Association of Microfinance Institutions in Rwanda

Financial needs assessment for youth investing in poultry, green beans, chili pepper & tomatoes value chains.

Final Report

October 2023

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Content

List of Abbreviations

AMIR: Association of Microfinance Institutions in Rwanda
BDF: Business Development Fund
BNR: Banque Nationale Du Rwanda
BRD: Banque Rwandaise De Development
FSPs: Financial Service Providers
MFIs: Micro-Finance Institutions
MINECOFIN: Ministry of Economy and Finance
PCG: Partial credit Guarantee
P.T.F.W.S: Pfunda Tea Workers and Farmers Sacco
RAB: Rwanda Agriculture Board
RIM: The Reseau Interdiocesain de Microfinance au Rwanda.
RYAF: Rwanda Youth Agriculture Forum
SACCO: Saving and Credit Cooperative
SERVE Project: Supporting and Enhancing Resilient and Viable Employment Opportunities
VC: Value Chain
VSLA: Village Savings and Loan Association

Executive Summary

This report presents a detailed assessment of the financial requirements of youth participating in the chili pepper, green beans, tomato, and poultry value chains within Rwanda's SERVE project. The primary aim of this assessment is to gather specific information regarding the financial needs of youth in these agricultural sectors, offering evidence-based insights to bolster the SERVE project's support.

Data was gathered through a mixed-method approach that encompassed demand-side, supply-side, and environmental assessments, providing a holistic insight into the financial needs and obstacles faced by young individuals who are engaged in the aforementioned value chains. The study targeted a modified population of 16,663 Youth Micro, Small, and Medium-sized Enterprises across four value chains and ten districts, employing rigorous sampling techniques to ensure representation by gender, value chain, and business category. Despite certain limitations, such as difficulties in reaching respondents and non-response rates, the report furnishes valuable insights and recommendations to enhance the SERVE project's support for youth engaged in these agricultural sectors

The review of Rwanda's agriculture financing context revealed that the formal financial sector's agriculture loan portfolio grew significantly whereas Microfinance institutions (MFIs) and Savings and Credit Cooperatives (SACCOs) have shown rapid expansion, constituting 22% of their loan portfolio in this sector. In March 2018, MFIs provided agricultural loans worth Rwf 22,150,868,484, which experienced significant growth, reaching Rwf 46,635,967,538 by June 2023, representing an approximately 110.89% increase during this period.

Despite this growth, the percentage of the loan portfolio in the agriculture sector relative to the total MFI portfolio decreased from approximately 15.95% in March 2018 to about 12.63% in December 2023, with a notable surge from March 2019 to June 2019. Formal financial sector participation remains low, accounting for only 5% of agricultural credit utilization.

Analysis of gender distribution in MFI loan disbursements shows a substantial shift over the years. In 2009, 99.96% of outstanding loans were held by males, with only 0.04% by females. By 2023, the proportion of outstanding loans held by females increased to 36.74%, indicating a significant change in the gender distribution of loans.

Moreover, while over 60% of Rwanda's youth are engaged in the agricultural sector, their active participation faces various financial obstacles. These challenges encompass constrained access to formal financial services, financial illiteracy, absence of tailored financial products and solutions as well and insufficient collateral options.

The dive into the cost of production for chili peppers, tomatoes, and large-scale poultry farming is notably high, making it a significant barrier for young individuals. For instance, chili pepper production requires around 4,000,000 Rwandan Francs for a 5-hectare plot.

The analysis of financial priorities among youth in agriculture reveals that the majority of financial resources are directed towards fertilizers and pest control, accounting for 47% of total expenditures. Land access costs, at 18.8%, represent the second-highest financial burden, emphasizing the challenge of securing land for agricultural operations.

Over 50% of youth in agriculture funded their initial startup costs through personal savings or contributions from family and friends. The reliance on personal resources suggests limited access to external financial resources. Many respondents found it challenging to secure funding for land acquisition and site preparation costs, infrastructure and equipment, and essential inputs. Addressing these challenges may require grants or low-interest loans to support youth in agriculture.

Only 4.2% of surveyed youth have taken crop or livestock insurance, while 95.8% have not. The low percentage of insurance uptake suggests limited awareness and access to insurance products among young agricultural entrepreneurs. 30.1% of respondents highlighted the lack of comprehensive insurance coverage for all potential risks as a major challenge. The chi-square test revealed a significant association between the envisaged challenge in accessing insurance and having taken crop/livestock insurance.

Youth in agriculture express a strong demand for digital training on financial literacy services, digital wallets, and mobile-based agri-loan requesting and payment services. These services are seen as essential for improving financial management and access to financial resources.

However, the supply-side analysis indicated that MFIs are cautious about agricultural lending due to the sector's inherent risks such as disease outbreaks, climate-related issues, and price instability. Few MFIs offer dedicated agricultural savings products, and generic products lack specificity for the agriculture sector. In addition, the lack of organized structures like cooperatives hampers loan disbursement to specific value chains.

This assessment recommended that addressing the financial needs of the youth investing in the selected value chains will require a multi-faceted approach that includes financial education, and linking youth to participating microfinance institutions, featured appropriate financial products for the youth as well as the entry points and supportive mechanism for the SERVE Project.

1. Introduction and Significance of the Assessment

While there is considerable documentation regarding the financial inclusion of young individuals and discussions about the necessity for loans, financial literacy, and savings among young people, and the establishment of venture capital funds for young agricultural startups, there is relatively little compiled information available about specific financial needs of youth in chili pepper, green Beans, tomatoes and poultry value chains in 10 Districts of the SERVE project interventions. Therefore, assessing the financial needs of the project beneficiaries in those value chains and Districts was critical to obtaining evidence-based information for the smoothness of the project implementation.

This report provides detailed findings from assessing the financial needs of the youth engaged in chili pepper, green beans, tomato, and poultry value chains in 10 selected Districts of Rwanda. The report highlights what are the key financial needs and requirements of the youth in selected value chains, as well as the challenges they face when trying to meet those needs. The assessment findings are meant to inform the SERVE project about the relevant financial support mechanisms to enhance financial inclusion as well as the parameters that should be factored in during the development of the specific tailored financial products for the target beneficiaries, especially loan, savings, and insurance products

The assessment put a focus on identifying ongoing best practices and current financial products on the market relevant to chili pepper, green beans, poultry, and tomatoes, together with identifying constraints encountered across different nodes of those value chains. It was also researched on the existing interventions by the Government, NGOs, and development agencies in enhancing agriculture financial services for youth engaged in agriculture; to identify possible synergies with the SERVE Project. Moreover, it analyzed the existing financial instruments that accelerate access to agriculture financial services to come up with a mechanism, specifically targeting female youth, that would stimulate private lending to the SERVE Project's prioritized agriculture value chains.

2. Objectives of the Assessment

The assessment aimed at identifying the priority of digital and non-digital financial needs of youth (predominantly female youth) involved in chili pepper, poultry, green bean, and tomatoes value chains; in selected 10 Districts of Rwanda; with the following key objectives:

a. To identify the financial needs and requirements of youth engaged in the selected agriculture value chains.
b. To determine the financing challenges and constraints encountered by the target youth in accessing and utilizing available financial services, at different nodes[1] of those value chains
c. To assess the existing financial services (both digital and non-digital) and financial products relevant to prioritized value chains and propose the ones that could be factored in during the implementation of the SERVE Project.
d. To identify possible opportunities and entry points for the SERVE Project to effectively expand agriculture financing access to youth, especially female youth across target value chains.
e. To provide actionable recommendations on mechanisms that would stimulate financial institutions' lending to youth, especially female youth, engaged in prioritized value chains.

[1] Production, post-harvest and processing, as well as commercialization levels

3. Assessment Approach and Methodology

As guided by the ToR, inception meeting and emerging issues during the implementation, the assessment employed mixed methods as an overall approach and methodology to suit the context of this assessment.

a. **Assessing the demand side:** This assessment focused on assessing the state of the demand for the financial services among the selected youth in 10 target districts and 4 value chains, indicating both current levels of access and use of financial services, as well as existing gaps and unmet needs.
b. **Assessing the supply side:** This was focused on assessing the state of the offer for financial services to youth on the part of sampled financial services providers. It comprised the identification of both generic financial services provided to youth in the target agriculture value chain, as well as financial products expressly designed for that client category. The emphasis was put on loan and saving products available for the youth in agriculture sector as well as their digitized level of such products and accessibility for the youth, especially the female youth.
c. **Assessing the environment side:** this engrossed on the identification of those regulatory, political, cultural and social factors that can either constraint or support youth financial inclusion in agriculture sector. It emphasized, in particular, on the analysis of policies, programs and other public interventions that aim at fostering access and use of financial services among youth.

3.1. Data collection techniques

The assessment process primarily relied on both primary and secondary data collection obtained through desk review, direct consultations with youth, financial service providers (FSPs), and other pertinent stakeholders. This approach involved the integration of both quantitative and qualitative data, enabling a holistic comprehension of the financial requirements and obstacles encountered by various youth segments involved in the poultry, beans, tomatoes, and chili value chains. To facilitate this comprehensive data-gathering process, we employed the following data collection techniques:

3.1.1. Desk Review

The desk review presents a comprehensive analysis of existing research and studies reports related to youth engagement in the agricultural sector and their financial needs. It explored successful financial models/case studies and interventions so far implemented to respond to the Agricultural Youth's financial needs. The emphasis was put on analyzing existing agriculture financing policies and services instruments in agriculture financing vis à vis the project's prioritized value chains (poultry, green beans, tomatoes, and chili) such as subsidies, grants, tax incentives, and low-interest loans, and how supportive they are policies in easing the financial burden for young people entering the agriculture in the target value chains.

3.1.2. Surveys

A structured survey was carried out to gather data from a diverse group of youth participants involved in various value chains. The survey was specifically designed to be representative of youth entrepreneurs; engaged in the green beans, chili, poultry, and tomatoes value chains, in Rulindo, Gakenke, Kayonza, Rwamagana, Ngoma, Kirehe, Nyamagabe, Huye, Nyabihu, and Rubavu Districts.

To efficiently collect this data, an individually administered questionnaire was developed using Kobo Collect, which streamlined the process by eliminating the need for manual data entry. The questionnaire was administered in person to carefully selected respondents who are part of the SERVE Project's target beneficiaries.
By structuring the survey in this manner, we aimed to collect comprehensive and accurate data from a wide range of youth entrepreneurs, ensuring the assessment's relevance and effectiveness in informing project decisions and strategies.

3.1.3. Key Informant Interviews (KIIs)

In this assessment, we conducted in-depth interviews (KIIs) with key informants, carefully chosen to complement the information derived from surveys. These informants primarily represented two critical domains: the agriculture financing industry and the realm of financial empowerment for youth and women.

The in-depth interviews allowed us to delve deeper into the subject matter, capturing nuanced information that transcends mere facts and figures. By engaging with key informants, we were able to gain a holistic understanding of the issues at hand and enrich this assessment with qualitative insights.

To maintain the representativeness and reliability of the key informant interview responses, we employed a methodology called thematic saturation. This approach guided our data collection process, ensuring that we continued collecting information until we observed a point of redundancy. This means that data collection ceased when key informants' responses began to repeat themselves, and further data collection would have yielded redundant information.

3.2. Sampling Frame and Sampling Technique

The target population for our assessment comprises youth between the ages of 18 to 35 who are actively engaged in the chili, tomatoes, green beans, and poultry value chains across ten selected districts. However, for this assessment, we have employed a modified definition of the population, referred to as the "defined target population".
This definition was derived through a comprehensive evaluation of the project document and the youth profiling criteria established by the project consortium. Consequently, this rigorous examination has led us to identify a specific target population of 16,663 Youth Micro, Small, and Medium-sized Enterprises (MSEs) for the assessment, as indicated in the table1below:

Table1: Defined target population

V.C / District	Chili pepper		Green Beans		Poultry		Tomatoes	
	Male	Female	Male	Female	Male	Female	Male	Female
Huye	50	75	100	354	252	618	422	538
Gakenke	59	123	105	428	128	228	114	231
Kayonza	54	100	96	172	139	290	411	519
Nyabihu	11	20	7	85	169	480	72	189
Kirehe	52	130	6	46	197	711	370	840
Rubavu	32	57	29	123	255	699	59	199
Ngoma	67	178	28	89	85	308	264	611
Rulindo	33	47	55	266	202	488	206	421
Nyamagabe	24	36	28	111	214	431	80	137
Rwamagana	29	64	135	342	103	358	357	422
Total Gender	**411**	**830**	**589**	**2016**	**1744**	**4611**	**2355**	**4107**

Total VC	**1241**	**2605**	**6,355**	**6,462**

Subject to the population size, and in light of the challenges posed by limited time and budget constraints, it was deemed unfeasible to reach every individual youth within all four targeted value chains across ten districts. To overcome this limitation, a judicious approach was adopted, wherein a representative sample was utilized to extract essential information from project beneficiaries. Given the diverse nature of our target population and the necessity to encompass various subgroups (value chains, gender, and business categories: individual or group) within each value chain, a stratified multi-stage random sampling method was employed.

The stratified sampling technique[2] entailed breaking down our defined population into pertinent strata based on value chain, gender, residence (displaced or not), and business venturing aspects. Subsequently, random sampling was carried out within each stratum. This stratified approach was instrumental in ensuring that estimates could be generated with equal precision across the target population and that the selection of respondents from this population was carried out with equal statistical power. Within each stratum, the number of individuals selected was proportionate to ensure adequate representation of each subgroup and to capture the diversity within the target population.

Consequently, the application of stratified sampling with multiple strata led to the creation of strata such as "Male youth in the green beans value chain" and "Female youth in the chili value chain." At the third stage of the process, respondents were chosen using the simple random sampling method for administering the data collection instrument.

To elucidate further, the following strata were devised:

a. **Agriculture Value Chains as Primary Strata**: This choice was made based on the premise that individuals are not evenly distributed across the four value chains, and their financial needs may vary significantly according to the specific value chain they are associated with.
b. **Gender Strata as Secondary Strata**: Recognizing that women constitute at least 70% of the target population, gender-based strata were established. This approach was crucial in ensuring the equitable inclusion of male respondents in our sample.
c. **Business Venturing Strata**: In order to encompass a wide spectrum of youth respondents, strata were devised to incorporate both those belonging to business groups (such as cooperatives, Youth Farmer Groups, or Limited companies) and those operating as individual entrepreneurs.

By structuring the sampling process in this manner, the aim was to collect data that would comprehensively represent the diverse facets of the youth population engaged in the project, while also allowing for meaningful analysis and insights.

[2] The Stratified multistage random sampling is an effective method that combines the techniques of stratified random sampling and multistage sampling: https://www.vedantu.com/question-answer/multistage-stratified-random-sampling.

3.3. Sample Size Determination

To determine an appropriate sample size for the whole target population, the following formula for a finite population was used: $n = \frac{N \times (Z)^2 \times p(1-p)}{(N-1) \times (e)^2 + (Z)^2 \times (1-p)}$, where:

n=required sample size.

N= Total population size (in this case 16,663 male and female youth belonging to various value chains. Some of them are refugees or other are not; and they operate either individually or through business groups such as Limited company, cooperatives and Youth Association).

Z is the Z-Score corresponding to the desired confidence level (here it is 1.96 for 95% confidence level).

p=Estimated proportion of the population with our attribute of interest (0.5 in case there is no prior estimate available)

e= margin of error or desired level of precision (in our case is 0.05). Subject to the above, the sample size (n) is equal to: $n = \frac{16{,}663 \times (1.96)^2 \times 0.5(1-0.5)}{(16{,}663-1) \times (0.05)^2 + (1.96)^2 \times (1-0.5)}$ =369 respondents.

However, the calculated sample size should be adjusted to the probable dropout proportion. The adjusted sample size N1 is obtained as N1 = n/(1-d), which implies that to calculate the adjusted sample size, the total expected sample size is divided by one minus the proportion expected to dropout (0.10 in this case). This results in dividing 369 by 0.9, giving a sample size adjusted for dropout of 410 in this assessment.

The proportional allocation, within each stratum, of the total sample size was performed using the stratum weights[3] as follow: $nk = n\frac{Nk}{N} = nWk$

Where, Nk is population size of stratum k ,and nk is size of sample from stratum k ;while N is the population size. Therefore:

(a). For the chili pepper value chain, the selected $nk = 410\frac{1241}{16663} = 410 \times 0.0744764 = 31 people$

(b). For the Green beans value chain, the selected $nk = 410\frac{2605}{16663} = 410 \times 0.156 = 64 people$.

(c). For the Poultry value chain, $nk = 410\frac{6355}{16663} = 410 \times 0.38 = 156 people$

(d). For the Tomatoes value chain,

$nk = 410\frac{6462}{16663} = 410 \times 0.39 = 159 people$

- **Male and female respondents within each value chain.**

(a) Chili pepper

- Number of Male respondents: $nk_m = 31\frac{411}{1241} = 31 \times 0.33 = 10$
- Number of Female respondents: $\boldsymbol{nk_F = 31\frac{830}{1241} = 31 \times 0.667 = 21}$

[3] Stratified sub-group sample size = (Total Sample Size / Entire Population) * Population of Subgroups

(b) Green Beans

Number of Male respondents: $nk_m = 64\frac{589}{2605} = 64 \times 0.226 = 14$

Number of Female respondents: $nk_F = 64\frac{2016}{2605} = 64 \times 0.774 = 50$

(c) Poultry

Number of Male respondents: $nk_m = 156\frac{1744}{6355} = 156 \times 0.274 = 43$

Number of Female respondents: $nk_F = 156 \times \frac{4611}{6355} = 156 \times 0.725 = 113$

(d) Tomatoes

Number of Male respondents: $nk_m = 159\frac{2355}{6462} = 159 \times 0.364 = 58$

Number of Female respondents: $nk_F = 159 \times \frac{4107}{6462} = 159 \times 0.635 = 101$

Furthermore, considering that the respondents are unequally distributed across target districts, our determined sample size was proportionally allocated in ten districts as follow[4]:

Table2: Sample size by District, Value chain and Gender

Value chain	**Chili pepper**		**Green Beans**		**Poultry**		**Tomatoes**		**G. Total**		
Districts	Male	Female	Male	Female	Male	Female	Male	Female		M	F
Huye	1	2	2	9	6	15	10	13	**59**	*20*	*39*
Gakenke	1	3	2	11	3	6	3	6	**35**	*10*	*25*
Kayonza	0	3	2	4	3	7	10	13	**43**	*16*	*27*
Nyabihu	1	1	0	2	4	12	2	5	**26**	*7*	*19*
Kirehe	1	3	0	1	5	17	9	21	**57**	*15*	*43*
Rubavu	2	1	1	3	6	17	1	5	**37**	*10*	*27*
Ngoma	1	5	1	2	2	8	7	15	**39**	*10*	*29*
Rulindo	1	1	1	7	5	12	5	10	**42**	*12*	*30*
Nyamagabe	1	1	1	3	5	11	2	3	**26**	*9*	*18*
Rwamagana	1	2	3	8	3	9	9	10	**44**	*15*	*29*
Total Gender	**10**	**21**	**14**	**50**	**43**	**113**	**58**	**101**	**410**		
Total VC	**31**		**64**		**156**		**159**		**410**		

This geographical variability was taken into consideration to determine the number of respondents from each District among 10 selected Districts. That was due to the fact the financial needs of youth can vary significantly depending on their location.

[4] The proportioned number in each District was obtained by multiplying the required sample size of each value chain by the gender proportion within that value chain in a given District.

Similarly, to ensure that other categories of interest (such as business venture types, refugees, and people with disabilities) in the population are proportionally represented, quota sampling was applied by considering both business venture types, youth with disabilities, and displaced youth within each value chain and District.

3.4. Sampling Procedures

The selection of individual youth respondents involved systematic sampling to ensure respondents were chosen from various value chains and across 10 target Districts. This method also guaranteed the representation of various categories, including males and females, individual youth and sole proprietorships, refugees/displaced persons, non-refugees, people with disabilities, etc., in the sample.

The selection of key informants was intentional and aimed at enriching the depth and quality of the data. The focus was on individuals with expertise in these sectors, capable of providing insights beyond the quantitative data collected through the youth survey. This selection combined expert and heterogeneity sampling techniques, ensuring that key informants possessed both expertise and practical experience in agriculture financing, with a specific emphasis on financial inclusion for youth and women. This approach aimed to account for the diversity of interventions within these areas.

3.5. Data analysis

After collecting the data, a structured data preparation process was followed before diving into the analysis. This process consists of several essential stages, including data validation, data cleaning, and data editing.

For the analysis, the survey data from KOBO was imported into the Statistical Package for Social Sciences (SPSS). SPSS was chosen due to its robust features for data analysis, especially for generating frequency tables that offer key statistical insights into the financial needs of youth across the selected 10 districts.

The analysis primarily employs both qualitative and quantitative analysis tools, which were applied to investigate various aspects of youth's cash flow patterns, attitudes, aspirations, and financial practices in relation to their financial needs. Additionally, relevant factors for designing and delivering youth-friendly financial products were explored, encompassing how youth prefer to access financial services and what type of financial services they typically need from participating financial service providers.

A crucial aspect of the analysis involved performing hypothesis tests to determine whether there is a significant association among different variables considered in this assessment, such as the existence of a relationship between the value chain and the financial needs of youth in agriculture, or whether distinct financial needs among youth are based on factors such as gender or membership in a business group or association.

Furthermore, the analysis of Key Informant Interviews (KIIs) centered on a structured process that began with converting interview notes into a digital, word-based format to enhance the organization and ease of access to the gathered data. Following this step, the transcribed data was meticulously reviewed and analyzed to discern recurring themes and patterns within the responses. The chosen analytical approach primarily revolved around thematic analysis, where the recurring ideas and concepts emerging from the datasets were carefully examined. Through the

synthesis of these recurring elements, comprehensive and cohesive themes were constructed to provide valuable insights from the supply side into the financial needs of youth engaged in the selected agriculture value chains.

3.6. Data Quality control measures

To ensure the quality and integrity of the data collection process for this sensitive and crucial assessment, a comprehensive set of measures and activities have been implemented. These steps are designed to guarantee the reliability of the data and information gathered. The following activities and measures were undertaken:

- **Validation of Research Protocol and Instruments:** The research protocol and data collection instruments underwent a rigorous validation process. This validation was conducted during a meeting with AMIR (Add the full name or acronym), ensuring that the research tools were well-designed and appropriate for the study's objectives.
- **Interviewer-Assisted Approach:** During Key Informant (KI) interviews, an interviewer was always accompanied by a note taker. This approach was adopted to ensure that no valuable information provided by the respondents was missed. Additionally, it helped minimize the chances of misinterpretation by data collectors, as two sets of ears and eyes were dedicated to capturing and recording the responses accurately.
- **Use of Pretested Research Instruments:** To maintain the quality of data collection, pretested research instruments were employed. These instruments had been carefully tested and refined to ensure that they effectively captured the required data. Any issues or challenges identified during the pretesting phase were addressed to enhance the quality of the data collection process.
- **Recruitment of Committed and Professional Enumerators:** A critical factor in data collection is the enumerators responsible for gathering information. To maintain the integrity of the process, a diligent effort was made to recruit enumerators who were not only committed to the study's objectives but also possessed a high level of professionalism. This ensured that data collection was carried out with precision and in accordance with the established protocols.

3.7. Ethical and Data Confidentiality Considerations

Our pursuit of information followed rigorous ethical guidelines and data protection protocols. All gathered data has been handled with the utmost confidentiality and stored securely, prioritizing the anonymity and privacy of participants throughout the entire process. Informed consent was diligently obtained.

Prior to embarking on fieldwork, assistance was enlisted from AMIR to facilitate introductions to the target respondents and interviewees. In doing so, scrupulous adherence to research ethical standards during data collection was maintained, respecting each respondent's right to choose whether or not to provide answers. Additionally, absolute confidentiality of any shared information was ensured, and a commitment was made to use it exclusively for the purpose of the assignment.

3.8. Limitations encountered during the assessments

During the planning stages of fieldwork, a sample of four hundred and ten respondents was initially identified, along with their contact information. However, during the fieldwork itself, significant difficulties were encountered in reaching these individuals. Many of the provided telephone numbers turned out to be incorrect, or the respondents were located in areas with no network coverage. Furthermore, a substantial portion of the youth cooperatives selected for the study were either non-existent or no longer operational. To address this challenge, additional respondents had to be selected to replace those who could not be reached. This was necessary

because it helped to reduce the non-response and missing rate to 0%, compared to 10% in the initial predictions when determining the sample size.

Securing the availability of key informants and survey respondents according to the original schedule proved to be a significant challenge. Telephone conferences were conducted with some key informants, and in some cases, interviews had to be scheduled during evening hours to accommodate their availability.

In addition to these communication challenges, physical access to respondents' locations in certain Districts was limited. The selected respondents were situated in areas lacking reliable public transportation, necessitating long journeys by motorbike for enumerators. This not only extended the time required for data collection but also presented logistical issues, including increased transportation costs and scheduling conflicts. This situation highlights some of the daily challenges that youth in these areas face regularly.

Moreover, adhering to the regulations governing interactions with refugees within the refugee camp, coupled with the time required for these procedures, made it unfeasible to conduct Focus Group Discussions (FGD) with refugee participants. However, successful interviews were conducted with camp program managers, who graciously shared valuable insights into the financial needs of refugee youth engaged in the agriculture sector

4. Presentation of the assessment results

This chapter presents a comprehensive analysis of the research findings. A thorough desk review of research reports and articles related to agricultural financing and the financial needs of youth involved in agriculture in Rwanda was conducted. Importantly, the analysis incorporates data collected from surveys aimed at youth participants and insights gathered from key informant interviews with various stakeholders, including financial service providers, government entities, and development agencies.

The analysis takes into account the contextual framework of agricultural finance in Rwanda. However, the emphasis focus was put on the demand and supply analysis of financial services and products specifically tailored to the youth engaged in the chili pepper, green beans, tomato, and poultry value chains.

4.1. Contextual Analysis

a. Macro-Economic Context

Rwanda aims to achieve Middle-Income Country status by 2035 and High-Income Country status by 2050 through various economic transformation goals, including increasing agricultural and livestock productivity and positioning the country as a financial services hub to promote investments. These efforts are part of a broader strategy to create jobs, foster sustainable urbanization, build a knowledge-based economy, and transition to a green economy[5].

However, the unemployment rate is noticeably higher among the youth population in contrast to that among adults, and it has consistently remained higher among females at 22.2 percent, as opposed to males at 17.2 percent. Moreover, despite an overall increase in the employment rate, the agricultural sector, which employs a significant portion of the Rwandan population (79%)[6], has seen a decline of approximately 47,000 jobs since 2020[7].

b. Agriculture Finance Context

According to a world bank report (2018), the primary contributor to agricultural loans is the Development Bank of Rwanda (BRD), making up 41% of the total. Other banks accounted for 36%, while MFIs and SACCOs, which saw the most rapid expansion, constituted 22% of the loans in this sector[8].

In March 2018, MFIs' loans in the agriculture sector amounted to Rwf22,150,868,484. By June 2023, they had increased to Rwf46,635,967,538, representing an approximate growth of 110.89% during this period. However, the percentage of the loan portfolio in this sector remains low compared to the total loan portfolio of MFIs. It started at approximately 15.95% of all loans

[5] Government of Rwanda (2017) 7 Years Government Programme: National Strategy for Transformation (NST1). GoR: Kigali.

[6] https://afr.rw/downloads/agriculture-finance-thematic-report-finscope-rwanda-2020/

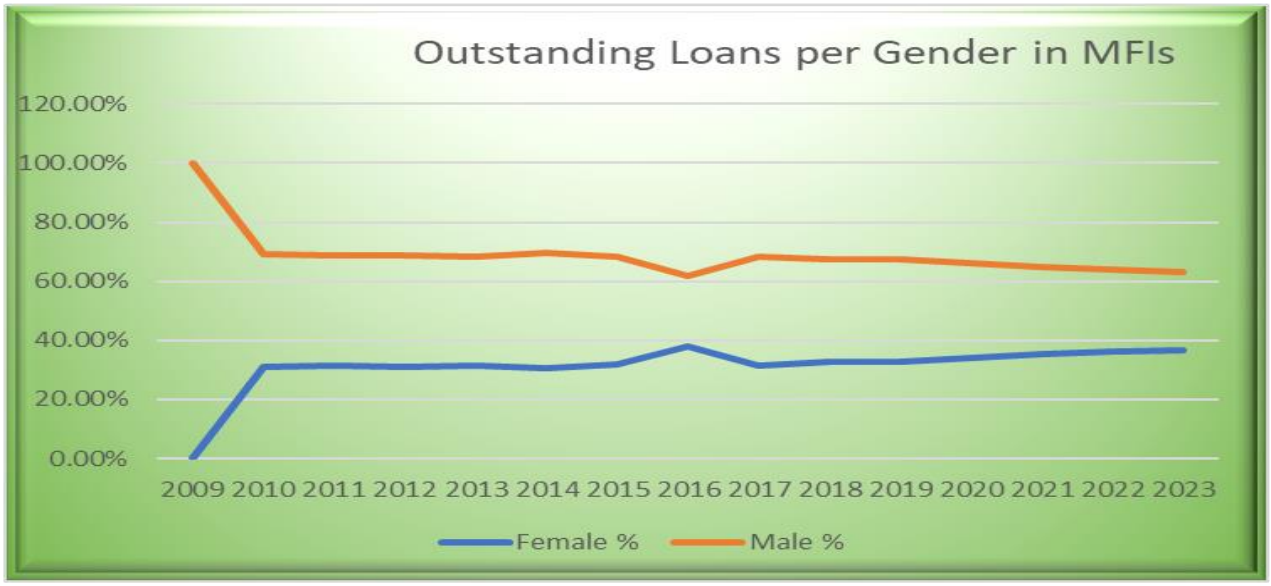
[7] https://www.statistics.gov.rw/publication/trends-labour-market-performance-indicator-rwanda-august-2021 accessed on 18 September 2023.

[8] https://documents1.worldbank.org/curated/en/536681536640330399/pdf/Rwanda-Agriculture-Finance-Diagnostic.pdf

in March 2018 and decreased to about 12.63% in December 2023, with a significant growth phase from March 2019 to June 2019 when it surged from 15.95% to 21.27%[9].

When it comes to FMI's loan disbursements by gender, it was found that in 2009, the vast majority of outstanding loans (99.96%) were held by males, with only a minimal 0.04% held by females. Over the following years, there was a consistent increase in the proportion of outstanding loans held by females, reaching 36.74% in 2023. This information suggests a significant shift in the gender distribution of outstanding loans over the years, with females gradually gaining a larger share of the loans in MFIs[10].

Figure 1:Trend of Outstanding Loans per Gender in MFIs[11]



Besides, the participation of the formal financial sector remains anecdotal over the years when considering the low share of formal credit (5%) Between 2016 and 2020, Rwandan farmers witnessed a significant surge in credit utilization, with 76% borrowing money in 2020 compared to 42% in 2016. The formal financial institution borrowing rate doubled from 8% to 17% during this period, with 4% from banks and 12% from other non-bank formal sources. Informal credit, at 54%, was the primary contributor to this growth, while reliance on family and friends for borrowing declined from 23% in 2016 to 6% in 2020[12].

Moreover, savings is the most common financial product among farmers in Rwanda and thus one of the mainly used financial requirement to s to meet their different financial needs. Informal savings mechanisms remain important for farmers in Rwanda, and their uptakes are largely driven by the fact that 61% of farmers use savings groups. In 2020, 13% of farmers saved in banks while 35% saved in other formal financial institutions such as SACCOs or mobile money operators. However, a large proportion of farmers still resort to informal savings, even if the share fell from 55% in 2016 to 35% in 2020[13].

[9] Researcher's own analysis based on BNR's raw data retrieved from BNR-National Bank of Rwanda: Financial Inclusion Data(https://www.bnr.rw/index.php?id=143).
[10] Idem
[11] idem
[12] https://afr.rw/enhancing-inclusive-agriculture-finance-in-rwanda-a-path-to-the-rapid-transformation-of-the-sector/
[13] Idem.

In addition to that, barriers to agricultural financing persist due to infrastructure limitations, with more than 60% of farmers living over an hour away from financial services. Additionally, challenges include inadequate access to financial products, high-risk exposure, and high loan rejection rates among farmers. Furthermore, farmers face low awareness and limited access to Digital Financial Services (DFS)[14].

However, crop insurance is a crucial ingredient that can guarantee access to finance for smallholders as it can help to de-risk agriculture financing. Currently, farmers fail to repay their loans due to crop failure and poor harvest, adding more difficulties to a sector already prone to high financing risks. In 2020, 11% of farmers reported utilizing formal insurance programs, marking a notable increase from the 5.97% recorded in 2018. The significant boost can be attributed to the launch of the National Agriculture Insurance Scheme (NAIS) in 2019, which was established by the Ministry of Agriculture and Animal Resources (MINAGRI)[15]. Nevertheless, it is important to note that the majority of farmers continue to lack access to insurance services. The proportion of underserved farmers in terms of risk financing remains around 90% in both years, despite nearly doubling the insurance penetration rate from 5.97 % in 2018 to 11% in 2020[16].

c. Selected agriculture value chains and Associated production costs

The Finscope's Thematic Report, on Agriculture Finance, underscores that farming activities primarily encompass expenses related to farming equipment, seeds, fertilizers, pesticides, food, and medicine for livestock. Interestingly, these costs are predominantly covered by alternative or informal sources of finance. Drawing upon data from the Rwanda Agriculture Board (RAB), DUHAMIC ADRI, and various agriculture units within the targeted districts, it was revealed that production costs, particularly for chili peppers, tomatoes, and large-scale poultry farming, are expected to be the primary drivers necessitating loans for the youth investing in those value chains. This elevated cost may present a significant hurdle for young individuals aspiring to enter these agricultural sectors, given concerns about affordability. Conversely, the analysis reveals that green bean production is comparatively more cost-effective when compared to the other agricultural value chains.

For instance, investing in chili peppers necessitates approximately 4,000,000 Rwandan Francs for a 5-hectare plot, particularly due to the expensive seed costs, which can vary between Rwf5,000 to Rwf15,000 per kilogram, depending on the variety. Additionally, fertilizer costs can range from Rwf100,000 to Rwf300,000 per hectare, while expenses related to drip irrigation systems, pipes, and water sources may vary from Rwf500,000 to Rwf2,000,000 per hectare. Labor costs for activities such as planting, weeding, and maintenance vary depending on whether hired labor or family labor is utilized but typically range from Rwf200,000 to Rwf500,000 per hectare. The storage facility cost is highly variable depending on the scale and type of facility but may range from Rwf1,000,000 to Rwf10,000,000 or more.

Similarly, when examining the investment required in the tomato and green bean production, there are notable differences in the total production costs. The cultivation of tomatoes entails an

[14] Idem

[15] https://www.minagri.gov.rw/fileadmin/user_upload/Minagri/Publications/Annual_Reports/Minagri_Annual_Report_2018-19.pdf

[16] https://afr.rw/enhancing-inclusive-agriculture-finance-in-rwanda-a-path-to-the-rapid-transformation-of-the-sector/

estimated total cost of RWF 4,146,550, whereas the production of green beans comes with a lower total expense, estimated at RWF 3,405,470.

Turning to the poultry value chain, for a small-scale farm focused on raising 2000 broiler chickens, the total estimated cost for this endeavor amounts to Rwf7,400,000. This figure encompasses various expenses, such as a building cost of Rwf1,500,000, approximately Rwf300 for medicines, Rwf1,600,000 for chicks, and around Rwf4,000,000 for materials and feeds.

d. Youth Context

With over 60% of Rwanda's youth engaged in agriculture and related sectors as their primary source of employment, this vital industry holds significant potential for generating income and jobs within this demographic. Nevertheless, the productivity and profitability of these young farmers face substantial challenges due to the constraints posed by small land plots and limited availability of land[17]. When they seek financial support from institutions to lease more reliable plots and acquire necessary inputs, they encounter a hurdle in the form of collateral requirements, which they often lack. Consequently, many are compelled to continue with subsistence farming practices[18]

According to the FINSCOPE Rwanda 2020 survey report, youth are the most financially excluded at 18%, significantly higher compared to the national average of 7% exclusion whereas gender gap in financial inclusion is closing with only 8% excluded women compared to 7% amongst male counterparts[19]. Young people do mostly face other challenges of limited knowledge of and experience with financial services as well as perceptions that FSPs are not affordable or accessible for them. So, this situation leads youth to rely on the informal saving groups as their source of finance to invest in their small businesses and agricultural activities These factors are compounded by biases and misperceptions that FSP staff have about youth not being bankable, resulting in very limited access to financial services for rural youth[20].

4.2. Financial Services and products for the youth investing in selected value chains

4.2.1. Demand Analysis

This demand analysis primarily relies on the collection of primary information and feedback through the survey conduct on sampled individual youth engaged in chili pepper, green beans, tomatoes, and poultry value chains, especially in production stage. Where relevant, the findings from the original research are integrated with results from other assessments and studies.

[17]https://www.youthpolicy.org/national/Rwanda_2005_National_Youth_Policy.pdf, Rwanda National Youth Policy, page 16

[18] https://www.cnfa.org/success-story/youth-engagement-in-agriculture-improves-access-to-digital-technology-and-extension-in-rwanda/

[19]https://www.bnr.rw/fileadmin/user_upload/2020_Rwanda_Finscope.pdf

[20] https://makingcents.com/wp-content/uploads/2020/12/cf5fc8_2d40f189d59d4cc88820de1caac0ccfd.pdf

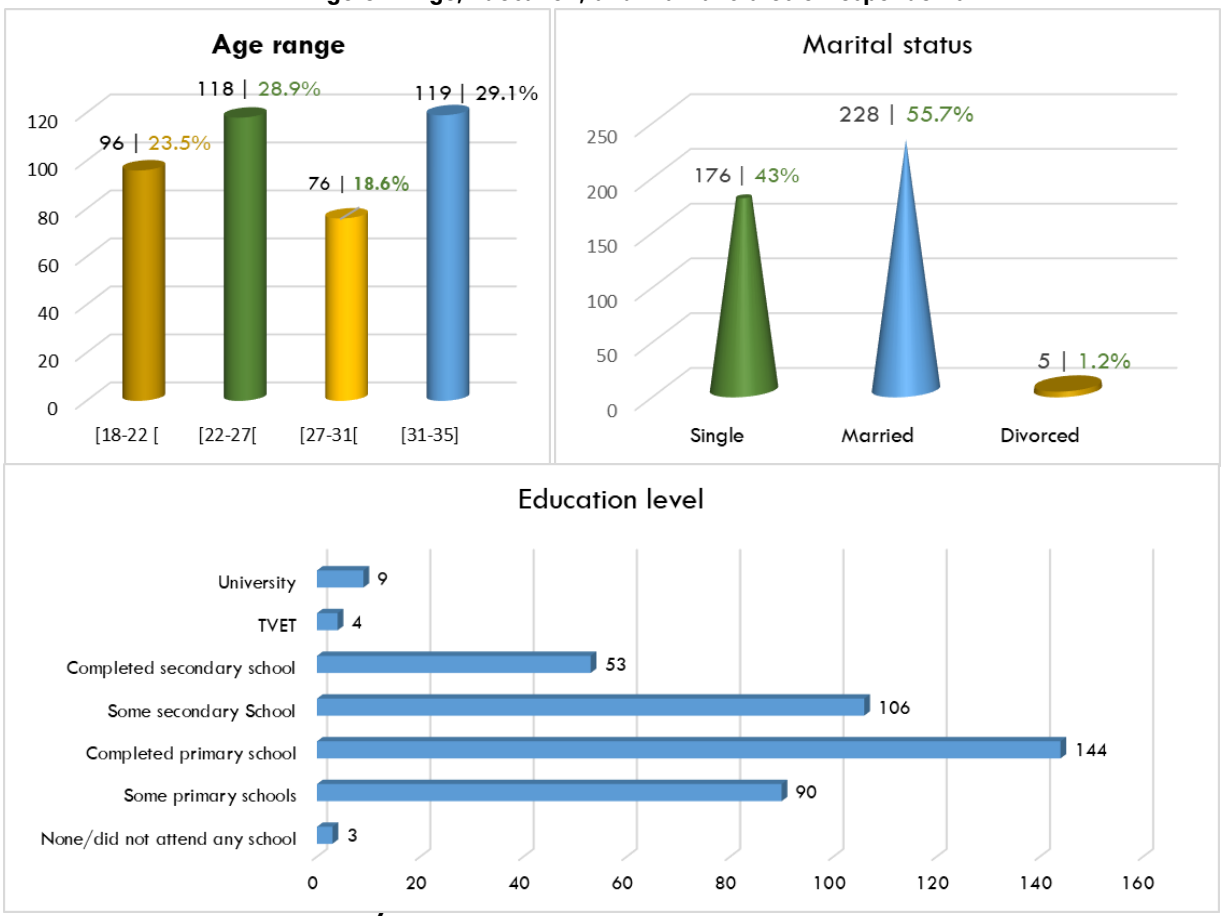
4.2.1.1. Demographic Characteristics

The survey revealed the following demographic characteristics of the respondents:
The age category [22-27[has the highest number of respondents (45.2%), with the majority being married (60.2%). The [18-22[age category has the second-highest number of respondents (24.5%), with 53.8% of them being single.

The majority of individuals in this sample have at least some primary school educations, with 22% having attended some primary school and 35.2% having completed primary school.
A significant portion of the sample (25.9%) has some secondary school education, while 13% have completed secondary school.

A smaller number of individuals have pursued more specialized education paths, such as TVET (Technical and Vocational Education and Training), which is chosen by 1% of the sample.
A small proportion (2.2%) have attained a university education.
It's noteworthy that only a very small percentage (0.7%) did not attend any school.

Figure 2: Age, Education, and Marital Status of respondents



Examining gender and disability variables among youth participants in chili, tomato, green beans, and poultry value chains in the table below, several noteworthy patterns become apparent. Among the total sample of 409 participants, 13 individuals reported having disabilities, constituting 3.2% of the total population. Looking at the gender breakdown, it is apparent that both males and females are represented, with 9 males (2.2% of the total sample) and 4 females (1.0% of the total sample) reporting disabilities. Interestingly, the majority of participants, accounting for 96.8% of the total sample, do not have disabilities.

Table3: Gender Vs disability Status

Gender	People with disabilities		Total
	Yes	No	
Male	9	121	130
	2.2%	29.6%	31.8%
Female	4	275	279
	1.0%	67.2%	68.2%
Total	13	396	409
	3.2%	96.8%	100.0%

Furthermore, an analysis of respondents with disabilities by gender reveals that 9 (69.2%) are male, with the remaining 4 (30.8%) being female. This information underscores the importance of considering gender and disability factors in financial needs assessment, suggesting that while the overall prevalence of disabilities in this youth population is relatively low, it is essential to acknowledge and address the specific needs of individuals with disabilities within both genders to ensure an inclusive and equitable approach to financial support within these agricultural value chains.

a. Gender vs. Marital Status

The table 4 below shows the distribution of respondents by gender and marital status as follow:

- Among males, 53.8% are single, 46.2% are married, and none are divorced.
- Among females, 38.0% are single, 60.2% are married, and 1.8% are divorced.
- Overall, 43.0% are single, 55.7% are married, and 1.2% are divorced.

Table 4: Gender vs. Marital Status

Gender	**Single**	**Married**	**Divorced**	**Total**
Male	70 (53.8%)	60 (46.2%)	0 (0.0%)	130
Female	106 (38.0%)	168 (60.2%)	5 (1.8%)	279
Total	**176**	**228**	**5**	**409**

Gender-wise, female respondents accounted for 68.2% of the total, while males comprised 31.8%.

b. Age Category vs. Marital Status

The table 5 below shows the distribution of respondents by age category and marital status:

- The majority of single participants (88.5%) fall within the age category [18-22[.
- Most married participants (38.1%) fall within the age category [22-27[.
- Participants who are divorced are distributed across different age categories.

Table5: Age Category vs. Marital Status

Age Category of Project Participant	**[18-22 [**	**[22-27[**	**[27-31[**	**[31-35]**	**Total**
Single	85	11	0	0	96
Married	71	45	2	0	118
Divorced	14	62	0	3	79
Total	**176**	**228**	**5**	**119**	**409**

4.2.1.2. Value Chain Participation and Business Characteristics

The majority of respondents are engaged in individual/sole proprietorship businesses (91%), *followed by limited companies (2%), youth cooperatives (3%), youth associations (3%), and youth Village Savings and Loan Associations (VSLAs) (1%).*

Green beans and chili pepper are the most common value chains among respondents, with 28.0% and 30.3% participation, respectively.

The table below presents the distribution of business categories and their primary engagement in various value chains.

Table 6: Types of Businesses and Primary Value Chain Engagement

Business category	Value chain				
	Green Beans	Chili pepper	Poultry	Tomatoes	Total
Individual/Sole proprietorship	**25.8%**	**27.6%**	**19%**	**18%**	**91%**
Limited Company	0.6 %	0.4%	0.4%	1%	2%
Youth Cooperative	0.9%	1.1%	1%	0.5%	3%
Youth Association	0.5%	0.7%	1%	1%	3%
Youth VSLA	0.3%	0.5%	0.5%	0.8%	1%
Total	28.0%	30.3%	21.7%	19.95%	100%

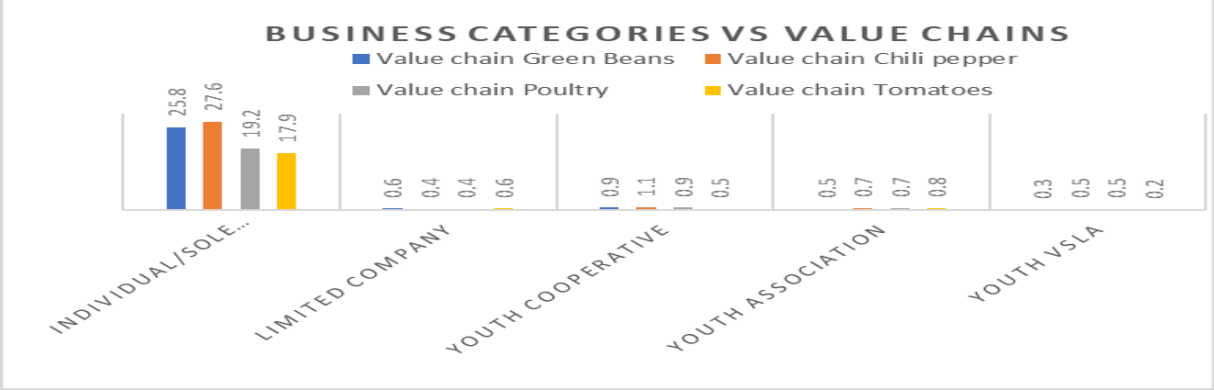


Figure 3: Graph 2: Business Types vs Value chains

The statistics provided in table 6 above, indicate the distribution of different types of agricultural enterprises within four categories: Green Beans, Chili Pepper, Poultry, and Tomatoes. In the Green Beans category, sole proprietorships dominate with 91.83%, while other categories like Limited Companies, Youth Cooperatives, Youth Associations, and Youth VSLAs have smaller percentages. A similar trend is observed in Chili Pepper, Poultry, and Tomatoes, where sole proprietorships maintain a significant presence ranging from 88.68% to 91.10%, while other enterprise types have relatively smaller shares. These statistics suggest that individual/sole proprietorships are the predominant business model in these agricultural sectors, with limited company participation being notably lower across the board, and youth cooperatives and associations also playing a minor role in comparison.

a. Motivations for Joining Value Chains

The assessment explored the motivations behind youth joining agricultural value chains.

- The most common motivation for youth to join value chains is the identification of market gaps (38.8%).
- Seeking alternatives for employment problems (29.8%) and family background in agriculture (10.3%) are also significant motivators.

The following table summarizes the motivations reported by respondents.

Table 7: Motivation for joining Value chains

Motivation	**Responses**	**Percent of Cases**
Identified Market Gap	199	38.8%
Family Background/Growing up in a family with a history in agriculture	53	10.3%
Seek alternative for my employment problem	153	29.8%
Donor fund in the value chains	1	0.2%
Passion for Sustainable Farming[21]	14	2.7%
Other motivation	93	18.1%
Total	**513**	**100.0%**

Moreover, the association between the education level and motivation of youth to be engaged in agriculture activities was assessed.

Table8: Pearson Chi-Square Tests

Highest schooling level		Identified Market Gap	Family Background	Seek alternative for employment	Donor fund in the VC	Government support	Passion	Other Motivations
	Chi-square	16.225	7.152	20.075	6.733	.	5.591	5.854
	df	6	6	6	6	.	6	6
	Sig.	.013*,b	.307b,c	.003*,b	.346b,c	.	.471b,c	.440b,c

c. The minimum expected cell count in this subtable is less than one. Chi-square results may be invalid.
b. More than 20% of cells in this subtable have expected cell counts less than 5. Chi-square results may be invalid

From table 8 above, the chi-square test results, conducted at significance level of 5%, indicate that the level of schooling is significantly associated with factors like "Identified Market Gap," "Seeking alternative employment," and "Donor fund in the value chains," while no significant associations were found for "Government support/policies," "Passion for Sustainable Farming," and "other motivation[22].

Furthermore, understanding the distribution of business categories among project beneficiaries is crucial for the members of the project consortium to tailor their support and resources to address the needs and preferences of different demographic groups.

[21] wanted to contribute to the industry in a meaningful way

[22] However, the validity of these results should be carefully considered, especially for subtables with low expected cell counts.

Table 9: Business category of project participant

District	Business category of project participant					Total	%
	Individual/ Sole proprietorship	Limited Company	Youth Cooperative	Youth Association	Youth VSLA		
Gakenke	30	2	1	0	1	34	8
Huye	54	0	2	1	1	58	14
Kayonza	46	0	1	0	0	47	11
Kirehe	54	1	1	1	1	58	14
Ngoma	37	1	2	0	1	41	10
Nyabihu	23	0	1	3	0	27	7
Nyamagabe	26	0	1	0	0	27	7
Rubavu	31	1	3	0	0	35	9
Rulindo	35	2	2	3	1	43	11
Rwamagana	33	1	1	3	1	39	10
Total	369	8	15	11	6	409	100

District-wise distribution showed that Huye had the highest number of respondents (14%), followed by Kayonza (11%) and Kirehe (14%). The distribution of respondents was fairly balanced across the other districts

Moreover, the analysis of project participants' business categories in various districts indicates that "Individual/Sole Proprietorship" is the most prevalent category, accounting for the majority of participants. Limited Company, Youth Cooperative, Youth Association, and Youth VSLA have relatively lower representation in the districts studied.

- The majority of project participants are individuals or sole proprietors, constituting 90% of the total participants.
- Limited companies make up 2% of the participants.
- Youth cooperatives represent 2% of the participants.
- *Youth associations make up 3% of the total participants.*
- *Youth Village Savings and Loan Associations (VSLAs) contribute 1% of the total.*

b. Gender Vs Agriculture value chains

The examination of gender-based distribution within target value chains has proven to be invaluable in gaining insights into the gender dynamics within the agriculture sector. This analysis illuminates the unique participation patterns of both males and females, which are essential for enhancing the effectiveness of the SERVE Project's interventions and advancing gender equity in agricultural activities.

Table 10: Gender Vs Agriculture value chains primarily engaged in

Gender	Agriculture value chains primarily engaged in									Total
	chili	chili &	Green	Green	Green	poultry	poultry	tomatoes	tomatoes	

		tomatoes	Beans	Beans other	Beans & tomatoes		& other		& other	
Male	10.0%		11.5%	0.8%		31.5%	0.8%	43.8%	1.5%	100.0%
	3.2%		3.7%	0.2%		10.0%	0.2%	13.9%	0.5%	31.8%
Female	8.6%	0.4%	15.8%	1.1%	1.1%	35.1%	1.4%	36.2%	0.4%	100.0%
	5.9%	0.2%	10.8%	0.7%	0.7%	24.0%	1.0%	24.7%	0.2%	68.2%
Total	9.0%	0.2%	14.4%	1.0%	0.7%	34.0%	1.2%	38.6%	0.7%	100.0%
	9.0%	0.2%	14.4%	1.0%	0.7%	34.0%	1.2%	38.6%	0.7%	100.0%

The above table 10 provides an overview of the participation of both males and females in various agricultural value chains, with tomatoes and poultry emerging as prominent sectors. While males exhibit a stronger presence in the tomatoes and poultry sectors, females are notably active in the green beans value chain.

For instance, among females, 15.8% focus on green beans, accounting for 10.8% of the total, while among males, 11.5% are primarily involved in the green bean's agriculture value chain, contributing to 3.7% of the total. These findings align with the key informant interviews (KIIs), where informants highlighted that many women tend to invest in the green beans sector due to its comparatively lower level of labor-intensive work when compared to other selected value chains.

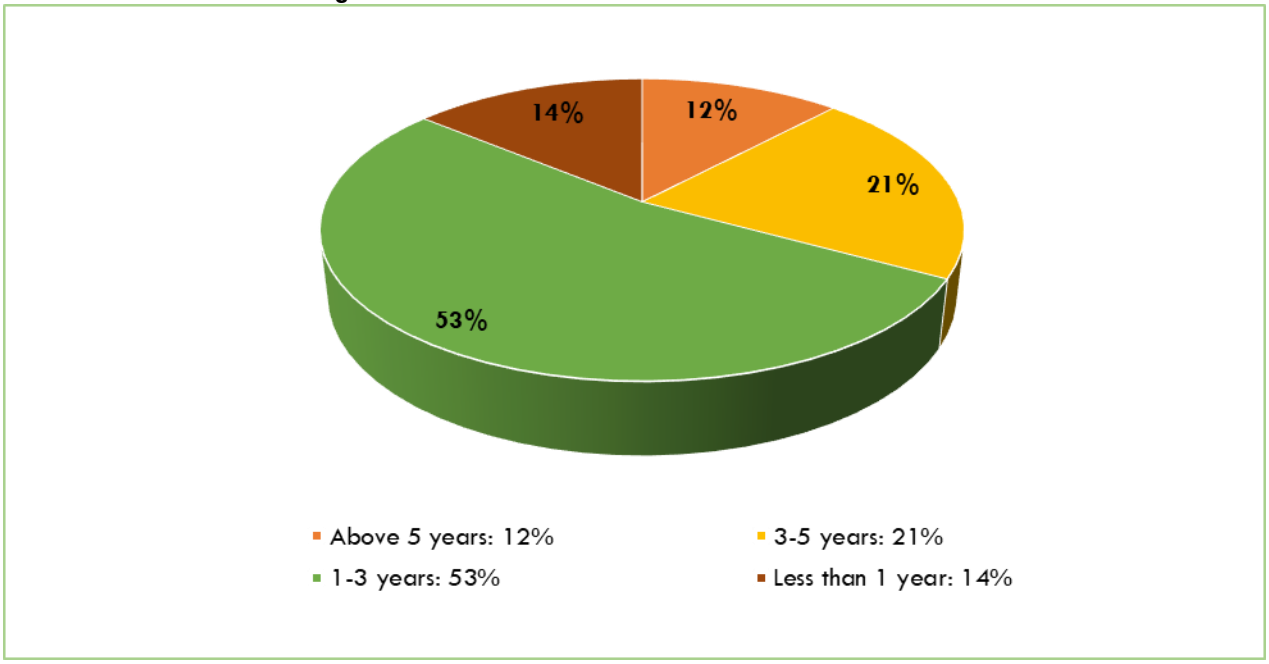
c. Years of respondents in their respective value chains

The assessment revealed that 14.2% of respondents relatively new, less than 1 year, to their specific agricultural value chain. This implies that they are likely inexperienced and may require significant support and training to be successful in their chosen area of agriculture. Their financial needs are likely to be higher initially due to startup costs, such as land acquisition, equipment, and learning about the industry.

The majority of respondents (53%) fall into the category of 1-3 years, indicating that they have some experience in their chosen value chain. However, they may still face financial challenges as they continue to build their expertise and might need access to credit, market information, and mentorship to enhance their financial stability and growth.

Concurrently of respondents fall in the category of 3-5 years (20.5%). This group represents individuals who have more experience in their value chains compared to the previous category They may have better financial stability, but they could still have financial needs related to expansion, diversification, or adopting more advanced practices. Investment in marketing and distribution channels may also be important for them.

Figure 4: Years in the Value Chain



The information on the figure 4 above suggests that the financial needs of youth investing in agriculture vary depending on their experience in the specific value chain. New entrants (less than 1 year) may require significant support for startup costs and training. Those with 1-3 years of experience may need financial assistance for scaling up and adopting best practices. Respondents with 3-5 years of experience may need financing for expansion and improved marketing, while those with more than 5 years might seek capital for large-scale projects or innovations.

4.2.1.3. Financial Priorities and Resource Allocation in Youth Agriculture Investment

This section delves into the financial priorities of youth involved in agriculture, shedding light on where their monetary allocations are most concentrated. By examining the percentages of responses from a survey of youth investors, the goal to discern the key areas that demand their financial attention. In doing so, valuable insights were revealed; which can guide the SERVE Project and participating financial institutions in offering targeted support to these aspiring agricultural entrepreneurs. Understanding the weight of financial considerations such as fertilizers and pest control, land access, and input costs among the youth farmers in target 10 selected Districts not only underscores the challenges they face but also points towards opportunities for informed intervention and empowerment.

The statistics, in the above table 10 below, reveals that the majority of the agricultural financial costs incurred by youth are directed towards fertilizers and pest control, accounting for 47% of the total expenditures. This significant allocation underscores the awareness among youth investors of the importance of these inputs in achieving successful and profitable agricultural outcomes. The second-highest category of expenditure, at 18.8%, is dedicated to land access costs, emphasizing the financial challenge associated with securing land for agricultural operations. In third place, inputs costs, at 14.1%, highlight the recognition among youth investors of the significance of investing in high-quality inputs for maximizing agricultural productivity. Equipment costs represent 13.4% of expenses, indicating the importance of acquiring and maintaining agricultural

equipment. Operating costs, making up 5.1% of financial needs, cover day-to-day expenses, and though smaller, remain a critical aspect of agricultural operations.

Table 11: Financial Priorities and Resource Allocation

Highest financial costs incurred	**Responses**	
	N	Percent
Land access costs	143	18.8%
Inputs Cost	107	14.1%
Fertilizers/pest control costs	357	47.0%
Equipment costs	102	13.4%
Operating Costs	39	5.1%
Crop/livestock Insurance Costs	3	0.4%
Post harvest handling costs	3	0.4%
Market and selling Costs	5	0.7%
Total	759	100.0%

Additionally, a comprehensive analysis was conducted to enhance our understanding of how the most substantial financial expenditures are intertwined with the respondents' respective value chains. The results indicate that Land access costs are a significant concern in Poultry and Chili Pepper value chains while Fertilizers and pest control costs are a universal concern across all value chains.

Equipment costs are relatively uniform across value chains and operating costs are somewhat higher in the Poultry value chain. Insurance costs, post-harvest handling costs, and market/selling costs are generally low and relatively consistent across value chains.

All the above information is statistically presented in the table 12 below, and is crucial for SERVE Project as well as the participating financial institutions; to tailor their assistance and resources to address the specific financial needs of youth investing in different selected value chains.

Table12: Financial costs associated with value chain involvement.

	Value chain					Total
	Green Beans	Chili pepper	Poultry	Tomatoes	Other value chains	
Land access costs	117	122	125	62	140	143
	34.1%	32.9%	47.2%	25.4%	35.3%	
Inputs Cost	89	102	50	79	103	107
	25.9%	27.5%	18.9%	32.4%	25.9%	
Fertilizers/pest control costs	299	325	223	222	347	357
	87.2%	87.6%	84.2%	91.0%	87.4%	
Equipment costs	94	96	54	61	99	102
	27.4%	25.9%	20.4%	25.0%	24.9%	
Operating Costs	29	31	32	25	36	39
	8.5%	8.4%	12.1%	10.2%	9.1%	
Crop/livestock Insurance Costs	3	3	0	3	3	3
	.9%	.8%	0.0%	1.2%	.8%	
Post-harvest handling costs	3	3	2	1	3	3
	.9%	.8%	.8%	.4%	.8%	
Market and selling Costs	3	4	4	3	5	5
	.9%	1.1%	1.5%	1.2%	1.3%	
Total	343	371	265	244	397	409

From the statistics in the table11 above, it was found that the highest land access costs are observed in the Poultry and Chili Pepper value chains, with 125 and 122 counts, respectively, and his suggests that access to land is a significant financial concern for youth investing in these two value chains.

The percentage within value chains for land access costs is the highest for Poultry (47.2%) and lowest for Tomatoes (25.4%).

The percentage within value chains for inputs cost is the highest for Tomatoes (32.4%) and lowest for Poultry (18.9%). Fertilizers and pest control costs are substantial in all value chains, with Chili Pepper having the highest count at 325, while the percentage within value chains for operating costs is the highest for Poultry (12.1%) and lowest for Tomatoes (10.2%).

However, a Chi-square test was performed with a significance level set at 5% to investigate the potential link between the reported highest costs and the value chains of respondents. The analysis did not reveal a significant association; the critical value for α (alpha) at 0.05 with degrees of freedom (df) equal to 21 was determined to be approximately 38.885, while the computed chi-squared value was 22.40. Since 22.40 is less than 38.885, we did not find sufficient evidence to reject the null hypothesis, which posited that there is no discernible connection between the two variables.

4.2.1.4. Financial Cost vs Business Category

This section provides insights into the financial costs associated with different business categories among project participants, with a focus on land access costs, inputs cost, fertilizers/pest control costs, equipment costs, operating costs, crop/livestock insurance costs, post-harvest handling costs, and market and selling costs.

The analysis of the data in table13 revealed the following information:

- **Land Access Costs**: Land access costs are one of the major financial components for all business categories. Youth cooperatives have the highest land access costs (7), followed by individual/sole proprietorships (126).
- **Inputs Cost**: Inputs cost represents the expenses related to materials and resources required for farming. Again, individual/sole proprietorships incur the highest input costs (98), followed by limited companies (3).
- **Fertilizers/Pest Control Costs**: Fertilizers and pest control costs are substantial, with individual/sole proprietorships incurring the highest costs (324). This suggests that this cost is a significant concern for youth involved in agriculture.
- **Equipment Costs**: Equipment costs are relatively lower in comparison to land access and input costs, but they still contribute to the overall financial needs. Individual/sole proprietorships have the highest equipment costs (91).
- **Operating Costs**: Operating costs are relatively lower across all categories, with individual/sole proprietorships having the highest (36).
- **Insurance, Post-Harvest Handling, and Market Costs**: These costs are generally low for all categories, indicating that they may not be significant financial concerns for youth in agriculture.
- **Cooperatives and Associations**: Youth cooperatives and associations have similar cost patterns, suggesting potential collaboration among youth to reduce individual financial burdens.

Table13: Financial cost vs business category

Highest financial costs	Business category of project participant					Total
	Individual/Sole proprietorship	Limited Company	Youth Cooperative	Youth Association	Youth VSLA	
Land access costs	126	3	7	4	3	143
Inputs Cost	98	3	3	2	1	107
Fertilizers/pest control costs	324	7	12	11	3	357
Equipment costs	91	2	5	2	2	102
Operating Costs	36	0	1	1	1	39
Crop/livestock Insurance Costs	3	0	0	0	0	3
Post-harvest handling costs	3	0	0	0	0	3
Market and Selling Costs	4	0	1	0	0	5
Total	369	8	15	11	6	409

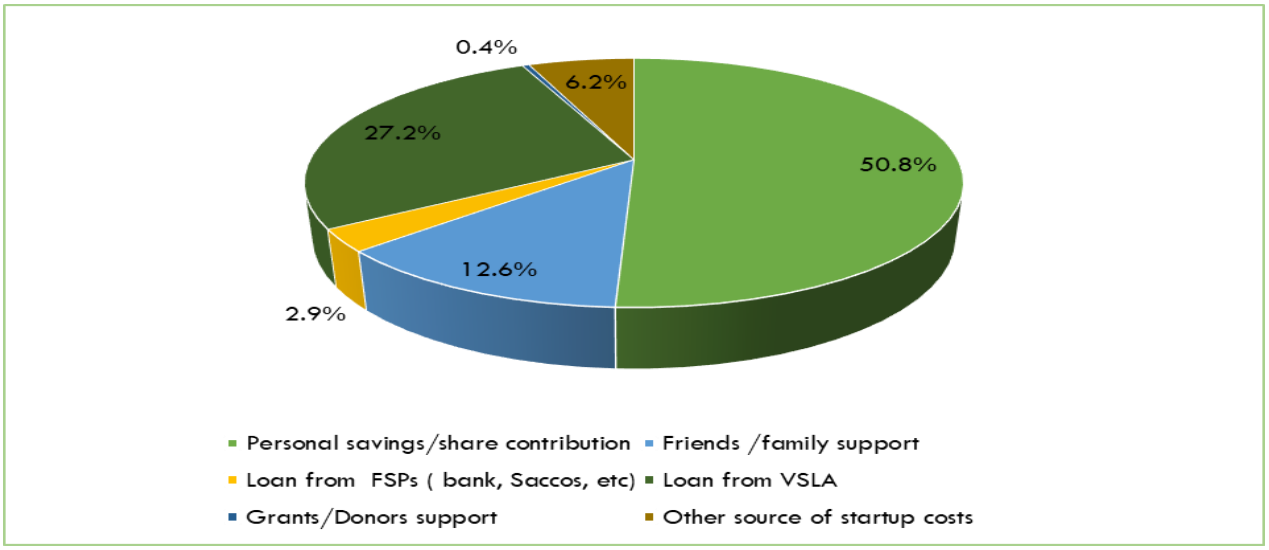
In conclusion, the financial needs assessment reveals that individual/sole proprietorships generally have the highest financial burdens across all cost categories, particularly in terms of land access,

inputs, and fertilizers/pest control. This indicates that individual/small-scale farmers may require more financial support and resources. Collaborative efforts, such as youth cooperatives and associations, may help alleviate some of these financial burdens by sharing costs and resources.

4.2.1.5. Source of Agriculture startup Capital Financing

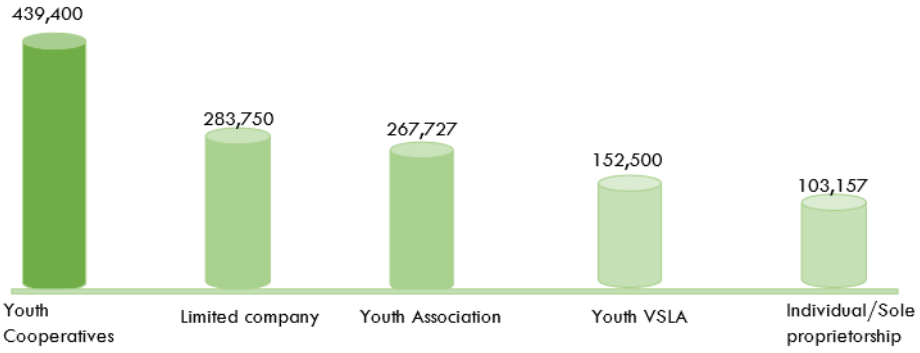
The analysis about respondents' diverse ways the youth funded their initial startup costs showed that more than half (50.8%) of the respondents utilized personal savings or contributions from family and friends while nearly a third of the respondents (30.1%) accessed startup capital through VSLAs.

Figure 5:Source of Agricultural Start-Up Funding Costs



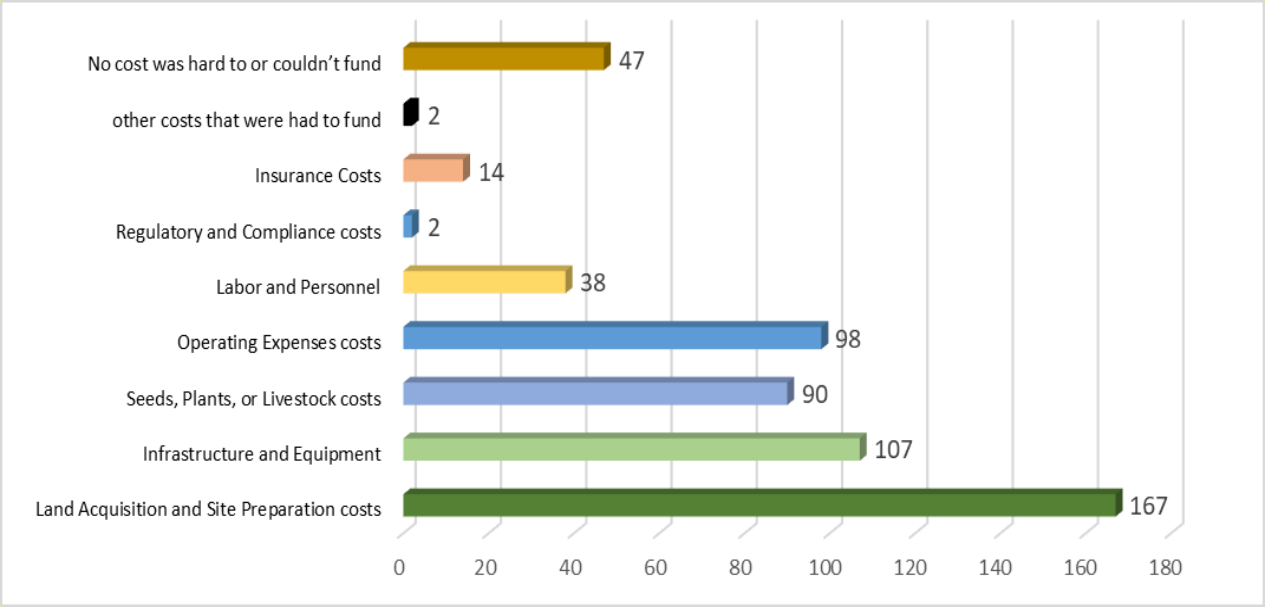
The above information reflects not only a commendable financial discipline and a willingness to invest personal resources in agricultural ventures, but also a crucial role played by youth VSLAs in providing accessible credit, fostering financial inclusion among youth, and promoting self-reliance within communities. However, this also suggests limited access to external financial resources, because looking at the below figure 4, it could be observed that the average of initial start-up within each business type (see the figure 6below) was very meager compared to the involved value chains 's investment requirements that have been discussed in the section 4.2.1.4 above.

Figure 6: Average Initial Start-up Capital



Furthermore, when we analyzed the start-up costs that couldn't be funded or were hard to fund, was found that nearly 30% of the respondents (167 respondents) found it challenging to secure funding for land acquisition and site preparation costs. This is a significant obstacle as access to suitable land is fundamental for agricultural activities. Youth may need support in obtaining or preparing land for farming.

Figure 7: Initial startup costs not funded or hardly funded



In addition, as it could be observed on the above figure 5, roughly 19% of the respondents (107 respondents) encountered difficulties in funding infrastructure and equipment, including barns, greenhouses, storage facilities, irrigation systems, and farm tools. This indicates a need for financial support or access to resources such as loans or grants to invest in necessary infrastructure. And, approximately 16% of the respondents (90 people) struggled to secure funding for seeds, plants, or livestock. Access to quality seeds and livestock is essential for a successful agricultural venture. Addressing this challenge could involve support for purchasing these essential inputs.

4.2.1.6. Distribution across the Value Chains' Nodes

The findings from the table reveal that the majority of the respondents, comprising 65.3% of the cases, are primarily engaged as farmers within their respective value chains, with the highest proportion within the chili, tomato, and green beans value chains. Poultry farming is also a significant role, representing 33.0% of the cases. It's important to highlight that the survey results indicate a minimal presence of traders, with just one respondent (0.2%) identifying as such. Additionally, a small percentage (1.4%) of respondents occupy various roles within the value chain, including activities such as distributing agricultural inputs and purchasing produce at low harvest-time prices, subsequently reselling them at a profit after a certain period.

These findings indicate a strong presence of farmers, emphasizing the agricultural nature of the value chains under consideration, and underscores the need to address their financial needs and support their activities within these value chains.

Figure 8: Distribution of respondents across different nodes of value chains

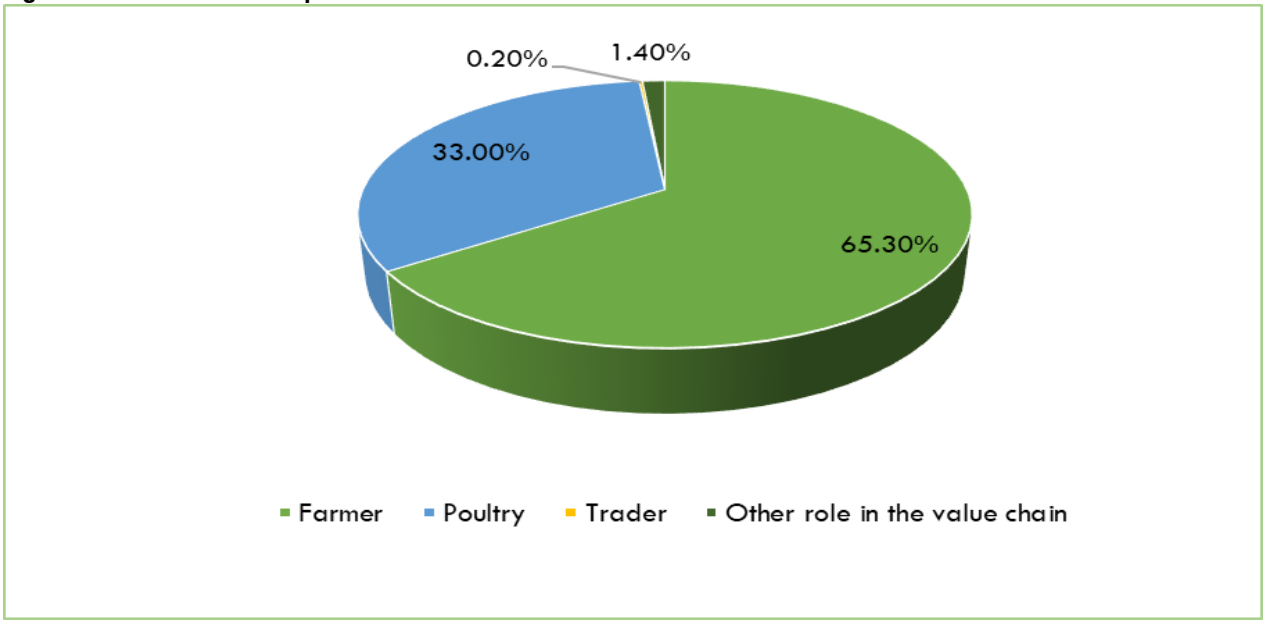


Table 14 below displays the distribution of gender among respondents engaged in various roles within the chili, tomato, green beans, and poultry value chains. It was found that among male respondents, the majority are farmers (22.0% of total male respondents), followed by those involved in poultry (9.8%), while there are no male traders or individuals with other roles in the value chain. On the other hand, among female respondents, farmers also make up the largest group (44.3% of total female respondents), with a substantial representation in poultry (23.7%), and very few female traders and others in the value chain. In total, the data shows that females constitute a significant portion of respondents (68.2% of the total), reflecting their active participation across different roles in the value chains, while males primarily engage as farmers and in poultry-related activities.

Table 14: Gender Distribution across different Value Chains' Nodes

Gender	Value Chains' Nodes				Total
	Agri-Farmers	Poultry Farmers	Traders	Other roles in VC	
Male	90	40	0	2	130
	22.0%	9.8%	0.0%	0.5%	31.8%
Female	181	97	1	4	279
	44.3%	23.7%	0.2%	1.0%	68.2%
Total	271	137	1	6	409
	66.3%	33.5%	0.2%	1.5%	100.0 %

Moreover, looking at the table14, we observe that a higher proportion of females (44.3%) are engaged as farmers, while a lower proportion of males (9.8%) are involved as traders in the poultry value chain.

To test the association between respondents' genders and the roles they play within the value chains, a chi-squared test of independence can be conducted. The null hypothesis (H0) assumes that there is no association between gender and role in the value chain, while the alternative hypothesis (H1) suggests that there is an association.

The chi-squared test of independence revealed a statistically significant association between respondents' genders and the roles they play within the value chains ($\chi^2 = 10.045$, df[23] = 3, $p < 0.05$). At a significance level of 5%, the critical chi-squared value with 3 degrees of freedom is approximately 7.815. Since the calculated chi-squared value (10.045) is greater than the critical value (7.815), we reject the null hypothesis. This means that there is a significant association between gender and the role individuals play within their respective value chains.
Specifically, the association suggests that gender plays a significant role in determining the specific roles within these value chains. It may be important for the SERVE Project to consider gender-specific interventions and support strategies to promote gender equity and empowerment within these agricultural value chains.

4.2.1.7. Ways of gathering information about financial services relevant to agricultural work

Respondents were asked to indicate how they gather information related to agriculture. The data was then analyzed to produce the frequency table shown above.

Table 15: Gathering information about financial services

Ways of gathering information	Frequency	Percent
Online research and social media	12	2.9
Family/friends (in person)	83	20.3
Financial advisors	55	13.4
Workshops/training	19	4.6
Radio/TV	214	52.3
It is not easy to get information about available financial services	19	4.6
Other ways	7	1.7
Total	409	100.0

The findings from the frequency table on how youth farmers gather information related to agriculture reveal that the majority of respondents primarily rely on traditional methods such as family and friends (in person) and radio/TV, with 20.3% and 52.3% of the respondents, respectively. Financial advisors and workshops/training are also significant sources of information at 13.4% and 4.6%, respectively. Surprisingly, online research and social media play a relatively minor role, with only 2.9% of respondents utilizing these platforms. Additionally, a notable portion (4.6%) express difficulty in obtaining information about available financial services, suggesting potential gaps in outreach and communication channels for financial service providers within the agricultural sector among youth farmers.

[23] df: degrees of freedom equal to (2 - 1) * (4 - 1) = 3

4.2.1.8. Financial Challenges at Different Stages

Generally, the assessment of the most common financial challenges for the youth in chili Pepper, green beans, tomatoes and poultry value chain revealed that:

- The most significant challenges faced by the surveyed young individuals in the selected agricultural value chains was limited access to capital. Many of them lack the financial resources required to start or expand their agricultural ventures. This includes purchasing land, seeds, equipment, and other essential inputs.
- Collateral: It was revealed that for many young people in agriculture, especially those starting out, the lack of tangible assets to offer as collateral makes it difficult to access financing.
- A substantial portion of respondents demonstrated to have a limited s experience in agribusiness and financial management, which poses a major barrier when it comes to securing loans or investments from traditional banks and microfinance institutions (MFIs).
- It was observed that youth in selected value chains needs initial capital injections to set up or scale their agribusiness enterprises whereas providing grants or low-interest loans specifically can significantly help them cover the costs of land acquisition, infrastructure development, and technology adoption.
- Like any small holder farmer in Rwanda, the assessment findings unveiled the surveyed youth need access to an inclusive insurance product which can: (i) *provide coverage for the capital investments made in agricultural production*, (ii) *offer protection to farmers and agribusinesses against potential losses that may occur after crops or agricultural products have been harvested and (iii) mitigate financial risks associated with fluctuations in commodity prices*.

a. Financial challenges faced at production stage.

The assessment on the common challenges faced, at production level, by youth engaged in the target value chains, revealed that the majority of respondents, over 62%, face difficulties in financing essential production inputs such as seeds, fertilizers, pesticides, feed, and equipment. Access to affordable credit and financial support for input costs is critical to improving the youth's participation in agriculture.

Table 15: Financial Challenges at Production level

Challenges	Frequency	Percent
Securing land and covering associated costs	98	24.0
Funding my production inputs	254	62.1
Covering modern agricultural technologies costs	7	1.7
Obtaining financial support to attend agricultural training programs	25	6.1
Bad credit history to access Loan	17	4.2
Lack of required collateral to secure loans	1	.2
Other challenges	7	1.7
Total	409	100.0

Also, securing land and covering associated costs is a significant challenge for a quarter of the respondents (24.0%). This includes expenses related to land acquisition or leasing, and initial preparation. A substantial portion of the youth (6.1%) recognizes the importance of training

programs for improving agricultural practices. However, they face financial challenges in accessing such training. Providing subsidies for agricultural training could be beneficial.

Moreover, the crosstabulation of gender and the mostly faced financial challenges at the production stage reveals notable disparities. Among males, the primary financial challenge is funding production inputs, accounting for 20.3% of the responses, followed by securing land and covering associated costs at 7.1%. In contrast, female participants encounter even more significant financial obstacles, with 41.8% facing challenges in funding production inputs and 16.9% struggling to secure land and cover associated costs. This suggests that females in these value chains encounter greater financial barriers at the production stage. Furthermore, it's worth noting that both genders encounter challenges related to bad credit history and lack of required collateral, though these issues are relatively minor compared to funding production inputs for females.

Further analysis (table16) regarding which gender, among male youth and female youth, mostly faced the land access challenge revealed that a higher percentage of females, at 68.2%, face limited access to land and associated costs, compared to males at 31.8%. This discrepancy underscores the pronounced challenges that women encounter in these agricultural value chains, necessitating targeted interventions and support to empower female participants and promote gender equity in accessing vital resources for their agricultural activities.

Table 16: Gender vs Land Acquisition and associated costs

	Land Acquisition Challenges		Total
	Yes	No	
Male	12.2%	19.6%	31.8%
Female	28.6%	39.6%	68.2%
Total	40.8%	59.2%	100.0%

Besides, the cross-tabulation of marital status and the most frequently encountered financial challenges at the production stage for individuals engaged in chili, tomato, green beans, and poultry value chains reveals some interesting insights. It appears that married individuals face higher financial challenges at the production stage compared to their single and divorced counterparts, with 55.7% of married respondents reporting difficulties in funding production inputs and other associated costs. Single individuals, on the other hand, are more likely to face challenges related to funding their production inputs (28.1%), while divorced individuals have minimal representation in the survey. Overall, a substantial proportion (62.1%) of respondents identified funding production inputs as their primary financial challenge, highlighting the critical need for financial support and solutions in these agricultural value chains to enhance productivity and sustainability.

Table17: Marital status Vs Mostly faced financial challenges at Production Stage

Marital status	Mostly faced financial challenges at Production Stage							Total
	Securing land and associated costs	Funding production inputs costs[24]	Covering modern agricultural technologies costs[25]	Obtaining financial support for training programs[26]	Bad credit history	Lack of required collateral	Other challenges	
Single	8.3%	28.1%	1.0%	3.4%	1.7%		0.5%	43.0%
Married	15.4%	33.0%	0.7%	2.7%	2.4%	0.2%	1.2%	55.7%
Divorced	0.2%	1.0%						1.2%
Total	24.0%	62.1%	1.7%	6.1%	4.2%	0.2%	1.7%	100%

However, the results of the chi-square tests, conducted at significance level of 5%, indicated that there is no significant association or linear trend between marital status and financial challenges faced at the production stage for youth involved in the selected value chains.

The crosstabulation of marital status and limited access to land challenges reveals significant variations in the financial needs of youth engaged in chili, tomato, green beans, and poultry value chains. Among singles, 43.0% face land acquisition and site preparation costs, with 13.7% having limited access to land. For married individuals, 55.7% encounter these costs, and 26.2% of them experience limited land access.

Table 18: Marital status Vs Land Acquisition and Site Preparation costs

		Land Acquisition and Site Preparation costs		Total
		Yes	No	
Marital status	Single	13.7%	29.3%	43.0%
	Married	26.2%	29.6%	55.7%
	Divorced	1.0%	0.2%	1.2%
Total		40.8%	59.2%	100.0%

In contrast, divorced individuals have a relatively lower financial burden, with 1.2% facing these costs and just 1.0% experiencing limited land access. This suggests that marital status is associated with different financial challenges, with singles facing relatively higher costs and married individuals experiencing both higher costs and limited land access, while divorced individuals have the least financial burden in this context. These findings could inform tailored support programs for the youth in these value chains based on their marital status and specific financial needs.

[24] seeds, fertilizers, and pesticides, feed, equipment

[25] irrigation system, precision farming tools, and mechanized equipment

[26] that can help to improve agricultural practices

The chi-square test was conducted to examine the association between marital status and land access challenges in the context of youth engagement in chili, tomato, green beans, and poultry value chains.

Table 19: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.603[a]	2	.002
Likelihood Ratio	12.771	2	.002
Linear-by-Linear Association	11.976	1	.001
N of Valid Cases	409		
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.04.			

The results indicate a statistically significant association between these variables, as both the Pearson Chi-Square (12.603) and Likelihood Ratio (12.771) tests yielded p-values of .002, which are below the typical significance level of .05. Additionally, the Linear-by-Linear Association test showed a p-value of .001, further supporting the presence of a relationship. Thus, overall findings suggest that there is a significant association between marital status and land access challenges among the youth involved in these agricultural value chains.

b. Challenges faced at harvesting and post-harvest level

Concerning the challenges faced at the harvesting and post-harvest level, the assessment result showed that a significant portion, 30.6% of the respondents, cited the need for funds to purchase processing and food preservation equipment. This highlights the importance of processing and preserving produce to add value and extend its shelf life. However, the high percentage suggests that many young farmers face financial constraints in acquiring this essential equipment.

Moreover, over a quarter of the respondents (27.1%) identified the need for working capital to cover the cost of moving products from farms to markets. This highlights a critical financial challenge faced by young farmers in ensuring that their produce reaches consumers efficiently and on time.

Table20: Challenges faced at harvesting and post-harvest level

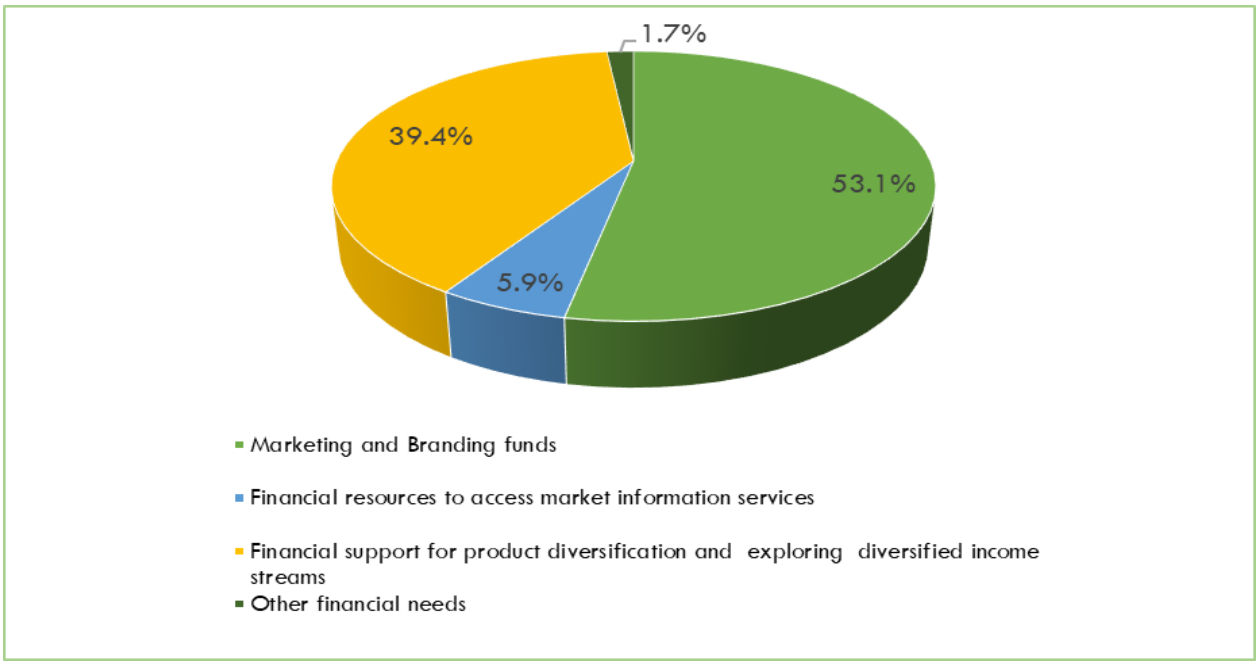
Challenges faced at post-harvest level	**Frequency**	**Percent**
Fund to acquire proper storage facilities to prevent spoilage and maintain the quality of my produces	74	18.1
Fund for purchasing processing and food preservation equipment	125	30.6
Financial resources to acquire the necessary knowledge/value addition techniques	88	21.5
Working capital to cover the cost of moving products from farms to markets	111	27.1
Other needs	11	2.7
Total	409	100.0

Besides, a noteworthy observation emerges from the survey, with over one-fifth (21.5%) of the participants highlighting the crucial requirement for financial resources to access knowledge and techniques essential for value addition in agriculture. This underscores a substantial financial barrier hindering the ability of young farmers to invest in training and education, pivotal for enhancing the quality and marketability of their agricultural products. Simultaneously, nearly 18.1% of the respondents pointed out the necessity of securing funds for acquiring proper storage facilities, a critical aspect in preventing spoilage and maintaining the quality of their harvests. This finding underscores the financial constraints that many young farmers face in their efforts to invest in essential storage infrastructure for preserving the value of their crops.

c. Most common financial challenges commercialization stage.

The most prominent financial challenge reported by the respondents is the lack of marketing and branding funds. Over half (53.1%) of the respondents highlighted this as a critical issue. This finding underscores the importance of effective marketing and branding for agricultural products. Youth in agriculture require financial support to establish strong branding and marketing strategies to reach a wider customer base, create brand recognition, and enhance the perceived value of their products.

Figure 9: Financial Challenges at market level



Concurrently, 39.4% of the respondents emphasized the need for financial support to diversify their products and explore diversified income streams. This indicates a strong desire among young farmers to expand their offerings and reduce dependence on a single crop or livestock. Diversification can improve resilience in the face of market fluctuations and offer new income opportunities. Providing financial support for diversification is essential to help youth agriculture entrepreneurs achieve the value chain maximization goal.

Furthermore, a smaller but still notable percentage of respondents (5.9%) identified the need for financial resources to access market information services. This suggests that while market

information is crucial for making informed decisions in agriculture, a relatively small proportion of youth face financial constraints in accessing such services. Supporting access to market information can empower these young farmers to make better decisions and improve their competitiveness in the marketplace.

d. Different business stages and loan applications

An analysis to discern respondents' loan applications based on different business stages revealed that loan applications are most prevalent at the production and commercialization stages, with varying percentages of applications from different financial sources. The table below provides a breakdown of loan applications based on different business stages.

Table 21: Business Stage Vs Loan Application

Business stage	Loan Applications			Total
	From VSLAs	From MFIs/ SACCOs	From Commercial banks	
Mostly faced financial challenges at the Production Stage	42	2	2	46
	32.6%	1.6%	1.6%	35.7%
Mostly faced post-harvest and Processing Level Financial Need	10	1	2	13
	7.8%	0.8%	1.6%	10.1%
Mostly faced financial need at the commercialization of produce	65	3	2	70
	50.4%	2.3%	1.6%	54.3%
Total	117	6	6	129
	90.7%	4.7%	4.7%	100.0%

As it could be observed in the above table 21, the majority of loan applications (35.7%) were from entrepreneurs who faced financial challenges during the production stage and secured 46 loans in total. In this category, most loans (32.6%) were obtained from Village Savings and Loans Associations (VSLAs), while a smaller percentage were acquired from Microfinance Institutions (MFIs) or Savings and Credit Cooperative Organizations (SACCOs) and Commercial Banks (1.6% each).

Another significant business stage for loan applications was the commercialization of produce, accounting for 54.3% of the total applications. Out of 70 loans in this category, 50.4% were sourced from VSLAs, 2.3% from MFIs/SACCOs, and 1.6% from commercial banks. A smaller portion of applications (10.1%) were related to entrepreneurs facing post-harvest and processing level financial needs, with 13 loans in total, primarily obtained from VSLAs (7.8%) and to a lesser extent from MFIs/SACCOs (0.8%) and commercial banks (1.6%).

Moreover, the chi-square test, carried out at a significance level of 5%, revealed a calculated chi-squared value of 93.64. This value significantly exceeds the critical value of 9.488, confirming a statistically significant association between loan applications and the business stage of the applicants at a 5% significance level.

Analyzing the loan applications submitted by the surveyed youth in response to financial difficulties encountered across various stages of the value chains, the information in table 22 reveals that, for Green Beans, the majority of financial challenges were observed at the production stage, with 37

out of 40 loan applications (92%) seeking financial support in this phase. Post-Harvest and Processing Level had significantly fewer challenges, with 7 loan applications (6.3%), and commercialization of the produce saw 59 loan applications (52.7%). This suggests that Green Bean farmers primarily need financial support during the production stage.

Similarly, Chili Pepper farmers encountered most financial challenges during the Production Stage, with 34 out of 37 loan applications (91.9%) directed toward this stage. Post-Harvest and Processing Level faced 8 loan applications (7.3%), while commercialization had 57 loan applications (52.3%). The data for Poultry and Tomatoes follows a similar pattern, with Production Stages being the most financially challenging for farmers. This information can guide policy and support efforts to better cater to the financial needs of farmers at various stages of value chains, with a focus on the production phase.

Table22: Loan application per business stages and value chains

	Faced Challenges per business Stage and Value chains	**Loan Applications**			Total
		From VSLAs	MFIs/ SACCOs	Commercial Banks	
Green Beans	Mostly faced financial challenges at Production Stage	37	2	1	40
		33.0%	1.8%	0.9%	35.7%
	Mostly faced post-Harvest and Processing Level Financial Need	7	1	1	9
		6.3%	0.9%	0.9%	8.0%
	Mostly faced financial need when it comes to commercialization of your produces	59	3	1	63
		52.7%	2.7%	0.9%	56.3%
	Total	**103**	**6**	**3**	**112**
		92.0%	5.4%	2.7%	100.0%
Chili pepper	Mostly faced financial challenges at Production Stage	34	2	1	37
		31.2%	1.8%	0.9%	33.9%
	Mostly faced post-Harvest and Processing Level Financial Need	8	1	2	11
		7.3%	0.9%	1.8%	10.1%
	Mostly faced financial need when it comes to commercialization of your produces	57	3	1	61
		52.3%	2.8%	0.9%	56.0%
	Total	**99**	**6**	**4**	**109**
		90.8%	5.5%	3.7%	100.0%
Poultry	Mostly faced financial challenges at the Production Stage	40	2	2	44
		36.0%	1.8%	1.8%	39.6%
	Mostly faced post-Harvest and Processing Level Financial Need	8	1	1	10
		7.2%	0.9%	0.9%	9.0%
	Mostly faced financial need when it comes to commercialization of your produces	52	3	2	57
		46.8%	2.7%	1.8%	51.4%
	Total	**100**	**6**	**5**	**111**
		90.1%	5.4%	4.5%	100.0%
Tomatoes	Mostly faced financial challenges at the Production Stage	**15**		**2**	**17**
		27.8%		3.7%	31.5%
	Mostly faced post-Harvest and Processing Level Financial Need	7		2	9
		13.0%		3.7%	16.7%
	Mostly faced financial need when it comes to commercialization of your produces	26		2	28
		48.1%		3.7%	51.9%
	Total	48		6	54
		88.9%		11.1%	100.0%

e. Youth's Prioritized Banking Financial Challenges to address

When asked the challenges that the Youth want to be addressed to meet their agriculture financing needs, the largest proportion of respondents, 29.7%, identified stringent eligibility criteria as a major challenge. This indicates that many young farmers find it difficult to meet the requirements set by financial institutions to access agricultural credit. Also, a significant proportion, 17%, mentioned that they lack awareness of the financial products and services offered by banks for farmers. Approximately 11.2% of the respondents mentioned that one of the significant challenges they face is the physical inaccessibility of financial service providers. This implies that the proximity and availability of banks or other financial institutions may be limited in their agricultural areas.

Table 23: Prioritized Challenges to be addressed

Challenges	Responses	
	N	Percent
Inaccessible physical locations of financial service providers	51	11.2%
Absence of tailored products	26	5.7%
Stringent eligibility criteria to access agriculture credit	135	29.7%
Lack of Trust by financial institutions in lending agricultural businesses	11	2.4%
High-interest rates offered by financial institutions	39	8.6%
Complex application processes for financial service	38	8.4%
Seasonal Income Variability	37	8.1%
Limited awareness of the Banks' various financial products and services	77	17.0%
Corruption to get the loan approved	1	0.2%
Lack of insurance coverage for crops or livestock	3	0.7%
Discrimination or exclusion based on gender	2	0.4%
Discrimination or exclusion based on refugee status, disability, etc	1	0.2%
Other challenges	33	7.3%
Total	454[27]	100.0%

Furthermore, the above table 23 indicates that about 5.7% of the respondents expressed the need for financial products that are specifically designed to meet the unique requirements of their agricultural businesses. This suggests that the current financial products available may not cater to the specific needs of young agricultural entrepreneurs. Approximately 8.6% of respondents are troubled by the high interest rates offered by financial institutions. This suggests that the cost of borrowing is a significant concern for young farmers.

About 8.4% of respondents find the application and approval processes for loans to be overly complex and lengthy, which is a barrier to obtaining financial assistance, while seasonal income variability, making it difficult to meet regular loan repayment schedules, is a concern for 8.1% of

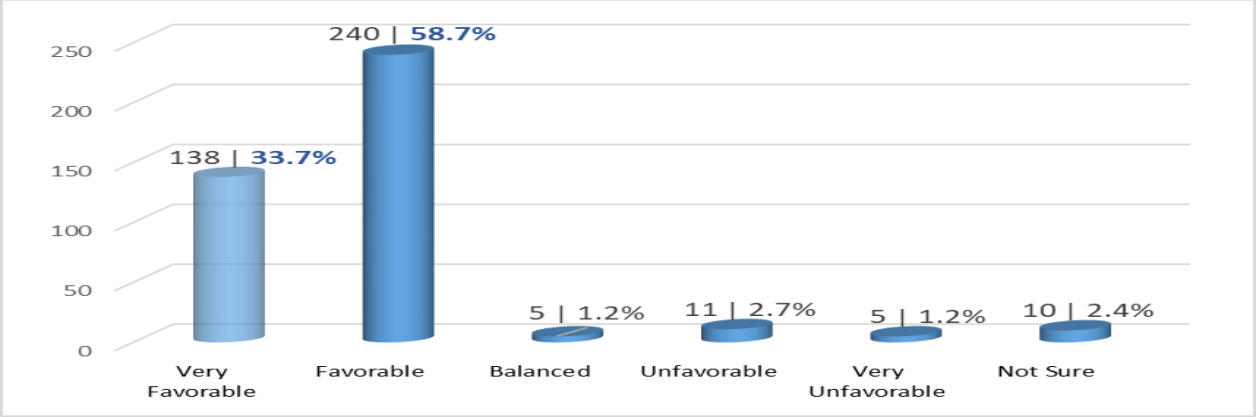
[27] This number surpassed the sample size due to the potential for multiple responses on this variable.

the respondents. This indicates that the irregular nature of income in agriculture makes it challenging for them to meet regular loan repayment schedules.

4.2.1.9. Income and Expenses Comparison

The assessment revealed that a majority of respondents (58.7%) have a generally positive outlook on their financial situation in agriculture, perceiving their income as higher than their major expenses within the value chain. Moreover, a substantial 33.7% of respondents, identified as "Very Favorable," exhibit a robust financial situation in their agricultural pursuits, with income from agriculture notably surpassing major expenses throughout the value chain, implying potential surplus income for reinvestment or future savings. This indicates that there is potential for further growth and development within the agriculture value chain.

Figure 10:Income vs expenses



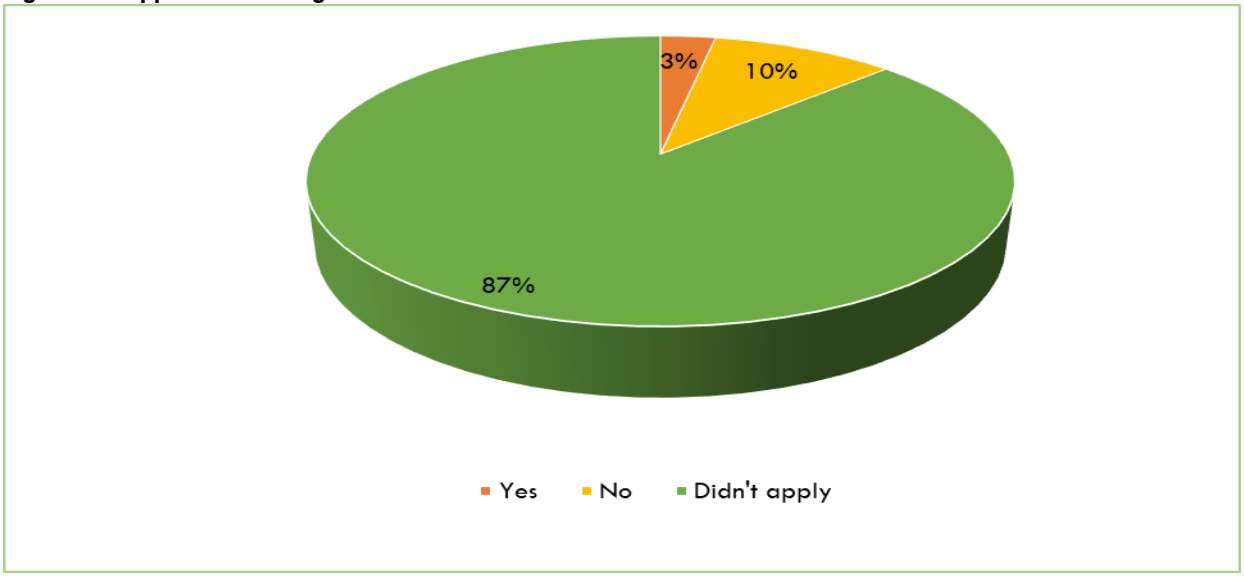
However, the above findings contradict what the key informants, especially the microfinance institution, indicated. They suggested that, due to the adverse risks and high production costs involved in agriculture, farmers often incur losses. Therefore, these participants' responses may be influenced by their limited skills in calculating profits and production costs for their agricultural activities."

In addition, it's essential to support those who perceive their situation as unfavorable or very unfavorable by providing them with the necessary resources, training, and financial assistance to overcome their challenges. Additionally, addressing the 2.4% of respondents who are not sure about their financial situation can improve their financial literacy and help them make informed decisions.

4.2.1.10. Application for Loans and Rejections

In relation to access to loans by the surveyed participants, it appeared that a significant portion (86.6%) of the youth surveyed did not apply for agriculture loans. Only a small percentage (2.9%) had their loan applications refused. The low number of youths having their loan applications refused is an interesting finding, as it could explained by the pattern of 86.6% of the survey participants didn't apply for loan for their agricultural investments as well as 50.8% in the previous section who indicated that the source for funding their agriculture activities was their personal saving.

Figure 11: Application for Agricultural Loan



After conducting a comprehensive analysis of the data presented in figure 11 above, it became evident that there is a need to delve deeper into the underlying causes of loan rejections. The table data highlighted that two predominant factors, "Insufficient Income" and "Lack of Collateral," were responsible for a significant share of loan rejections, representing 28.6% and 21.4% of cases, respectively.

Table 24: Reason for loan rejection

Reason for loan rejection	**Responses**	
	N	Percent
Poor Credit History	1	7.1%
Insufficient Income	4	28.6%
Lack of Collateral	3	21.4%
Limited Repayment Capacity[28]	1	7.1%
wasn't informed of the reason for the rejection though I asked	4	28.6%
Other reason	1	7.1%
Total	14	100.0%

Furthermore, it is concerning that nearly 29% of individuals whose loan applications were declined reported not receiving any information about the reasons behind their rejection. This situation underscores a concerning lack of effective communication within the loan application process, potentially discouraging young applicants from seeking financial support for their agricultural pursuits.

Overall, this data highlights the importance of addressing issues related to collateral availability and proper planning of income streams from agriculture business for young individuals seeking agriculture loans. Furthermore, improving communication and transparency in the loan application process is essential to help youth understand the reasons for rejection and potentially work on improving their eligibility in the future.

[28] Limited Repayment Capacity means that it wasn't possible to repay the loan based on my income streams

In the cross-tabulation of gender and the lack of collateral for youth engaged in chili, tomato, green beans, and poultry value chains, it is evident that a significant proportion of both males and females face challenges related to inadequate collateral for covering loan amounts. Specifically, 16.7% of males and 8.3% of females lacked sufficient collateral to secure their loans. On the other hand, 41.7% of females and 41.7% of males had sufficient collateral. Overall, 25% of the total respondents lacked adequate collateral, while 75% had the necessary collateral, underscoring the pressing need for financial support and assistance in these agricultural value chains, especially among those with limited collateral resources.

Table 25: Gender Vs Lack of Collateral

Gender	Lack of Collateral		Total
	Yes	No	
Male	2	5	7
	16.7%	41.7%	58.3%
Female	1	4	5
	8.3%	33.3%	41.7%
Total	3	9	12
	25.0%	75.0%	100.0%

However, the chi-square test results (table 23) show that there is no statistically significant association between gender and collateral challenges among the youth engaged in chili, tomato, green beans, and poultry value chains. The p-values for the Pearson Chi-Square, Continuity Correction, Likelihood Ratio, and Linear-by-Linear Association tests all exceed the common significance level of 0.05, with p-values ranging from 0.733 to 1.000. Therefore, we fail to reject the null hypothesis, which suggests that there is no relationship between gender and collateral challenge in this context. The alternative hypothesis, which would indicate a significant association, is not supported by the data.

Table 26: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.114[a]	1	.735		
Continuity correction	.000	1	1.000		
Likelihood Ratio	.116	1	.733		
Fisher's Exact Test				1.000	.636
Linear-by-Linear Association	.105	1	.746		
N of Valid Cases	12				
a. 3 cells (75.0%) have an expected count less than 5. The minimum expected count is 1.25.					
b. Computed only for a 2x2 table					

4.2.1.11. Having a Savings Bank Account for Agricultural Earnings

As it could be observed in the table below 273 respondents, which accounts for 66.7% of the total respondents, indicated that they have a savings bank account specifically for their agricultural earnings. This suggests that a significant portion of the surveyed individuals are actively using savings accounts to manage their agricultural income. Having a savings account can be an indicator of financial literacy and financial planning.

Table 27: Having a savings bank account for agricultural earnings

Having a savings bank account for agricultural earnings	Frequency	Percent
Yes	273	66.7
No	136	33.3
Total	409	100.0

Nevertheless, 136 respondents, constituting 33.3% of the total respondents, reported that they do not have a savings bank account for their agricultural earnings. This implies that a considerable number of the surveyed youth involved in these agricultural value chains do not currently utilize savings accounts for managing their agricultural income.
It was also found that in "Male" category, 21.3% of respondents have a savings bank account for their agricultural earnings, and 10.5% do not.

Table 28: Gender Vs Having a savings bank account specifically for agricultural earnings

Gender		Having a savings bank account specifically for your agricultural earnings		Total
		Yes	No	
	Male	21.3%	10.5%	31.8%
	Female	45.5%	22.7%	68.2%
Total		66.7%	33.3%	100.0%

In the female category, 45.5% have such an account, while 22.7% do not.
However, the use of chi-square tests to determine whether there is a statistically significant association between gender and having a savings bank account specifically for agricultural earnings revealed that there is no statistically significant association between gender and having a savings bank account.
Furthermore, it was found that while a considerable number of respondents have savings bank accounts for agricultural earnings, they do not use them very frequently for their agricultural financial transactions.

The majority of respondents use their accounts either "Occasionally (a few times a year)" (28.1%) or "Never" (29.1%).
A significant portion also uses their accounts "Monthly" (16.4%) or "Weekly" (10.0%).
Only a small percentage uses their accounts "Daily" (0.7%) or "Several times a week" (0.2%).

Table 29: Frequency of using Bank account

Frequency of using Bank account	Frequency	Percent
Daily	3	.7
Several times a week	1	.2
Weekly	41	10.0
A few times a month	3	.7
Monthly	67	16.4
Occasionally (a few times a year)	115	28.1
Rarely (once a year or less)	57	13.9
Never	119	29.1
Prefer not to answer	3	.7
Total	409	100.0

This information is valuable in understanding the financial behaviors of the youth involved in the selected value chains and indicate the need for tailored agricultural saving products or services to better meet their needs for their agricultural endeavors.

4.2.1.12. Digital Financial Products and Needs

The analysis of the current use of digital financial services and products among respondents reveals that the majority (77.5%) use mobile money services and other digital wallet. Mobile money is a versatile tool that can be used for various financial activities, including transfers, payments, and even savings. This suggests that the youth in agriculture are open to using digital financial services, with mobile money being the most popular choice.

Table 30: Digital Financial products or services

Digital Financial Services Used	**Responses**	
	N	Percent
The bank's Mobile-based cash deposit and withdrawal services	58	12.7%
Mobile-based Agri-loan requesting & payment services	4	0.9%
Mobile money and other Digital wallet (MTN mobile money, Airtel money, Money phone),	355	77.5%
I don't use any digital financial product /service	35	7.7%
Other services	5	1.1%
Total	457	100.0%

Moreover, it was found that about 12.7% of the respondents use mobile-based deposit and withdrawal services. This indicates that a modest portion of the youth in agriculture is already leveraging digital financial tools for basic banking needs. This group might have some level of financial inclusion and familiarity with digital transactions, which can be advantageous for their investment activities.

To address the financial needs of this group effectively, it may be worthwhile to promote and expand awareness of mobile-based Agri-loan services and encourage the use of digital wallets for savings, which can help with financial planning for agricultural investments.

Furthermore, the analysis on respondents' comfort with digital financial services revealed that a significant portion of the respondents falls into the "Somewhat comfortable" category, comprising

47.4% of the total (table31). This suggests that a large portion of the youth in agriculture has some level of confidence in using digital tools for financial services. This comfort can potentially be leveraged by the SERVE Project's participating financial institutions for digitizing their offered financial services and products while meeting the financial needs of these young individuals involved in agricultural value chains.

Table 31: Respondents' comfort with digital financial services

Characteristics	Frequency	Percent
Very comfortable	58	14.2
Somewhat comfortable	194	47.4
Not comfortable at all	91	22.2
Never use digital financial services	64	15.6
Prefer not to say	2	.5
Total	409	100.0

It's notable that the respondents are distributed across a range of comfort levels. 14.2% are "Very comfortable," 22.2% are "Not comfortable at all," and 15.6% "Never use digital financial services." This diversity implies that there is a need for tailored approaches to cater to the varying levels of digital readiness within this demographic.

From the findings in table 28, chi-square tests have been conducted to trace whether as the level of education increases, there is generally a positive trend in the comfort with embracing digital financial products and tools. Thus, there following Hypothesis where formulated:

Null Hypothesis (H0): There is no significant association between the level of education and the comfort in embracing digital financial products among youth in agriculture.
Alternative Hypothesis (H1): There is a significant association between the level of education and the comfort in embracing digital financial products among youth in agriculture.

Table 32: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	64.082[a]	24	.000
Likelihood Ratio	59.435	24	.000
Linear-by-Linear Association	11.775	1	.001
N of Valid Cases	409		
a. 19 cells (54.3%) have expected count less than 5. The minimum expected count is .01.			

As it can be observed in the table 32 above, all three test statistics (Pearson, Likelihood Ratio, and Linear-by-Linear) have a p-value of .000, which is less than the commonly used significance level of 0.05. This suggests a significant association between the two categorical variables (schooling level and comfort with digital financial systems). Thus, the data suggests a significant association between the highest level of schooling and the level of comfort with digital financial and payment systems among the surveyed population.

This information suggests that focusing on financial education and digital literacy programs for youth with lower education levels may be essential to ensure wider adoption of digital financial products in the agriculture sector. Additionally, tailoring these programs to meet the specific needs of each education group could be beneficial for more targeted support.

4.2.1.13. Analysis of challenges faced in adopting digital financial products

The survey findings reveal a range of challenges and barriers that individuals face when adopting digital financial products. Limited access to mobile phones and digital literacy are the most prominent issues, highlighting the need for strategies to improve digital inclusion and education. Additionally, challenges related to electricity, internet access, and connectivity underscore the importance of infrastructure development. Financial service providers should also take note of the absence of digital services as a hindrance to adoption.

Table 33: Challenges or barriers faced

Barriers	Frequency	Percent
Limited access to mobile phone	120	29.3
Lack of electricity	29	7.1
Limited access to internet costs	60	14.7
Limited internet connectivity issues	66	16.1
Limited digital literacy	130	31.8
Absence of digital financial services at my FSP	14	3.4
Other barriers	112	27.4

A substantial 31.8% of respondents identified limited digital literacy as a significant barrier. This suggests that a lack of knowledge or skills required to navigate digital financial platforms is a major obstacle for many people. Similarly, limited access to mobile phones was identified as the most prevalent challenges. Approximately 29.3% of the survey participants mentioned this as a barrier. This suggests that a significant portion of the population faces issues related to device availability, which is a fundamental requirement for using digital financial services.

Furthermore, limited internet connectivity issues were reported by 16.1% of survey participants. This indicates that even if individuals have access to the internet, they may still encounter challenges related to the quality and reliability of their internet connections. Approximately 14.7% of respondents pointed to limited access to the internet due to cost as a significant barrier. The high cost of data packages or internet services can make it difficult for individuals to engage with digital financial products effectively.

4.2.1.14. Preferences for additional digital financial services

The findings revealed that youth in agriculture are keen to embrace digital financial services to enhance their business activities within various value chains. Notably, they prioritize services such as mobile-based deposit and withdraw services, digital wallets, and digital training for financial literacy.

Table 34: Digital financial services mostly needed for agriculture business activities

Digital financial services mostly needed by youth	Frequency	Percent
Mobile-based deposit and withdrawal services	96	23.5
Digital wallet and Mobile based Agri-loan requesting and payment services	118	28.8
Technology-based crop/livestock insurance access	15	3.7
Digital training for financial literacy services access	173	42.3
Other	7	1.7
Total	409	100.0

As it can be observed from table 34, the most significant demand among youth in agriculture is for digital training on financial literacy services, with 42.3% of respondents emphasizing its importance. This indicates a strong desire for education and skills development in financial management. Digital wallets and Mobile based agricultural loans requesting and payments services have also emerged as a preferred option among youth, with 28.8% of respondents highlighting the importance of services such as MTN Mobile Money, Airtel Money, and others for savings. This reflects the growing trend of digital financial tools being used to store and manage money as well as he the need for mobile-based agricultural loans requesting and payment services.

The majority of youth in selected value chains (23.5%) recognize the importance of mobile-based deposit and withdraw services. These services facilitate easy and convenient financial transactions, including depositing and withdrawing funds, which are crucial for day-to-day operations.

4.2.1.15. Insurance Analysis

The analysis about access to insurance by surveyed youth indicated that only a small percentage of respondents (4.2%) had taken crop/livestock insurance. The vast majority, 95.8% of respondents, have not taken any form of crop or livestock insurance. This indicates a low penetration of insurance in this sector among young agricultural entrepreneurs.

The table below summarizes the responses to a question about whether youth investing in agriculture in Rwanda have taken crop or livestock insurance.

Table 35: Having Taken Agriculture Insurance

Gender		Having taken Crop/ livestock insurance		Total
		Yes	No	
Male	% within Gender	3.8%	96.2%	100.0%
	% of Total	1.2%	30.6%	31.8%
Female	% within Gender	4.3%	95.7%	100.0%
	% of Total	2.9%	65.3%	68.2%
Total	% within Gender	4.2%	95.8%	100.0%
	% of Total	4.2%	95.8%	100.0%

The low percentage (4.2%) of respondents who have taken crop or livestock insurance suggests that there might be limited awareness or access to insurance products among youth involved in agriculture in Rwanda. This finding aligns with previous research in Rwanda and similar contexts,

where agricultural insurance adoption has often been low due to various factors, including lack of knowledge, limited access, and perceived high costs[29].

The next table provides data on the challenges faced by youth investing in agriculture when it comes to accessing and using crop and livestock insurance. The findings are summarized in terms of frequency and percentage of respondents who reported each specific challenge.

Table 36: Explore challenges in accessing and using insurance.

Challenges	Frequency	Percent
Coverage Gaps (No comprehensive insurance coverage to our potential risks)	123	30.1
Cost of Premiums (insurance premiums cost was high not affordable)	71	17.4
Difficulty to cope with year-to-year changes of insurance costs)	3	.7
Claim Processing Delays (much delays in processing our insurance claims)	4	1.0
No knowledge about government regulations and subsidy programs	176	43.0
Access to Insurance Providers	18	4.4
No envisaged challenge	12	2.9
Limited Crop and Livestock Options	2	.5
Total	409	100.0

As it can be observed in above table 36, lack of knowledge about the government agriculture insurance policy and Subsidy programs was the most significant challenge reported, with 43% of respondents indicating that they did not know government policy and subsidy programs related to agricultural insurance. This lack of awareness could be a major impediment to accessing government-supported insurance schemes. Moreover, a significant portion of the youth (30.1%) identified coverage gaps as a challenge. This suggests that the existing insurance options may not adequately address all the potential risks faced by agricultural activities; which could expose youth farmers to financial risks that are not covered by the existing agriculture insurance policy.

Furthermore, 17.4% of respondents highlighted the daunting issue of exorbitant insurance premiums. This statistic underscores the widespread concern regarding the accessibility of insurance among young individuals engaged in agriculture. This concern aligns with insights from Key Informant Interviews (KIIs), which underscored that the mandated 60% contribution from farmers under the National Agriculture Insurance Schemes remains prohibitively steep. This financial barrier acts as a significant impediment, especially for young farmers with limited financial resources. A relatively small percentage (4.4%) reported difficulties in accessing insurance providers. This suggests that, for some youth farmers, geographical or logistical factors may hinder their ability to connect with insurance companies. Understanding these challenges can inform strategies to enhance insurance participation and support the youth in these value chains.

Nevertheless, to gain a deeper understanding of the reasons behind the low uptake of insurance, we conducted a Chi-square test to assess whether there is any association between respondents'

[29] World Bank 2019, What drives insurance sector development in the
World Bank, 2019: What drives insurance sector development in the Republic of Rwanda and what are the opportunities ahead? -https://documents1.worldbank.org/curated/en/213521577693532915/pdf/Insurance

envisaged challenges in agriculture insurance having taken it, the following hypothesis where formulated:

Null Hypothesis (H0): There is no significant relationship between the mainly envisaged challenge in accessing insurance and having taken insurance.

Alternative Hypothesis (H1): There is a significant relationship between the mainly envisaged challenge in accessing insurance and having taken insurance.

Table 37: Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	145.065[a]	7	**.000**
Likelihood Ratio	52.283	7	.000
Linear-by-Linear Association	8.704	1	.003
N of Valid Cases	409		
a. 9 cells (56.3%) have expected count less than 5. The minimum expected count is .08.			

As it can be observed from the above table 37 about the chi-square Test, the p-value is less than 0.05, which led to rejecting the null hypothesis (H0) and the conclusion that there is a significant association between the mainly envisaged challenge and having taken crop/livestock insurance, at a significance level of 5%. In other words, the choice of whether to take insurance is related to the envisaged challenges in accessing insurance.

Furthermore, the cross-tabulation reveals key insights into the challenges faced by youth engaged in the chili, tomato, green beans, and poultry value chains regarding crop and livestock insurance.

Table 38: Mainly envisaged challenge in accessing insurance vs Having taken insurance

Mainly envisaged challenges	Having taken Crop/ livestock insurance		Total
	Yes	No	
Coverage Gaps (No insurance covering all our potential risks)	0.7%	29.3%	30.1%
Cost of Premiums (the cost is high and not affordable for us)	0.5%	16.9%	17.4%
Difficulty to cope with year-to-year changes of insurance costs)		0.7%	0.7%
Claim Processing Delays (much delays in processing our insurance claims)	0.5%	0.5%	1.0%
No knowledge about government regulations and subsidy programs	0.5%	42.5%	43.0%
Access to Insurance Providers (Limited access to insurance providers location)		4.4%	4.4%
No envisaged challenge	2.0%	1.0%	2.9%
Limited Crop and Livestock Options (Not all crops and livestock could be insurable)		0.5%	0.5%
Total	4.2%	95.8%	100%

Notably, it is observed from the table 38, that 0.5% of those who have no knowledge about government agriculture insurance policy and subsidy programs have taken insurance, while 42.5%

have not. This indicates that a very small percentage of youth who lack knowledge about government support for insurance have opted for it, suggesting a strong negative relationship. Similarly, 0.5% of those who mainly envisage high premium costs have taken insurance, while 16.9% have not. This implies that very few youths who perceive high premium costs as a challenge have opted for insurance, indicating a strong negative relationship between high premium costs and insurance uptake. 2% of those who don't envisage any challenges have taken insurance, while 1% have not.

Therefore, The SERVE Project' outreach efforts should focus on educating youth farmers about available insurance options and support programs. Moreover, the project could provide financial assistance to help its beneficiaries cover insurance premiums.

In the realm of agricultural risk management, the choice of insurance products plays a pivotal role in safeguarding farmers' interests and ensuring the stability of agricultural production. This table presents valuable insights into the preferences and priorities of respondents regarding crop and livestock insurance products. The data, derived from a comprehensive survey, showcases the frequency and percentage distribution of respondents who stated what products are most suitable for their needs.

Table39: Respondents' most suitable insurance products

Crop and livestock insurance products	Frequency	Percent
Multi-Peril Crop Insurance (MPCI) product	192	46.9
Crop peril-based Insurance product	65	15.9
Individual animal coverage products	71	17.4
Herd coverage product	40	9.8
Revenue Protection Insurance	41	10.0
Total	409	100.0

The analysis of statistics in the table above revealed that Multi-Peril Crop Insurance (MPCI) product was the most preferred insurance product among the respondents, with 46.9% choosing it. MPCI provides comprehensive coverage against a wide range of perils such as weather events, pests, and diseases. This preference suggests that the youth in agriculture value comprehensive protection for their crops, possibly because they are aware of the various risks associated with farming. Importantly, Youth in poultry (17.4%) farming want insurance options that protect their individual chicken. This preference could be driven by the value placed on individual chicken and the potential for higher losses in case of disease or death.

Furthermore, 10.0% of respondents choose revenue protection insurance. This type of insurance is likely seen as important by those youth who have a strong focus on the financial aspects of farming, as it could help protect against revenue fluctuations caused by the price volatility or yield variations. These findings align with responses from the majority of key informants, underscoring the necessity of subsidizing insurance at both yield and revenue levels. The above finding suggest that SERVE Project could explore the possibility for engaging with insurance providers and policymakers to bridge the gap between the youth's preferences and available insurance offerings is crucial. It might involve designing insurance products that cater specifically to their needs or improving accessibility and affordability.

4.2.2. Supply Analysis

The findings from interviews conducted with selected Microfinance Institutions reveal that the proportion of agriculture in their loan portfolios is typically quite low, averaging between 5% and 10%. However, certain MFIs, such as Duterimbere and RIM, surpass these averages, allocating up to 16% and 38% to agriculture, respectively. Nevertheless, even for those exceeding the 10% threshold, their internal procedures dictate that agricultural loans should not exceed 35% to 38% of the total loan portfolio. This limitation is primarily driven by their perception of the higher risks associated with agricultural lending compared to other sectors, stemming from factors like disease outbreaks, drought, floods, pests, and price instability of the agriculture production. ***"We have a dedicated unit for agriculture lending, where 20% to 38% of our lending is allocated to agriculture. However, we do not wish to exceed this percentage due to the following factors: (i) Agriculture is a highly risky business compared to other sectors. Factors such as diseases, droughts, floods, pests, and price instability of agricultural products contribute to its higher risk profile, (ii) The extended time lag between cash outflow and cash inflow from the farmer restricts our own cash inflow. The cash flow in agriculture is seasonal, which means that, as a bank, we must wait for at least four months for a farmer to repay the loan".*** Explained the director General of RIM.

Inopportunely, only a very limited number[30] of the interviewed MFIs is offering a dedicated agricultural savings product for farmers but also a generic product not specifically catered for agriculture.

The analysis of interview responses reveals that the microfinance institutions (MFIs) under examination receive various agricultural loan requests from young individuals engaged in agriculture. Notably, MFIs acknowledge a relatively low volume of loan requests from youth in the chili pepper, green, and tomato value chains. Yet, they indicated that there is a distinct decline in loan requests from youth actors involved in the poultry value chain; that can be attributed to the significant rise in the cost of feed and medicines, which has made poultry farming less financially viable for young entrepreneurs seeking loans from MFIs.

Additionally, certain MFIs have mentioned that the lack of sufficient data to evaluate potential new value chains makes them hesitant to extend loans to certain sectors, including chili, tomato, green bean, and poultry value chains. This challenge is exacerbated by the absence of an organized structure, such as efficiently managed youth cooperatives or value chain-focused cooperatives, that could ensure consistent production and reliable revenue streams to facilitate the repayment of the borrowed funds. "***The selected value chains in question do still lack a reliable and effective structure to ensure the financial security of loans extended to farmers within them. Take the Rice value chain, for example, where farmers are organized into cooperatives spanning from the local to the national level. This structure grants farmers access to stable market prices and enhances their bargaining power. Furthermore, in Rice value chain, the government support and cooperative management ensure that farmers have access to agricultural resources, including land and inputs, as well as reliable storage facilities and crop insurance. Such a robust structure constitutes a natural collateral for loans, eliminating the need for traditional collateral when providing loans to farmers in this value chain, resulting in minimal loan defaults***" explained by a manager at Goshen Finance PLC.

[30] Umutanguha Finance Company PLC and DUTERIMBERE IMF PLC

It was further revealed from the interviews MFIs that the majority of youth' loan requests primarily revolve around securing or purchasing farmland, procuring essential items such as seeds, fertilizers, and pesticides, and to a limited extent, acquiring modern agricultural equipment. However, it was found that most of the available financial products offered by those interviewed financial service providers are not typically structured to meet the needs of youth investing in agriculture. Majority of the interviewed MFIs indicated that their offered loans require collaterals, that youth do not have, and do often have high interest rates. While the Business Development Fund (BDF) is actively addressing the collateral issue by covering 75% of the required collateral value, several MFIs expressed concerns about the remaining 25%. They indicated that this percentage proves challenging for most youth to contribute, primarily because they lack savings and potential assets to offer as collateral and do not easily obtain the necessary assistance from their families to secure this 25%. Consequently, the dearth of collateral among young borrowers remains a significant impediment to accessing the loans they require.

Majority of the interviewed microfinance institutions (MFIs) have cited that women clients primarily seek loans with lower interest rates. However, they also recognize that the loans they provide tend to be relatively expensive, primarily due to the high cost of capital associated with their operations. These MFIs acknowledge that their interest rates may appear high when compared to the potential profits that could be generated from the agricultural projects financed by these loans.

In regards to the loan defaulting rate among young borrowers, interviews with the Microfinance Institutions (MFIs) revealed that this rate is relatively low when compared to the overall Non-Performing Loan (NPL) statistics. To illustrate, in the case of Urwego Bank, the NPL for loans extended to young individuals stands at less than 1%, while it is noticeably higher for medium and large enterprises. Similarly, at Umutanguha Finance PLC, the average NPL among young borrowers was found to be 2.6%, in contrast to the general NPL rate of 2%. It's noteworthy to mention that the average NPL ratio in the microfinance sector has averagely hovered around 6.7% between September 2021 and June 2023.

The microfinance institutions (MFIs) interviewed have also indicated that an inability to meet savings prerequisites for cash collateral, subpar credit histories, limited financial literacy, and restricted access to precise information about the products and services offered by MFIs do also constitute that the key barriers hindering youth access. ***"Lending to young individuals remains a challenge for us because the youth is often highly distracted and lacks both business-oriented and proficient money management skills. This situation prevents us from lending to them without collateral, even though we understand that it may be difficult for them to obtain such collateral".*** Explained one of the MFI's interviewees.

Furthermore, financial institutions view the mobility of young individuals, who often relocate from rural to urban areas, as a risk factor, which subsequently affects their willingness to extend loans to this demographic. "***Young individuals often struggle to prioritize savings, a crucial step towards financial resilience and an effective means of replacing the need for collateral in the long run. Additionally, a significant portion of young people engage in agriculture not out of a genuine career choice, but rather as a temporary step towards potential urban employment opportunities like public transport using motorcycles or various forms of trade. This situation has led to a certain level of skepticism within our lending institutions when considering agricultural loan requests from this demographic,***" elaborated the Business Development Manager of one of the consulted Microfinance Institutions (MFIs).

It was also mentioned by the interviewed financial service providers that when attempting to secure a loan, young individuals often rely on their parents to provide the necessary collateral, a situation where they are frequently denied. Similarly, some of the consulted MFIs have indicated that people with disabilities often encounter significant challenges when attempting to find someone willing to lend them collateral, primarily because they are not trusted due to their disability. Besides, it was highlighted that women, especially the married women, often do not exercise their equal property rights and hesitate to mortgage their households' land for loan access.
Furthermore, while the majority of the surveyed MFIs offer agricultural loans with repayment schedules that align with the agricultural seasons, majority of these institutions require monthly repayments. This approach disregards the fact that the sources of repayment could originate from the income generated during the specific agricultural seasons in which the borrowed funds were invested.

In relation to the financial needs for refugees, it has been discovered that Umutanguha Finance Company PLC offers both savings and loan products designed to cater to the essential financial requirements of young refugees in the Agriculture Sector. "Presently, we have a specialized loan product available for refugees, and, in partnership with the Rwanda Ministry responsible for Emergency Management, we can provide loans to refugees up to Rwf 200,000 without the need for collateral" Explained the CEO of Umutanguha Finance Company.

Taking into account all the information mentioned above, it has been determined that the SERVE Project's financial services participating in the project still require customization to align with the particular agricultural practices, seasonal variations, and local conditions of the smallholder farmers they are catering to. Furthermore, establishing robust connections with farmers and gaining a deep understanding of their distinct challenges can enable financial institutions to develop more effective and farmer-friendly products.

The following section highlights the financial loan products offered by the participating financial institutions. These products could be adjusted and integrated by the SERVE Project to better address the financial requirements of the project beneficiaries

Box1: RIM's Agribusiness financing in Partnership with Feed the Future Rwanda Project

Introduction: In 2021, RIM Ltd initiated a transformative partnership with Feed the Future Rwanda Nguriza Nshore, with the goal of revolutionizing their approach to agribusiness and especially to better support women and youth involved in agriculture in Rwanda.

Background: Before this transformation, RIM treated agribusiness clients like regular SME clients, offering generic financial products. This approach failed to acknowledge the specific challenges and opportunities in agriculture. Recognizing the need for change, RIM conducted assessments and gathered feedback from agribusiness clients.

Strategies Implemented: Insights from the assessment led to tailored strategies and financial products, including:

- **Tailored Financial Products:** RIM introduced specialized financial products, such as flexible loan terms and crop-specific financing options.
- **Productive Assessments:** In-depth assessments of agricultural productivity were conducted.
- **Market Analysis:** RIM analyzed market conditions to aid clients in making informed decisions.
- **Risk Evaluation:** RIM assessed risks associated with different crops and regions to reduce potential losses.

Results and Impact: These strategies had a significant impact on RIM's agribusiness portfolio:

- **Increased Client Base:** The number of agribusiness customers grew, with agricultural loans rising from 20% to 31% of the entire loan portfolio by the end of 2021.
- **Improved Portfolio Quality:** The quality of the loan portfolio improved, with credit at risk decreasing from 11% in 2020 to 4% in 2021.
- **Gender Inclusivity:** RIM promoted gender inclusivity, increasing women's access to tailored agribusiness products from 27% to 32%.
- **Youth Engagement:** Youth participation in agribusiness increased from 1% to 11%, thanks to targeted products and outreach efforts.

Customer-Centric Approach: RIM maintains a customer-oriented approach with ongoing training for loan officers, prioritizing customer satisfaction, and continuous feedback collection to refine offerings.

Future Initiatives: RIM plans to expand its presence in the agricultural sector, with specialized agribusiness loan officers in all branches and staff training on agribusiness strategy implementation. This commitment aims to enhance RIM's agribusiness strategy and impact the agricultural landscape in Rwanda positively.

Conclusion: RIM's partnership with Feed the Future Rwanda Nguriza Nshore showcases the benefits of adapting financial services to agriculture's unique financial needs, particularly for women and youth. This case study serves as an inspiring example for MFIs looking to increase their loan portfolio for youth investing in the agriculture sector in Rwanda

Box 2: Challenges in Lending to Youth in the Agriculture Sector - Insights from GOSHEN Finance PLC.

Youth engagement in the agriculture sector presents a unique set of challenges, particularly when it comes to access to financial resources. One of the significant hurdles faced by youth in agriculture is their limited access to land. Acquiring land, modern agricultural equipment and essential inputs like fertilizers and pesticides pose a financial burden that individual youth often struggle to meet. Their limited savings capacity, due to the financial constraints of youth, makes it especially challenging to afford these costs. To mitigate this challenge, many youths opt to pool their resources through business groups or cooperatives, enabling them to share the financial burden collectively.

In an effort to support youth in agriculture, GOSHEN Finance PLC partnered with a USAID project to introduce a youth-focused Agriculture loan product in Ruhango. Initially, youth groups were required to save 20% of their loan amount, but many found it impossible to meet this savings target. The required savings amount was later reduced to 10%, but even this proved challenging for most youth. Many faced difficulties in finding sources of income to save, and some lacked the commitment to fulfill their savings obligations. This case underscores the critical need for financial education and skills development among youth to make effective use of borrowed funds. Moreover, there is a prevailing skepticism among the youth regarding the agriculture sector's ability to provide sustainable employment and income. As revealed through GOSHEN Finance PLC's experience, some youth who obtained loans for their agriculture businesses later became discouraged due to insufficient cash inflow and decided to sell their business assets to seek non-agriculture-related jobs in urban areas, such as Kigali.

Another noteworthy aspect is the specific financial needs of women clients in the agriculture sector. Women often require loans without the need for collateral and at lower interest rates. However, GOSHEN Finance PLC faces limitations in providing such loans due to high capital costs. These challenges can be alleviated with government or development partner support and subsidies. For instance, the EDIFY Project facilitated lower interest rates by providing cash to GOSHEN Finance PLC at a reduced rate, which, in turn, allowed the organization to provide loans to Christian schools at a more affordable 15% interest rate. Such partnerships play a vital role in addressing the financial needs of specific client groups like women and youth in agriculture.

Box3: Empowering Rwandan Youth Agri-preneurs Through Tailored Financial Solutions[31]

In response to the challenges faced by Rwanda's youth engaged in agriculture, ICCO Cooperation's STARS program pioneered a transformative initiative focused on financial inclusion. Recognizing the potential of agriculture as a key economic sector, especially with over 60% of the youth actively involved, STARS collaborated with microfinance institutions to address the financial constraints hindering the youth's agri-entrepreneurial journey. The innovative approach introduced the A-CAT loan assessment tool[32], enabling loan officers to comprehend the unique seasonal needs of young farmers while assessing the associated risks effectively. Moreover, STARS strategically partnered with local farmers' association Imbaraga and Duterimbere IMF, selecting 60 young farmers specializing in irish potatoes and horticulture. These farmers, many of whom lacked collateral and credit history, found a lifeline through tailored loan products. By involving producer organizations like Imbaraga, the program ensured a partial loan guarantee, mitigating risks for the financial institutions. Additionally, STARS provided comprehensive training to these young entrepreneurs, covering Best Agricultural Practices, cost-benefit analysis of their production, and essential skills in loan management. Moreover, a pivotal aspect of the program was instilling the habit of savings among the youth, enhancing their financial resilience. Through strategic partnerships and innovative financial tools, this initiative empowered young agri-preneurs in Rwanda. By imparting crucial loan management skills, it transformed them into thriving agricultural entrepreneurs, boosting economic growth and self-sufficiency. This multifaceted approach demonstrates the impact of tailored solutions, breaking barriers of limited land access and financial exclusion for the youth.

[31] This good practice was prepared based on the information retrieved from https://www.icco-cooperation.org/en/blogs/empowering-youth-in-rwanda-to-become-successful-agri-preneurs/

[32] https://www.icco-cooperation.org/en/news/a-cat-a-tool-for-risks-assessment-in-agriculture-finance/

4.2.2.1. Relevant Youth or Agriculture-based savings and loan Products in the Consulted Financial Institutions

This section indicates the identified generic or tailored saving and loan products currently available from the consulted FSPs/ Microfinance institutions, that could be accessible and beneficial for the youth engaged in the Chili, tomato, green beans, and Poultry value chains in selected 10 Districts.

Table 40: Relevant Youth or Agriculture-based savings and loan Products

MFI/FSP	Youth/women/ target Value chain-based products	Product's Features (Description)	Quick Wins and Possible Collaboration for SERVE Project.
URWEGO Bank PLC	Crop Based Group Loan	The Microfinance Institution (MFI) offers working capital loans to farmers organized in groups. To access these loans, farmers need to: • Form an ad hoc group of 20-30 people for Group loan requesting. • Attend training sessions provided by Urwego Opportunity PLC to understand the eligibility criteria and how this loan product works. • Be part of the same value chain, focusing on the same crop. • Have farm lands in close proximity with a combined size of up to 1.5 hectares. • No collateral is required for these loans.	• Sensitize and raise awareness among project beneficiaries about this loan product and link them with Urwego Bank • The SERVE project should collaborate with Urwego as a consortium member to co-create group loan products focused on chili, green beans, and tomatoes as well as digitizing that product. Additionally, the project should consider covering the costs associated with trademarking the product under the name "Urwego Bank" for the benefit of other microfinance institutions participating in the initiative, should they wish to adopt and implement this product. • Engage in discussions with AMIR's members who already utilize computerized banking systems to explore the feasibility of integrating a similar digital system like "mHose."
	Offered Digital Services: mHose	mHose, now part of Momo, is a mobile banking platform for convenient and secure financial transactions. With Urwego Bank's mHose, custom can: • Self-register for Urwego's mobile banking services. • Easily receive and repay loans to the bank.	

MFI/FSP	Youth/women/ target Value chain-based products	Product's Features (Description)	Quick Wins and Possible Collaboration for SERVE Project.
		• Access their money without visiting a branch, enhancing safety and control. • Make deposits and savings • Pay bills (airtime and electricity) anytime, anywhere. • View account's financial information for free once a day.	
UMUTANGUHA FINANCE COMPANY PLC Based in Kigali with 21 Branches across country As digital service It currently has: Push and pull options Mobile banking: utilities and tax payment options Account balance using USSD and online ordering of a cheque book.	Agricultural Loan	•Offered to farmer clients who have agricultural projects ranging from small-scale farmers to large-scale farmers. •Open for agricultural associations, agricultural cooperatives, and individual farmers •Interest rate is 22.8% •Collateral is required • Not digitized however, one can monitor his account' movement using mobile phone	• Engage the project beneficiaries to utilize this loan opportunity in alignment with BRD's CDAT's subsidized interest loan facility • Project assist its beneficiaries in obtaining the necessary collateral by pledging 90% as a loan guarantee
	Seasonal Loan Facility	• Seasonal loan is a loan that we have prepared for farmers working with Umutanguha Finance PLC • to finance the farmer's season plan in a specific period, • especially for the purchase of seeds and agricultural equipment. • Not digitized yet	• SERVE Project would engage with UMUTANGUHA on the possibility to the project beneficiaries who have best projects chili and tomato value chains [33] and who have farming contracts with potential buyers • Cost sharing with this MFI to digitize and communicating this product among project beneficiaries.
	TWIGIRE- Refugees Loan	• TWIGIRE is a support for refugees residing in the country	• SERVE would engage in 100% Collateral-Backed Financing to increase

[33]Because their involving high risk and production costs.

MFI/FSP	Youth/women/ target Value chain-based products	Product's Features (Description)	Quick Wins and Possible Collaboration for SERVE Project.
		• Specifically designed to them: ○ to invest commercialization of goods and products ○ acquiring land or equipment agriculture production. • In collaboration with MINEMA, a loan amount of up to 200,000Rwf is provided with collateral requirement. • Not digitized yet	this amount up to 2000 000 for the youth refugees who were selected as SERVE beneficiaries. In addition, it is essential to engage the MoneyPhone company to digitize this product, ensuring digital accessibility for only refugees with confirmed and SERVE Project-endorsed projects.
	TERIMBERE (WOMEN LOAN)	• Specifically designed for helping women, to start and grow their businesses successfully. • Open for women farmers, traders, and entrepreneurs, and others • Interest rate is 18% • Requires collateral • Not digitized	SERVE Project could offer interest rate subsidy on this project and for women project beneficiaries and cover 75% of this loan collateral requirements using the BDF model of Partial Credit Guarantee

MFI/FSP	Youth/women/ target Value chain-based products	Product's Features (Description)	Quick Wins and Possible Collaboration for SERVE Project.
DUTERIMBERE-IMF PLC	Intego Saving	•A client saves any amount progressively according to his/her financial capacity •Has right to withdraw the saved money twice a month •Purpose for saving can be purchase plot, farm land, fertilizers, securing working capital, etc •Money is saved on sub account open under current account, at no cost. •No charge for internal transfer •6% of interest top up •Not digitized yet.	• The SERVE Project beneficiaries who hold accounts within this MFI could receive targeted sensitization and training to access this product. The Serve project could liaise with Money Phone Company to digitized this product through Duterimbere IMF by covering costs that could be required by Money Phone company • So far Duterimbere IMF has pull and push that enables clients to transfer money from account to Mobile Money (vice-versa) and sending money to their bank accounts.
	Seruka (Youth Loan)	• This loan is for youths aged 18 to 30 years old • have started a business or a project in agriculture or livestock within the last 6 months. • The loan is designed to assist them in refinancing their business or in starting a new project in agriculture or livestock. • Interest rate 20% • Requires Collateral • Cash collateral is accepted • It can be offered under BDF's Guarantee of 75% • Not digitized yet.	•The SERVE project has the potential to collaborate in subsidizing the interest rate, thereby reducing it to a level that aligns with the agricultural profitability of the beneficiaries. •In addition, it is possible to contribute additional funds to augment the BDF's guarantee, thereby assisting project beneficiaries who face challenges in securing the remaining 25% of the required collateral
	Agriculture Loan to entrepreneurs' women	• Is given to the MFI's clients	• SERVE project to link its beneficiaries

MFI/FSP	Youth/women/ target Value chain-based products	Product's Features (Description)	Quick Wins and Possible Collaboration for SERVE Project.
		• For increasing financial capacity in agriculture • Offered for groups or individuals • Not digitized yet.	(women groups in chili, green bean, and Tomatoes) with the MFI • Subsidize the interest rate Cover 90% of this loan collateral requirements
	Livestock loan for entrepreneurs' women	• Is given to the MFI's clients • For increasing financial capacity in livestock • Offered for groups or individuals	•SERVE project to link its beneficiaries (women groups in chili, green bean, and Tomatoes) with the MFI •Subsidize the interest rate
	Women Loan (Terimbere Mugore)	• This loan is specifically designed for women • who is doing business and possess tangible collateral. • It aims to help expand their businesses with •A maximum loan of 30 million at a 12% annual interest rate. •Not digitized	• Synergy on BDF's loan collateral guarantee with a top up of a percentage that could help beneficiaries to partly cover 25% of her own collateral contribution • Subsidize the interest rate
	Terimbere na BRD	• The loan is offered to clients of DUTERIMBERE-IMF PLC • support their projects related to the value chain, including chicken and pig breeding as well as mining activities. To qualify, • clients need tangible collateral • can access up to 100 million at a 16% annual interest rate. • Not digitized	• The SERVE PROJECT has the potential to contribute to this BRD's facility through assisting its beneficiaries in securing a portion of the necessary loan collateral requirement. • The collaboration would also involve providing support to help youth beneficiaries in chili pepper and tomato value chain pay interest less than 16% (because chili is expensive to produce while tomato is highly riskier and not

MFI/FSP	Youth/women/ target Value chain-based products	Product's Features (Description)	Quick Wins and Possible Collaboration for SERVE Project.
			covered by NAIS)
	Partial credit guarantee (Former TEKANA)	• It is offered to the MFI's Clients (individual, Cooperatives and groups) • Doing income generating activity but do not have sufficient collateral to cover loan • Clients can benefit from BDF's guarantee of 75% • This loan is offered at 12% of interest rate • Collateral can be cash or material • Not digitized yet	SERVE Project to synergy on this BDF's loan partial collateral guarantee with a top up of a percentage that could help beneficiaries to partly cover 25% of her own collateral contribution for the project beneficiaries
	Intego Loan	• It is given to client that have save to achieve the goal the have set (Intego save) • It is given as supplement to the savings to further help client to achieve the set goal • Client must save at least 50% of his/her goal, then the remaining balance is given as a loan • The maximum amount to be loaned is 10,000,000 Rwf • Not digitized	Promote awareness and educate project beneficiaries about the features and benefits of this loan product
P.T.F.W SACCO[34]	Zamukamuhinzi	• A collateral-free loan • Payable in 4 months • at 4% per month, with a • Declining interest rate of 48% (4% • A very limited number of youths can access	The project should synergy on this product through deposit for loan guarantees and subsidizing interest rate to allow this SACCO to extend this product to the project beneficiaries located in Rubavu District.

[34] Pfunda Tea Farmers and Workers SACCO

MFI/FSP	Youth/women/ target Value chain-based products	Product's Features (Description)	Quick Wins and Possible Collaboration for SERVE Project.
		it as it is provided to the farmers who have tea plantation • Not digitized	
	Intego Saving	• Clients can save varying amounts over time based on their financial abilities. • Savings can be earmarked for purposes such as buying a plot of land, acquiring farm land, purchasing fertilizers, and more. • Funds are deposited into a sub-account within their current account, incurring no additional charges. • A 6% interest bonus is added to the savings.	The SERVE Project beneficiaries who hold accounts within **P.T.F.W SACCO** could receive targeted sensitization and training to access this product. The Serve project could liaise with Money Phone Company to digitized this product through SACCO by covering costs that could be required by Money Phone company
RIM	CREDIT AGRI ELEVAGE PECHE ASSOFI	• Target client: Informal group • Duration: 12 months • Repayment frequency: Monthly and seasonal • Interest rate: 24% per year • Mandatory savings: 10% • Credit commission: 1.5% + VAT • File fees: 0.5% of the credit amount + VAT (the minimum amount is 2000 Rwf, and the maximum is 100,000 Rwf	The SERVE Project has the potential to establish a strategic partnership for • Cash refinancing, aimed at bridging the financial gap that often arises between the disbursement of loans and their subsequent repayment by project beneficiaries so as to increase the amount of loan provided and loan repayment schedule for the project beneficiaries. • Assist RIM in providing training for its staff within the SERVE Project's operational districts, focusing on the implementation of agribusiness strategies and the collection of analytical data for product development. This training should include the adaptation of existing loan products, namely, Zamuka Rubyiruko and
	CREDITS AGRI ELEVAGE PECHE PERSONNES PHYSIQUES CONSTANT	•Target Client: Individuals/Companies •Duration: 24 months •Repayment Frequency: Monthly •Interest Rate: 16% and 18% per year •Mandatory Savings: 0% •Credit Commission: 1.5% + VAT	

MFI/FSP	Youth/women/ target Value chain-based products	Product's Features (Description)	Quick Wins and Possible Collaboration for SERVE Project.
		• File Fees: 0.5% of the credit amount + VAT (the minimum amount is 2,000 Rwf • The maximum loan is 100,000 Rwf •Not digitized	Baduka Mugore, to align them with the unique realities of the agriculture sector. • Providing specialized training in credit and cash management to the project beneficiaries who aspire to secure agricultural loans through AMIR.
ABAHIZI SACCO TUMBA	KABYINZOZI	• Open for only Youth and women client • can borrow up to 200,000Rwf without collateral • But only a maximum of 100,000Rwf when request for this loan at the first time. • Maximum 3days of request process for this loan product • The demand for this loan is higher than what SACCO can offer • Not digitized	Aims to: • Support on this product through cash refinancing • enhance synergy with MINECOFIN's SACCO computerization initiative by providing support for digitizing the product, making it accessible and repaid via mobile phone. • Tap into possibility to introduce it in other SACCOs in the Project's selected Districts.
BK INSURANCE	**Agriculture insurance** • Production capital insurance • Post harvest insurance • Market price insurance • Green house insurance • All are not digitized	• BK does currently lead crop insurance market with 95% and cover production cost insurance under NAIS[35] • Only Chili pepper, green beans and Poultry, of the SERVE Project's target value chains, are insured under NAIS framework • Claims can now be filed or processed at any location where there is a BK group branch. • It does not exceed 30 days for	The SERVE PROJECT aims to enhance synergy with the Insurance companies by: • increasing awareness among project beneficiaries in the chili, green beans, and poultry value chains about crop and livestock insurance products, which are included under the National Agricultural Insurance Scheme (NAIS). • Establish connections between these beneficiaries and BK Insurance Company.

[35] National Agriculture Insurance Scheme

MFI/FSP	Youth/women/ target Value chain-based products	Product's Features (Description)	Quick Wins and Possible Collaboration for SERVE Project.
		processing a farmer's claim • Plan to have agent distributors up to village level by 2030 • Farmers' limited experience and fundamental skills in foreseeing contingencies and managing risks doe negatively affect BK's Loss ratio • Farmers still lack awareness regarding the process of filing and settling claims • BK Insurance occasionally faces the challenge of managing more than 30,000 claims simultaneously, leading to potential delays and frustration for the farmers involved. • Not digitized	• Allocate funds for equipping project facilities with the necessary knowledge and skills for filing and submitting insurance claims, as well as providing training in contingency planning and risk assessment. • Supporting project beneficiaries in tomato value chain to obtain insurance for that crop • Possibly support the project beneficiaries to acquire post-harvest insurance • Support on covering cost for conducting a feasibility study for digitizing the claim process • Providing assistance in funding a feasibility study aimed at digitizing the claims processing procedure. • Assisting project beneficiaries in meeting a portion of their own financial commitment within the framework of NAIS.
RADIANT INSURANCE COMPANY Ltd	**Agriculture insurance products:** • Production capital insurance • Post harvest insurance • Market price insurance • All are not digitized	• The SERVE Project's target value chains include Chili pepper, green beans, and Poultry, but currently, only a small number of clients are insured within the NAIS framework for these products. • Provided under Radiant Yacu Micro insurance Company. • For some farmers, a 60% own contribution is beyond their financial means. • The use of paper-based processes causes significant delays in handling claims, while digitizing the claim process comes with a substantial cost. • The limited experience and basic risk	

MFI/FSP	Youth/women/ target Value chain-based products	Product's Features (Description)	Quick Wins and Possible Collaboration for SERVE Project.
		management skills of farmers have a negative impact on the company's loss ratio. • Farmers still lack awareness about the procedures for filing and settling claims.	

4.2.2.2. Development Agencies, Policies, and Facilities

This section presents findings on various development agencies and government interventions aimed at facilitating agricultural financing and promoting financial empowerment, particularly among youth and women in the agriculture sector. These endeavors are invaluable for the SERVE Project, providing crucial considerations for the implementation of the access to finance component.

- **National Bank of Rwanda (BNR) and MINECOFIN:** The interviews conducted with officials from BNR and MNECOFIN have unveiled the pivotal role this institution plays in shaping financial inclusion policies. BNR's impactful initiatives, such as the National Financial Literacy Program, have been instrumental in educating young individuals on effective financial management and formal financial services. Presently, BNR is actively engaged in the finalization of two pivotal strategies: one centered around Financial Digital Transformation and the other comprising a comprehensive 5-year National Strategy aimed at fostering financial inclusion among youth.

  MINECOFIN is actively modernizing Umurenge SACCOs (Savings and Credit Cooperatives) by leveraging technology to streamline operations and enhance member services. This includes implementing core banking systems for efficient management of member accounts, loans, and savings, offering mobile and online banking for digital account access and transactions, utilizing software for credit risk assessment and loan portfolio monitoring, and harnessing data analytics tools to gain insights into member behavior and enhance decision-making for SACCO sustainability.

  Furthermore, it was revealed that the plans include digitizing all Umurenge Sacco financial services for remote client access, aiming to facilitate convenience without physical visits. However, the challenge lies in educating the youth about available digital financial services and products, compounded by network connectivity issues in some areas and limited access to smartphones or basic mobile phones with the required capabilities for using digital financial services.

- **MINAGRI and Rwanda Agriculture Board (RAB):** RAB is presently overseeing three significant projects that can offer potential benefits to the beneficiaries of the SERVE Project:

  (i) Kayonza Integrated Irrigation and Watershed Management Project (KIIWP-Phase II, 2023-2028)

  This initiative aims to improve food security, increase income for 40,000 rural households, and enhance climate resilience, particularly among vulnerable groups like women-led households and youth. These goals will be achieved through sustainable small-scale agricultural activities, often in collaboration with public-private partnerships. The project focuses on nine drought-prone sectors within Kayonza District;

  (ii) Sustainable Agricultural Productivity and Market Linkage Project (SAPMP)

  The project targets a diverse group of beneficiaries, including smallholders, low-income households, women farmers, resource-poor farmers, and young people. It emphasizes inclusive participation, with measures to support vulnerable groups, promote women's involvement in value chain development, and engage young farmers in suitable cultivation options and income generation activities. The project's implementation spans multiple regions and will extend from September 2020 to December 2024, encompassing a range of activities designed to enhance agricultural productivity and marketability while fostering sustainable and inclusive development such as the provision of Micro-credit to farmer organizations, and Digitization of farmers organizations' activities.

(iii) **Commercialization and De-Risking for Agricultural Transformation Project (CDAT)**

Iganze Muhinzi Mworozi-CDAT's objectives include promoting irrigation usage, encouraging commercialization among producers, and facilitating access to agricultural finance. Beneficiaries include farmers' cooperatives, commercial farmers, and small to medium-sized agri-enterprises. The project will facilitate agricultural financing through private financial institutions, benefiting around 2,232 stakeholders.

It comprises two main components: (i)Scaling up agricultural finance with a budget of US$15 million, overseen by the Development Bank of Rwanda (BRD). The credit line is accessible to BRD investment clients directly and through partnering commercial banks, MFIs, and SACCOs. This targets end-projects in agriculture production, postharvest, and livestock by farmers and farmers' organizations, and (ii) Strengthening agricultural insurance quality and effectiveness through the National Agricultural Insurance Scheme (NAIS), with a budget of US$20 million.

All value chains in agriculture are eligible for investment and/or working capital facilities under the following terms:

- Lending max: FRW 540 million (this does not apply to PFIs)[36].
- Interest Rate: Blended with financial institution (90% of the loan at 8% and 10% at the market rate).
- Tenor: up to 10 years.
- A possible grace period of up to 3 years.
- Access to a partial credit guarantee through the Business Development Fund (BDF)

Additionally, it was revealed during the interview that the Rwanda Agriculture Board (RAB) has implemented a Small-Scale Irrigation Support (SSIT) program. This program aims to assist smallholder farmers in surmounting financial and knowledge-related challenges associated with small-scale irrigation development. The central element of the SSIT program is the provision of partial subsidies to farmers for acquiring irrigation kits, including pumps and water distribution technologies. Access to this program is available through RAB's 13 stations and at the district level, across the country.

❖ Business Development Funds (BDF) aims to support micro and small enterprises (MSEs) by facilitating their access to financing. This is achieved through the provision of partial credit guarantees (PCG) covering 50% to 75% of the collateral required by lenders. BDF collaborates with Microfinance Institutions (MFIs) and banks, enabling women and youth involved in agriculture to benefit from a 75% guarantee for their necessary loan collateral.

Additionally, BDF operates a credit facility program co-funded by MIGEPROF, specifically tailored for women and youth who are members of SACCOs. The program's objective is to assist SACCOs in securing sufficient funds to lend to the aforementioned target groups. SACCOs receive this funding from BDF at an interest rate of 9% and subsequently lend it to their clients at their standard interest rates. The SERVE project can work in synergy with this facility to subsidize the interest rate of the program.

[36] https://www.brd.rw/cdat/

BDF is also on the brink of launching the Economic Recovery Fund Facility 3 (ERFF3), supported by a fund of 30 billion from the World Bank. This capital is provided to SACCOs at a 0% interest rate, while SACCO clients can access it at an 8% interest rate.

Moreover, BDF offers a direct lending facility to young graduates who wish to invest in agriculture. Eligibility for this program requires registration as a company or cooperative. The maximum loan amount permitted is 10 million, repayable over five years, with a 30% exoneration on the loaned amount after timely payment of 70%.

One of the challenges observed, regarding the PCG facility, is that the remaining 25% to be covered as collateral by youth and women remains a hurdle, particularly for those with limited resources. Another challenge arises from the reluctance of banks and MFIs to process loan applications under PCG due to the extended time it takes to reimburse the participating financial institutions in the event of client defaults. Some PFIs, instead of applying for PCG at BDF, opt to provide loans based solely on the 25% collateral that youth and women can provide, thereby limiting recipients' access to the PCG facility. Here, SERVE can step in by offering a guarantee for the remaining 25% not covered by BDF, but only for youth in registered farmer cooperatives, limited companies, or well-established groups of young farmers. This approach promotes group accountability and risk-sharing.

Another challenge pertains to loan diversion by borrowers, leading to project failures and subsequent loan defaults. Additionally, some youth and women lack sufficient information about how PCG works, indicating a need for increased awareness about the program.

To date, BDF has updated these facilities by removing certain requirements for participating financial institutions, while also revising some of its calculation methodologies that are no longer deemed relevant.

- **Business Development and Employment Units (BDEUs) in selected 10 Districts**: The interviews conducted with BDEUs have uncovered a noteworthy shift in the attitudes of young people towards agriculture in recent times. This shift is marked by the emergence of agricultural cooperatives and groups, as well as the implementation of various financial support and training initiatives. These initiatives are a result of collaborative efforts between the districts' administration, the central government, and development partner organizations. The primary objective of these training initiatives is to encourage both women and youth to engage with financial institutions, improve their financial literacy, and avail themselves of agricultural extension services to boost agricultural production.

  However, it was observed that several persistent barriers hinder youth engagement in agriculture. These barriers include limited access to formal financial services due to a lack of collateral, insufficient financial literacy, and a shortage of relevant financial products. Furthermore, it was noted that access to finance for women involved in agriculture is constrained by factors such as limited access to information, cultural norms, and beliefs. These issues collectively restrict the agricultural potential of young women in rural areas.

  To address these obstacles and markedly improve financial access for young individuals, especially women, engaged in agriculture; BDEUs proposes that the SERVE project should assume a crucial role by implementing interventions focused on decreasing microfinance interest rates, including interest rate subsidies and cash refinancing for microfinance institutions (MFIs). Additionally, the project

should engage in negotiations with MFIs to encourage them to accept agricultural equipment and farming contracts as viable alternatives to conventional loan collateral

- **CARE INTERNATIONAL:** Therefore, as a member of the SERVE Project Consortium, Care International will bring significant expertise in promoting savings and establishing connections with financial institutions for the project's beneficiaries throughout its implementation.

  The interviews with Care International's staff members responsible for promoting Village Savings and Loan Associations (VSLAs) revealed that this institution is actively engaged in supporting the agriculturist youths in accessing finance and financial services to meet their financial needs. Care International supports youth in saving and obtaining loans through youth-established savings groups. Youth participating in these VSLAs benefit from practical training in financial literacy, focusing specifically on saving, budgeting, record-keeping of financial expenses, and the operations and proceedings of financial institutions. Care also provides training to youth VSLAs in entrepreneurship and facilitates their connection with financial institutions. This enables them to access loans, subject to an upfront savings requirement of 10% as cash collateral, in case their VSLA faces liquidity challenges. This initiative also ensures the secure placement of VSLA members' funds.

  One significant advantage for a Youth VSLA working with financial institutions is that members can access loans through these institutions, facilitated by their VSLAs, at amounts higher than what they could obtain directly from their VSLAs. In most cases, as revealed by Care International, the loans applied for by youth VSLAs from financial institutions are primarily used for agricultural production, including leasing or purchasing farmland, as well as acquiring seeds and inputs. However, it was observed that financial institutions, especially during the agricultural season, struggle to meet all VSLAs' loan requests due to insufficient liquidity. Additionally, it was revealed that youth face challenges in providing collateral required by financial institutions to access loans, as they often lack personal properties. For the SERVE Project beneficiaries, this challenge could be mitigated by injecting loan capital into the participating institutions. Nevertheless, there is a risk that VSLAs may still be underserved if the capital lent to financial institutions is extended to clients other than VSLAs.

  Another challenge observed during interviews with Care International is the long distance that VSLAs must travel to reach financial institutions, which is associated with high transport costs. A possible solution to this challenge is transitioning to digital financial service provision by the participating financial institutions. Care International suggests that the National Bank of Rwanda (BNR) and the Ministry of Finance should support financial institutions by offering subsidies to digitize their services and products. Furthermore, digital literacy among VSLA members is limited, and smartphone penetration is low. However, despite these limitations, youth are eager to learn how to use smartphones, and they can afford the cost of acquiring them.

  While access to financial education is crucial, it was noted during interviews with Care International that financial institutions are often unprepared to provide such a non-financial service to clients. In the views of the interviewed staff, alongside financial products, providing financial education and training to youth farmers is essential to ensure that they have the knowledge and skills to manage their finances effectively and make informed decisions about loan usage and repayment. This may contribute to a reduced default rate among youth borrowers from these institutions-Addressing this issue could be a synergistic activity for the SERVE Project. It was also observed that some youth VSLAs struggle to secure registration services at the community level. Without proper registration, it becomes challenging to access services from financial institutions.

Regarding crop and livestock insurance, interviews with Care International revealed that existing insurance products are limited, primarily covering production costs, and not all crops are insured under the National Agricultural Insurance Scheme (NAIS). Farmers also require insurance that covers changes in market prices, which could stimulate financial institutions' interest in lending for agriculture. Furthermore, it was observed that farmers, including youth, lack complete and accurate information about crop and livestock insurance. Some are not even aware of its existence. Additionally, the process of filing claims is not user-friendly, discouraging farmers as they perceive the costs of the claims process to outweigh the benefits they would receive.

- **PROFEMME TWESE HAMWE**: This organization, as revealed in an interview with the SERVE project coordinator, plays a vital role in empowering women economically. They offer tailored financial literacy training and technical assistance for business planning, with a focus on women engaged in cross-border trade. The organization also provides startup funding, connects aspiring entrepreneurs with financial institutions, and supports women in agricultural production, covering up to 50% of costs for machinery, packaging materials, and quality standards certification. In the implementation of the "SERVE" Project, Profemme Twese Hamwe's contributions are multifaceted. Their role would encompass empowering young women by offering financial literacy training, enabling informed financial decisions, providing technical assistance in developing sustainable business models, offer financial support through grants or microloans, and act as intermediaries with financial institutions. Additionally, the organization could much contribute in creating networking opportunities, monitors project progress, and advocates for policies promoting gender equality in financial access, thereby positively impacting female youth's economic and social well-being.

- **DUHAMIC ADRI**: DUHAMIC ADRI provides support to youth in modern agricultural practices, market information, and market linkages with potential buyers. The organization also offers financial literacy training and assistance in forming and professionally managing savings groups. While providing this support, DUHAMIC ADRI has found that most youth primarily require funds for land costs (rental or acquisition), seeds, and production inputs, mainly fertilizer and pesticides. Furthermore, youth need to acquire irrigation equipment to cope with climate change consequences, such as droughts and floods.

However, DUHAMIC ADRI has observed that it has always been very challenging for youth to obtain loans from formal financial institutions because they lack collateral requirements for such loans. They mentioned that most young individuals engaged in agriculture do not possess land for collateral, and it is difficult for them to obtain collateral support from their parents and families. Additionally, DUHAMIC ADRI indicated that youth's savings levels remain low due to their meager income and poor cash management.

While the problem of capital and collateral for youth can be partially solved by working together, where their joint activities could serve as collateral, it is challenging for them to venture into agricultural activities through cooperatives or companies due to a lack of trust among them. This lack of trust is mainly caused by imbalances in capital, mobility issues, and a limited sense of working as a group, prioritizing collective interests over individual interests. DUHAMIC ADRI also emphasized the need to support youth in saving at least 20% of their required loan amount, which could increase their trustworthiness with Microfinance Institutions (MFIs). Additionally, DUHAMIC mentioned that agricultural loan repayments should be synchronized with the harvest season, while banks could explore alternative liquidity solutions during the interim periods.

DUHAMIC ADRI's findings also emphasized that a significant portion of young individuals do not view agriculture as a financially rewarding venture. Instead, they tend to favor alternative income sources that they perceive as more profitable. Additionally, the interviews with DUHAMIC ADRI shed light on the fact that many women tend to invest in the green beans sector due to its relatively lower level of labor-intensive work compared to other selected value chains.

Regarding crop insurance, DUHAMIC ADRI highlighted a significant issue where insurance companies stipulate that coverage will be provided only under the condition that farmers have taken all possible measures to protect their crops but still experienced crop failure. However, these insurance companies lack agents on the ground to verify whether farmers have indeed taken these precautions. Also, the required contribution by farmers for insurance seems to be high for some, but costs could be reduced if young farmers work in groups and pool their farmlands.

It is unfortunate that tomatoes are not among the insured crops due to their high unpredictability in terms of risk. To de-risk tomato farming for target beneficiaries, the SERVE Project could support the acquisition of equipment for year-round tomato cultivation, provide facilities for preservation, and offer regular, accurate agricultural season information to the youth.

DUHAMIC ADRI indicated that there is still limited follow-up by local administrations on various interventions for youth by development partners, which limits sustainability after project completion. The SERVE Project should make efforts to ensure that key elements of its financial inclusion strategies continue to be implemented beyond the project period.

- The Rwanda Youth Agriculture Forum (RYAF): An interview with RYAF revealed that this organization has been actively involved in empowering both youth graduates and non-graduates interested in or already engaged in the Agriculture and Farming sector. RYAF primarily focuses on advocating for professional training, mentorship, financial literacy, and access to financial services. They also facilitate access to financial resources to support income-generating agricultural activities. The key financial needs identified by RYAF, which require SERVE Project 's interventions, include: (i)Access to startup capital for investments in land acquisition, agricultural equipment, and seeds. (ii)Access to bank loans with partial credit guarantees, as many young people lack property to use as collateral. It is worth considering providing small agricultural loans without requiring collateral and making direct payments to seed or input suppliers instead of disbursing funds directly to the recipients. (iii) Easy access to loans through microfinance institutions via mobile phones, similar to banks like Equity Bank and BK. This would eliminate the need for physical visits to the bank and the signing of physical documents for certain loan amounts., and (iv) Financial literacy and close monitoring for youth who are in the process of obtaining or have already received loans. Some individuals in this category may be less trustworthy due to their mobility and their tendency to view agriculture as a stepping stone to other desired employment opportunities.

4.2.3. Suggested Financial Products and Support Services for Target Youth

Drawing upon information obtained through desk reviews, Key Informant Interviews (KIIs), and a comprehensive assessment of the financial needs, requirements, and challenges faced by young participants in the selected agriculture value chains, these recommendations regarding customized financial products and support services are of utmost importance. The recommendations provided encompass a holistic approach to fulfilling the financial requirements of youth involved in agriculture, fostering collaboration between the SERVE Project and financial institutions, and tailoring products and services to the specific challenges faced by the project's intended beneficiaries.

Recommendations	Financial Institutions (MFIs)	SERVE Project
Financial Products		
Young Farmer Loans	Design loans with favorable terms for young farmers, low-interest rates, and longer repayment periods.	• Encourage the development of such loans with lower interest rates and longer repayment periods. • Provide subsidies or grants to facilitate land acquisition. • Explore subsidizing interest rates through SERVE Project's fund.
Crop Production Loans	Adapt existing loan products to align with agricultural sector realities. Develop a loan product that covers costs for seeds, fertilizers, pesticides, etc. Establish a strategic partnership for cash refinancing, bridging financial gaps for project beneficiaries.	• Support the development of crop production loans to aid in acquiring seeds, fertilizers, and other inputs. • Facilitate access to equipment leasing and financing options. • Engage with UMUTANGUHA on seasonal loans for beneficiaries in chili and tomato value chains.
Farm Ownership Loan	Create saving or loan products to help young farmers transition from renting to owning farmland. Offer low-interest loans for land acquisition.	• Encourage MFIs to develop products that facilitate the transition from renting to owning land. • Subsidies, grants to facilitate land acquisition
Equipment Leasing and Financing	Develop leasing options to help young farmers acquire necessary equipment.	• Promote leasing and financing options for farming equipment. • Encourage MFIs to offer leasing and financing solutions.
Working Capital Loans	Provide loans for day-to-day operating expenses and seasonal needs.	• Suggest the creation of working capital loans aligned with the farming season.

Recommendations	Financial Institutions (MFIs)	SERVE Project
Digital Access		
Digital-Based Loan Application and Disbursement	Introduce a digital platform for loan applications and disbursements via mobile phones. Implement a digital platform to streamline loan applications and disbursements. Offer digital-based loan application and disbursement.	• Explore, with participating MFIs, the possibility for the integration of digital systems similar to Urwego Bank's "mHose" for convenient and secure financial transactions. • Encourage MFIs to offer digital solutions for convenience. • Collaborate with MoneyPhone company to digitize the MFIs'agri-loan and saving products exclusively for SERVE-endorsed projects. • Share with MFI the costs for digitization of their loan product.
Collateral and Risk Mitigation		
Group Lending and Collateral Fund	Encourage group lending and establish a collateral fund for youth through collaboration with youth development organizations. Collaborate with SERVE Project and Urwego Bank to co-create group loan products focused on chili, green beans, and tomatoes. Collaborate with SERVE Project to provide guarantees for the remaining 25% collateral requirement for youth in registered farmer cooperatives, limited companies, or well-established groups. Increase awareness about the PCG program among youth.	• Collaborate with Urwego Bank to promote group lending and establish a collateral fund for risk-sharing. • Promote awareness among SERVE beneficiaries and facilitate their connection with Urwego Bank. • Explore the possibility to cover 75% of loan collateral requirements for refugees and women beneficiaries using the Partial Credit Guarantee model. • Collaborate with Participating MFIs and ICCO (Cordaid) to introduce in participating MFIs *A-CAT* [37]*to monitor the groups and individual agri-loan products*
Savings Accounts		
Agriculture Savings Accounts	Encourage young farmers to open savings accounts for future agricultural investments. Link savings to specific agricultural goals.	• Collaborate with financial institutions to offer agriculture savings accounts tailored for future investments. • Promote the development of agriculture savings accounts.

[37] An Agricultural-Credit Assessment Tool (A-CAT) developed by ICCO Terrafina Microfinance: https://www.icco-cooperation.org/en/news/a-cat-a-tool-for-risks-assessment-in-agriculture-finance/

Recommendations	Financial Institutions (MFIs)	SERVE Project
Financial Literacy		
Financial Literacy and Training Programs	Provide financial education programs tailored for youth, covering money and credit management. Provide training to staff in agribusiness strategies and analytical data collection.	• Offer financial literacy programs for youth with incentives such as lower interest rates on loans. • Include financial literacy in project activities.
Crop and livestock insurance		
	Explore options for digitizing the claims process.	• Increase awareness among SERVE beneficiaries about crop and livestock insurance under the National Agricultural Insurance Scheme (NAIS). • Establish connections between beneficiaries and BK Insurance and RADIANT Yacu. • Allocate funds for knowledge and skills training for insurance claims. • Support beneficiaries in obtaining insurance for tomatoes and post-harvest insurance. • Support feasibility study for digitizing claims process.

4.2.4. Identified Entry Points for SERVE Project and Collaboration Mechanisms

Based on the identified existing interventions, loans, and insurance facilities, it is recommended that the SERVE Project initiate collaboration with financial service providers to factor in the following existing initiatives:

- ***Crop Based Group Lending and savings:*** These products have the potential to foster social cohesion, facilitate risk-sharing, and promote collective financial discipline, thereby simplifying the process for young farmers to secure credit and accumulate savings for future agricultural investments. The SERVE project should consider partnering with Urwego Bank as a consortium member, working together to advance group lending and savings initiatives among youth involved in the chili, green beans, poultry, and tomatoes value chains. Through this collaboration, Urwego can share its extensive banking expertise with other microfinance institutions that are members of AMIR.

- **Digital Loan Services:** The SERVE Project is highly recommended for collaborating with Microfinance Institutions in the implementation of phone-based loan applications and digital disbursement processes. To achieve this goal, the project shall assist the participating financial institutions to collaborate with companies specializing in electronic loan disbursement such as MoneyPhone[38], This partnership will enable young farmers to access loans electronically through mobile wallets, which they should have in conjunction with the Microfinance Institution (MFI).

[38] https://www.money-phone.com/ , Rwanda Apply | MoneyPhone (money-phone.com)

- ***Financial Literacy Programs*:** collaborate with the involved financial services provided to providing financial education and training that can enhance the target youth's awareness about crop and livestock insurance capacity to manage finances, understand credit, and develop viable business plans. Within the framework of these programs, SERVE project will mainly need to collaborate with participating financial Institutions for offering the following support:
    - **Application Assistance:** Assist targe Youth in preparing loan applications and necessary documentation. Inform about the requirements of different lenders and help them to present their financial information in the best possible way to increase their chances of securing funding.
    - **Negotiation:** negotiate loan terms and conditions with lenders on behalf of the youth. This will include interest rates, repayment schedules, collateral requirements, and other terms of the financing agreement.
    - **Risk Management:** Support target youth to assess the risks associated with different financing options and opportunities available in different participating financial services providers and help them to make informed decisions.
    - **Financial Planning:** Help the target youth to create realistic financial projections and budgets, as well as forecasting future financial needs; for their agricultural activities
- **Women Empowerment and Inclusion:** Collaborate with DUTERIMBERE Develop targeted financial products and services that empower women in agriculture. These could include loans with reduced interest rates, flexible repayment terms, and financial literacy programs aimed at increasing women's financial independence and decision-making power.
- **Refugee financing:** Collaborate closely with Umutanguha Finance Company PLC and RIM Ltd, to create special loan facilities that cater to the unique needs and challenges of refugeed. These facilities should address the lack of collateral as a significant barrier to increase the loan amount provided to the refugeed youths well as the refugees reach out number.
- ***Collateral Fund support*:** collaborate with participating microfinance institutions to provide top-ups of between 10% and 15 % on BDF's Collateral Guarantees Funds and BRD/CDAT project to support the project beneficiaries in meeting collateral requirements for loans and help them to access MFIs' loans with reduced collateral requirements
- **Reduced Interest Rates on the Participating MFIs Refinancing Funds:** Collaborate with Participating Microfinance Institutions to synergy on the MINAGRI/BRD' CDAT program's subsidized interest facility of 8% to lower interest rates to between 5 and 10% which will enable the participating (MFIs) to offer loans at more affordable rates to youth and women in agriculture.
- **AGRISAVE Product:** This product could take the form of an Agri-Wallet, offering a feature that allows youth to earmark 10% or 20% of the proceeds from their produce as funds to be held in a blocked mobile money account. These funds would be designated for the sole purpose of purchasing inputs in the following year, thereby contributing to enhanced liquidity within the targeted value chains. The SERVE Project could take the initiative to collaborate with microfinance institutions especially DUTERIMBERE IMF, RIM Ltd, Umutanguha Finance PLC, Goshen Finance Ltd and Urwego Bank, to enhance and put in place a mobile

phone-based service that can assist project beneficiaries in regularly setting aside a portion of their income in small denominations that aims at establishing a reserve fund capable of mitigating risks related to late purchases of quality farm inputs, crop failure, or market fluctuations. This will also involve require to engage with mobile money-based platforms, especially "Money Phone"[39] to bring in its expertise in creation of agri-wallets.

- **Crop Insurance and livestock:** Explore opportunities for collaboration with insurance service providers such as BK-Insurance and Radiant, to enhance the synergy with MINAGRI's National Agricultural Insurance Scheme (NAIS). This collaboration could involve supplementing to 60% of the farmers own' contributions. Additionally, consider the feasibility of expanding NAIS coverage to include tomato crops, which are currently not supported under the scheme.
- **Crop and Livestock Insurance 's Information Dissemination:** This could involve partnerships with MINAGRI and insurance service providers for development of mobile apps/USSD and creating channels that deliver relevant crop and livestock-related information.

5. Conclusion and Recommendation

Participants in the value chains, particularly chili and poultry, indicated that they have been involved in their respective sectors for 1-3 years. Many mentioned being motivated to enter the value chain due to identified market gaps, government support, or a passion for sustainable farming. Notably, respondents faced financial challenges related to securing land, covering input costs, and accessing training programs to improve agricultural practices.

The assessment findings revealed that a substantial number of participants funded their initial startup costs through personal savings or contributions. Others relied on loans from VSLAs and other informal financial service providers. The main challenges reported with accessing to forma loan were related to loan rejections based on poor credit history, insufficient income, and a lack of collateral.
Respondents indicated different financial challenges at various stages of their value chains. Securing land and covering associated costs, along with funding production inputs, were the most common challenges at the production stage. Post-harvest and processing challenges included acquiring proper storage facilities and processing equipment. For commercialization, the main need was marketing and branding funds.

Few respondents reported taking crop or livestock insurance, highlighting the need for increased awareness and access to these services. The challenges faced included coverage gaps and the high cost of premiums.
A majority of respondents expressed confidence in their ability to budget and manage finances effectively. Many kept records of income and expenses and had set financial goals for their agricultural activities. Participants reported using a mix of financial sources, including personal savings, informal loans from family and friends, and loans from VSLAs and cooperatives.

[39] https://www.money-phone.com/products

Concerning the supply side, it has been observed that agricultural financing remains below 10%. Factors such as climate change, the absence of collateral, a shortage of high-quality inputs, limited financial literacy, the uncertainty of outcomes and returns, contribute to financial institutions' reluctance to extend loans to the youth engaged in agriculture sector including the project's target value chains.

From the above conclusion, this assessment makes the following recommendations:

- Develop loan products specifically designed for youth in agriculture. These loans could have flexible repayment schedules aligned with crop cycles, grace periods, subsidized interest rate, and lower collateral requirements. Each participating MFI should consider the prudent choice of creating an agriculture loan product tailored for youth in conjunction with a savings product.
- In addition to loans, financial institutions are recommended to encourage smallholder farmers to open savings accounts tailored to future agriculture investments and their agriculture financing resilience. one of its features could be: (i) flexibility to make both regular and irregular deposits, accommodating seasonal income variations, (ii) Competitive interest rates to encourage farmers to save more and earn returns on their deposits, (iii) Linking savings to specific agricultural goals or projects, such as buying seeds, equipment, or irrigation systems (as it is in DUTERIMBERE IMF and UMUTANGUHA Finance), (iii) the ability to earmark funds for specific investments, such as sustainable agriculture practices, technology adoption, or infrastructure development, and (iv) Access to the that account through mobile apps or SMS services, particularly in rural areas where internet access may be limited.
- Given the level of digital comfort among respondents, financial institutions should focus on developing mobile-based services that cater to the unique needs of youth in agriculture. These services should aim to simplify the application and repayment processes for agricultural loans.
- Financial institutions should invest in financial literacy programs tailored to the needs of youth in these value chains. This will enhance their ability to manage finances effectively and make informed decisions.
- It is crucial for the SERVE Project to educate its beneficiaries on the importance of forming cooperative groups. These groups play a vital role in organizing financial services for youth farmers. The assessment findings have shown that approaching and gaining the trust of young individuals who are not part of any cooperative or association is challenging. This lack of association makes it difficult for financial institutions to trust them and provide financial services.
- Efforts should be made to increase awareness and access to insurance services among youth in agriculture. Innovative approaches, such as bundled insurance products, should be explored to address coverage gaps and high premium costs.
- Collaboration between participating financial institutions, agricultural organizations, and SERVE Project should focus on loan collateral support, reducing interest rate, financial literacy, cash refinancing in order to facilitate access to agricultural financing for the project beneficiaries.

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    - https://www.money-phone.com/products

7. Annexes

1. List of People/Organizations Contacted for Key Informant Interviews

No	Name	Post	Institution
1	Maniragaba Alex	Manager	Muyumbu SACCO
2	Tuyishime Constantain	Profemme Twese Hamwe	officer/ kayonza
3	Dushime Dieudonne	Manager	Rukara Sacco
4	Muda Mututa	BDF	Kayonza District
5	Nzaramba	DUHAMIC-ADRI	Ngoma District
7	Mukiza Innocent	Manager	Remera SACCO
8	Valence	DUHAMIC-ADRI	Kirehe District
9	Vuganeza Andrew	Camp Programm Manager	MAHAMA Camp Refugee
10	Ngaboyimana Jean Bosco	MANAGER	SACCO NEMBA/GAKENKE
11	Emmanuel Hategikimana	Director of Agriculture Department	RULINDO DISRIC
12	Ganishuri Innocent	MANAGER	PTFWS (PFUNDA SACCO)
13	Bigaya Jean Leonard	PWDs' Intervention Manager	RUBAVU DISTRICT
14	Nzitonda Jean De dieu	LOAN OFFICER	MUKAMIRA SACCO/NYABIHU
15	Gatera Damien	Director General	RIM
16	Munyana Gertrude	Business Development and Partnership Manager	Goshen Finance PLC
17	Solange Uwimana	Project Coordinator	Urwego Bank
18	Muhawenimana Noel	Chief Executive Officer	Umutanguha Finance Company PLC
19	Roger Iraguha	Head Of Operation Services	DUERIMBEREIMF LTD
20	Mutoni Brenda	Green Finance Manager	BRD
21	Joselyne Uwababyeyi	Field Coordinator, M&E	DUHMIC ADRI
22	Annet Kakibibi	SERVE PROJECT COORDINATOR	PROFEMME TWESE HAMWE
23	Glycerie Niyibizi	In Charge of VSLAs	Care International-Rwanda
	BDEU/Ngoma	BDEU Director	Ngoma District
24	Alice Ingabire	Project Manager	RYAF
25	BDF/Gakenke	Branch Representative	BDF/Gakenke
26	OSWALD		RAB
27	ERIC NTANIRA	Director of Agriculture insurance	BK insurance
28	Bernard Rugambage	Program Manager	BDF Kigali
29	Letitia Mahoro	Agriculture Insurance Manager	RADIANT Yacu
30	Rita Kayibanda	Senior Analyst Financial Inclusion and Education	BNR
31	Fustin Mutabazi	Director central Government Internal Auditor	MINECOFIN

2. Individual Questionnaire:

Introduction:

Thank you for participating in this survey. Your insights will help us understand the financial needs of youth in various value chains, including green beans, chili, poultry, and tomatoes. We are particularly interested in understanding the unique requirements of male, refugee, people with disabilities, and women youth. Additionally, we aim to identify both digital and non-digital financial needs that can be addressed by microfinance institutions, along with suggestions for customized loans and savings products tailored to meet those needs. Your responses will contribute to the development of more effective financial solutions.

Section I: Demographic Information:

1.Name: (Optional_____
2.Gender: ( ) Male ( ) Female ( )
3.Your District Name:…..
4.Are you internally displaced ? ( ) Yes ( ) No
5.Do you have a disability? ( ) Yes ( ) No
6.Please provide your age:
( )[18-22[
( )[22-27[
( )[27-31[
( )[31-35]
7. Your Highest schooling level:
()=None/did not attend any school;
( )= Some primary schools
( )Completed primary scool;
( )= Some secondary School
( )Completed secondary school;
( )=TVET;
()5=University).
8.Your Marital status?
()Single,
() married, …
( )Divorced
( )Prefer not to say

Section 2: Value Chain Participation and involved Financial Needs :

9 a. Which of the following business category do you belong to ?
( ) Individual /Sole proprietorship
( )Limited Company
( )Youth Cooperative
( ) Youth Association
( ) Youth VSLA

9 b.Is your business legally registered
( )Yes
( ) No

9.c If registered,where is it registered?
( )Rwanda Cooperative Agency
( ) Rwanda Development Board
( ) Rwanda Governance Board

( ) Registered as a VSLA at cell level

10.a Which of the following agriculture value chains are you primarily engaged in? (Select all that apply)
( ) Green Beans
( ) Chili
( ) Poultry
( ) Tomatoes
( ) Other

10b.Please describe your role within the value chain
( ) farmer,
( )Wholesale/distributor,
( )processor
( )Trader
( ) other (specify)

10.c.How long have you been involved in this value chain?
( )<1year
( )1-3 years
( )3-5years
( )>5years

10.d. What motivated you to get engaged in this agriculture value chain?
( )Identified Market Gap
( )Family Background/Growing up in a family with a history in agriculture.
( )Seek alternative for my employment problem
( )Donor fund in the value chains
( )Government support/policies
( )Passion for Sustainable Farming/ wanted to contribute to the industry in a meaningful way

10.e.What are the two highest financial costs that connected to the involvement in your present value chain(s)
( ) Land access costs
( ) Inputs Cost
( ) Fertilizers/pest control costs
( ) Equipment costs
( ) Operating Costs
( ) Crop/livestock Insurance Costs
( ) Post harvest handling costs
( ) Market and selling Costs

11.a.How did you fund the initial startup costs?
( ) Personal savings/share contribution,
( ) Friends /family support
( )Loan from FSPs (bank, Saccos, etc)
() Loan from VSLA,
( ) Loan from Monkash/Moneyphone
( ) Grants/Donors support
( )Other (please specify)

If11a is loan, through which means you accessed that loan
()At Bank
( )Mobile phone
( ) In hand

11.b. how much was those initial start up cost?
( )…… Rwf
( ) Don't remember

11.c.How much you borrowed from FSPs for start-up Capital?
( )……Rwf
( )Don't Remember

11.d. How much you got from friend or Donor support?
( )……Rwf
( )Don't Remember

11.e.Which of the following initial startup costs were hard to fund or you couldn't fund for your agriculture enterprise while they were very needed
( ) Land Acquisition and Site Preparation costs
()Infrastructure and Equipment (barns, greenhouses, storage facilities, Irrigation systems, Farm tools),
( )Seeds, Plants, or Livestock costs
( )Operating Expenses costs (:Fertilizers, pesticides, and herbicides, Chicks feeds and drugs, etc)
( ) ( )Labor and Personnel:(workers and employees' salaries and wages)
()Regulatory and Compliance costs (Permits and licenses, Compliance with environmental regulations, Food safety certifications)
( ) Insurance Costs (Crop/animal insurance, Liability {loan} insurance Property insurance)
( ) other (specify)
( ) No cost was hard to or couldn't fund

11.f.What was the amount of the cost you couldn't or was hard to fund?
( )…..……Rwf
( ) Do not remember

12.What is your mostly faced financial challenges at Production Stage?
()Securing land and covering associated costs.
() Funding my production inputs (seed, fertilizers, and pesticides, feed, equipment) costs
()Covering modern agricultural technologies (irrigation system, precision farming tools, and mechanized equipment,) costs.
() Obtaining financial support for attending training programs that can help to improve agricultural practices.
() Bad credit history to access
( ) Lack of required collateral to secure loans
() Other, please specify.

13.What is mostly faced post-Harvest and Processing Level Financial Need?

() Fund to acquire proper storage facilities to prevent spoilage and maintain the quality of my produces
() Fund for purchasing processing and food preservation equipment
() Financial resources to acquire the necessary knowledge/value addition techniques such as grading, packaging, and proper storage of produces.
() Working capital to cover the cost of moving products from farms to markets

14.What is your mostly faced financial need when it comes to commercialization of your produces?
*( )*Marketing and Branding funds
( )Financial resources to access market information services (Price information, consumer preferences, supply and demand trends)
( )Financial support for product diversification and exploring diversified income streams

15.aHow do you currently fund your agricultural business activities within your value chain(s)? (Select all that apply)
( ) Personal savings
( ) Informal loans from family/friends
( ) Loan from VSLAs
( ) Loan through my Cooperatives
( ) Microfinance institutions (including SACCOs)
( ) Commercial banks
( ) Informal Money lenders (Lambert)
( ) Telecommunication companies financial services (Monkash, e-wallets)
( ) Donors fund
( ) Other (please specify): _____

16.a Have you ever refused an agriculture loan by Bank/MFI
( ) Yes
( )No
() Didn't apply

16.b. If yes, what was the reason
( ) Poor Credit History (late payments, defaults, or other negative credit events)
( ) Insufficient Income (couldn't demonstrate a stable and sufficient income to repay the loan)
( ) Lack of Collateral (din't have adequate/sufficient collateral to cover the loan amount)
( ) Inadequate Business Plan (didn't have realistic or complete business plan)
( )Poor Repayment Capacity(wasn't possible to repay the loan based on my income streams)
( ) Incomplete Documentation (Submitted application was incomplete/ inaccurate)
( ) Didn't ask the reason for rejection
( )wasn't informed the reason for rejection though I asked

17.How would you contrast the income you generate from agriculture/farming with the significant expenses associated within your value chain?
() Very Favorable: My income from agriculture/farming significantly exceeds my major expenses along the entire value chain.
( ) Favorable: Generally, my income from agriculture/farming is higher than my major expenses within the value chain.

( ) Balanced: My income from agriculture/farming roughly matches my major expenses within the value chain.
( )Unfavorable: My major expenses in the value chain tend to be higher than the income I generate from agriculture/farming.
( )Very Unfavorable: The income I generate from agriculture/farming is far below the major expenses in the value chain.
( )Not Sure: I haven't calculated or compared the income and expenses in the value chain of agriculture/farming

18a. On a scale of 1 to 4, how confident are you in your ability to budget and manage your finances effectively?

1. Not confident
2. Confident
3. Very confident
4. Excellent

18.b Do you keep a record of your income and expenses?
( ) Yes
( ) No
( ) Not sure

18.c. Have you ever set financial goals for your agricultural activities, such as saving for equipment or expansion?

( ) Yes
( ) No
( ) Not sure

19.a.Do you have a savings bank account specifically for your agricultural earnings?
Yes
No
Not needed

19.b.If yes, how frequently do you use it for financial transactions related to the value chain?
( )Multiple times a day
( ) Daily
( )Several times a week
( )Weekly
( )A few times a month
( )Monthly
( )Occasionally (a few times a year)
( )Rarely (once a year or less)
( )Never
( ) Prefer not to answer

19.c.If never or rarely what reason behind?

20.a.How do you usually gather information about financial services relevant to your agricultural work? (Select one:
( )Radio/TV
( )Online research and social media
( )family/friends (in person)
( )financial advisors

( )workshops/training,
( )Other (specify)
( ) It is not easy to get information about available financial services

20..b. Have you attended any financial literacy workshops or training programs related to agriculture?
( )Yes
( )No

20.c. If yes, please specify the type and source of the training.
( ) Financial institution
( )Government
( )NGO
( ) my Cooperative/ Company/ VSLA
( ) Private Business Companies

21.a.How otten do experience financial losses due to unexpected events in your agricultural work (e.g., crop failure, animal illness)?
( )Much often
( )Quite Often
( )Rarely
( )Didin't happen

21.b. If much and quite often did you have a financial safety net or emergency fund in place to cope with these losses?

( )Yes
( )No

22.c. If answer in 22.b is yes, what extent do you believe that fund can help you cope losses relevant for business activities in your current value chain(s)?
() Very relevant
() Relevant
() Not relevant

21e Do you ever take Crop/ livesokc insurance?
(Yes
(N

c What is your mainly envisaged challenge in accessing crop livestock insurance ?
() Coverage Gaps (No comprehensive insurance coverage that addresses all our potential risks),
() Cost of Premiums (The cost of insurance premiums is high and not affordable for us)
() Difficulty to cope with year-to-year changes of insurance costs)
() Claim Processing Delays (much delays in processing our insurance claims)
() Gathering accurate data on crop yields, livestock numbers, for insurance purposes is hard
() No knowledge about government regulations and subsidy programs
( ) Limited Crop and Livestock Options (Not all our crops and livestock may be insurable)
( ) Access to Insurance Providers (The rurality does limits easy access to insurance providers,
( )No envisaged challenge
Lack of access to related information
Diffficulty

22.d.Which among the following insurance products could be the most appropriate crop/livestock insurance product for your agriculture businesses

().Multi-Peril Crop Insurance (MPCI) product: covers a variety of perils, including natural disasters (e.g., drought, flood, hail, wind), disease, and other yield-reducing events
().Crop peril based Insurance product
( ). Individual animal coverage products
( ).Herd coverage product .
( ) Revenue Protection Insurance(covers not only yield losses but also changes in market prices)
( ) Other (specify)

22.e.According to you, what could be your maximum insurance cost per season/year for your crop/ livestock ? ---------- Rwf

23.Which among the following challenges do you mostly want to be addressed in order to meet your agriculture financing needs ?
( ) Inaccessible physical locations of financial service providers
( )There is no tailored products that address specific needs of my agricultural businesses.
( )stringent eligibility criteria to access agriculture credit
( ) Lack of Trust by financial institutions in leading agricultural businesses .
( ) High Interest rates offered by financial institutions.
( )Complex application processes for financial service /Lengthy and complicated paperwork in loan application analysis and approval processes
( )Seasonal Income Variability that making it difficult to meet regular loan repayment schedules.
( ) Limited awareness on the Banks' various financial products and services for farmers.
( ) Corruption to get loan approved
( ) Lack of insurance coverage for crops or livestock
( )Discrimination or exclusion based on gender.
( )Discrimination or exclusion based on disability, etc.
( )Other (please specify): _____

24.Which among the following Agriculture financing products do you mostly want to be specifically designed and provided by your Financial services provider ? microfinance institutions or community savings groups

( ) Crop Production Loans: capital needed to purchase seeds, fertilizers, pesticides, and other inputs necessary for crop cultivation.
Pesticides, Insecticides and fungicides cost covering loan
( ) Warehouse Receipt Financing: Loans against stored agricultural produce or warehouse certificates
( )Equipment and Machinery Loans: to acquire essential farming equipment and machinery,
( )Working Capital Loans: to cover day-to-day expenses, such as labor wages, fuel, and maintenance costs.
( )Livestock Loans: to purchase animals, feed, and cover veterinary expenses.
( )Climate-Resilient Farming Loans: loans that support the adoption of climate-resilient farming practices,
( )Agriculture Group Loans:
( )Agriculture Savings Accounts: In addition to loans, financial institutions can encourage smallholder farmers to open savings accounts tailored to their needs. This helps them build financial resilience and save for future investments.
() Specific Financial counseling and Training for farmer: on how to manage finances effectively and make informed decisions about loan usage and repayment.

25. How comfortable are you with using digital financial and payment systems? (e.g., mobile banking, online loans)?
[ ] Very comfortable
[ ] Somewhat comfortable
[ ] Not comfortable at all
[ ] Never use digital financial services
[ ] Prefer not to say

28.What is your most non-digital financial service you believe would be of the importance for advancing your agriculture business (within your value chain)?
( )Small/ short-term loans tailored to agricultural cycles
( ) Larger loans for agricultural inputs/equipment
( ) Subsidized crop and livestock Insurance
( )Agriculture Group Lending
( ) Subsidized loan interest rate
( )Financial counseling
( ) Other (specify)_____

26.Which of the following digital financial products or services do you currently use in your related to agriculture activities
Mobile based deposit and withdraw services
(Mobile based Agri-loan requesting &payments services
( )Digital wallet (MTN mobile money, Airtel money, Mobicash, Money phone) BKcash,Nkunga pay, Pesachoice) Savings
( )Technology based crop/livestock insurance access
( )I don't use any digital financial product /service
( )Other (specify)……
30.What is your most digital financial services do you mostly need for your agriculture business activities within the value chain(s)?
Mobile based deposit and withdraw services
(Mobile based Agri-loan requesting &payments services
( )Digital wallet (MTN mobile money, Airtel money, Mobicash, Money phone) BKcash,Nkunga pay, Pesachoice) Savings
( )Technology based crop/livestock insurance access
( ) Digital training for financial literacy services access
( ) Other (please specify): _____

27.Which of the following challenges or barriers do you face in adopting digital financial products for your agricultural activities?
Absence of digital financial services at my FSP
Limited access to mobile phone,
Lack of electricity
Limited access to internet costs
Limited internet connectivity issues,
Limited digital literacy
None
Other

For Representative of Youth Cooperatives/Limited Companies, Association and VSLA,
28.What's the most financial Need does currently your business organization have
( ) Inadequate subscribed and paid-up shares for startups
( ) Funds to acquire seed/ chicks/ fertilizers/pesticides/feeds
( ) Working capital for day to day expenses
( ) Funds for building /renovating /expanding our chicken coop or storage facilities

( ) Fund for products marketing and distribution
( ) Funds for legal and regulatory compliance (permits, standards ,etc.)
( ) Funds for our member services (credit, health care, education & training)
( ) Reserve funds to ensure organization long-term sustainability
( ) Fund for Bank's Loan repayment

29.What's the most challenge does your business organization currently face with regards to insurance for your crop/livestock?

() Coverage Gaps (No comprehensive insurance coverage that addresses all our potential risks),
() Cost of Premiums (The cost of insurance premiums is high and not affordable for us)
() Difficulty to cope with year-to-year changes of insurance costs)
() Claim Processing Delays (much delays in processing our insurance claims)
() Gathering accurate data on crop yields, livestock numbers, for insurance purposes is hard
() No knowledge about government regulations and subsidy programs
( ) Limited Crop and Livestock Options (Not all our crops and livestock may be insurable)
( ) Access to Insurance Providers (The rurality does limits easy access to insurance providers,
( ) Difficulty with accessing insurance as a group because we are not legally registered
( ) No encountered challenge
( ) Other (specify)

30. What's he most challenge does your business organization currently face with regard to access to financial services

() stringent criteria for extending credit to our businesses group
() High Interest Rates (High-interest rates on loans pose a significant financial burden on businesses)
( ) Bad credit History of business group
() Signatories/regulator' requirements limit our access to Digital Banking Service (ATM, mobile banking)
() Limited Financing Options (lack of diverse financing options, group lending, etc)
() Limited access to available Digital Banking Services (our FSP does not have that allowed digital product)
() Limited access to financial advisory services from our FSP.
() Cybersecurity Concerns (worried about the security of their financial data and transactions when using online banking services.
() Geographical Accessibility (difficulty with accessing physical FSP branches or ATMs)
() Lack of savings Adequacy Requirements to be eligible access the loan/credit.

31. *Is there any additional information or suggestions you would like to share regarding your Agriculture financing needs and how to address them? (For individual and groups)*

----------End…….

3. Key Informants Interview Guide

For Public Institutions

Qn1. Can you provide an overview of the (chili pepper, green beans, poultry and tomatoes) value chain(s) in Rwanda /this District? (Key stages and players involved, main inputs required for cultivation, post-harvest handling and storage, market access?

Qn2.What are the major financial requirements implication for investing chili pepper, green beans, poultry, and tomatoes production, with regard to inputs, labor, and equipment, post-harvest and processing activities, pricing and market access? How do farmers typically access financing for those

inputs. And what main challenges and gaps that need to be addressed for supporting them to secure loans or credit for such an investment?
Qn3. What are your perceived opportunities within the above mentioned 4 value chain development that could be tapped into by the youth-led agricultural initiatives and attract the FSPs financing?

Qn4. What are interventions do you have in place to support access to agriculture financial services and which ones are targeting youth in agriculture. Is *there any specific program/intervention that support access for those who are in poultry, chili, green beans, and tomatoes value chains?*
Qn5. Is there any intervention that specifically support youth female, PWDs and refugees with accessing agricultural financing in the above-mentioned value chains? [Probe name the programs and what they do]. How effective are these programs? What are the specific challenges they encounter in obtaining loans or credit for their agricultural operations and what could be your suggestions/ innovative mechanism to address them and enhance/improve the financial resilience of chili, green bean, tomatoes, and poultry young farmers?

Qn6. Are there any financial instruments that are specifically designed to accelerate access to financial services for youth in poultry, chili pepper, tomatoes and green beans value chains? () Yes () No If yes, please specify: _____

Qn7.Based on your experience and opinion, what are challenges related to crop and livestock insurance in chili pepper, poultry, tomatoes and green bean value chains? what could be innovative approaches or tailored solutions to address those challenge across the target value chains?

Q8. What form of collaboration between financial institutions, agricultural organizations, and youth-focused NGOs and association to better facilitate access to agricultural financing for youth in n the chili pepper, green beans, poultry, or tomatoes value chain(s)? Are there any examples of successful collaborations or partnerships that could be factored in?

For Microfinance Institutions and Insurance companies

Qn1.How would you describe your current lending to the small holder frames and what specific agricultural loan and saving products do you have for them? How is your loan portfolio for such a lending?

Qn2.How your MFI is interested with lending chili, poultry, green beans and tomatoes value chain? How do small-scale poultry, tomatoes, chili pepper, and green bean Youth farmers typically access credit from your bank and what are most hindering factors /challenges that frequently prevent them from easily access? Can you share any success stories or case studies related to the adoption and impact of your specific agricultural loan /savings products among your young clients?

Qn3.How do you perceive the financial needs of youth in agriculture who are banking with you that you still need to address? What are their mostly showed up needs when it comes to loan and saving products/services for agricultural purposes? Do you realize any challenge need specific to the women, refugee and PWDS?

Qn4. What are your perceived opportunities within the above mentioned 4 value chain development that could be tapped into by the youth-led agricultural initiatives and attract the FSPs financing?

Qn5. From your experience and perception, how significant is the lack of collateral or credit history constitutes a barrier for youth in obtaining agricultural financing from your bank? How do you support them on that issue. What do you think could be alternative forms of collateral to increase youth's access to loan and credit facilities from your Banking institution?

Qn6. What digital financial products and platforms has your bank developed specifically for young clients? - Please provide details on each. How were these products and platforms designed to meet the unique needs and preferences of young clients? Can you share any success stories or case studies related to the adoption and impact of these digital products among young clients?

Qn7 How does your Financial Institution /FSP ensure that these digital products and platforms are accessible and user-friendly for young clients, including those with limited digital literacy? Are there any initiatives or features aimed at promoting financial education and digital literacy among young clients?

Qn8. Which specific financial products or services do you think are still lacking and that would be suitable to meet the financial needs of youth in the agricultural sector? What specific financial needs or challenges do young clients face that necessitate tailored digital solutions? -Please describe

Qn9.What future plans or innovations does the bank have in mind to further improve digital financial inclusion for young clients? Are there any emerging trends or technologies the bank is considering for this purpose?

Qn10. At your perception, what are major challenges that are preventing young farmers in Rwanda to embrace digital tools and technologies for farming practices or financial transactions? In which ways you think can digital platforms play a role in simplifying the application and repayment processes for agricultural loans?

Qn11. How could your microfinance institutions tailor its savings and loan products to better serve youth' financial goals within Chili, green been, poultry and Tomatoes value chain(s)? what do you could be innovative approach by the MFI to enhance youth access to agricultural finance services? how better do you think financial literacy program should work for increased financial impact among the youth in chili, green bean, poultry and tomatoes value chain(s)?

Qn12.How do you see collaboration with development partners and government for financial products development specific for youth/women in one of these value chains (chili, poultry, tomato, green beans.

Is there any specific financial product that you think you could develop, adopt, refine through collaboration with the above-mentioned organizations and what could be an appropriate form for such a collaboration?

For Non-Public Institutions and Youth Supporting Organizations

Qn1: Do you have in your interventions portfolio any support or assistance to the Youth engaged in the agriculture sector, please describe (which are the issues you address and for which youth categories female, disabled, and refugees.) what are observable effects on the ground among youth you assisted). If not do you have any plans to do so?

Qn2 What are your currently perceived gaps and challenges in financing agriculture in Rwanda, (especially chili pepper, poultry, tomatoes, and green bean value chains). *What do you think could be the innovative and appropriate mechanism to address those challenges and improve the overall value chain (s) sustainability?*

Qn3. *What is your perception of the major financial needs of youth in agriculture in Rwanda?* What are your perceived specific financial needs of female refugee status, and PWDs and how their status hindering their access to agriculture financial product and services?

Qn4.What do you think could be a suitable agriculture financing model to be deployed to support youth in chili pepper, poultry, tomatoes, and green bean value chains? What are *innovative financing models (such as group lending, peer-to-peer lending, or crowdfunding) that could be adapted by FSPs to meet current financial needs of youth in agriculture? How would these models work.*

Qn5. *What are your perceived opportunities within the above mentioned 4 value chain development that could be tapped into by the youth-led agricultural initiatives and attract the FSPs financing?*

*Qn6.*How do you think the agriculture financing could be expanded to reach more female youth chili pepper, poultry, tomatoes, and green bean value chains?

Qn7. In your opinion how could MFI and other FSPs strengthen or change their agriculture lending approach to better serve more youth within Chili, green been, poultry and Tomatoes value chain? (Probe one unique needs of female young farmers, refugees, PWDs).

Qn8.What types of customized loan and saving products that you think would best suit to the financial needs of youth within Chili, green been, poultry and Tomatoes value chain(s)? which of them need to be digitized and be accessed online or vial mobile (Provide specific examples if possible)

Qn9. How do you perceive the issue of loan collateral among the youth in agriculture and what do you think could be alternative forms of collateral for loan within those selected value chain (Farm Equipment, livestock, Chicken, hatches, Harvested Products, Contractual Arrangements, Cooperative Memberships).

Qn10.Based on your experience and opinion, what are challenges related to crop and livestock insurance in chili pepper, poultry, tomatoes and green bean value chains? what could be innovative approaches or tailored solutions to address those challenge across the target value chains.

Qn11.What form of collaboration between financial institutions, agricultural organizations, and youth-focused NGOs and association to better facilitate access to agricultural financing for youth in chili pepper, green beans, poultry, or tomatoes value chain(s)? Are there any examples of successful collaborations or partnerships that could be factored in?

----------End----------