advisers should be enabled by budgets for executing the work but also for sourcing support for simple tasks such as data collection.

M&E processes suggested by Rikolto headquarters should be adapted to local contexts in a participative way with the involvement of all local teams.

## 1. Introduction

**Rikolto** is an international NGO with more than 40 years of experience in partnering with farmer organisations (FOs) and food chain stakeholders. **Rikolto’s mission is to enable sustainable incomes for farmers and nutritious, affordable food for everyone.** Rikolto wants to reach this goal by building bridges between smallholder farmers, FOs, companies, authorities, and other actors across rural and urban areas. Building on their experience in creating **inclusive business relationships**, Rikolto works with diverse partners to strengthen selected commodity sectors and to address the broader food system challenges of cities. Rikolto puts **strong emphasis on gender and youth empowerment** and makes concerted efforts to reduce environmental damage, address **climate change** impacts, and enhance food system **sustainability and resilience** in facing shocks and crises.

**Rikolto runs programmes in 17 countries worldwide through seven regional offices**, supported by a global support team. Out of these 17 countries, 13 are part of the 2017-2021 DGD-funded programme: Belgium, Burkina Faso, Congo, Ecuador, Honduras, Indonesia, Mali, Nicaragua, Peru, Senegal, Tanzania, Uganda, and Vietnam. Their global **Rice, Cocoa, Coffee and Food Smart City (FSC) programmes**, seek change in three key food system domains: **sustainable production, inclusive markets, and enabling environments**. In Uganda, the program is entitled “**Creating shared value for all actors in grains and horticulture value chains**” and focuses on rice and horticulture, specifically the Fresh Fruit and Vegetable (FFV) sub-sector, as the main component of the FSC program.

**Figure 1: Overview of Rikolto programmes**



Rikolto Uganda’s Theory of Change describes its 2017-2021 objectives and pathways of change (Figure 2). Within the food system, Rikolto strives to bring about change in the following three areas:

1. Sustainable food production and consumption
2. A fair share of benefits of trading relationships for all
3. The provision of healthy food

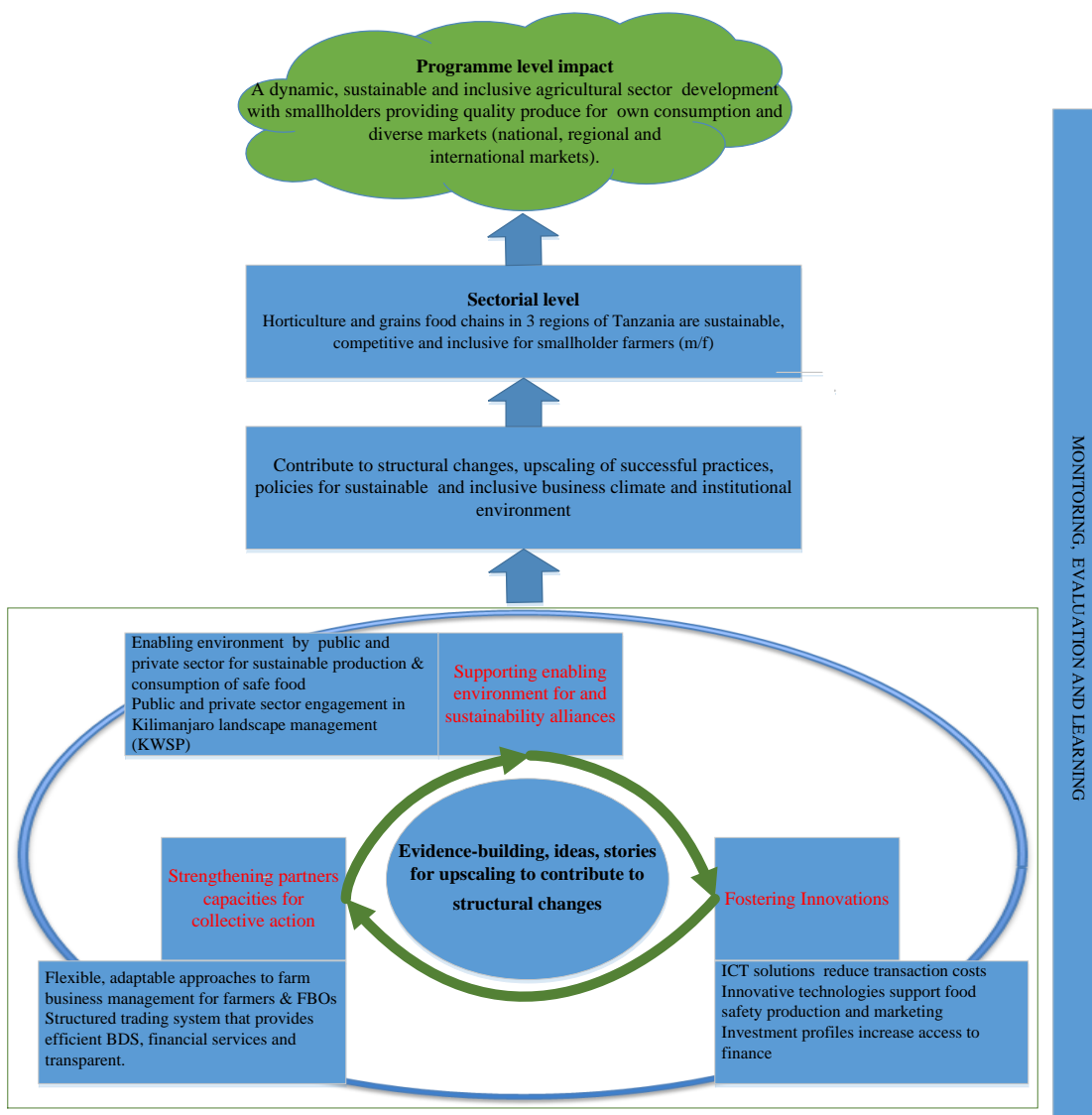
To bring about the above-mentioned transformational changes in the food system, Rikolto Uganda focuses its work on changing the existing business climate, the farming sector and the institutional environment. The goal is to establish a **business climate** where sustainable and inclusive business models become mainstream practice. The **farming sector** aspired for should build experience and knowledge on how

smallholder farmers can position themselves as credible suppliers of formal and informal markets. This can include organising themselves in strong FOs that are effective representatives of their members and trustworthy business partners. The **institutional environments** should enable smallholder farmers to be competitive and foster sustainable food chains from production to consumption.

Rikolto Uganda concentrates its efforts and resources on **three main pathways of change**:

1. **Strengthening the capacities** of its partners (FOs) for collective action.
2. **Supporting the development of an enabling environment** for a sustainable food system
3. **Fostering innovation** for an inclusive and sustainable food system.

**Figure 2: Theory of Change for Rikolto Uganda**



## 1.1 Evaluation Objectives and Questions

This end line evaluation aims at measuring Rikolto Uganda's impact on i) the livelihoods of farmers, ii) the business and organizational capacities of FOs, and iii) the institutional environment.

This Uganda country report combines the findings of the internal and external assessments, giving an overview of the country programmes' impact. The findings are answering the retrospective Evaluation Questions (EQ), as well as three Covid-19 specific questions reported in this section.

### a) Farmer Level:

EQ1. Have Rikolto's interventions contributed to increased resilience and improved livelihoods of farming households? Are there heterogeneous effects?

### b) Farmer Organisation Level:

EQ3a. What has been Rikolto's role in strengthening FOs and making them strong business organizations for their members?

EQ3b. What added value does the FO demonstrate as a collective action mechanism for producers?

EQ4a. Has Rikolto succeeded in facilitating business relations between FOs and private buyers?

EQ4b. Are these business relations economically profitable, socially inclusive, and environmentally sustainable?

### c) Institutional Level:

EQ5a. Has Rikolto succeeded in setting up and/or strengthening multi stakeholder initiatives (MSI)?

EQ5b. Have these MSI succeeded in promoting sustainable food systems?

EQ6. How is the evidence generated by Rikolto's pilot interventions used to influence policy decisions at regional/national/local or sector level?

### d) Non-farmer level:

EQ2a. What are the spill over effects of Rikolto's policy work beyond their direct beneficiaries?

EQ2b. Which **impact** did Covid-19 responses have on the target groups?

EQ2c. To which extent has Rikolto's response to the COVID-19 outbreak left a more resilient food system in place, able to respond more swiftly to a next systemic crisis?

EQ2d. Other questions from review of Rikolto Uganda **Farmer Survey (FS) analysis report (FSAP)** regarding: Plausible explanations for:

- The decrease in income from 2019 to 2021.
- The large share of income generated through the FO in 2017 and 2021 but much smaller in 2019.
- While commercialisation of FC increased, average sales, total profit and profit margins all declined.
- Sustainability indices increased greatly from 0.86 to 1.61 but below Rikolto target of 2.

## 2. Evaluation Methodology

To optimize the resources available, the evaluation was composed of an external assessment conducted by ADE with the support of a Local Team (LT), and an internal assessment conducted by Rikolto Regional Team (RT), under the supervision of the LT. The external assessment focused on farmer and FO levels related to the rice program, while the internal assessment focused on the FO and institutional levels of the Fresh Fruit and Vegetable (FFV) / the Food Smart City (FSC) program. The Rikolto Uganda end line evaluation was conducted in a participatory, professional and ethical manner, with sensitivity to issues of rights, gender and culture of all the stakeholders. Anonymity and confidentiality of individual informants was protected to the extent required by laws of Uganda. ADE and RT used a participatory mixed methods non-counterfactual design that combined both the quantitative and qualitative approaches.

### 2.1 Quantitative evaluation

For the quantitative approach ADE analysed the Farmer Survey (FS) data which has been collected by Rikolto Uganda at baseline (2017), midterm (2019) and end line (2021). For the **rice program**, the different survey waves comprised 222 farmers in 2017, 338 in 2019, and 230 in 2021, resulting into an unbalanced dataset from a full sample of 790 farmers. The sample was composed of farmers producing different commodities as main crops, such as rice, banana, pulses, maize, and FFV. Among the respondents, farmers producing rice as main crop more than doubled from 59 in 2017, through 64 in 2019, to 122 in 2021, making a total of 245 rice farmers, were sampled from the districts of Butaleja and Bulambuli.

**FFV program:** The different survey waves of FFV farmers consisted of 444 farmers in 2017, 338 in 2019, and 229 in 2021, resulting in an unbalanced dataset from a full sample of 789 farmers. The overall sample is composed of farmers producing different commodities as main crops, such as rice, pulses, maize, and FFV. Among the respondents, farmers producing FFV and banana as main crop increased over the years, from 39 in 2017 to 108 in 2021, making a total of 222, sampled from Kapchorwa, Manafwa, Tororo and Kayunga districts.

An assessment of change in outcome variables was determined based on comparison of aggregate baseline (2017), Mid Term Review (MTR) in 2019 and end line (2021) values of various indicators. An outcome variable is the observable dependent variable which is measured by changes in independent variables. In this case, income is an outcome variable dependent on production, and price, among others.

Quantitative data analysis was conducted using STATA. Frequencies, proportions/percentages, means and totals were used to summarize the data into specific indicators. Statistical analyses were mainly exploratory in order to understand the characteristics of the beneficiary farmers targeted by Rikolto Uganda. In addition, resilience indices were constructed from available data. The reference or base values for comparison were aggregate estimates of program outcome indicators drawn from the program baseline, mid-term review and end-line data. Results were disaggregated by age, sex, region, among others.

The results of the FS analysis report a correlation and not a causality since there is no control group in Uganda. It is likely that unobserved factors apart from Rikolto Uganda's interventions (e.g., COVID-19, government policies, climatic events, etc.) affected the variables of interest. Therefore, qualitative information collected by the LT has been used to estimate the impact of Rikolto Uganda's program. Furthermore, the attrition rate was high as only a relatively small sample of farmers (11.5%) participated in both the baseline and end line surveys. While Rikolto Uganda selected new producers in 2019 and 2021 with similar characteristics to the 2017 producers (e.g., age, gender, education, etc.) to

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limit attrition bias, this limitation should be taken into account when interpreting the results, especially when comparing indicator trends between 2017-2019 and 2019-2021.

The rest of this section describes the methodology for additional qualitative data collection conducted in Uganda.

## 2.2 Qualitative evaluation

Primary and secondary qualitative data were collected through participatory approaches, notably Focus Group Discussions (FGDs), summarised in Table 1 and detailed in annex 1, and review of project documents listed in Table 2. This allowed for triangulation of information gathered and ensured impartiality. The qualitative component facilitated concrete, contextual and in-depth understanding of the contribution of Rikolto Uganda's interventions to improve household resilience, livelihood outcomes and strengthen FOs, as well as spill over effects and impact of Covid-19 on the programme.

### Sampling frame, design and sample size for qualitative data collection

A preliminary review of Rikolto Uganda program's documents and RT's knowledge of the program guided the identification of program stakeholders and the definition of the sampling frame. The target population sampling frame included: individual farmers drawn from the Rural Producer Organisations (RPOs) within Area Cooperative Enterprises (ACEs) and blocks within irrigation schemes; FO leaders at board and sub-committee levels and; Non-FO members. For the rice program the Non-FO members were Rikolto Uganda program staff. The sampling units were selected purposively, focusing on rice and FFV farmer groups from the following partner organisations: **Rice** - Doho Irrigation Farmers' Cooperative Society (DIFACOS), Manafwa Basin Rice Farmers' Cooperative Society (MBRFC), Taabu ACE and Bunambutye ACE; **FFV / FSC** - Kangulumira Horticulture and Vanilla farmers' cooperative society (Kangulumira) in Kayunga district, Kwapa Farmers' Cooperative Society (Kwapa) in Tororo district, Sabinu Agro Commodity Farmers' Cooperative Society (Sabinu) in Kapchorwa district, Mbale City Council (for Mbale City) and the Kampala City Council Authority (KCCA for Kampala city).

### Sampling strategy and data collection methods and tools

Three categories of respondents were interviewed: i) Rice FO members (farmers) not in FO leadership positions - 24 farmers in 2 FGDs per FO per day; ii) FO leaders - 6 leaders in 1 FGD per FO per day; iii) RT program staff interviewed in two meetings. Farmers who were not in leadership positions were over-sampled, to allow for replacement. Overall, 288 farmers, 72 farmer leaders and 3 RT members were interviewed, making a final sample size of 363 for the rice program. Concerning FFV the qualitative data collection was structured as follows: i) FFV FO members (farmers) not in FO leadership positions - 15 farmers in 1 FGD per FO per day; ii) FO leaders - 9 leaders in 1 FGD per FO per day; iii) Farmers who are non-FO members - 15 farmers in 1 FGD per FO per day. Overall, 135 farmers, 27 farmer leaders and 135 Farmers who are non-FO members were interviewed, making a final sample size of 307 for the FSC program. All interviews were conducted face-to-face, by trained enumerators. Telephone contact was made with a few farmers to verify unclear data. The LT and RT allocated four days for qualitative data collection.

The semi-structured interview guides which were prepared by the LT based on the evaluation questions listed on page 7 were used for the FGDs, while the documents reviewed, guided secondary data collection. Data collected using these two tools complemented the FS data in order to provide answers to the evaluation questions.

**Table 1: Qualitative data collection methods, tools, target respondents/sources**

| Data collection methods         | Data collection tools | Target respondents/ sources   | Sample sizes achieved   |
|---------------------------------|-----------------------|---|---|
| <b>1. Document Review</b>       | A document checklist  | <ul style="list-style-type: none"> <li>DGD funded rice program documents</li> </ul>                           | <ul style="list-style-type: none"> <li>21 Program, policy and strategy documents</li> </ul>   |
| <b>2. FGD – FFV/FSC program</b> | FGD guide             | <ul style="list-style-type: none"> <li>FO members</li> <li>FO leaders</li> <li>Non-FO members</li> </ul>      | <ul style="list-style-type: none"> <li>9 FGDs = 135 farmers</li> <li>3 FGDs = 27 FO leaders</li> <li>9 FGD = 135 farmers</li> </ul>       |
| <b>3. FGD – rice program</b>    | FGD guide             | <ul style="list-style-type: none"> <li>FO members</li> <li>FO leaders</li> <li>Non-FO members (RT)</li> </ul> | <ul style="list-style-type: none"> <li>24 FGDs = 288 farmers</li> <li>12 FGDs = 72 FO leaders</li> <li>1 FGD = 3 program staff</li> </ul> |

### Qualitative data quality control and field work management

Eight persons for the rice program and six persons for the FFV program, were pre-selected from Rikolto Uganda's team of enumerators, then invited for a one day interactive enumerator training at Rikolto Uganda Offices. They were deployed to the program areas where they were familiar with local languages spoken. Topics covered included: the DGD rice program overview, assessment objectives, qualitative interviewing skills, research ethics, questionnaire administration, key technical terminologies, informed consent administration, data quality and integrity, team work, Covid-19 Standard Operating Procedures given by the Ministry of Health, among others.

Data collection interview guides were printed in English, but administered in local languages and responses recorded in English. In each program area, LT and RT combined efforts to supervise the enumerators and ensure that the enumerators adhered to the assessment protocol. In order to ensure high response rate and successful tracing of farmers and FO leaders during the data collection, the LT worked with RT and leaders and/or staff of the FO, to mobilise respondents. Spot checks were done by the LT and RT, in order to ensure adherence to the assessment protocol and verify data quality. In some cases, respondents were contacted on telephone to clarify some responses. The active phone contacts for each sampled and interviewed respondent were captured for this purpose. The re-interviews were conducted by RT and LT.

### Data analyses tools and approaches

For analysis of qualitative data, audio recordings and hand written questionnaires were transcribed into MS Excel and analysed manually by reading respondents' texts line-by-line and conducting first level analysis of data from various FGDs, question by question. Information from first level analysis was then synthesised in response to the evaluation questions.

### Logistical limitations

Several logistical hitches were experienced such as late mobilization of farmers, causing delays in starting and completing the qualitative data collection. In addition, one of the trained enumerators performed poorly and a replacement was needed. Data analysis was also delayed because of late submission of one set of questionnaires by one enumerator. This issue was addressed by extending the report writing period.



This evaluation is extensively **based on available information** provided by Rikolto (Table 2).

**Table 2: Available documentation and data**

|   |
|---|
| <p><b>Intervention Framework – at country-cluster level</b></p> <ul style="list-style-type: none"> <li>• The Intervention Framework describes Rikolto’s Theory of Change, interventions and related outcomes, as well as annual monitoring data for a country-cluster combination</li> <li>• Annual Reports to DGD based on the Intervention Framework (IF) - including a “Performance Scoring Card” assessing Rikolto’s performance along seven criteria and a related Lessons<sup>1</sup></li> </ul>  |
| <p><b>Midterm Review (MTR) – at country level</b></p> <ul style="list-style-type: none"> <li>• The MTR assesses the 2017-2021 DGD-programme up to 2019 for Uganda based on available monitoring and FS data</li> </ul>  |
| <p><b>Farmer Survey (FS) data – at farmer level</b></p> <ul style="list-style-type: none"> <li>• The FS has been elaborated by Rikolto to collect data at farmer level at baseline (2017), mid-term (2019) and end-line (2021)</li> <li>• FS data descriptive results are provided to the LT by the CT when available<sup>2</sup></li> </ul>  |
| <p><b>SCOPEInsight Assessments &amp; Methodology – at the FO level</b></p> <ul style="list-style-type: none"> <li>• <i>SCOPEInsight</i> assessments are being carried out every 18-24 months to measure FOs’ business and organisational capacities</li> <li>• SCOPE Basic reports are designed for nascent and/or emerging organizations and the SCOPE Pro for more advanced and matured ones</li> <li>• The <i>SCOPEInsight Methodology</i> and <i>Score Interpretation Guideline</i> are provided to the LT for additional guidance</li> </ul> |
| <p><b>Rikolto’s general framework for BDS – at the global level</b></p> <ul style="list-style-type: none"> <li>• This document provides Rikolto’s objectives, principles, and guidelines on how to facilitate change in food systems</li> <li>• It aims to prevent Rikolto’s interventions from undermining the local Business Development Services (BDS) sector and to ensure sustainable interventions with a scalable impact</li> </ul>  |
| <p><b>LINK Assessments &amp; Methodology – at the business relationship level</b></p> <ul style="list-style-type: none"> <li>• The LINK assessments make use of the “New Business Model Principles” to assess the level of inclusiveness of business relationships</li> <li>• An <i>Assessment Guide</i> is provided to the LT to facilitate interpretation</li> </ul>  |
| <p><b>COVID-19 documentation – at the country level</b></p> <ul style="list-style-type: none"> <li>• The COVID-19 documentation comprises a summary of Rikolto’s COVID-19 response activities, as well as monitoring data that captures the implementation progress and results</li> </ul>  |

<sup>1</sup> The Annual Reports to DGD are especially relevant for Tanzania and Uganda.

<sup>2</sup> The CT is responsible for performing the FS data analysis for each country-cluster combination of interest, as well as providing the descriptive results and detailed guidance to the LT to facilitate interpretation.

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### 3. Programme Overview Uganda

In Uganda, agriculture provides 70% of employment, to mostly smallholder farmers with small plots between 0.25 - 2 hectares on average, using mostly family labour. It accounts for approximately 50% of all exports and one-quarter of GDP (World Bank, 2018). It is therefore, a critical sector for pursuing inclusive growth and development. In the selected sub-sectors of rice and FFV, large scale production is mostly done in government facilitated rice schemes like Doho irrigation and on privately owned cut flower farms, respectively (Rikolto Uganda, 2017).

**Challenges in rice and fresh fruit and vegetable sub-sectors:** Rikolto Uganda identified several challenges in the rice and FFV sectors including: limited capital, the use of rudimentary technology, climate related issues, high cost of electricity, and for the case of rice, ad hoc non-tariff barriers within the East African Community (EAC). Moving downstream in agricultural value chains in Uganda, activities are dominated by Micro, Small and Medium Enterprises (MSMEs), engaged in transportation, post-harvest handling, processing, bulking and trading. The MSMEs are poorly organised and un-coordinated, leaving the market system largely unstructured and with very low levels of trust among actors. The flow of market information on product quality, quantity, grades and consistency, are mostly dysfunctional and/or distorted by brokers. These challenges exert a downward pressure on farm-gate prices and act as dis-incentives for farmers to invest in quality inputs and better-quality products. It leaves farmers without Quality Management Systems (QMS) since they are unaware of the market demands. Smallholder farmers are also faced with climate related challenges, especially droughts, floods, pests and diseases. Yet in the globalised and liberalised markets of today, there is a growing awareness of food safety and environmental standards which has increased the demand for consumption and production of safe and quality foods (Rikolto Uganda, 2017).

**Intervention opportunities:** Rikolto Uganda highlighted some opportunities presented by the above challenges, including: room to improve smallholder Return on Investment (ROI) through the use of productivity enhancing technology, collective marketing, better post-harvest handling, better linkages and collaboration with the private sector, as well as various opportunities to influence public and private policy at various levels. From the above challenges and opportunities, Rikolto Uganda developed a Theory of Change, stating its conviction that fair return shall accrue to smallholder farmers when **trading systems** provide services that support their growth and development and, **market systems** develop approaches which incentivize production of safe, and sustainable food. This, even though capacity for collective action among farmers remain a big challenge (Rikolto Uganda, 2017).

**DGD funded program:** The DGD funded program of 2017-2021, aimed to contribute to the development of a dynamic, sustainable and inclusive grains and horticulture sub-sectors in Uganda, with family farmers providing quality products for own consumption and diverse markets. The specific objective of the program was to develop rice and horticulture food chains in Uganda that are sustainable and inclusive for smallholder farmers, both male and female. Key intervention strategies included: i) Piloting structured trading systems in the rice and horticulture trading systems in cities, that provide efficient services to the benefit of small holder farmers, ii) Developing flexible, adaptable models for farmers' business management that stimulate the inclusiveness of smallholders in the rice, horticulture and food systems in cities and, iii) Building market systems for rice and horticulture products, which incentivises sustainable production and consumption of safe food. The Rikolto Uganda program was implemented in partnership with farmers, their FOs, private rice and horticulture chain actors, service providers, as well as policy

makers and food system stakeholders. Within the horticulture sector, Rikolto Uganda zeroed in on the FFVs as an integral part of the FSC program.

#### 4. Impact at Farmer Level

This section evaluates the overall impact of Rikolto Uganda's program at farmer level, focusing on the rice cluster. It assesses Rikolto Uganda's impact on farmers' resilience and livelihood, and explore heterogeneous effects.

##### EQ1. Have Rikolto's interventions contributed to increased resilience and improved livelihoods of farming households?

###### *Sample characteristics of rice producing farmers*

In this section, we present a summary of the descriptive statistics of the household characteristics, highlighting contextual differences and similarities, as well as limitations that may affect reliability of data. We compare, as much as possible, the baseline situation in 2017 with the midterm and end line situations in 2019 and 2021, respectively.

**Table 3: A summary of relevant household characteristics for rice farmers**

| Characteristics                                     | 2017 | 2019 | 2021 |
|---|------|------|------|
| Sample size   | 59   | 64   | 121  |
| <b>Human capital</b>                                |      |      |      |
| Female  | 0.36 | 0.36 | 0.36 |
| Younger than 35 years                               | 0.17 | 0.22 | 0.19 |
| Number of household members                         | 5.61 | 8.03 | 7.34 |
| <b>Education</b>                                    |      |      |      |
| Education - No certificate/diploma                  | 0.34 | 0.17 | 0.39 |
| Education - Basic literacy                          | 0.36 | 0.31 | 0.37 |
| Education - Primary school certificate              | 0.24 | 0.20 | 0.08 |
| Education - Junior high school certificate          | 0.03 | 0.13 | 0.06 |
| Education - Senior high school certificate          | 0.03 | 0.17 | 0.07 |
| Education - Vocational training certificate/diploma | 0.00 | 0.00 | 0.02 |
| Education - University diploma (Bachelor)           | 0.00 | 0.02 | 0.01 |
| <b>Assets</b>                                       |      |      |      |
| Farmland (hectares)                                 | 1.6  | 1.87 | 1.14 |
| <b>Experience</b>                                   |      |      |      |
| Member of an FO                                     | 1.00 | 1.00 | 1.00 |
| Years of membership in the FO                       | 4.73 | 3.48 | 6.56 |

**Source:** Rikolto Uganda Rice Farmer Survey data analysis report by ADE

**Female farmers:** In all survey waves, we observe that 36% of the respondents are female farmers, with no significant differences in this number across the different survey periods. RT confirmed this percentage of women to be representative for the targeted rice farmers (Table 3). The main reason for this low percentage of female rice farmers is that few women have access to land for rice cultivation in the irrigation schemes. On the one hand, the culture of the Banyole does not allow women to inherit land, on the other hand, the cost of hiring land within the schemes is high. Yet, the limited capital that the women

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have access to in their Village Savings and Lending Association (VSLAs) cannot suffice for land hire. Furthermore, lack of capital prevents the women from hiring bigger plots of land from institutions like DIFACOS Savings and Credit Cooperative (SACCO).

**Young farmers:** Between 17% (2017) and 22% (2019) of the respondents are younger than 35 years (Table 3). This is way below the youth percentage at national level, which stands at 81% (UBOS, 2017). This low percentage of youth respondents among the beneficiaries is not surprising either, because it is common knowledge in the Ugandan context that the youth in agriculture, especially upstream value chain activities is rather low. The youth prefer to engage in economic activities with faster ROI. More importantly, most youth do not have land. There are no significant differences in age across the periods, implying that although many farmers only participated in one of the three surveys, their basic characteristics are similar.

**Other sample characteristics:** The sample has a rather low level of education, especially in 2017 and 2021. In 2017, most respondents have no diploma (34%), basic literacy (36%) or a primary school certificate (24%). In 2019, most respondents fall into one of those three categories, but more respondents have a senior (17%) or junior high school (13%) certificate. In 2021, most respondents have no diploma (39%) or a basic literacy (37%). We observe that overall, the levels of education were similar across periods and not statistically different. In 2021 however, fewer respondents had a primary school certificate compared to 2017 (Table 3).

Sampled farmers in 2021 had on average 1.7 more household members (7.3), compared to 2017 (5.6), significant at a 1% level (Table 3). In 2021, 60 farmers whose main crop is rice were added from Bulambuli whereas in 2017 and 2019, all farmers whose main crop was rice were from Butaleja. The average farmland owned per farmer is about 1.2 hectares across the three periods (Table 3). In 2019, farmers owned more farmland than in the other two periods (significant at 5% level). On average, more farmers were part of the FO for 1.8 years in 2021 than in 2017 (significant at 1% level).

*Survey data limitations:* Rikolto Uganda's farmer survey presents various limitations associated with the validity of its sampling strategy: i) The FS results report a correlation and not a causality since a control group was not foreseen in 2017, implying that other unobserved factors may have affected the variables of interest, ii) It is very likely that COVID-19 affected livelihood indicators therefore, comparing the trends of 2017-2019 with that of 2019-2021 may not be useful for interpreting the findings, iii) The attrition rate is high because only a relatively small sample of farmers (11.5%) participated in both the baseline and end line surveys, iv) The sample sizes are small and the number of farmers surveyed might not be sufficiently large to observe a change, v) Some questions of the survey have been changed, added, and dropped across the three waves. This limits the capacity to consider those variables over the three periods. While observations from the FS data have been used to supplement analysis for the report, conclusions could not be drawn from it. Information from analysis of qualitative data and LT/RT's knowledge of the context, have been critical, in deriving conclusions from this assessment.

*Contextual differences and similarities of the program area:* The rice program was implemented in two districts, Butaleja and Bulambuli. Although the two districts show some intrinsic differences, there are similarities both in context and in the way agriculture is practiced.

Bulambuli district is part of the Mount Elgon region of Eastern Uganda. This district is relatively densely populated, at 229 people/Km<sup>2</sup>, same as the national average (UBOSa, 2017). Its topography and vegetation varies into three distinct types: (a) Lowland, between 1100-1350 metres above sea level

(m.a.s.l) and a vegetation of savannah grassland; (b) Upland, at 1800 m.a.s.l and vegetation of tropical rainforest and; (c) Mount Elgon, the highest point of 4,322 m.a.s.l, has an alpine mountain vegetation. The district is vulnerable to soil erosion and landslides (Akoyi, 2017), but it has a relatively higher soil fertility and experiences less frequent droughts than Butaleja. The district is generally cool, with annual mean temperature between 15°C and 25°C, and receives ample rainfall of 477.07mm on average, annually. The main cash crop in Bulambuli upland is coffee, although in the lowlands (Rikolto Uganda program area) maize has been the main crop. Coffee is followed by sunflower. Besides, farmers produce a wide range of food crops including, bananas, sweet potatoes, cassava, beans, and a wide range of fruits and vegetables, for food security. Rice, which has become an important crop, is a relatively new crop in the district.

Butaleja district is part of the greater Tororo district. The district is generally flat, low lying, with higher temperature and longer dry periods. Population density is rather high, at 374 people / Km<sup>2</sup>, way above the national average (UBOSb, 2017). Altitude is about 1064 m.a.s.l on average and temperature varies from 16°C to 32°C in the year, rarely going beyond 36°C. Vegetation is mostly savannah grassland, with several swamps and some forests. Land and vegetation degradation is high in the district due to high population pressure. The district receives relatively little rainfall, on average 302.3 mm annually. In Butaleja, unlike Bulambuli, rice is the major cash and food crop, with over 70% of the population involved in rice production, mostly in government established irrigation schemes. In addition, farmers produce a limited range of other food security crops, including, beans, maize and cassava.

Despite contextual differences, there are **several similarities**: Land degradation is evident in both districts, and soil fertility is generally low, despite the difference in population density and pressure, and the fact that Bulambuli lowland receives alluvial soils from the upland parts of the district. Both districts have two production (rainy) seasons in a year, March to May, then August to October. In-between are dry seasons which have become progressively longer with time. Agriculture is practiced by smallholder farmers, with limited application of inorganic agro-inputs and, mostly using rudimentary farm equipment like the hand hoe, ploughs, cutlass and slashers. For most farming activities, family labour is used except during peak periods of harvesting. A good proportion of the farmers are organised in groups for purposes of marketing and pooling resources.

### *Defining and building a resilience index*

The definition of resilience used in this report is the one provided by the Resilience Measurement Technical Working Group (RM-TWG), saying: following which Resilience is the “*Capacity that ensures **stressors and shocks** do not have long-lasting adverse development consequences*” (Constas, et al, 2014). This definition considers resilience as a set of capacities at different scales (households, communities, and systems), that emerges as a reaction to specific disturbances (shocks and stressors) that undermine the stability of a system, increasing its vulnerability. It considers resilience not as an end, but rather as an instrument to achieve the ultimate goal of limiting vulnerability and promoting long-term sustainability and improved well-being.

In operationalizing the definition, resilience indicators are re-grouped into absorptive, adaptive and transformative capacities, following Bené, et al. 2015 and the main RM-TWG resilience literature. Absorptive capacity is a household’s ability to absorb the impacts of shocks in the short-run. Adaptive capacity reflects the ability to respond to long-term social, economic, and environmental impacts of shocks through specific adaptation strategies. Transformative capacity refers to structural changes in the structure and function of the system caused when the adaptive capacities of the household, community, or ecosystem are overwhelmed by the magnitude of the shocks.

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To estimate resilience, ADE first estimated each resilience latent (i.e. unobserved) capacity by following a latent variable approach (Alinovi *et al.*, 2009) through factor analysis. Once the capacities had been estimated, ADE built the resilience index through a factor analysis of the estimated capacities. In general, the indicators considered for absorptive capacity were all indicators related to mitigation and preparedness strategies. ADE chose indicators associated with Good Agricultural Practices (GAP), including soil and water management, input use, among others, as proxies for the degree of preparedness and, indicators such as access to safety nets and coping abilities for mitigation capacities.

For adaptive capacity, ADE considered indicators associated with ability to use technology and innovation skills to overcome the shock, as long-term responses once the absorptive tools are exceeded by the shock. In this case, we considered indicators, such as education and training, in addition to diversification of livelihood, access to credit and land size, as proxies of farmers' ability to adapt to a multi-hazard environment. For the transformative capacity, ADE considered all indicators that enhance governance and enable conditions for resilience and transformation, for instance access to services, infrastructure and social inclusion. Unfortunately, the transformative capacity was not considered in the index because available data was only one indicator under this resilience capacity.

### *Relevant livelihood outcomes and related indicators*

**Income:** According to the FS, the *average annual total household income* increased sharply from 1619 USD in 2017 to 2823 USD in 2019, (significant at 1% level), before declining dramatically to 1602 USD in 2021 (significant at 10% level). The income decreased between baseline and end-line, but this difference is not significant. The main reason behind the increase in income in 2019 could be that surveyed households in 2019 households were, on average, richer and had more household members (attrition bias). Furthermore, the RT confirmed that an important factor behind the drastic decline in income from 2019 to 2021, is the lockdown due to the Covid-19 pandemic. Key end markets including schools and hotels were closed and large gatherings were not allowed. In addition, urban consumers who lost jobs, either lowered their food budget lines by consuming cheaper foods or retreated to their rural homes. Moreover, rice was not one of the foodstuffs which was purchased by government for distribution to poor urban households (RT-FGD).

Similarly, the *average annual income from the rice*, per household in USD, increased from about 1227 USD in 2017 to 1854 USD in 2019, but then decreased in 2021 to around 782 USD (significant at 5% level). As indicated by a high standard deviation (SD), some households earned a lot less and others a lot more, which is a big difference compared to the whole sample. The income was lowest in the end-line and not mid-term. Important to note that in 2021, the 60 farmers added from Bulambuli had a much higher average income of 1085 USD, while the others have an average income of 485 USD. From knowledge of the context, this income difference is not surprising because in Bulambuli district (part of Mount Elgon sub-region), household incomes are generally higher than in Butaleja (part of the greater Tororo), due to richer soils, more rainfall and a broader variety of other crops grown, which allows them to earn more from farming. In the Bulambuli lowlands, farmers earn more from other important crops, especially sunflower and vegetables.

While the income was just enough or even sufficient for 69% and 31%, of the respondents in 2019, respectively, the economic situation worsened in 2021 (FS). Majority for respondents (79%), reported that the situation was somewhat insufficient to fulfil the basic needs of the household. On average, *most of the income in 2021 is generated by the rice* (71%) and other crops (18%). Income derived from keeping livestock, other wage labour, small business, salaried jobs and rentals account for the income of few farmers.

**Farmland:** There are several explanations of the big difference in income. First, the sizes of the *households and farmland* which were significantly higher in 2019 than in 2017 and 2021. This may not be surprising because household sizes are quite large in the Mount Elgon region, with about 8.4 people on average and hence bigger family labour capacity for farming. In addition, households in Mt. Elgon have the tendency of acquiring pieces of land in different parts of the sub-county or district, with a typical household having up to four plots on average, cumulatively adding up to larger pieces of farmland per household than many other districts of the country (Akoyi and Maertens, 2017).

**Table 4: A summary of relevant livelihood outcomes for rice farmers**

| Outcome indicator                     | 2017 | 2019 | 2021 |
|---------------------------------------|------|------|------|
| Annual total household income (USD)   | 1619 | 2823 | 1602 |
| Average annual income from rice (USD) | 1227 | 1854 | 782  |
| Income by sales through FO (USD)      | 495  | 169  | 356  |
| Production (tons)                     | 1.89 | 2.79 | 2.92 |
| Productivity (tons/hectares)          | 3.75 | 3.36 | 4.61 |
| Average sales price of rice (USD/ton) | 644  | 650  | 290  |
| Total profit (USD)                    | 924  | 1078 | 365  |
| Profit margin                         | 837  | 459  | 105  |
|                                       |      |      |      |

**Source:** Rikolto Uganda Rice Farmer Survey data analysis report by ADE; **Notes:** N=244

**Production and productivity of rice:** Second, are the production and productivity trends (Table 4). On average, there was a significant and big increase in production and productivity. The commercialization also significantly increased between 2017 and 2019 as indicated by increased profit. There was however, a significant and strong decline in average sales price of rice (from 640 USD/ton in 2017 to 290 USD/ton in 2021), total profit (from 925 USD in 2017 to 365 USD in 2021) and the profit margin (from 835 USD in 2017 to 105 USD in 2021), indicated in Table 4. Third, both farmers and farmer leaders concurred that an important factor negatively affecting rice price and profit trends is importation of rice from Tanzania, deemed to be of better quality, and yet, cheaper than the Ugandan rice. Fourth, is the negative effect of the Covid-19 pandemic which led to closure of rice end markets.

*Sales via the farmer organisation:* There is a big variation among the farmers regarding their sales through the FO. Some sold less than 10% of their production and others sold all their production through the FO. While on average the absolute amount sold through the FO increased from 2017 to 2021, the share of production sold through FO remained at around 40% in 2021, after a big decline to 13% in 2019, significant at 1 % level (FS). The decline most probably emanated from closure of MBRFC, between 2018 and 2019. By 2020, MBRFC rehabilitation was complete and the scheme resumed production again (FG-RT).

In 2021, farmers were more sceptical about the FO help to increase their income compared to 2019. Indeed, most farmers said that the FO had little (25%) or considerable impact (64%) in 2019. In 2021 the responses were more mixed: about 25% answered that the FO had little or no contribution while about 20% reported that it had considerable or a main contribution. Around 10% said that the increase in sales was just because of the FO (FS).

*Relationship between FO membership and total income:* There is a positive correlation between the years of membership in an FO and total income. While income declined strongly, by 576 USD on average, from base- to end line, significant at 10 % level, the decline is less on average, for farmers who have been long

in an FO than those who joined more recently (FS). FGD with farmers across all rice partner organisations indicated that they, as members of FOs, learn a lot from Rikolto Uganda interventions, especially the linkage with BDS service providers. They reported to have received a broad range of trainings on GAP, Climate Agriculture (CSA) techniques, diversification, business and organisational development skills. All these training have had spill over effects on their ability to generate income and cope with its decline (FG-FGD, Taabu, Bunambutye).

According to FS, the relationship between FO membership and income seems to be through better prices. In 2021 however, most rice growers were *unsatisfied (77%) with the price* they received. Only 9% were neutral and 8% were satisfied. In line with FS, most respondents said that Covid did not negatively affect the prices received by the FO: 32% reported that they got a better price and 47% reported that they got the same price as usual. However, 21% of the farmers confirmed that the price decreased due to the pandemic (FS). The lockdown that followed meant that demand for rice, declined and pushed down prices, and yet, competition with Tanzanian rice is also a reality.

**Table 5: Services to which rice farmers had good access when needed**

| Types of services                         | 2021 |
|---|------|
| Seeds                                     | 0.56 |
| Fertiliser/pesticides                     | 0.52 |
| Irrigation                                | 0.49 |
| Production materials/tools                | 0.36 |
| Training / extension services             | 0.53 |
| Manual labour                             | 0.68 |
| Storage facilities                        | 0.40 |
| Processing facilities                     | 0.31 |
| Transportation                            | 0.22 |
| Market information (demand, prices, etc.) | 0.26 |
| Marketing services                        | 0.07 |
| Certification (Fair trade, organic, etc.) | 0.00 |
| Weather information                       | 0.14 |
| Credit or loan                            | 0.30 |
| None of the above                         | 0.05 |
| <b>Comparison with 2016</b>               |      |
| Access to services is better than in 2016 | 0.79 |
| Access to services is the same as in 2016 | 0.13 |
| Access to services is worse than in 2016  | 0.08 |

**Source:** Rikolto Uganda Rice Farmer Survey data analysis report by ADE; **Notes:** N = 121

*Access to and satisfaction with services:* While most farmers did not have sufficient access to services in 2021, most of them (79%) reported an improvement since 2016. The services that most farmers had access to in 2021 include manual labour (68%), seeds (56%) and training/extension services (53%). Among those services to which farmers had the least access were certification (0%), weather information (14%) and transportation (22%). Marketing services (69%) and weather information (73%) were the two services that farmers were most unsatisfied with. Moreover, most services that were reported not to have been available for farmers, were indeed needed, such as certification (51%) and marketing services (65%) (Table

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5). From personal communication, the RT highlighted that the uncertainties in the market, in times of a big external shock like Covid-19, could have caused the dissatisfaction with market information service provision. Regarding certification, other than Rikolto Uganda's work with partners to promote SRP which is a gradual process, other forms of certification in rice sector in Uganda is not evident (RT-FGD).

Farmers were particularly satisfied with the nature and quality of training/coaching/mentoring services, facilitated by Rikolto Uganda. Notably, training on GAP and linkage with agro-input dealers in order to procure good quality chemicals and seeds, contributed to higher productivity and production. These trainings skilled the farmers in proper use of inputs, following the cropping calendar, using protective gear whenever handling agro-chemicals and disposing off containers safely. They also affirmed that peer learning opportunities during exposure visits boosted their self-confidence. Training on group strengthening and governance increased trust among FO members, which in turn facilitated bulking and collective marketing of rice. Continuous sensitisation to promote women and youth involvement in rice production, has strengthened the capacity of these groups and reduced crime rate among the youth. Trainings on formation and management of SACCOs helped FO members to address cash needs in between seasons and to take care of social issues which arise (FG-FGDs and FO-FGDs).

*Sustainability:* Between 2017 and 2021, the sustainability indices (soil conservation, water management, resource management, climate change, bio-diversity, among other indices), more so the sustainable landscape management index, improved greatly. On average, it almost doubled, from 0.86 in 2017 to 1.61 in 2021, significant at 1% level, however, still below the Rikolto target of 2 (FS). Failure to reach the target could have been due to limited skills of the two groups engaged in 2020 (Bunambutye and Taabu), which had not received the GAP trainings yet. They were trained only in 2020 and they could not have applied the practices by the time of the FS (RT-FGD). In addition, the measurement of these indices by Rikolto became stricter.

*Food Security:* According to the FS, while food insecurity is prevalent for a big proportion of farmers, most of them (54%) reported an improvement compared to 2016. Yet, in 2021, more than half of the farmers said that they were worried about not having enough to eat, not eating healthy and nutritious food and/or only eating few types of food. About one third reported having to skip a meal and eating less than needed. Note also that for 17% of the respondents, the situation is worse now than prior to the start of the program (FS).

#### *Rikolto's impact on farmers' livelihood and resilience*

*Improvements in livelihood:* According to FGD with FO leaders, Rikolto Uganda facilitated trainings on GAP and mentorship to improve business skills have helped farmers to improve productivity of rice (Table 4) and other crops, to increase sales through their FOs. Sensitisation of farmers by Rikolto Uganda regarding the advantages of FOs and collective marketing has also helped to increase the participation of youth in rice production and this has drawn the youth away from crime (FO-FGD, Taabu & Bunambutye). Some FOs (Taabu) were able to acquire equipment e.g. tractors, milling machine, and threshers from other partners, as a result of the stronger FO capacity resulting from Rikolto Uganda interventions. Formation of SACCOs helped FOs to access funds from the Micro-finance Support Centre (MSC). In addition, it strengthened the social capital of farmers, enhancing their capacity to obtain funds from other sources, as well as the bond among members, leading to increased trust by farmers in their FOs. Moreover, it triggered an increasing number of women to join the FOs, further re-enforcing the business capacity of the FOs. Unfortunately, both total household and rice incomes did not increase due to a combination of negative effects of price and the Covid-19 pandemic. Although the factors mentioned above helped to improve farmers' livelihood

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and had a positive impact both on their capacity to absorb shocks, decline in incomes undermined farmers' adaptive capacity. The positive impact of non-income factors however, may not have been sufficient in facing the COVID-19 covariate shock during the program period and undermined improvements in livelihood indicators (Table 4, all FG-FGDs).

### *Impact on resilience*

**Shock exposure:** The comparison of 2017 (baseline) and 2019 (midterm) shock information coming from Rikolto Uganda's Farmer Survey shows that farmers' exposure to shocks increased in a significant way since the pre COVID-19 period and kept increasing after COVID-19. In 2021, farmers reported the heaviest non-Covid-19 shocks experienced in the last two years. It emerged that family illness (25.4%) or death (17.2%), as well as environmental shocks, such as climate variability (14.8%) and drought (10.7%) have been the most important shocks. All four partner organisations (Taabu, Bunambutye, DIFACOS and MBRFC) confirmed this ranking of the shocks and this increasing exposure. Particularly, they named key environmental shocks such as floods, hailstones and prolonged droughts. They also link high incidences of certain pests and diseases to climate change, for instance locusts which attacked all crops in 2017, birds and rats which have continuously infested their rice fields and yellowing rice disease, the Rice Yellow Mottle Virus (RYMV). In addition, land conflicts, attributed to demographic pressures, increased, especially since many young people are interested in growing rice. This has pushed the demand for land for rice production to levels higher than the supply, hence many conflicts. Domestic violence has also increased, due to high levels of poverty (all FO-FGDs).

**Coping strategies:** Income diversification has been the most adopted coping strategy to deal with shocks in the last two years. Table 6 indicates that over the project period, 33.6% of rice respondents used this strategy against non-COVID-19 shocks and 27.9% of them, against COVID-19 shocks. The strategy involved using savings (24.6%) and safety nets (18.03%), and the reduction of household expenses (16.4%). The latter strategy has been applied especially to face COVID-19 related shocks. About 50% of the households in the rice subsample have recovered from the most important shock to which they have been exposed in the last two years. 25% of these households either reached a better or the same level of well-being as before, while 34% of them either did not recover yet or recovered but their level of well-being is worse off (16%). Regarding COVID-19, 36% of the households in the restricted sample recovered.

**Table 6: Resilience coping capacities of rice farmers**

| Resilience coping strategies | Shocks       | COVID-19     |
|------------------------------|--------------|--------------|
| Aid                          | 0.82         | -            |
| Reduction of consumption     | 3.28         | 6.56         |
| Reduction of expenses        | 16.39        | <b>22.95</b> |
| Income diversification       | <b>33.61</b> | <b>27.87</b> |
| Migration                    | -            | -            |
| Use of savings               | <b>24.59</b> | <b>23.77</b> |
| Safety nets                  | <b>18.03</b> | 18.85        |
| Other                        | 3.28         | -            |
|                              |              |              |

**Source:** Rikolto Uganda Rice Farmer Survey data analysis report by ADE; **Notes:** N = 122; percentages of respondents reported

**Resilience capacities and resilience index:** In general, for the analysis of the *absorptive capacity*, ADE considered all indicators related to mitigation and preparedness strategies. In particular, indicators associated with GAP (soil and water management, and inputs use) were chosen by ADE, as proxies for the degree of preparedness, while others such as access to safety nets and coping abilities were chosen for mitigation capacities. For the *adaptive capacity*, ADE considers indicators associated with ability to use technology and innovation skills to overcome the shock as long-term responses, once the absorptive tools are exceeded by the shock. Indicators such as education and training, diversification of livelihood, access to credit and land size are considered therefore, as proxies of farmers' ability to adapt to a multi-hazard environment. For the transformative capacity, ADE considers all indicators that enhance governance and enable conditions for resilience and transformation, such as access to services, infrastructure and social inclusion. Unfortunately, since only one indicator was available under this resilience capacity, the transformative capacity was not considered in the index.

On average, farmers' **absorptive capacity** increased significantly at 1% level, between baseline (0.46 in 2017) and end line (0.95 in 2021). Farmers confirmed that the increase in absorptive capacity can be attributed to the activities in which farmers engaged during Rikolto Uganda's intervention. These activities included: Training in GAP (soil and water conservation, use of certified seeds, manuring, fertiliser and agro-chemical application, better land preparation by digging contours, making trenches for erosion control, planting in lines, proper drying methods, following the cropping calendar, recycling straws, etc); SRP techniques; use of disease and drought tolerant varieties of crops, safe spraying of crops; training in CSA techniques, business planning, record keeping, banking, bulking, marketing; formation and management of SACCOS; linkage to private sector service providers; study tours to similar projects. Farmers confirmed that by applying these practices, yields are higher, crops are healthier, sales increased and as result, their absorptive capacity increased in general (FG-FGD).

On average, farmers' **adaptive capacity** decreased significantly at 1% level, between baseline (0.48 in 2017) and mid-term review (0.33 in 2019), then stagnated in 2021. The decrease in the adaptive capacity generated a significant decrease in the overall **resilience index** between baseline (0.57) and end line (0.22). This result might signal that COVID-19 undermined the enhancements in the capacity of those households to adapt to a multi-hazards environment. The FGDs with farmers and leaders concurred that their adaptive capacity reduced due to several factors which affected their capacity to diversify the income, including high incidences of pests, diseases and climate related challenges, leading to reduced earnings. Since they generally have a weak capital base, poverty set in. The situation was worsened by Covid-19 pandemic which depressed sales further and affected their ability to pay back loans. This in turn affected their ability to borrow more for diversification, and yet their capital was already fixed in rice, hence a vicious cycle of poverty. Capital is a critical thing because of high cost of production for labour and agro-inputs. Most farmers also believe that they cannot earn from other crops as much as they earn from rice, so they stick to rice. Some of them highlighted limited knowledge for producing other crops and difficulty in finding genuine suppliers of good quality inputs, especially certified seed (all FG-FGD).

**Heterogeneous effects:** Extra resilience analysis for female farmers and those below 35 years old (the youth) categories in the full sample, indicate that both categories of farmers do not show significant differences in resilience capacities than male and older households. According to farmers, Rikolto Uganda activities offer equal opportunity to farmers of all categories. They reported however, that women

participate more actively in farming activities and the youth are faster in adopting new technology (all FG- and FO-FGDs).

**Elements enhancing absorptive and adaptive capacities:** FO leaders highlighted the following as key elements which help farmers to recover from or prepare to face shocks: ability to diversify to other alternative sources of income; skills necessary for diversification and; resources including capital and others, which enable investment in alternatives. The latter is crucial because when a shock hits, the limited capital of farmers are usually already tied up in non-remunerative enterprises which have been hit by that specific shock. Social capital, a well-developed network of social support that offers a fall back when a shock hits and SACCOs to which a farmer can turn to for some cash, are important elements. Absence of these elements weaken farmers' capacity to prepare for shocks, to face them, and impedes recovery (FO-FGD).

**Elements that Rikolto Uganda contributed to address:** Respondents confirmed that Rikolto Uganda addressed many of the above elements critical to prepare for, face and recover from shocks through: trainings on GAP and CSA techniques, importance of protective gears, exposure tours to other farmers which facilitates learning, linkage to partners and service providers, group strengthening trainings - especially related to bulking and collective marketing, systematic involvement of youth in rice production, pilot project implementation and following the cropping calendar, formation and management of SACCOs, among others (all FG- and FO-FGDs).

#### *Heterogeneous effects*

Rikolto Uganda interventions seem to have no heterogeneous effects. Extra *resilience analysis* run for female and younger farmers (less than 35 years old) in the full sample, indicated that both females and young farmers do not show significant differences in the values of resilience capacities and indices from males and older farmers. Regarding heterogeneous effects of Rikolto Uganda interventions on *livelihood indicators*, there are only few significant differences across sex or age group (FS). While females had a higher profit margin than males in 2017 (significant at 5% level), the data shows no difference in 2019 and 2021. In 2017, the only significant difference between the age groups is the average sales price. Regarding age, younger farmers had a higher average sales price of rice than older farmers in 2021, while it was lower in 2017, both, significant at 5% level. Farmers and their leaders further confirmed that Rikolto Uganda interventions do not have heterogeneous effects because it targets and offers opportunities to all farmers equally. They admitted however, that younger farmers are faster in adopting new technologies than older ones (FG- and FO-FGDs).

#### **EQ2. What are the spill over effects of Rikolto's policy work beyond their direct beneficiaries?**

##### *Potential spillover effects of Rikolto Uganda's policy work beyond their direct beneficiaries*

**Sustainable rice platform:** Rikolto interventions on policy work included participation in the **SRP platform**, with the aim of achieving the adoption of SRP by key stakeholders, both public and private. Rikolto and other global actors elaborated an SRP standard. In Uganda, this is new and Rikolto Uganda promoted its understanding and adoption at the national level by collecting data on evidence of implementation of the SRP standards by FOs, then presenting the results being achieved to key policy makers. As a result, the SRP standard was adopted by national policy makers and has been included in the 10 year national rice development strategy, which will soon be launched by government in 2022 (RT-FGD).

**International workshop agreement:** Another example of spillover effects is the model for strengthening FOs. Rikolto Uganda managed to convince the Ministry of Agriculture Animal Industry and Fisheries (MAAIF) and Ministry of Trade and Cooperatives (MTC) of the government of Uganda, of the benefits of the **International Workshop Agreement (IWA)** guidelines on professionalising FOs under the Agribusiness Market Ecosystem Alliance (AMEA), based on its Scope assessment experiences. Both ministries are committed to implement the guidelines. It is important to note that 80% of scope assessment indicators align with IWA guidelines, which form the first stage of the International Standards Organisation (ISO) standard.

#### *Potential indirect beneficiaries*

Other NGOs, for instance the International Rescue Committee (IRC), has shown interest in using the SRP methodology and committed itself to apply SRP standards with its partners, refugees in different parts of the country. Kilimo trust, another NGO, also picked up lessons from SRP implementation by Rikolto Uganda and is implementing it with its partners in Tanzania. Moreover, the mere fact that SRP is now in the national rice strategy implies that whoever will be investing in rice in Uganda, from public or private sector, will use the strategy as a reference point and will mostly probably implement the SRP standards. Regarding FO capacity strengthening, MAAIF and MTC have launched IWA guidelines, adapted to the Ugandan context. They have also included the standard in the Agricultural extension bill that will soon be enacted.

#### *Have these policy changes trickled down to non-beneficiary farmers?*

The RT, reported an estimated non-beneficiary farmers amounting to 47,013 in 2019, which declined to an estimated 33,192 in the post Covid-19 period (IF). This is particularly relevant for policy change at the level of companies that buy SRP rice from farmers and FOs. Policy changes have also trickled down to non-beneficiary farmers through other NGOs like the International Rescue Committee (IRC) and Kilimo Trust, and through public institutions like MAAIF and MTC (RT-FGD). Furthermore, policies in companies which buy rice under long term trade agreements with FOs, pay higher prices. As a result, the bulking of produce arising from the long-term trade agreements attracted non-cooperative producers who also benefited from the collective marketing mechanism. This practice also stimulated uptake of sustainable production methods by non-cooperative members (FO-FGD, Bunambutye).

## 5. Impact at Farmer Organisation Level

This section evaluates the overall impact of Rikolto Uganda's program at farmer organisation level for both rice and FFV /FSC clusters.

EQ3a. What has been Rikolto's role in strengthening FOs and making them strong business organizations for their members?

*Rikolto Uganda's contribution to turning FOs into self-sustaining businesses*

Throughout the program period, SCOPE basic has been used to assess all Rikolto Uganda partner FOs, implying that they are generally considered to be of low to medium level of professionalism.

**Table 7: A summary of SCOPE scores for dimensions assessed for rice farmer organisations**

| Dimension                          | 2017 | 2021 |
|------------------------------------|------|------|
| Internal management                | 3.1  | 3.2  |
| Financial management               | 3.2  | 3.2  |
| Sustainability                     | 2.5  | 2.8  |
| SCOPEInsight average overall score | 3.1  | 3.1  |

Source: Author's compilation from Rice FO SCOPE reports

**Table 8: A summary of SCOPE scores for dimensions assessed for fresh fruit and vegetable farmer organisations**

| Dimension                          | 2017 | 2021 |
|------------------------------------|------|------|
| Internal management                | 3.1  | 2.8  |
| Financial management               | 2.8  | 2.1  |
| Sustainability                     | 2.7  | 3.1  |
| SCOPEInsight average overall score | 3.1  | 2.8  |

Source: Author's compilation from FFV FO SCOPE reports

While SCOPEInsight average score for rice FOs remained the same in 2017 and in 2021 at 3.1 (Table 7), that of FFV FOs reduced from 3.1 in 2017 to 2.8 in 2021 (Table 8). With these average overall scores, it is difficult to see the impact of Rikolto Uganda's efforts in FO capacity building. While these poor scores could be due to biases of those administering the SCOPE tool, it could also be a reflection of the poor business environment in the country, making it difficult for FOs to thrive, especially the widespread corruption and the high level of dependency thinking linked to donations from government and development organisations (RT-FGD).

Highlights of areas of differences and improvements, as well as possible reasons behind them are discussed below, as summarised from the SCOPE reports at baseline (2017) and end line (2021), for the different FOs, referenced with the name of the FOs:

*Internal management:* average score for rice FOs improved slightly from 3.1 in 2017 to 3.2 in 2021 (Table 7) while that of FFV FOs deteriorated from 3.1 in 2017 to 2.8 in 2021 (Table 8). Good progress was recorded

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on FO **internal governance**. In 2017, most rice FOs had some few staff and executive members who conducted FO business but policies governing their recruitment and management were not clear. For instance, some rice FOs either had poor quality executive members (Taabu), while others had good staff/executives and plans but did not evaluate staff performance (DIFACOS), or they did not elaborate key performance indicators for the staff (Bunambutye). The FFV FOs had staff but without policy and strategic/business plans to guide operations (MBRFC, Kwapa, Sabiny). In 2021, improvements were reported at staffing and management levels. Most partners had qualified staff, especially business / general managers and accountants / accounts assistants and their recruitment was well documented. Managers mostly had reasonable space for decision making and financial reports and FO performance is shared at the Annual General Meeting (AGM), once a year. All FO partners have business plans to guide operations. One FO had a quality manager, as a result of the organic certification process the FO went through (Kangulumira). Staff performance monitoring is still generally problematic, especially among FFV FOs and this could be the reason for reduction in score from 3.1 to 2.8 (Table 8).

In 2017 all rice and FFV FOs except MBRFC which was still young (was about 5 years old), held their AGM once a year, and members were able to express their needs in such meetings. In 2021, improvements in terms of membership management, better structuring of governance bodies and skills development were recorded in the SCOPE reports. In all rice and FFV FOs, the AGM is duly held once a year to update members on various organisational issues and proceedings documented. In all cases, except one (MBRFC) a Supervisory Committee (SUPCO) has been established to carry out internal controls. In some cases in rice FOs, members of the Board of Directors (BoD) were trained in leadership and management, with support of Rikolto Uganda (FG-FGD, Bunambutye, DIFACOS).

Regarding **internal organisation in 2017**, all rice and FFV FOs, except DIFACOS, did not mention the existence of any by-laws and record keeping was scanty, focussing mainly on production data. Furthermore, awareness of corruption was low among FOs. Some FFV FOs could not even articulate their vision and mission (Sabiny). In 2021 however, some by-laws covering different aspects had been passed in all rice and FFV FOs and generally well documented, with provision for amendment, and all FOs understood their mission and objectives. In all cases, staff received training supported by Rikolto Uganda, in collaboration with the Uganda Cooperative Alliance (UCA). Staff are paid and the partners are aware of the prevalence of corruption, for instance loss of organisational funds, depriving farmers of investments meant for them, denying employment to qualified personnel, among others. All partners have had multi-annual business plans, with clear vision and mission. In 2021 however, more farmers than in 2017 were aware of the strengths and weaknesses associated with these plans. While in 2017 only one FO (DIFACOS) monitored organisational performance, in 2021 organisational performance monitoring against annually set targets was systematic among all rice and FFV FOs. Remarkable improvements were evident among FFV FOs (Kwapa and Kangulumira), in terms of adjusting to Covid-19 pandemic.

*Financial management:* While average financial management score stagnated for rice FOs at 3.2 throughout the program period, it deteriorated for FFV FOs from 2.8 in 2017 to 2.1 in 2021 (Table 8). In 2017, most FOs did not have accountants and carried out only simple finance, administration and accounting tasks (Taabu, Bunambutye, MBRFC - rice, Kangulumira - FFV). DIFACOS, Kwapa and Sabiny carried out more complex financial management tasks, with some degree of controls because they already had an accountants. Most transactions were done in cash and recorded as such. Levels of financial control were few for FOs with accountants and generally missing for those without accountants and done mostly by the board with regard to the manager. Spending and income forecasts, based on cash flows linked to activities, were generally not done. Furthermore, all rice and FFV FOs did not use financial records to access

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loans and subscription fees payment were about 50% on average. In 2021, much as several improvements were reported in detailed SCOPE reports, rice FOs scored the same as in 2017 (Table 7), while FFV FOs scored lower than 2017 (Table 8). This was mainly attributed to the interruption of business by the pandemic (RT-FGD). All partner FOs carried out basic finance administrative and accounting tasks: prepared annual budget, management presented periodic financial statements, used subsidiary books of accounts, cash receipts and ledgers for internal control and maintained asset register. They all had finance management manuals with financial procedures, rules and regulations and most were able to obtain loans from off-takers and Financial Institutions (FIs) and pay back. Membership subscription had increased to about 65% of members of the rice FOs and higher at 90% for FFV FOs (Kwapa and Sabiny).

*Sustainability:* The average score for sustainability improved for all FOs during the program period, but more for FFV FOs from 2.7 in 2017 to 3.1 in 2021 (Table 8), than for rice FOs, from 2.5 in 2017 to 2.8 in 2021 (Table 7). In 2017, social issues regarding the use of **child labour, forced labour, and gender gap in pay**, were generally silent in most rice and FFV FOs except DIFACOS and Bunambutye (rice FOs) which actively prevented child labour. In Kwapa, children under 14 years of age even worked for members and the FO had no youth representation on the BoD. Most FOs were not taking any measures to provide **a safe and healthy work environment** for its employees, especially women. All rice and FFV FOs reported some actions on environmental issues, regarding proper waste disposal and handling of agro-chemicals. In 2021, *social sustainability* performance remained quite vague, without clear actions. Most rice and FFV FOs did not encourage forced or child labour, but they did not have policies to prevent it either. They claimed to have no gender gap in payment of salary, but they admitted that women are mostly employed in seasonal jobs, which in itself is an indicator of gender gap in employment and therefore, payment. Only one rice FO (Taabu), had a child labour policy. None of the partners offered full maternity rights in terms of paid leave. Taabu reported having a policy offering full maternity rights, but is unable to implement it due to financial limitations. For FFV, more women and youth joined the FOs, surpassing older men, due to the introduction of the chili value chain which was inclusive. Children were no longer involved in dangerous or heavy labour activities for FO members and there is a high representation of women on the BoD (RT-FGD).

*Environmental Issues:* In 2017, most partners reported only on measures for better water management, waste recycling and proper handling of agro-chemicals. In 2021, broader environmental issues are taken into account. Most FOs were aware of dangers of agro-chemicals; waste is recycled into manure; some business plans include environmental protection, environment management practices and the organisation's response to the surrounding nature.

*Key financial data:* For the rice FOs with data (e.g. DIFACOS), both turnover and net profits were higher in 2017 than in 2021, mostly because of closure of end markets due to the Covid-19 pandemic. Only one FO (Taabu), had a loan history information, at base- and end line. All FOs however, had a grant history over the project period, indicating grants received, both in kind and in cash. FGD with FOs affirmed the necessity of these grants, especially to support business expansion and for investment in assets, which they would otherwise not afford through their profits or through the loans. The FFV FOs assessed, improved financial data reporting in 2021 compared to 2017 and 2019. This was so because Kangulumira started accessing lucrative markets, after undergoing the PGS certification process. This led to a tripartite agreement among Rikolto Uganda, Bringo and Kangulumira, to have their products and farming system certified by Ecocert. Over the program period, the FO has signed four contracts to supply fresh and dried pineapples and jack fruit to German, Turkey, USA and UAE because they now had a traceability system that buyers valued. By end line evaluation (2021), all chilies produced in Kwapa and Kapchorwa were sold to a Kenyan company called Mace Foods. All FO leaders confirmed that Rikolto Uganda has made a big contribution in *End-line impact assessment of the 2017-2021 DGD-funded programme implemented by Rikolto*



strengthening their *capacity to do business* and linking them to BDS providers, with a positive impact on their ability to access and manage finances (all FO-FGDs).

*Social, environmental and economic capacity strengthening of FOs:* Concerning *social capacities* of FOs, Rikolto Uganda facilitated relationships between FO and other private actors, especially buyers and other service providers. This has improved business networks of FOs, in general, and supported the upgrading of the selected value chains. Welfare of farmer members improved due to the introduction of SACCOs. Moreover, sensitisation of farmers about the value of joining FOs and selection of inclusive vegetable chain, have all contributed to rising FO membership. Exposure visits of FO members to other farms and the peer learning that took place, contributed to improved self-esteem of members, higher confidence in their FO, as well as confidence in the FOs themselves to engage in profitable business.

Regarding *environmental issues*, Rikolto Uganda facilitated training of farmers with GAP and CSA techniques for production. Furthermore, Rikolto Uganda developed a strategy with District Technical Teams to influence the sustainable production of the selected crops, through adhering to CSA techniques. District extension officers reinforced the adoption of environmental sustainability tools by using the six themes: Soil and water conservation, Resource management, Climate change, Biodiversity and Landscape management. Under the FSC program, Rikolto Uganda supported the Uganda Fruits and Vegetable Exporters and Producers Association (UFVEPA) to train grocers and brand kiosks/green for marketing sustainable foods. Rikolto Uganda also supported the East African Grain Council (EAGC) and UCA to implement ICT-based traceability systems for farmers and developed an inventory of FOs and buyers that adhered to food safety and quality standards. These efforts helped with raising awareness and making sustainable food visible.

Rikolto Uganda has also strengthened *economic capacities* of partners. FOs have been sensitised on diversification, value addition, selection of enterprises which are marketable - rice, soya beans and beans, trainings on GAP which has enabled farmers to increase productivity, production and quality of produce. Furthermore, increase bulking and collective marketing have helped to meet market demands, farmers were able to bargain for higher prices and created market linkages with buyers and FIs. Linkage with private companies (agro-input suppliers, YARA, etc.), improved business service procurement and reduced cost of production. Through linkage with FIs and trainings on financial management, the capacity of FOs have been strengthened to do business in general, particularly, the FO capital base has been boosted and the FOs have been able to sign formal contracts with service providers. Under the FSC program, FO leaders affirmed that the private sector started training their FOs on QMS implementation, in order to improve their competitiveness and their position to access better markets (FO-FGD).

#### *Changes that have occurred in the local BDS sector*

The number of accredited BDS providers offering services to FOs increased from 2 in 2017 to 4 by the end of the programme in 2021. Accredited BDS providers are registered and regulated within their areas of specialisation and hence provide higher quality services. The BDS categories included financial service providers (such as MSC), audit service providers, agro-input providers (e.g. YARA East Africa) and mechanization service providers (e.g. Bongomin Group). In 2017 none of the farmer groups were paying for BDS, but by end line, all of them in both the rice and FSC program were paying for some services such as access to credit, and extension services, among others. While FOs improved their economic viability, from 2 to 3 according to scope assessment score, progress fell below the intended Rikolto Uganda target of score four by end line (RT-FGD). The relationship between Rikolto Uganda and BDS providers remained strong, evidenced by continued quarterly monitoring meetings in the pre-Covid period and only a few of

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them post Covid. During these meetings the FOs highlighted positive impact of the services received on their development, further building the confidence of service providers, despite the Covid-19 measures.

FO leaders further confirmed the positive changes in the BDS sector in terms of quality of services. BDS providers mentioned were: SWT, UCA, Micro-finance support centre, the Uganda National Bureau of Standards (UNBS), IFDC, Pearl seeds, NAAC Rosemery, info trade, UCA, DIFACOS SACCO, sprayer operators, THOOKELL Certified Public Accountants, among others. High quality BDS have empowered farmers to shift from traditional to modern and better farming techniques, and the FOs indicated that they felt stronger and more confident in doing business together (FO-FGD). Due to loans from financial institutions and use of YARA fertilisers, farmers increased productivity, production and income in the initial program period, before the decline in prices. FO leaders indicated that members have been inspired to have a competitive spirit, which is good for business. Formal banks like MSC, Centenary Rural Development Bank (CDRB) and Development Finance Company of Uganda (DFCU) offered loan packages that were suitable for commercial farmers covering the whole cluster. The interest rates were affordable but accessing the loans was a challenge, especially for smallholder farmers who did not have collateral. Majority of the farmers prefer to borrow from CDRB because the bank has a long history of serving farmers and understanding the agricultural value chains. Farmers, however, were dissatisfied with SACCOS because funds available for borrowing were limited, compared to their needs. In addition, some BDS providers were corrupt, especially extension workers who are paid by government and still demand money.

At cluster meetings where cluster members clarified their common vision for the sector, BDS providers interacted directly with farmers, resulting into a closer relationship between them. When BDS providers understood well the FO needs, they adjusted their offers, for instance packaging smaller portions of inputs which were accessible and affordable to farmers. BDS providers have also incorporated credit in their services, to enable farmers to access the products on offer, especially inputs. In some cases however, relationship between FOs and some BDS providers did not go well. Prices offered by SWT to farmers for their produce was so low that it discouraged the members from transacting business. SWT also promised linkage with financial institutions which did not happen. Consequently, mistrust developed between FO and SWT due to unfulfilled pledges (FO-FGD, Bunangakha).

*Rikolto Uganda's opinion on alignment of changes in the BDS sector with Rikolto's BDS policy*

*Rikolto Uganda's vision on BDS provision:* The changes mentioned above on the local BDS sector are all well in line with Rikolto's vision on BDS provision, especially in the pre-Covid period. The vision focused on increasing the efficiency of delivering quality services within selected agricultural value chains. It sought to stimulate behaviour change of market players, which was expected to motivate them to effectively perform key market functions. It also promotes sector collaboration to solve critical market constraints in order to achieve sustainable transformation in the selected sector (Rikolto BDS Policy).

*Rikolto Uganda opinion on alignment of changes with BDS policy:* Overall, the changes realised in the local BDS sector were in line with the Rikolto BDS policy, particularly the intended result of crowding in the BDS providers. The RT opinion on the BDS policy was assessed, according to the Likert scale (1=Strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly agree), following the eight BDS core principles in the policy. On the Likert scale, the RT somehow agrees (3 - 4). While some service providers came in and succeeded to provide services that were being demanded by farmers, some were struggling to develop models which depend on the market actors paying for the services. This was especially the case for those service providers who came with the expectation that Rikolto Uganda, being an NGO would give hand-outs to farmers, either directly or indirectly, from which then, payments for their

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services would be made. On the market system aspect, there would have been more sustainable results, especially when constraints in the market system had been analysed, key investments identified and private players were able to implement the investments. Unfortunately most BDS providers needed financial support to cushion them against some of the risks they faced (buying down the risks) to initiate such investments in rural areas and in some cases for the first time and yet, Rikolto Uganda does not offer such support. Eventually, this lack of expected support discouraged service providers (RT-FGD).

*Rikolto Uganda opinion on statement of core BDS principles:* While there was a general agreement with the statement of the core principles, sometimes the RT questioned the practical implication of some of the principles. For instance, according to the principle of *sustainable service delivery*, there should be a business case for service delivery, which is a very good thing for sustainability of the service delivery. In reality however, there are many organisations which still offer free services to farmers. This kind of environment affected the farmers' willingness to pay for the services, even when they need the services, and by implication undermined the sustainability of service delivery.

The RT expressed some reservations regarding principle number three of *bundled services*. Promoting the bundling of services and ensuring that there is still some competition among BDS service providers is a delicate balance. In a context where free services exist and food prices in rural areas are very low, bundled services are more likely to "lock in" farmers and instead exploit them. Bundling inputs, with training and credit, much as they go together can also lead to ambiguously high costs of the bundled service package or seemingly cheap package with a catch on one of the aspects, e.g. credit. The same worry was expressed regarding principle six of *sector governance*. The Ugandan context is such that the public and private interests are highly inter-twined, to such an extent that even when regulations are in place, clearly stated as a responsibility of government, the actual work of regulation is usually passed on to the private sector who already have interests in the provision of the services. In this way, value capture is disguised in the involvement of private sector into governance, to the detriment of the farmers who are then pushed to perform the role of farm workers but with the disadvantage of working their own land and incurring all other costs of production (RT-FGD).

FO leaders also expressed reservation on applicability of the governance principle, in sustainable BDS provision. They claim that the governance principle only works in cases where the trading system is structured, for example in DIFACOS scheme. In cases where trading systems are not yet structured, there is a challenge of local buyers sabotaging the structuring of the market system so that they can protect their middlemen jobs. Whenever they conduct the middlemen work in an unstructured system, they continue earning at the expense of the farmers through cheating or earning a lot for very little work done (FO-FGD, Bunambutye).

In addition, RT emphasised the importance of understanding that the provision of BDS itself is inter-linked because BDS providers get confidence from the presence of each other. By acting in linkage with one another, their risks are reduced. For example; an FO (Taabu) got a rice buyer (SWT), but Taabu did not have money for crop finance to pay the farmers as the buyer takes the produce. They then went to MSC which analysed Taabu's ability to repay the loan, found it weak, then they advised Taabu to take an insurance and use fertilisers because the yield per acre was very low. YARA came in to sell fertilizers and build farmers' capacity. Another company, Bongomin, came in with higher yielding seeds. All these BDS providers are coming in due to the buyer that picked interest and un-earthed other problems (RT-FGD).

*FO opinion on statement of core BDS principles:* Across the board, the FO Leaders rated all the BDS principles highly (4-5) on the Likert scale. They contend that without various actors applying these principles, value

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chain actors would not move in a coordinated manner to structure the market to the benefit of all. They however, indicated that services were expensive, especially given the fact that food prices were still rather low (FO-FGD). Based on the BDS policy, Rikolto Uganda sought to stimulate behaviour change of market players towards increasing the efficiency of delivering quality services, particularly through the approaches used in program implementation.

With the value chain approach, several service providers were brought on board, to facilitate flow of goods and money. Various associations of chain actors were then supported to seek policy change in order to improve the business environment. The market system development approach, facilitated better alignment of key market functions, actors and service providers, so they could deliver services more efficiently depending on capacity of farmers to pay. The sustainable sector transformation approach, focused on promoting stakeholder collaboration to address critical constraints.

#### *FOs' opinion on Rikolto Uganda's approach to fostering a sustainable BDS sector*

FO leaders reiterated their strong agreement with the two principles of *Sustainable Service delivery and Sector governance*. Based on these principles, Rikolto Uganda has engaged different kinds of partners to strengthen FOs' business capacity, including: strengthening the capacity of community based facilitators, leaders and management of FOs; organising exposure visits to facilitate peer learning; involving various stakeholders both public and private, in developing uniform standards and making proposals under AMEA, among others (FO-FGD, MBRFC). Rikolto Uganda also facilitated business linkages with service providers, built capacity of business managers to procure and use quality services and helped FOs to develop policies on governance, finance, among others. These efforts helped to develop the demand side of the BDS. In order for the BDS sector to be sustainable, it is important the providers are able to deliver high quality services at reasonable costs that can be afforded by FOs which are able to generate income. Rikolto Uganda successfully supported all chain actors in the targeted market system/value chains, to coordinate better and work more efficiently to achieve competitiveness, through the following actions: identification of high potential value chains in the FFV sector, which were attractive to women and youth; development of the profiles of the selected FFV chains into business cases in order to attract and guide investment decisions; together with the private sector, embarking on FO strengthening on the implementation of QMS, in order to improve FO competitiveness and capacity to access better markets; supporting the private sector to influence their sourcing policies and adopt more inclusive strategies which enable smallholder farmers to access such markets and; commissioning a service provider to develop a MIS (database) for all FO partners, to support smallholder farmers overcome some of the challenges hindering them from accessing better-paying markets provided by large off-takers and accessing finance credit.

In spite of these positive elements, governance of the BDS remains problematic. The situation was worsened when internal governance challenges led to the withdrawal of UCA, a Rikolto Uganda partner, responsible organisational strengthening of FOs. FOs reported that farmer participation and involvement in policy development on key services, for instance extension, was still very low and this affected FOs negatively whenever unsuitable policies come up (FO-FGD).

### EQ3b. What added value demonstrates the FO as a collective action mechanism for producers?

#### *Improvements in services offered by FO*

The FO leaders mentioned several improvements in the services they offered to the farmers. They confirmed that the most important service was the linkage with buyers who could purchase their produce and pay them well. Others included: access to cheap credit; access to qualified extension service providers; trainings in modern farming methods; access to genuine agro-inputs; improved value proposition to FFV FO members in terms of commission for each kilogram sold to FO, in order to encourage bulking and collective marketing; securing a sustainable market that pays better than traders and; transparency of the FOs regarding business operations. In order for this to happen, there is need for a high level of trust between farmers and leaders. Through capacity building of leaders on a wide range of governance issues, including financial management and record keeping, the trust between farmer members and leaders greatly improved. This in turn enabled achievements in bulking produce and marketing collectively, leading to more earnings. Rikolto Uganda facilitated linkages between FOs and various service providers compelled the FOs to keep abreast with the needs of the farmers, further increasing member confidence in the FOs. Membership management has improved due to closer interaction and communication, especially on finances (FO-FGDs). 2021 Farmer survey revealed the following statistics below:

#### *Improvements in terms of production and commercialisation by FO*

Among rice FOs, there has been a big increase in productivity of rice, from 3.75MT/Ha in 2017 to 4.6MT/ha in 2021, significant at 1% level and consequently, a big increase in production, though not significant (Table 4). FO leaders confirmed that with support of Rikolto Uganda, their ACEs were able to mobilise farmers to pool resources to boost production. For instance, the ACEs accessed loans on behalf of members, advanced inputs to farmers ahead of production season (through agro-input soft loans) and sourced inputs in bulk from agro-input suppliers, which helped to lower the cost of procuring these inputs (FO-FGD, Taabu and Bunambutye). Similarly, FFV FOs also had a significant increase in productivity of the focus crop (FFV) from 1.07 MT in 2017 to 9.41 MT in 2021), as well as commercialisation (Table 9). This increase is attributed to the change in respondents rather than an actual improvement in the field because more than one-third of respondents were replaced between 2019 and 2021 (FS). The selection of pineapples, onions and chilli as focus crops for FFV farmers, following a feasibility study by Rikolto Uganda, attracted youth and women as well as stable buyers. The investment profile conducted by Rikolto Uganda also attracted private investments and changed some off-takers' sourcing policy through signing of forward contracts that structured the trade and increased trust among farmers to grow the crop. These contracts were used as collateral to secure credit from MSC to boost their productivity and commercialisation.

*Price and share of product sold through FO per Metric Ton (MT): Commercialisation* of rice also increased between 2017 and 2019, from 1.9 MT to 2.8 MT, respectively, significant at 5% level (Table 4). According to FO-FGDs, the main reason behind increased commercialization were the ACE efforts to improve governance and control of ACE funds which then boosted members' confidence in the ACEs. This resulted into positive response by members when ACE called them to bulk and market collectively, improved ACE business in general and commercialisation of rice in particular (FO-FGD, Taabu and Bunambutye). The FS results in Table 4 however, show a significant and strong decline in *average sales price* of rice (from 640 USD/MT in 2017 to 290 USD/MT in 2021), *total profit* (from 925 USD in 2017 to 365 USD in 2021) and the *profit margin* (from 505 USD in 2017 to 96 USD in 2021). For FFV, the average sales price of the focus crops, increased modestly between 2017 and 2021 (from 896 USD per ton in 2017 to 1160 USD in 2021), this

increase is a lot bigger (682 USD more) and statistically significant, than for the 2019-2021 period, suggesting an important change took place in this last period to improve the sales price (Table 9).

The structuring of trade in selected FFV chains through signed contracts stipulating the value proposition like agreed price and other services offered by both parties, increased trust among farmers to sell through FOs. They earned premium price, much better than what they would have earned by selling to middlemen. FO members also benefited from other services offered by the buyer, for instance, extension services, supply of genuine seeds, transport and packaging materials. All these things increased farmers' loyalty to the group (all FO-FGDs).

**Table 9: A summary of relevant livelihood outcomes for fresh fruit and vegetable farmers**

| Outcome indicator                    | 2017 | 2019  | 2021  |
|--------------------------------------|------|-------|-------|
| Annual total household income (USD)  | 2560 | 2689  | 2295  |
| Average annual income from FFV (USD) | 1746 | 1213  | 437   |
| Income by sales through FO (USD)     | 872  | 915   | 1047  |
| Production (tons)                    | 1.07 | 9.38  | 9.41  |
| Productivity (tons/hectares)         | 2.08 | 16.52 | 13.72 |
| Average sales price of FFV (USD/ton) | 896  | 478   | 1160  |
| Total profit (USD)                   | 1446 | 363   | 322   |
| Profit margin                        | 770  | 152   | 807   |
|                                      |      |       |       |

**Source:** Rikolto Uganda FFV Farmer Survey data analysis report by ADE; **Notes:** N = 222

According to rice FO leaders and RT, (FO-FGD Bunambutye, MBRFC, DIFACOS and RT-FGD), several factors affected the rice commercialisation results, most important being the importation of Tanzanian rice. This rice, being clean and aromatic is considered to be of higher quality by Uganda consumers because it appeals to their tastes and preferences and moreover, it was being sold at the same price as Ugandan rice. These imports have affected the rice sub-sector in the country so negatively that some big players have announced their exit. This issue is a national problem which raises strategic questions for future Rikolto Uganda programming for the rice sub-sector in Uganda. Secondly, the price decline can be attributed to the long period of lockdown measures instituted by government to curb the spread of the Covid-19 pandemic. Thirdly, rice prices have been going down in the country as production gradually increased, although the situation might change for better, now that the lock down measures have been lifted.

*The share of income generated through the FO:* Is quite large in 2017 and 2021, for rice farmers. In 2021, around 355 USD of the total 780 USD (almost half of the total income from rice) in sales were generated through the FO (significant at 10% level) but much smaller in 2019 (Table 4). This is likely due to the composition of the respondents, with those who entered in 2019, having been less involved with the FO than in the other years. FGD with the RT confirmed that indeed, the farmers who joined in 2019 in Bulambuli had a relatively high income, which is an indication of other sources of income besides what is earned through involvement with the FO. An additional explanation is that in 2018-2019, one of the main rice producing partner FO, MBRFC (also called Doho II), was closed for rehabilitation, leading to a decline in the quantity of rice being handled by the FO.

FOs in the FFV sub-sector indicated that between 2019 and 2021, respondents' perception on the role of the FO to increase the income had become even more favourable. Indeed, farmer leaders affirmed that the FOs had contributed mainly or exclusively to their income in 2021. They affirmed that contracts in

which the FO entered, were favourable in terms of price offered for the focus crop (FO-FGDs). In 2021, the majority of FFV farmers were satisfied (48%) or very satisfied (12%) with the price they received. However, Covid negatively affected the prices of other crops: 77% reported that they got a lower price (FS).

*Contribution of FO to income developments:* Farmers concur that without the FO, it would have been difficult for them to benefit from the Rikolto Uganda facilitated trainings they received. In terms of engagement with the private sector, attempts to relate individually in the past only led to losses, partly because of cheating and partly because of higher service costs, since it became more expensive for the service providers to deliver the various services to individual farmers. In this regard, the FO and members' participation contributed significantly to the increase in income in the initial year of the program. Concerning the decline in income starting from the pre-Covid-19 period, they stress that this cannot be attributed to the FO since key factors which affected the decline were beyond the FO control, namely the Covid-19 situation and rice importation from Tanzania (FG-FGD, Bunambutye; FO-FGD MBRFC and DIFACOS).

The contribution of FFV FOs to income developments is articulated in their business plans where their vision, mission, objectives and value proposition are well stated and linked to participation in FOs. Mostly, efforts of FFV FOs aimed at building an economically empowered community through bulking of horticultural produce creating profitable market linkages. They have achieved this result through working with Rikolto Uganda (FO-FGD). The FOs have engaged in the following services, on behalf of their members: trainings on production; dissemination of market information; demonstration of improved technologies; facilitation of access to quality farm inputs; linkage of members to better markets both local and modern markets; encouraging saving; availing loans to members; administering finance grants for service delivery; liaison with other stakeholders in the bid to promote FFV cultivation in the region.

*Contribution of economic value to members:* In 2017, all partners' SCOPE Insight reports indicated that FOs added economic value to members in terms of premium price for producers, and discounted prices of inputs as a result of bulk purchase of inputs and trainings accessed through the FO. Also, respondents could ably explain the added value of joining the cooperative as opposed to working individually (SCOPE reports of Bunambutye, DIFACOS and MBRFC). By 2021, respondents reported that FOs were able to offer additional services including: grading of produce and setting corresponding differentiated prices, a transparent mechanism for price setting, payment of cash on delivery of produce. They were able to offer better prices because of lower costs resulting from bulk purchase, shared labour and general pooling of resources. Some FOs were able to pay annual dividends (DIFACOS).

Respondents of MBRFC mentioned side selling as a big challenge by up to 50% of its members. Moreover, they point out that the FO tried to provide economic benefits to its members, but the members did not appreciate them, claiming that it was not enough compared to the costs they incurred. In addition, FO leaders also reported a mind-set transformation of their members towards farming as a business instead of what they always knew of farming for subsistence. Furthermore, the FOs are able to use modern processing machines which ensure high quality rice, just from doing business together as an FO (FO-FGD DIFACOS and Bunambutye). FFV FOs added economic value which helped members to increase their access to information, capital, and technology; bring benefits to members; and partly promote production, enhance productivity, and increase income. This was possible because of support from Rikolto Uganda, facilitating linkage with better markets and BDS providers. All this was done to increase the economic viability of each individual member to have a sustainable income.

### *Farmers' satisfaction with the FO since Rikolto Uganda's intervention*

From all the FGDs, both farmers and leaders concurred, regarding their satisfaction with services received through their FO since Rikolto Uganda's interventions. They agreed that they learnt a lot from the GAP trainings, importance of protective gears; exposure to other farmers which facilitate learning; linkage to partners and service providers; group strengthening trainings, especially related to bulking and collective marketing which helped to increase productivity and sales; also involvement of youth in rice production which strengthened their capacity and reduced crime; record keeping; study tours; provision of seeds of food security crops. Taabu has acquired equipment e.g. tractors, milling machine, and threshers; pilot project implementation and following the cropping calendar; formation and management of SACCOs (FG- and FO-FGDs). Even when these services were not delivered by the FO, the FO played an important role in assessing the needs of members, sensitising and mobilising them to acquire the services, as well as negotiating prices on members' behalf. A limitation that was highlighted across the board is the fact that some of the services are too far away from the farmers, especially, storage, bulking and processing facilities (all FG- and FO-FGDs).

Consensus among FFV FO leaders indicated that farmers were satisfied with the services received through the FO since Rikolto Uganda partnered with them. Some of the key services received included; access to credit for production from VSLA through the support of MSC, linkages to better markets like Mace foods, Bringo Fresh, and export market for organic products, linkages to BDS providers both public and private. The FO skills in business planning, financial management, leadership, internal management and general business management have improved. Production and productivity have increased due to the services of a dedicated team of community-based trainers and business managers. This has enabled better prices through collective action mechanisms, particularly bulking and structured trade. Covid 19 was highlighted as one of the challenges that affected access to some services in 2021.

### **EQ4a. Has Rikolto succeeded in facilitating business relations between FOs and private sector buyers?**

#### *Business relations that have been set up and/or strengthened by Rikolto Uganda*

Rikolto Uganda succeeded in facilitating business relationships between **FO partners and various private sector companies** which provide BDS. Categories of service providers included: input suppliers (seeds and fertilisers), sprayers, and buyers, among others. While farmers and their FOs could not articulate their business needs in 2017, by 2021, after a Rikolto Uganda facilitated exercise to diagnose key organisational challenges, they were able to list the needs clearly, and this enabled the provision of targeted support. In general, farmers have benefited in terms of increased quantity and quality of products sold through their FOs. The activities carried out by Rikolto Uganda included: facilitation of Business-to-Business (B2B) meetings, training and coaching of partners.

Several examples indicate that FOs are professionalising and are continuing to access BDS in a structured way. Taabu, Kwapa and Sabiny accessed business loans from the MSC and Taabu has been appraised for a bigger loan, implying that these FOs are able to present bankable projects to MSC; DIFACOS members continued to access financial services through their SACCO; DIFACOS and MBRFC procured quality seeds for their members from Namunasa Rice Seed Growers' Association; Kangulumira signed a contract to supply Bringo Fresh deliveries ltd with fresh and processed fruits; Kwapa and Sabiny entered a contract with Mace foods to supply dried chili and the two FOs have forward contracts and received extension services, good quality seeds and packaging from MACE foods. The price for chili improved, FOs supplied



high quality chili and received commission; SWT staff were facilitated to train farmers on national quality standards for rice; membership to the VSLAs increased, enabling increased member savings and access to credit to meet business needs; the four FOs still have good relations with their service providers for loans, fertilizers, market linkages, and quality declared rice seeds (IF, SCOPE reports, MTR).

*The current state of business relations compared to that expected at the start of the programme*

At the beginning of the program in 2017, farmers had great expectations from the partnership with Rikolto Uganda (all FG-FGDs) in terms of: trainings by Rikolto Uganda but not just on focus crops but in all crops; provision of office equipment to facilitate office work e.g. computers; staff capacity building up to post-graduate level; linkage to national and international buyers in high numbers to allow competition for farmers' produce; higher prices; purchase of machinery for value addition; high yielding seeds; loans; mechanisation of farm operations; financial linkages; introduction of an alternative cash crop; drying equipment; solar and hydroelectric power; price information sharing; improved packaging to enable FOs attain UNBS certification; inputs for farmers and financial support, among others.

By end of 2021, the farmers acknowledge that Rikolto Uganda fulfilled some of their expectations, especially trainings to support sustainable production and FO business development. Rikolto Uganda also conducted studies to identify high value crops that included women and youth, demonstrated high yielding seed varieties, brokered business relations, linked one FO to international markets through organic certification (FG, Kangulumira) and facilitated FOs to access credit and other BDS services. Some farmers stressed that many of their expectations however, were not met. For instance, prices were still low, compared to the costs they incurred to produce, buyers were few and limited capital prevented them from making better investments, especially in machinery and equipment. They also reported that while they appreciated linkage with private service providers, some of them have promised services which they did not deliver e.g. SWT (rice FG-FGDs).

*Fostering and hindering factors in facilitating these business relations*

*Fostering factors:* Benefits inherent in the value chains of the selected innovations fostered business relations. For instance, business linkages, stronger business capacity of FOs and better technical capacity of farmers, all contributed to increased productivity, production, volumes of quality food sold, and consequently farmer income (pre-Covid), thereby attracting partners to this approach. The fact that Rikolto Uganda has access to tools appropriate for professionalising FOs, through networks like AMEA, supported the work of facilitating business relations. From the policy context, a new Government policy initiative by the Ministry of Water and Environment (MWE) and the National Environment Management Authority (NEMA), to protect the wetlands by issuing permits to interested users, is an opportunity for Rikolto Uganda rice partners to engage with public sector to protect wetlands by promoting SRP (IF, MTR, FG-RT). In addition, the feasibility studies conducted by Rikolto Uganda to identify high value and inclusive chains, make business cases to encourage private sector investment and business linkages to off-takers helped to structure trade through signing of contracts and certification (RT).

*Hindering factors:* **Covid-19 pandemic** which disrupted all aspects of life, has been the most important hindering factor because it shrunk end markets, lowered prices, locked people down, brought the economy to a near halt and increased poverty. In addition it made it difficult to conduct any form of business, thereby discouraging all players along the value chain. Other hindering factors include bureaucratic delays by UNBS in signing contracts, misappropriation of funds by one partner UFVEPA and limited access to working capital by some partners due to failure in meeting lending requirements (IF, MTR, FG-RT). Rikolto Uganda also had to drop two key FO partners in the program period (UCA & UFVEPA) due

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to mismanagement of program funds. This meant these partners could no longer meet lending requirements, leading to limited access to working capital at the cooperative level, and failure of the farmer members to aggregate more produce.

#### EQ4b. Are these business relations economically profitable, socially inclusive, and environmentally sustainable?

##### *Have facilitated business relations enabled an increase in the profits of the FOs?*

The business relationships between FOs and off-takers, as well as other actors, facilitated by Rikolto Uganda, have been beneficial economically, socially and environmentally. Moreover the benefits complement each other. The signed contracts with buyers which had economic impact also attracted more members to the FOs, boosted business and fostered the application of the sustainable practices (GAP and CSA) which they acquired during program interventions. Some rice FOs evolved positively in terms of membership because of better business capacity, from 1700 to 2800 members between 2017 and 2021 (FO-FGD, DIFACOS). By 2021, the FOs were conducting annual audits, preparing business proposals, paying service providers, mobilising members to bulk, package and bargain for better prices, and are linked to financial institutions. A combination of all these improvements, increased sales of FOs and subsequently profits, notably in the pre-Covid period (FO-FGD, Bunambutye and MBRFC). According to FO leaders of DIFACOS, profits increased by 25-30% between 2017 and 2021 (FO-FGD DIFACOS, RT). In most cases traders were reluctant to sign formal contracts due to unpredictability of orders and prices, while farmers were also not willing to invest in improved farm practices without an assured market. This is mainly due to the highly un-structured nature of the market, with very low levels of trust among chain actors, especially for the FFV farmers. Eventually, farmers lose in such case and traders benefit (RT-FGD).

##### *Have increased profits enabled farmer organisations to pay adequate prices for their members' products?*

Leaders from all rice FOs, except Taabu, acknowledged that due to higher profits, they were able to pay higher prices, although they were not able to meet to the expectations of their members, since rice prices have been on the decline (FO-FGD, Bunambutye, DIFACOS and MBRFC). Kwapa and Sabinu FO leaders demonstrated the evolution of profit margins earned from the contracts signed with off-takers: MACE Foods bought chili at the agreed price of UGX 12,000/Kg (USD 3.36/Kg) of dry chili, of which UGX 10,000 (USD 2.8) went directly to farmers and UGX 2,000/Kg (USD 0.56) was the commission for the cooperative (IF). This price of chilli is way above market price of UGX 5,000/Kg (USD 1.4/Kg). Through collective action, especially sourcing quality agro-inputs in bulk, the cost of obtaining the inputs were reduced. In addition, bulking produce by members and marketing together reduced the cost of purchase for buyers since they bought large quantities from one place. By implication, FOs were able to make higher commissions and pay members better. In one case, inconsistency in record keeping and lack of transparency in communicating financial situation made it difficult for farmers to benefit from higher profits made by the FO (FO-FGD, Bunangakha – Taabu).

##### *Do business relationships incentivise environmentally sustainable and socially inclusive production?*

The FO leaders concurred that business relationships incentivised environmentally sustainable and socially inclusive production in several ways. Most buyers who related with FOs were interested in large quantities of produce because this lowers their cost of purchase. This compelled FOs and their members to think critically about and act on increasing productivity. Due to agreements made with buyers, farmers were motivated to apply the GAP and CSA skills already given to them to increase productivity and production at farm level and move towards sustainable rice production. Some of these skills included: good seed

selection, following the cropping calendar, planting in lines, soil and water conservation techniques, among others. Application of these skills by farmers, in the quest to increase sales, contributed to environmental sustainability (FO-FGDs). Another example is the case in which Bringo supported Kangulumira to achieve organic certification, with the aim of creating a community that respects and protects the prudent use of natural resources.

Socially inclusive production was incentivised by all initiatives which increased trust in FO and increased membership to the FO. Most important were transparent financial management and participatory approach to communicating the affairs of the FO. Bulking and collective marketing also stimulated social inclusion. Another initiative that fostered social inclusion was the formation of VSLAs and SACCOs. On the one hand, farmers were only able to participate in these initiatives when they were earning some regular stream of income from business. On the other hand, farmers needed access to some form of capital to be in position to say in production. Such savings/credit schemes and business relationships were mutually reinforcing. In the case of FFV value chains, the selection of the enterprises themselves and the business relations brokered provided inclusive opportunities.

#### *Fostering and hindering factors in facilitating economically profitable, socially inclusive, and environmentally sustainable business relations*

##### *Fostering factors*

- **Asset endowment of the FO** - Private companies preferred to do business with FOs that owned/had access to capital assets such as stores / warehouses, lorries, among others.
- **Level of business capacity and maturity of the FO** - Private companies preferred to enter into long term business relationships with FOs with members / management staff who properly understand costing/pricing, market dynamics and its effects on the price.
- **Profitability of the FO businesses** – Better prices earned from the business relations brokered by Rikolto Uganda encouraged many farmers to join the FOs, bulk their produce, sell collectively, access credit, and genuine agro inputs. Other trainings in GAP and CSA techniques helped to increase household productivity and production, further benefiting the businesses.
- **Values of key partners of the FO** – Partnership between FO and Rikolto Uganda compelled the FO put social inclusion and environmental sustainability on the agenda – leading to definition of results and activities. The presence of women and youth in leadership further pushed the social inclusion agenda.

##### *Hindering factors*

- **Lack of working capital in FOs** - Most large private companies do not make advance payments. It was challenging therefore, for FOs without own working capital, to aggregate the volumes required by the respective off-takers.
- **Competition from local processors** - Most farmers prefer to deal with local processors, since they offer advances unlike the big private companies. In a way, this practice undermines the bulking initiative by FOs to the satisfaction of the big companies.
- **Purchase of white rice as opposed to paddy** - Most large private companies wanted paddy (un-milled) rice, yet farmers feel that they can make more by adding value to their rice before selling to the big company. This leads to side-selling which also undermines the bulking initiative.
- **The Covid-19 pandemic** – which disrupted businesses due to movement restrictions to slow down the spread of the corona virus. This affected negatively the delivery of critical BDS, restricted access to international markets and necessitated market diversification, especially for the FFV sector.

## 6. Impact at Institutional Level

This section evaluates the overall impact of Rikolto Uganda's program at institutional level for the FFV /FSC cluster only.

### EQ5a. Has Rikolto succeeded in setting up and/or strengthening MSI?

#### *The multi-stakeholder initiatives established or strengthened*

Rikolto Uganda set up two Multi-Stakeholder Initiatives (MSI) in Mbale and Kampala, in order to gain better understanding of the selected FFV pilots, with a vision of Food Smart Cities (FSC) and from a food systems perspective. A food system comprises drivers (socio-economic, environmental and institutional), all value chain activities, as well as outcomes (food and nutrition security, economic and environmental). This means many stakeholders are involved and are continuously interacting in specific food systems. In the two MSIs, Rikolto Uganda brought together these stakeholders including: policy makers from MAAIF, MTC, Ministry of health, Ministry of Finance, regulatory agencies (UNBS and National Drug Authority), city authorities of Kampala and Mbale cities, private sector, civil society organisations ( consent, Food Rights Alliance & Slow food international) and research ( NARO and Makerere University).

The Mbale MSI supported the stakeholders to develop a shared vision to improve food safety of urban food chains, implementation, as well as monitoring efforts. The MSI participants formed governance committees which designed and facilitated action plans for regulation or incentives necessary to speed up the development of an enabling environment and they later developed pathways to achieve desired results. This was based on a comprehensive analysis of the current policy framework and business models related to food systems in the city.

The Kampala MSI strives for a socially informed, equitable and just society through empowerment of consumers. It offered advisory services, promoted ethical practices among businesses and engaged policymakers to enact pro-people policies for present and future generations. The MSI engaged food chain stakeholders in a policy chat over different approaches that could be used to build key aspects of a sustainable FSC. The chat aimed at generating a movement of national and local authorities, businesses, farmers, consumers and other food system actors to transform urban food environments for improved consumption of healthy, sustainable and nutritious food for all city-dwellers, regardless of their level of income. The policy chat series stimulated dialogue on policy environment and became an advocacy platform to drive sustainable crop production and consumption practices, inclusive business approaches and creating enabling environment at the city level.

#### *Comparison of the current and state expected state of functioning of the multi-stakeholder initiatives*

In addition to the start-up activities mentioned above, stakeholders were mapped though functioning is still at infancy and little has been achieved. Soon after establishment, the Covid-19 pandemic hit, the country was locked down, making it impossible to conduct planned activities, for instance: civil society participation to provide expertise, independently researched information and play their "watchdog" role; participation of the city governments to strengthen urban governance in collaboration and; private sector provision of managerial and technical training and support to help municipalities improve the strategic management of urban areas.

### *Important factors in supporting multi-stakeholder initiatives*

Factors which foster MSI development include: common interest of all the partners to ensure safe, nutritious, healthy and sustainably produced food for all consumers and willingness of the city government to lead, for example the role KCCA played in the Urban and Peri-urban Agriculture (UPA) programme. Other factors however, hinder MSI development, including: high number of activities leading to delays in implementing some of them according to plan; the novelty of the food system approach to most stakeholders, requiring more time to push processes and activities.

### *EQ5b. Have these MSI succeeded in promoting more sustainable food systems?*

#### *Success of the multi-stakeholder initiatives in promoting a sustainable food sector*

A sustainable food system is one that ensures food and nutrition security for all in such a way that the economic, social and environmental bases needed to generate food and nutrition security of future generations are not compromised (HLPE, 2017). Based on this definition, the contribution of MSI in promoting a sustainable food sector was assessed and foundations for success highlighted, even though the MSIs are not functioning optimally yet because activities were interrupted by lock down imposed by government to curb the Covid-19 spread.

City governments have adopted a four-part approach to nurturing a sustainable food system: treatment, prevention, promotion and regulation. Through the MSI, government has created a mechanism to ensure that the entire food chain, from food production to consumption, is efficiently managed within the overall development strategy. It included building capacities at all levels (households, communities, local councils, sub-counties, district levels) for adequate action to improve household food security; integrating food and nutrition issues at local governments; enforcing regulations that safeguard the health of personnel handling agricultural inputs and by-products, as well as third parties likely to be affected; monitoring, regulating business activities, trade policy, food safety and investments in research and development in the food and agriculture sector. Civil society groups under the Food Rights Alliance, have analysed the food systems in Uganda, based on evidence and voices from the relevant actors. During the dialogue, stakeholders identified bottlenecks, opportunities and game-changing solutions to transforming the food systems for sustainable development. These activities form a strong foundation for success.

#### *Factors for multi-stakeholder initiatives to promote a sustainable food smart city sector*

On the one hand, the team of stakeholders is comprised of dynamic, qualified, dedicated, experienced and technical people, with experience in both public and private sector environments, in research, policy formulation and implementation of legal and regulatory frameworks at national, regional and international levels. These things foster the promotion of a sustainable FSC sector. On the other hand, limited financial support from government and other stakeholders to implement the resolutions of the MSI, lack of dedication from government departments and the diversity of actors in the food systems hinder a sustainable FSC sector.

### *EQ6. How is the evidence generated by Rikolto's pilot interventions used to influence policy decisions?*

#### *Rikolto's pilot interventions in the fresh fruit and vegetables sub-sector/cities and use of evidence to influence policy*

Regarding policy influencing, Rikolto had a strategy of projecting evidence in terms of results from its pilot interventions in the FFV sub-sector, towards policy makers both private and public, at local and national

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levels. Rikolto presented results from pilot interventions and used them for debate in multi-stakeholder platforms, initiatives and forums, to convince the policy makers to use such evidence to adjust their policies for bigger impact. Examples are highlighted below:

*Organisational capacity building:* Evidence from Rikolto work on strengthening FOs was used within the AMEA network to standardise FO professionalization and promote it among network members (MTR). Eventually, MAAIF and MTC which were both convinced, included IWA guidelines in the national agricultural extension bill. The content of IWA guidelines is closely linked to the SCOPE methodology, (RT).

*Developing local business development service sector:* In the interest of availing quality BDS to FOs, Rikolto identified BDS providers, engaged in supporting their capacity strengthening and in some cases ‘buying down risks’, in order to address both the supply and demand sides of BDS. Rikolto then used the results of this work to convince apex organisations of selected sub-sectors to pilot the SCOPE Insight tool. Rikolto also participated in the Hortifresh platform of horticulture stakeholders, convincing them to make changes on how to engage BDS providers such that smallholder farmers can access affordable and high quality services. This approach was reinforced by a study recently conducted by the New vision newspaper and Makerere University on the use of locally available BDS providers who can support the production of safe food for urban consumers (“Deadly chemicals in local market vegetables”, New Vision, 01/03/2022, www.newvision.co.ug). Based on this debate and analysis already done by Rikolto, MAAIF is making an inventory of BDS providers within the food system, so that smallholder farmers and other food system stakeholders can access quality services. This work is aimed at convincing government to come up with a policy that guides quality BDS provision. Such a policy could include characteristics of a BDS provider, general terms and conditions under which they are expected to operate and how they could supplement agricultural extension provision by government, as well as eliminate counterfeit.

*Developing management information systems for easy access of BDS:* Rikolto supported FOs to acquire computer-based Management Information Systems (MIS), focussing on financial services and markets, as part of innovative ICT solutions to foster smallholder inclusion value chain activities. Rikolto used this experience to influence MAAIF to develop a MIS linked to the BDS provider inventory it is compiling, in order to enable stakeholders to find the right BDS providers for various sub-sectors and at various levels in the country (FGD-RT).

*Participatory guarantee system certification:* Rikolto piloted the Participatory Guarantee System (PGS) certification to prove to importers that through this approach, smallholder farmers can achieve Minimum Residue levels (MRLs) and engage in environmentally sustainable production of FFVs. It also demonstrated that various stakeholders can join hands to reduce costs of achieving a specific result. In this case, both the off-taker (Bringgo) and Kangulumira aimed at selling to a specific market. Rikolto used this evidence to approach and convince the Kayunga district authorities, to apply the PGS to improve fruit marketing in the district. The district is now using the PGS approach to develop ordinances to influence the enabling environment for fruit trading through cost-sharing with farmer groups supported by Rikolto (IF).

*E-commerce:* In an attempt to make adjustment towards business sustainability during the Covid-19 pandemic era, Rikolto linked three of its partner FOs that had been trained in product safety and traceability to collaborate with Bringgo, in order to sell their products online, to quality conscious consumers at a premium price. Rikolto then shared this experience with KCCA, and influenced the city to introduce the K-smart market, mainly to reduce traffic jam and congestion in the city. In the K-smart market, consumers order food online and the food is delivered to them by registered *safe boda boda* riders (IF). KCCA worked with market executives who have contacts of those coordinating each of the various sub-sectors within the market, and facilitated a partnership with *safe boda* company. The sub-sector

coordinators used their inventory of vendors and linked it with the inventory of *safe boda* riders around the city (FGD-RT).

*Inclusive business model.* Rikolto Uganda supported infrastructure improvement of selected market stalls and market establishments in Mbale city. Rikolto then facilitated direct commercial relationships between suppliers and market vendors, and worked backwards to link the selected vendors with FOs that could supply them. Through this structured system of selling FFVs which reduces costs of both smallholder farmers and vendors, the latter are able to pay premium price which then incentivises sustainable production and consumption. Using this experience, Rikolto then created awareness on food safety among vendors and city government authorities on the need for general improvement of the market regulatory policy, to support the horticulture industry. The Mbale city government is fully engaged in the project, is supporting organised sourcing of FFV products from the sensitised farmers and is expanding the initiative over various sectors. The city government is in the process of enacting a policy to influence the sourcing policies of vendors, as well as regulating the sale of safe fruits and vegetables in all the markets in the city (FGD-RT).

*Sectorial policy changes that the pilot interventions seek to realise*

Regarding FFV sectorial policy influencing, Rikolto Uganda had a clear strategy, aiming to create knowledge about the underlying social and economic structures, feedback loops and trade-offs that undermine healthy diets. The knowledge generated is then used to inform the multi-stakeholder co-creation and testing of solutions to chronic problems in city food systems on the one hand. On the other hand, it is used to mobilise evidence (case studies, business cases) that encourage the up scaling of commercially viable innovations which improve access to affordable, healthy, diverse and sustainably produced food (Rikolto Uganda strategy).

*Professionalization of farmer organisations:* Rikolto Uganda used its experience with strengthening FOs and its active involvement in AMEA, to influence MAAIF and MTC to develop policies which promote FO professionalisation. Rikolto Uganda highlighted the lack of a business mind set among FOs, many of which preferred to remain donor dependent, and the fact that even proven business models fail in Uganda because of limited FO capacity. Rikolto Uganda convinced the two ministries about AMEA and have launched the IWA29 guidelines in Uganda. MAAIF included these guidelines in the agricultural extension bill that will soon be enacted (IF). Examples are highlighted below:

*Food safety and sanitary and phyto-sanitary issues:* Under the FSC program, Rikolto Uganda supported FFV partners to go through the Global GAP and organic certification, thereby influencing the policies of mostly FOs. These interventions have been particularly important for FOs to supply the lucrative EU markets which require compliance with strict Sanitary and Phyto-sanitary (SPS) measures and overcoming Technical Barriers to Trade (TBT). Although these FOs desired to export to the EU, they were not aware of the processes that could lead them to meet the required conditions. Yet, organisms/pests such as the false codling moth, fruit fly, *Trioza* spp (a vector of citrus greening virus), and fall armyworm, among others, harmful to animal, plant and environmental health in the EU were detected in Ugandan FFV exports. Embracing food safety and complying with SPS is particularly crucial for Uganda for which the EU is the most important market for its FFV sub-sector in Uganda, and is continuously attracting new farmer groups to produce sustainably for export, hence spreading the consciousness on food safety and SPS across the sub-sector. (FGD-RT).

*European Union market entry challenges and export statistics:* Based on its experience in the FSC pilot, Rikolto Uganda has engaged in collaborating with other public and private stakeholders within the city MSIs and the Hortifresh platform, to develop strategies to prevent the impending ban of FFV products from Uganda, by the EU (RT-FGD). This tension has led to a decline in FFV exports. Recent Bank of Uganda statistics indicate a decline in FFV exports from USD 43.1 million in 2016 to 37.5 million in 2017 which is a decline of USD 5.64 million or 13% (Bank of Uganda statistics, 2021). While this policy action was not planned for at the beginning of the program, Rikolto Uganda used experience from its pilot to engage other stakeholders and respond to the crisis situation affecting the FFV sector.

*Ability of monitoring and evaluation system to assess impact*

Elements of the monitoring and evaluation system currently used cannot assess the impact at pilot level because their development did not include the MSI stakeholders, which would have encouraged participation and increased ownership of the project/plan (RT-FGD).

*Factors affecting the use of evidence of pilot intervention(s) to influence policy*

The willingness of a broad range of knowledgeable stakeholders to participate under a common initiative was a fostering factor. It emerged out of the great interest stakeholders had on the common objective of working towards sustainable food systems in the city. The timeframe within which the pilot was expected to mature however, was too short to allow the use of necessary evidence to influence policy decisions. In addition, resources were not enough to bring on board all stakeholders to implement/ execute the program to its expectation. Late disbursement of funds also had an influence on the time a pilot takes to mature.



## 7. Covid-19 Evaluation Questions

This section evaluates the impact of Covid-19 on Rikolto Uganda target group, focusing on both the rice and FFV clusters. It assesses the effectiveness of Rikolto Uganda's Covid-19 response on supporting the target group to adjust and cope with the shock.

### EQ1. How agile is Rikolto in responding to an external shock?

An agile organisation is one that is able to adapt quickly to market changes, particularly responding rapidly to customer needs. FOs are considered to be Rikolto Uganda clients/customers and they urgently needed support to diversify into livelihood alternatives. Rikolto Uganda was able to support FOs to adjust their business plans. Although this was appreciated by partners who managed to remain in good books with their lenders, their practical needs remained glaring and un-addressed, especially for the rice partners. For FFV partners, better efforts were made with the introduction of the e-commerce. From this experience regarding the Covid-19 pandemic, Rikolto Uganda's agility in terms of flexibility to support partners to switch to other livelihood alternatives was rather low. This is partly due to the nature of the shock that necessitated the full lock down of the economy. It is also partly due to the business environment of the country where e-commerce is still at its infancy and just for privileged few. Moreover, Rikolto Uganda's resources are rather limited for such levels of investment (RT-FGD).

### EQ2. Which impact did Covid-19 responses have on the target groups?

According to FGD with RT, Covid-19 pandemic which resulted into lockdown of the economy had many negative effects:

- Business disruption which meant that farmers could not buy or sell, farming took a very slow pace, even when harvests took place, it was not possible to sell much, leading to losses and waste.
- Rise in domestic violence in families due to poverty in farming households.
- FOs could not meet physically and many became dormant; no bulking possibilities; the VSLA activities stopped, so the numbers of farmers bulking dropped, and some FOs could not pay back loans – especially one FFV FO, Kangulumira, and all the rice FO defaulted.
- It reached a point where the banks stopped lending – Taabu could not receive the loan they expected to receive.
- On a positive note, one partner FO (Kwapa), on the basis of an already signed contract, got its loan for chili production and marketing and was able to repay.

Rikolto Uganda's FS report indicated that around 46% of rice farmers households did not recover from COVID-19. Around 37% of households recovered reaching a better level of well-being (19%) or the same level as before (18%). The remaining households recovered, but they feel worse off.

### EQ3. To which extent has Rikolto's response to the COVID-19 outbreak left a more resilient food system in place, able to respond more swiftly to a next systemic crisis?

To a very small extent because all Rikolto Uganda did was to support partner FOs to adjust their business plans, taking into consideration the measures government instituted to curb the spread of Covid-19. This was the case for rice partners. For FFV partners, Rikolto Uganda started some new initiatives, for instance e-commerce. Farmers have expressed their disappointment to Rikolto Uganda staff, regarding limited support from towards their diversification efforts. Rikolto Uganda Covid-19 response, though limited

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however, has built the capacity of FOs to adjust their own plans in future and communicate changes to their partners, especially regarding reasons why they were not able to deliver when hit by a shock. Some of Rikolto Uganda's interventions in response to the pandemic however, will lead to improvements in future and contribute to a more resilient food system. They include improvements regarding:

- **Access to markets:** The established e-commerce will continue to support FOs accessing the middle class, and high quality market. Participation in e-commerce is complementary to efforts that Rikolto Uganda already made to take some partners through a process of certifying their products. It is easier for farmers with certified products to access such high end markets.
- **Health:** The demand for quality foods, such as fruits and vegetables, increased during to Covid-19, and the trend will continue.
- **Food security:** e-commerce initiated by Rikolto Uganda will continue to help farmers to sell and reach better off consumers who are able to buy from such platforms.
- **Communication/coordination with stakeholders/actors:** following Rikolto Uganda example and partnership with KCCA, K-smart market opened an online market, which includes food suppliers and distributors. This has helped to decongest physical markets and was a key step to curb the spread of Covid-19. The expectation is that the trend will continue in future, especially among busy urban middle class consumers.
- **Income:** through some sales and higher prices on e-commerce, it was possible for FFV farmers who participated to continue earning some income during COVID-19, though not much because this online market is still limited.
- **Access to information:** Covid-19 gave birth to certain new operations, for instance the clientele of BRINGO Fresh has gone up because they can access online platform. Referrals of new consumers by those already participating is continuing up to today and client numbers continue to rise.
- **Lower training costs:** although face-to-face trainings could not be conducted, experience sharing conducted online reduced operational costs for Rikolto Uganda. Aspects of this method of work will continue in future.

## 8. Conclusions and Recommendations

### Conclusions

The conclusions and recommendations below are based on the findings of the assessment. In addition, conclusions and recommendations on upscaling and Monitoring and Evaluation (M&E) are presented, based on reflection by the RT.

Overall, Rikolto Uganda has made noticeable contributions towards the development of a dynamic, sustainable and inclusive sub-sectors, in which family farmers provide quality produce for own consumption and for the market. This is more evident in the FFV sub-sector, with the selection of the chili value chain which are inclusive of vulnerable groups and to a less extent, the rice sub-sector which is male dominated. It has done so by implementing a combination of strategies which sought to develop market systems and promote sustainable transformation of selected sub-sectors, in order to transform food systems.

Rikolto Uganda sensitised farmers, facilitated their access to trainings (GAP, CSA and SRP) and capacity building processes, linked them to private sector BDS providers and buyers in order to improve their

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business performance. A doubling of sustainability indices, though below Rikolto target of 2, demonstrated that farmers applied the techniques acquired through the trainings. Farmers appreciated access to high quality BDS and generally agreed with the BDS policy of Rikolto Uganda, with reservations on the principles of governance and bundling of services. Rikolto Uganda's interventions at farmer and FO levels, complemented each other.

**Livelihood:** The results showed improvements in productivity and production of focus crops, sales through the FOs at better prices, the quality and consistency of farmers' supply to the market, trust by members in their FO, bulking and collective marketing. The farmers also felt more confident to do business, mentioned that they had stronger social capital due to active participation in SACCOs and their food security situation improved. On the one hand farmers appreciated all capacity building efforts through Rikolto Uganda interventions and they acknowledged that their FOs were more, socially inclusive and environmentally sustainable, and moreover, without heterogeneous effects. On the other hand social performance of FOs, in relation to child labour and women empowerment, is rather poor, especially in the rice value chain. Moreover, key challenges remain. Food insecurity is still prevalent among beneficiary farmers and more importantly, incomes declined partly due to competition from Tanzanian rice, in case of rice and partly due to the Covid-19 pandemic.

Whereas the market linkages facilitated by Rikolto Uganda aimed to support farmers to eventually establish contract farming arrangements, the market seemed to be so risky that it undermined contracting. Most traders were reluctant to sign formal contracts due to unpredictability of orders and prices, while farmers were also not willing to invest in improved farm practices without an assured market. Main reason is the un-structured nature of the market and the low levels of trust among actors. This problem led to a situation where market signals to reward quality with better prices at farmer level did not function. Instead, bigger off-takers which bought un-graded products and graded later, benefited from the higher quality produce which they did not pay for.

**Resilience:** The impact of Rikolto Uganda interventions to strengthen farmer business performance and their absorptive capacity in case of shocks and stressors was evident. On average, farmers' **absorptive capacity** increased significantly at 1% level, between baseline (0.46 in 2017) and end line (0.95 in 2021). Farmers confirmed that the increase in absorptive capacity can be attributed to the activities in which they engaged during Rikolto Uganda's intervention, such as training in GAP and CSA. Farmers' adaptive capacity decreased due to various social, environmental and Covid-19 related shocks. In particular, farmers indicated that low capacity of farmers to diversify their livelihood due to limited access to capital and recurrent pests and diseases, among others, undermined their adaptive capacity, and reduced their resilience.

**FOs strengthening:** Regarding the strengthening of FOs into self-sustaining businesses, Rikolto Uganda played the role of coach, facilitator and match maker. Progress is reported on internal management of the FOs with improvements in governance, information sharing and staff performance monitoring. Financial management also improved, especially the establishment and implementation of financial management policies, rules, regulations, procedures, information sharing among members, recruitment of qualified staff and established various levels of control. The tasks however, are mostly carried out manually and are not computerised. Overall, the SCOPE score remained the same during the program period and for the case of FFV FOs, the average scores for internal and financial management even deteriorated. This could be due biases in administering the SCOPE tool but also the poor business environment. For those FOs that were continuously linked to buyers, their scores improved (RT-FGD).

From increased productivity, production, bulking, prices and linkage with buyers, Rikolto Uganda strengthened FOs as business organisations, enabled them to offer more and better services to members and selected value chains that are economically profitable, socially inclusive and environmentally sustainable. This was much clearer in the FFV sub-sector when the chili was selected and it included women and youth. FO capacity however, remains a challenge, such that even business models which have been tested and proven to be successful elsewhere, are struggling in Uganda, due to limited FO capacity in terms of lack of a business mentality and a high dependency syndrome (RT-FGD).

**Multi-stakeholder initiative and institutional level:** At institutional level, Rikolto Uganda succeeded in establishing two MSIs, with a broad range of qualified and committed stakeholders. Rikolto Uganda used its experience with organisational strengthening and SRP to influence policy makers in other NGOs and government ministries, resulting in spillover effects through adoption of tools and methodology of Rikolto Uganda by these stakeholders. Rikolto Uganda has also initiated reflection, planning and dialogue activities which have formed the foundation for promoting sustainable food systems. Actual functioning of the MSIs however is still at its infancy, partly due to lack of facilitation support from government to its representatives and partly because the Covid-19 pandemic interrupted everything, especially meetings.

**Covid-19 effects on program results:** Overall, the Covid-19 pandemic had a negative effect on all program achievements due to restrictions of movement of people, lockdown of end markets and the overall disruption in the supply chain. Rikolto Uganda's agility in supporting farmers at time of COVID-19 was low and could not effectively support the farmers to adapt to other livelihood option. In addition, rice imports from Tanzania, are having negative impact on the rice sub-sector in general. Some of Rikolto's interventions in response to the pandemic however, will lead to improvements and contribute to a more resilient food system.

**Environmental sustainability:** Regarding *environmental issues*, Rikolto Uganda made achievements at various levels. Farmers appreciated training on GAP and CSA techniques facilitated by Rikolto Uganda. Most FOs were aware of dangers of agro-chemicals, were recycling waste into manure and some FO business plans included environmental protection, environment management practices and the organisation's response to the surrounding nature (FO- and FG-FGDs). Rikolto Uganda also developed a strategy with district technical teams to promote adoption of environmental sustainability tools by using the six themes of soil and water conservation, resource management, climate change, biodiversity and landscape management (RT-FGD). Through facilitating organic and PGS certification, Rikolto Uganda implemented actions that promote sustainability.

**Gender equity and inclusion of youth:** Rikolto Uganda clearly mentions the importance of gender equity and youth inclusion in its strategy and strove for participation of these categories of beneficiaries in its activities with partners. Respondents also mentioned that there were no heterogeneous effects of Rikolto Uganda's work because it does not discriminate. Serious weaknesses, however, remained regarding real empowerment. Women and youth percentage among beneficiaries was low mainly due to limited access to land, which Rikolto Uganda was not addressing. In addition, none of the partners offer full maternity rights in terms of pay for their female workers and, women were more involved in seasonal jobs, itself a reflection of gender pay gap.

**Upscaling efforts:** During the program period, the foundation for future upscaling has been laid by Rikolto Uganda. For instance, inclusion of the SRP approach in the national rice strategy implies that other stakeholders who will invest in rice in Uganda in future will be compelled to apply the method. Another example is the launch of the IWA guidelines on farmer organisational professionalisation by MTC. This *End-line impact assessment of the 2017-2021 DGD-funded programme implemented by Rikolto*

however, happened in an *ad hoc* manner in the course of Rikolto Uganda policy influencing work. Much as Rikolto Uganda had elaborated pathways of change to achieve upscaling, there were several hindrances: there were no clear indicators to track upscaling work; budgets for upscaling work were insufficient; Rikolto Uganda did not have capacity to facilitate multi-stakeholder processes, which are key for upscaling and; Rikolto Uganda did not have a direct partner to promote upscaling of Rikolto Uganda's interventions.

**Monitoring and evaluation approach:** Over the program period 2017-2021, Rikolto Uganda has realized the importance of Monitoring and Evaluation (M&E) as an active learning tool for program officers and agribusiness advisers. This means that M&E is not only an important part of their skill set but also a tool they are expected to use in program management. Through the global Rikolto Uganda M&E support functions, program managers and advisers are expected to translate global expertise and tools at local level. There were several challenges with M&E: the system was characterized by too many data collection tools which are complex and overlapping – collecting more or less the same data; others seemed to collect information that was not relevant for measuring progress; some tools were not adapted to the local context and were mostly used for reporting rather than decision making.

### *Recommendations at Farmer level*

1. **Strengthening livelihood diversification:** Considering the low adaptive capacity of farmers when faced with shocks, Rikolto Uganda could either invest in supporting diversification of livelihood towards selected alternative livelihood sources when shocks occur or work in collaboration with other organisations that specialise in such support to family farmers, for example IFAD.
2. **Strengthen farmer capacity in economic calculations,** particularly concerning production cost calculations and profitability of crop and cropping operations. This should also contribute to enhance their price negotiation capacities.
3. **Understand what limits women involvement in rice then choose appropriate strategy:** From the beginning of the program, Rikolto Uganda had a good analysis of gender issues in the rice value chain and concluded that involvement of women in the chain was very low. Based on this analysis Rikolto Uganda aimed to empower women through mechanisation to reduce drudgery, targeted vocational training and supporting specific activities in the value chain, among others. Considering the patriarchal culture in the rice producing districts where a cash crop which occupies land perennially, belongs to the man, the root problem becomes access to and control over land. If this is the problem, the strategy ought to be different.
4. **Empower women to access land or seek alternatives:** Rikolto Uganda could decide to limit its interventions to supporting participation of women in provision of services to the rice sub-sector, from which they benefit directly. The other option could be to support families to increase investments in land hire on condition that women's access to land for production, as well as reaping the benefits from such plots by women is guaranteed. This could be a temporary measure combined with a medium to long term plan of supporting women out of rice production and into other livelihood alternatives. Whichever choice Rikolto Uganda makes, it will be important to engage the men, so they are supportive of the women, especially since it is common knowledge that in rural areas where women empowerment is low, the men will always take over the enterprises of women, once they become profitable. In all cases it is important to understand that participation of women is only the first step towards empowerment.

### *Recommendations at FO level*

1. **Business support by FOs to farmers:** For family farmers, the hope to build profitable and sustainable business engagements lies in collective action, especially bulking and marketing through their FO, yet the FO capacity has remained relatively weak. It will be important to develop a trajectory for support to each FO, towards sustainable business units. This should be based on a good analysis of specific challenges being faced in selling to specific markets, in linkage with a private buyer. Starting point should be therefore be the end market which could be supplied by the FO. An offer of cost and profit calculation support should also be integrated within the range of services offered by an FO.
2. FOs should collectively work on **strengthening market information systems**.
3. **Child labour:** Rikolto Uganda could support FOs in defining child labour issues in their context and in the selected enterprises, then support them to elaborate specific FOs policies and guidelines for prevention and mitigation of child labour.
4. **Gender equity and inclusion of youth:** It will also be critical for Rikolto Uganda to engage FOs in an in-depth and systematic gender analysis that covers participation, division of labour, decision making, then ownership and control over resources and benefits by women and youth. This will help FOs to come up with empowerment strategies rooted in their context, and move away from vague and contradictory messages on women and youth empowerment that emerged from FGDs. For instance, all FOs indicated that there is no gender gap in payments and yet they reported that women are mostly employed in seasonal jobs. Seasonal jobs are known to pay less, and to be more precarious. They are also good indicators of gender gap in payment. FGDs with farmers also highlighted that youth are performing better than older farmers in adopting improved technology, but, at the same time, it emerged that youth are often involved in land conflicts, especially in the rice value chain.
5. **Trust:** To address the problem of BDS providers making false promises to farmers, Rikolto Uganda and partners could develop a clear service quality and delivery monitoring mechanism that enables prompt trouble shooting and quick response to problems with BDS service providers.
6. **Contextualization:** To improve results from the Rikolto Uganda BDS policy implementation, Rikolto Uganda could engage FOs in analysing the applicability of the principles they have reservations on, then agreeing on adjustments to be made in their contexts, in order to realise the intended results.
7. **Price and quality:** Grading produce is crucial in structuring markets because it transmits price signals and benefits which motivate farmers to improve quality. In addition to the dialogue within agribusiness clusters, already initiated by Rikolto Uganda to find ways to lower the risks to both farmers and buyers, more investment could be made under the FO strengthening as business organisations, in order to support FOs to grade produce in a decentralised manner, so that price negotiation is done on already graded produce. The grades would need to be defined by major buyers and the producers, in reference to international or national standards for the selected enterprise. This system works very well with Fairtrade cooperatives in Uganda. In addition, Rikolto should deepen the analysis on the willingness of buyers and consumers to pay better prices for higher quality produce and disseminate the evidence, in order to persuade concerned traders to engage in price differentiation pricing. Such evidence would encourage both farmers and buyers to take advantage of the growing middle class in Africa in general and Uganda in particular.
8. **Technical assistance:** Considering the persistent problem of FO capacity to do business, the impact investment approach needs a stronger technical assistance package with FO strengthening at its core, especially on governance and management. Rikolto Uganda, through its participation in AMEA, should engage other interested stakeholders to search for a workable strategy to solve this problem. Previous programs had focused too heavily on FO strengthening, yet in agribusiness, the cluster approach would be more effective i.e. facilitating market actors within a geographic cluster to analyse

and develop interventions collaboratively, with the starting point as the market, rather than the FO. This means that the Inclusive Business Model (IBM) approach of Rikolto Uganda, could start from the market demand. When a potential buyer is found, then the strengthening of the FOs begins, with the objective of meeting the demand of that specific buyer. Strengthening FO should focus on ROI of the business.

9. **Sustainable business:** Concerning weaknesses of FOs to engage in sustainable business, Rikolto Uganda and indeed globally, need to address the issues of lack of working capital and diversification. This should be underpinned by an in-depth and well-grounded analysis of the selected sub-sectors and context situation, especially cost implications for FOs to sell in bulk, business ecosystem dynamics including options of buying down risk. Rikolto Uganda could collaborate with organisations that offer or support working capital access for farmers, for example a collaborative project among Pearl, IFAD and KPMG in Uganda. Rikolto Uganda could also explore green financing options and insurance packages. This could also contribute to Rikolto Uganda being more agile when shocks hit.
10. **Rice price:** Considering the declining rice prices in Uganda and the common knowledge at all levels of the rice value chain that importation of rice from Tanzania is rendering rice production in Uganda unprofitable, Rikolto Uganda might need to pose the strategic question of whether it should continue supporting rice in Uganda. This will be in line with the sentiments of the African Union that is discussing the possibility of zoning sub-Saharan African countries into agro-ecological zones, with comparative and competitive advantages of producing key food crops, which can then be marketed regionally or sub-regionally. If Rikolto Uganda decides to continue with rice, then it will be important to do in-depth analysis of the rice sub-sector, including micro- meso- and macro-issues that might be affecting the rice market, then target its support better. Rikolto Uganda will also need to engage the Uganda government on prospects for the rice sub-sector in the medium to long term, and the type of institutional support it intends to the sub-sector.

### *Recommendations at Institutional level*

1. **MSI:** Considering the fact that MSI results are only emerging, it is necessary to **consider consolidating MSI over time**. In particular, participation of public authorities should be strengthened.
2. In synergy with its developing, Food Smart Cities work, Rikolto should **support MSI in promoting territorial food systems which would develop localised agricultural exchanges with public institutions** such as schools or administrations, or possibly also with private supermarkets, so as to shorten value chains and develop economic activity and food autonomy at a local level. Such work should be associated with **diversification of producer activities, both in terms of variety of crop and crop transformation**. This should seek both to add value and increase resilience at producer and FO level, as well as increase food security at territorial level. Secure contracts would also help producers and transformers to secure capital to invest in improved practices and equipment and support activity diversification.
3. In order to boost functioning of the MSI and increase chances of uptake of recommendations by the various stakeholders, Rikolto Uganda might consider looking for a convenor with clout and from the public sector, for instance a relevant government ministry or University. This would encourage more commitment and support from government.
4. **Dialogue:** Considering the magnitude of the problem in the rice sector, Rikolto Uganda could initiate dialogue on the challenges within the rice platform, in order to come up with stakeholder proposed solutions for the sub-sector. Rice policy work could support tax policy proposals supporting Ugandan rice competitiveness with respect to Tanzanian rice.

5. **Policy and Rikolto Uganda program:** Now that the government of Uganda has a wetlands protection policy, which is an opportunity for farmers engaged in SRP, Rikolto Uganda could make an analysis linking this policy opportunity with its program which is already promoting SRP with smallholder rice, in order to solicit government commitment to support the sector. Rikolto Uganda could highlight the possibility of government hitting two birds with one stone by protecting wetlands as it eradicates poverty among smallholder farmers.

#### *Upscaling, monitoring and evaluation*

3. **Upscaling: Rikolto should follow, capitalise and systematise the pathways of change and logics it follows to develop new business models and achieve change.** In particular, so as to promote upscaling, it is important that Rikolto Uganda elaborates clear indicators to monitor progress in this area. It is also desirable to select partners, private or public, with whom to collaborate in upscaling Rikolto Uganda interventions. Pathways for upscaling which may emerge outside the planned collaboration should not be ignored either.
4. **Monitoring and evaluation:** Although M&E is considered part of the skill set of program managers and advisers, a good starting point in empowering them to take up this responsibility could be an internal refresher training on contemporary M&E concepts and tools used by Rikolto Uganda, as well as the purpose, practical use of the data collected and how to effectively convert data (analysis and analytical tools) into usable information at various levels. Implementation of effective M&E by managers and advisers should be enabled by budgets for executing the work but also for sourcing support with simple tasks such as data collection.

Specifically, efforts should be undertaken to understand the factors which determine the scope insight scores and why they have either remained stable or declined despite Rikolto support to FO.

M&E processes suggested by Rikolto headquarters should be adapted to local contexts in a participative way with the involvement of all local teams.



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## 10. Annexes

### Annex 1: Detailed sampling strategy

| Farmer group                       | District       | Category       | Number per category | Days | Total      |
|------------------------------------|----------------|----------------|---------------------|------|------------|
| Kangulumira                        | Kayunga        | FO leaders     | 9                   | 1    | 9          |
|                                    |                | FO members     | 15                  | 3    | 45         |
|                                    |                | Non-FO members | 15                  | 3    | 45         |
| <b>Subtotal</b>                    |                |                |                     |      |            |
| Kwapa                              | Tororo         | FO leaders     | 9                   | 1    | 9          |
|                                    |                | FO members     | 15                  | 3    | 45         |
|                                    |                | Non-FO members | 15                  | 3    | 45         |
| <b>Subtotal</b>                    |                |                |                     |      |            |
| Sabiny                             | Kapchorwa      | FO leaders     | 9                   | 1    | 9          |
|                                    |                | FO members     | 15                  | 3    | 45         |
|                                    |                | Non-FO members | 15                  | 3    | 45         |
| <b>Sample size FFV/FSC program</b> |                |                |                     |      | <b>307</b> |
| <b>Subtotal</b>                    |                |                |                     |      |            |
| Bunambutye                         | Bulambuli      | FO leaders     | 6                   | 3    | 18         |
|                                    |                | FO members     | 24                  | 3    | 72         |
| <b>Subtotal</b>                    |                |                |                     |      |            |
| Taabu                              | Bulambuli      | FO leaders     | 6                   | 3    | 18         |
|                                    |                | FO members     | 24                  | 3    | 72         |
| <b>Subtotal</b>                    |                |                |                     |      |            |
| DIFACOS                            | Butaleja       | FO leaders     | 6                   | 3    | 18         |
|                                    |                | FO members     | 24                  | 3    | 72         |
| <b>Subtotal</b>                    |                |                |                     |      |            |
| MBRFC                              | Butaleja       | FO leaders     | 6                   | 3    | 18         |
|                                    |                | FO members     | 24                  | 3    | 72         |
| <b>Subtotal</b>                    |                |                |                     |      |            |
| RT                                 | Rikolto Uganda | Non-farmers    | 3                   | 1    | 3          |
| <b>Sample size Rice program</b>    |                |                |                     |      | <b>363</b> |
| <b>Grand Total</b>                 |                |                | <b>670</b>          |      |            |