REPORT

IN-DEPTH STUDY ON "ANALYSIS OF VALUE CHAIN FOR INTENSIFIED CROPS AND MARKET PRICE IN RWANDA; THE CASE STUDY: IRISH POTATOES, MAIZE AND RICE"

Submitted to

Executive Secretary of
Rwanda Civil Society Platform (RCSP)
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LIST OF ABBREVIATIONS

BDS	Business Development Services
CIMMYT	The International Maize and Wheat Improvement Center
CIP	Crops Intensification Program
CNFA	Cultivating New Frontiers in Agriculture
CSO	Civil Society Organization
DCH	Double Cross Hybrids
EAC	East African Community
FGD	Focus Group Discussion
IC	Intensified Crop
IPM	Integrated Pest Management
KII	Key Informant Interview
MINAGRI	Ministry of Agriculture and Animal Resources
MINICOM	Ministry of Commerce
NGO	Non Governmental Organization
NPA	Norwegian People's Aid
NSGR	National Strategic Grain Reserve
OPVs	Open Pollinated Varieties
PPIMA	Public Policy Information, Monitoring and Advocacy
PSDAG	Private Sector Driven Agricultural Growth Project
RAB	Rwanda Agricultural Board
RBS	Rwanda Bureau of Standards
RCA	Rwanda Cooperative Agency
RCSP	Rwanda Civil Society Platform
RGCC	Rwanda Grain Cereal Corporation
SPF	Seeds Potato Funds
SPSS	Statistical Package for Social Sciences
ToR	Terms of Reference
TWCH	Three Way Cross Hybrids
USAID	United States Agency for International Development
VC	Value Chain
WFP	World Food Programme

ACKNOWLEDGEMENTS

This IN-DEPTH STUDY ON "ANALYSIS OF VALUE CHAIN FOR INTENSIFIED CROPS AND MARKET PRICE IN RWANDA; THE CASE STUDY: IRISH POTATOES, MAIZE AND RICE" involved individuals of different professional orientations presenting delicate balance in accomplishing the task.

We thank the Direct Beneficiaries, thus the farmers and members of cooperatives drawn from the eight (8) Districts who accepted to participate in the study and provided the information without which completion of this report would have been impossible.

We extend special thanks to the Key Informants who recognized the need to provide the essential information through interviews and one on one discussions. These included the District and sector Sector Agricultural officers, Agricultural extension officers, Presidents of cooperatives, Marketing officers, Traders, Input suppliers, Middle man/ Woman, local NGO, RAB officials, MNICOM officials, RCA officials, Consumers and Processors. The information gathered from all the aforementioned categories was critical in adding depth and relevance to this report

Thanks to the entire Rwanda Civil Society Platform (RCSP) staff community for ensuring that all the logistics were available when and where needed. This was particularly useful in the mobilization process, recruitment and induction of data collection teams, sampling process, administering questionnaires, data collection and facilitating all relevant literature

We finally hasten to acknowledge all those persons who contributed towards the success of the exercise in general, as we are not able to point out every individual in this report. It was, indeed awesome!

Naturally, any errors and omissions lie with the Consultants study team led by Dr. Michael Tusiime, Mr. Vincent Tengeye Makokha and Mr. Willis Odhiambo Okul.

EXECUTIVE SUMMARY

Issue based advocacy encompasses many different kinds of activities, but share the fundamental objective of enhancing capacity of vulnerable communities to identify, reduce and manage risk at local and national levels. With the support of the Norwegian People's Aid (NPA) through Public Policy Information, Monitoring and Advocacy (PPIMA) project and in line with evidence based advocacy, RCSP in this assignment identified a number of issues linked to the Value Chain (VC) of some agricultural products to prepare ground for their annual public policy dialogue.

This study had four (4) specific objectives looking at how farmers are facilitated to get inputs (*improved seeds and fertilizers*) to improve production and facilitating easy commercialization; analyzing the cooperation and collaboration between farmers and other relevant stakeholders of the intensified crops in establishing market price; assessing role of farmers/cooperatives and levels of involvement, consistency, and implications upon the entire value chain; and evaluation of farmers' perception with regard to the entire Value Chain and its implications.

The study employed a cross-sectional design of both qualitative and quantitative methods. Questionnaires, Focus Group Discussion guides, Key Informant Interview schedules and observation checklists were the main tools employed to collect data from the 577 respondents from across the three (3) Intensified Crops (IC). The respondents were drawn from individual farmers' beneficiaries, cooperative members, cooperative officials, private sector, processors, Non Governmental Organizations (NGOs) and government officials.

This report is organized into six (6) main chapters starting with the introduction into the assignment; followed by the methodology; the results of the Value Chain analysis are discussed in chapter 3; chapter 4 presents discussions on international best practices with the Conclusions and recommendations detailed in chapter 5 of the report. The last chapters 6 and 7 present field activity photos and annexes (*Terms of reference and tools used for the study*) respectively.

This report summarizes the findings in all the three Value Chains as follows; the first section gives an outline of the socio-demographic profile and characteristics of the respondents; the second section presents results of the study on each of the three (3) intensified VCs (*Irish Potatoes, Maize and Rice*) drawn from the eight (8) selected Districts from across the four (4) provinces (*East, North, West and South*) of Rwanda. The second section presents results of analysis for the three (3) intensified crops based on the four (4) objectives of the study under the following sub-topics; Facilitation of Farmers access to inputs; Cooperation and collaboration between farmers and other relevant stakeholders; the role of farmers/cooperatives in the entire VC; and finally the third section discusses farmers' perception in regard to the entire VC.

The report concludes with a set of recommendations specific to RAB, MINAGRI, MINCOM, RCA and CSOs aimed at;

- Developing sustainable strategies of increasing access to inputs for farmers in Rwanda.
- Improving production through localized farmer support institutions.
- Creating enabling environment for farmers to undertake farming as a business and improve incomes/ build resilient communities (*markets and prices*) and protect consumers as well across the Value Chains.
- Putting up alternative means on continuous monitoring framework for pricing of farmers' produce and regular monitoring and audit of cooperative activities to identify performance gaps.
- Ensuring meaningful participation, contribution and ownership by all stakeholders and developing consultative dialogue with key actors on policy development.
- Capacity building of farmers and empowerment to determine production and market dynamics being the key stakeholders.

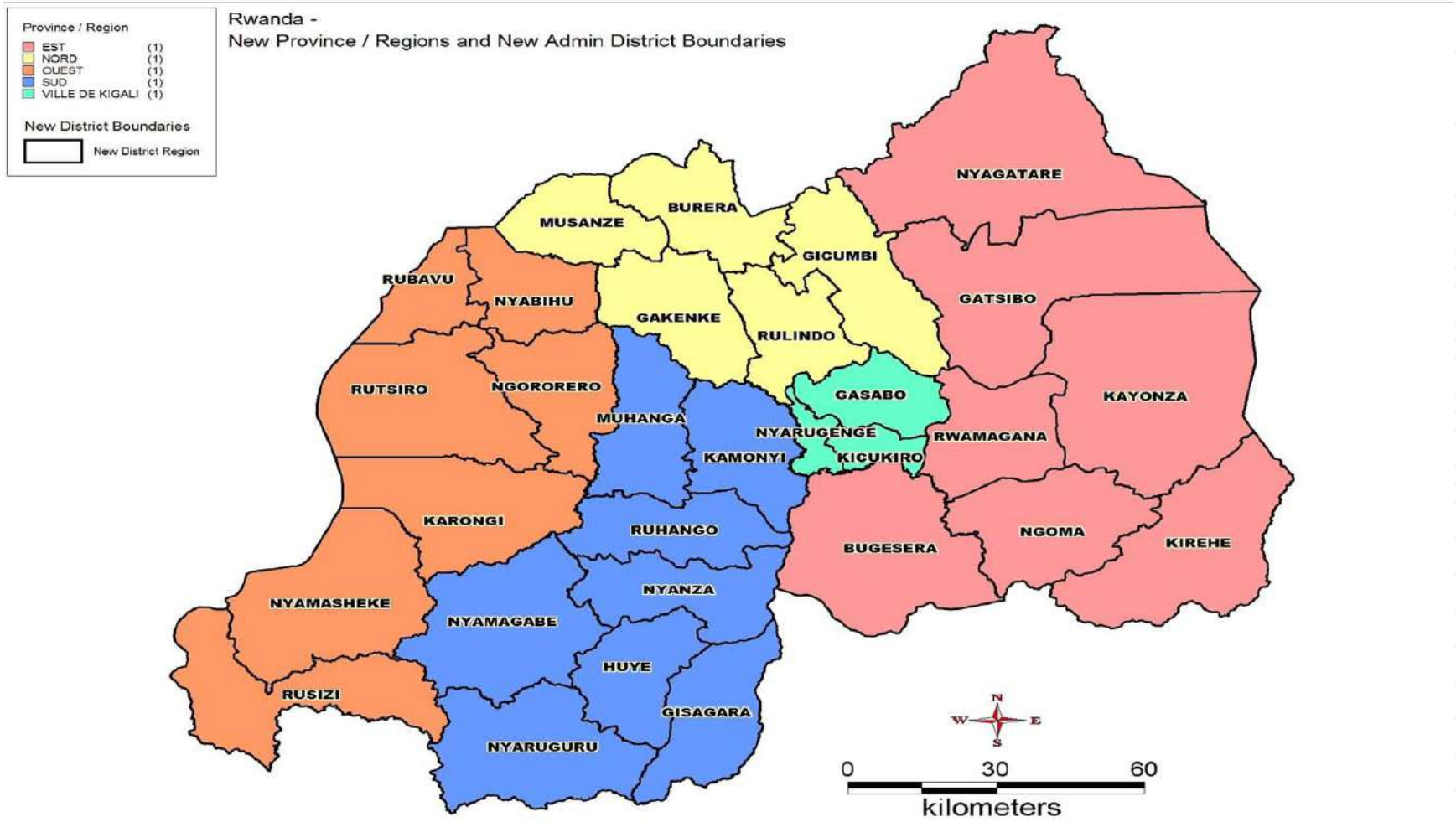
1.0 INTRODUCTION

1.1 The Organization

The Rwanda Civil Society Platform (RCSP) is a non-profit making umbrella organization that was created in 2004 with the objective to set up a platform for information sharing, consultation and advocacy among Civil Society Organizations (CSOs) and their partners. The RCSP is composed of nine (9) national umbrella organizations with more than 500 members. The mission of RCSP is to act as a framework of exchange, strengthening solidarity and the capacity of its members, to be the people's voice and defend the public interests and interests of its members at national, regional and international levels.

1.2 Background

RCSP, with the support of Norwegian People's Aid (NPA) through Public Policy Information, Monitoring and Advocacy (PPIMA) project and in line with evidence based advocacy, identifies an issue that needs to be advocated for and that becomes a subject of an annual public policy dialogue. For this year's (2018) theme, RCSP, through consultations with PPIMA project partners identified a number of issues linked to the value chain of some agricultural products. In this framework, RCSP undertook **"Analysis of value chain for intensified crops and market price in Rwanda; the case study: Irish potatoes, maize and Rice"**, findings of which informed the public policy dialogue. Given the zoning of the selected crops (*Irish potatoes, Maize and Rice*), the research purposively targeted, among others, Musanze, Burera, Gatsibo, Nyagatare, Ruhango, Gisagara, Nyabihu and Rusizi districts of Rwanda.



Source: Google Maps 2018

1.3 Purpose of the Consultancy

The main purpose of this study was to establish the link between crop production and market price by clearly highlighting current aspects involved in the entire value chain and pricing mechanisms in relation to cost of production.

1.4 Specific objectives

The specific objectives and activities are analyzed in the *Table 1* as follows:

Table 1: Summary of Survey Objectives and expected Outputs

Objective/Activity	Data source	Method of data collection	Outputs
To assess how farmers are facilitated to get inputs (improved seeds and fertilizers) for rice, Irish potatoes and Maize to improve production and facilitating easy commercialization;	Rwandan Agriculture Sector, Ministries of agriculture in each of the 8 Districts, member organizations/ Private Sector/Cooperatives.	Document review, Mapping of service providers & stockists/retailers, Stakeholder mapping etc. FGDs KIIs	Report on Access to modern agricultural practices & farm inputs, Support from Ministry of Agriculture & private sector, Business Development Services available related to the 3 crops, Quality of inputs.
To analyze the cooperation and collaboration between farmers and other relevant stakeholders involved in commercialization of the intensified crops in establishing market price;	Available literature, key data in the Agriculture sector and consultations with relevant departments at the Districts, farmers/community members/Cooperatives, Markets.	Interviews, Literature Review. FGDs KIIs	Chain Actors, contextual, situational description and analysis reports. Market analysis reports.
To assess the role of farmers (or farmers' cooperatives), levels of involvement, consistency & its implications upon the entire value chain (from production to market);	District and national Agricultural sector & relevant agencies, Private sector, farmers groups, Monitoring and Evaluation systems and Cooperatives	Document review, Stakeholder, Market analysis, VC analysis. FGDs KIIs	Chain Actors analysis report VC analysis report Stakeholder analysis report
To evaluate farmers' perception with regard to the entire VC and its implications (underlying consequences to the farmers' development).	Available literature, key data in the Agriculture sector and consultations with relevant departments at the Districts, farmers/community members, Markets.	Literature review, consultative workshops/meetings, cost, income and price analysis PMSD model FGDs KIIs	Gap analysis report, Satisfaction indices report Price analysis report

2.0 METHOD AND DESIGN

2.1 Methodology

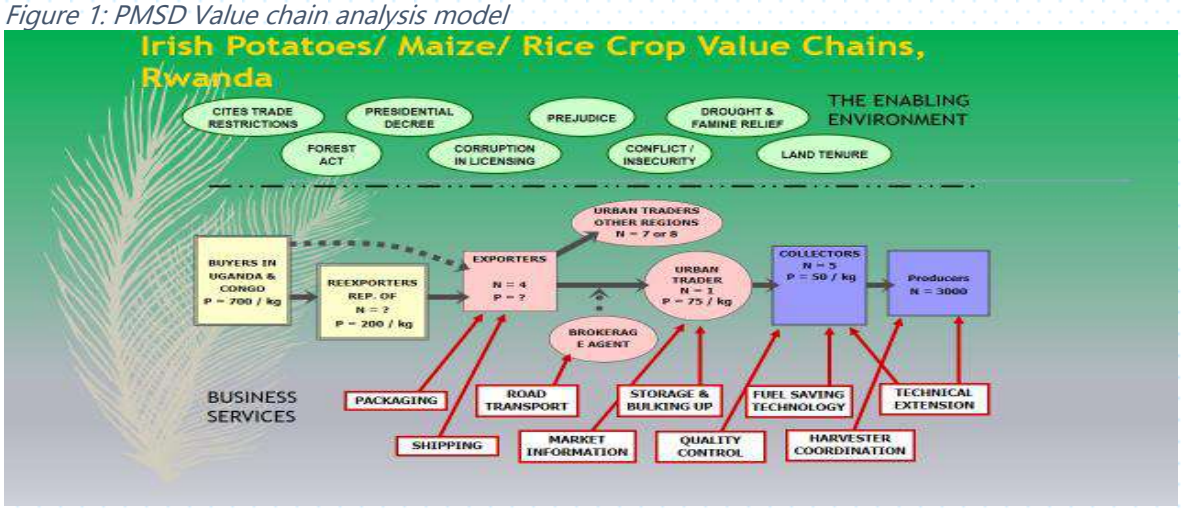
2.1.1 Approach

The study employed Desk/Literature review, Field visits and interviews to collect relevant data from the targeted Districts. Desk/Literature review was conducted from existing project documents provided by RCSP, other relevant institutions and other grey literature from internet concerning the three (3) intensified crops (*Maize, Rice and Irish Potatoes*). Field visits were conducted to get information from primary actors in sampled specific VC locations for analysis. The team of consultants combined both qualitative and quantitative data collected for analysis and interpretation.

2.1.1.1 Secondary data collection

The team collected data using grey literature, internet searches and other referenced secondary data sources. Data on relevant laws, policies and regulations on the three VCs was collected, analyzed and interpreted to identify main issues for each selected crop at each stage of the VC (*input supply, production, processing and marketing*) in the eight districts. The team employed Participatory Market System Development (*PMSD*) model of VC analysis (*patented by Practical Action Consulting*) to identify major issues of concern. This was then used to develop the criteria and plan for the VC analysis on attrition of market prices in the study. Data was also drawn from regional and national levels.

Figure 1: PMSD Value chain analysis model



2.1.1.2 Primary data collection

The team of consultants used mixed approaches in collection of primary data. These included interviews with chain actors (*input suppliers, farmers, processors, marketers and consumers*), Focus Group Discussions (FGDs) with cooperatives and Key Informant Interviews (KIIs) with government officials, cooperatives officials, private sector players, financial institutions and other business service providers.

In a nut shell, the team of consultants applied the following strategies to identify targeted respondents for primary data collection from the field;

- ✓ We jointly developed a list of key respondents to participate in this study.
- ✓ We consulted with RCSP on the sample frame and respondents' selection process and criteria before we collected data in the field,
- ✓ We used random, purposive and stratified sampling methods to help come up with appropriate respondents to interview.

2.1.2 Study area

The VC analysis data was collected from the eight targeted Districts as presented in *Table 2*;

Table 2: Focus Provinces and Districts of Study

SNo.	PROVINCE	DISTRICT	Crop Zoning (VC Focus)
1	East	Gatsibo	Rice and Maize
		Nyagatare	Rice and Maize
2	North	Musanze	Irish Potatoes
		Burera	Irish Potatoes
3	West	Nyabihu	Irish Potatoes
		Rusizi	Rice
4	South	Ruhango	Maize
		Gisagara	Rice
5	Kigali	Key Markets	Irish Potatoes, Maize and Rice

2.1.3 Target population

The respondents were drawn and sampled from the eight Districts of the assignment. 16 cooperatives (*two from each district were selected, and with different VCs from amongst the three intensified crops*). Our total target was 575 respondents drawn from all the cooperatives, purposively and randomly depending on the kind of information needed (*Ref. sampling frame Table*). Gender dimensions were considered at every stage of sampling of the VC actors who were primarily dependent on agriculture.

2.2 Study design

The study employed mixed methods where both quantitative and qualitative data were collected concurrently.

2.2.1 Sample size

Sample size of respondents was determined based on purpose of the study and the depth of information needed. Our target of 575 respondents included Government departments and the private sector stakeholders that provided support functions in Agriculture within the targeted Districts. This formed the sampling frame. This study used a confidence interval of 95%.

2.2.2 Population Sampling

- **Purposive and Snow-bowling sampling** techniques were employed to identify targeted respondents who participated in the study.
- **Random sampling**: was used to select respondents drawn from both primary and secondary beneficiaries.

2.2.3 Sampling frame

The *Table 3* below presents summary of tools the team used and the targeted respondents;

Table 3: Sampling Frame

	Survey of Area/ Frequency of use of Tool				
Type of Tool	**East Province**	**West Province**	**South Province**	**North Province**	**Total**
Target Areas	**Districts**	**Districts**	**Districts**	**Districts**	
	1.Nyagatare 2. Gatsibo	1. Nyabihu 2. Rusizi	1. Ruhanga 2. Gisagara	1. Musanze 2.Burera	**8**
Desk review					
Quantitative Questionnaires (10 Pax per Cooperative) • Four Female members • Four Male Membres • I Youth representative • I Disabled	40	40	40	40	**160**
Key Informant Interviews (Per District) • Sector Agric officer (2) • Agric extension officer- Districts (1) • Presidents of cooperative (2) • Marketing officer (2) • Trader (2) • Input supplier (2) • Middle man/ Woman (2) • VC local NGO (1) • MINAGRI official (1) • MNICOM official (1) • RCA official (1) • Consumers (24) • Processors (8)	15	15	15	15	**95**
5-Members FGD (Categories Per Cooperative) • Traders (5) • Cooperative Members (5) • Supervisory Committee (5) • Farmers out of cooperatives (5)	80	80	80	**80**	**320**
Case studies	2	2	2	2	**8**
Total					**575**

2.2.4 Recruitment of Research Assistants

A team of twenty four (*24*) Research Assistants (*3 per district*) from the local populations were recruited and trained to assist and guide field data collection from the eight targeted districts. In this study practical pre-test sessions to familiarise with research instruments (*tools*) were also considered as part of the Research Assistants' training.

All the Research Assistants that were engaged in this study were college graduates with clear geographical and cultural knowledge of the respective districts in which they were engaged.

2.2.5 Instruments and tools for data collection

The key instruments used to gather relevant information and data for the study included:

- Questionnaires and checklists.
- Focus Group Discussion guides and Key Informant Interview schedules.
- Public documents, reports including recent surveys as listed below;
    1) Strategic Plan for Agriculture Transformation 4 (PSTA 4), 2018-2024.
    2) Industrial Master Plan for the Agro Processing Subsector (2014 - 2020), Ministry of Trade and Industry (MINICOM).
    3) Rwanda Agricultural Sector Risk Assessment World Bank Group Report # 96290-RW, October 2015.
    4) The Crop Intensification Program in Rwanda: a sustainability analysis, UNEP/UNDP report, 2010.
    5) Consumer Price Index (CPI), Rwanda, June 2018, 10 July 2018, NISR – National Institute of Statistics of Rwanda.
    6) MINAGRI National Rice Development Strategy (2011-2018), September 15, 2011 (Revised August, 2013).
- Field observations and reviews, including time series analysis.
- Extensive literature reviews of reports, evaluations and other relevant documents.

2.2.6 Criteria used for development of data collection tools

Survey data collection tools were developed by the team of consultants in consultative meetings with the RCSP team before submission of the final inception report. The tools included questionnaires for cooperative members, observation profile to document unique experiences in the process of data collection, KII schedule and FGD guides. The draft tools were shared with RCSP members for feedback and inputs before being approved for use to draw pertinent information for the study from the cooperative society members, leaders and other stakeholders. The inception report was approved by the client with finalized tools as agreed.

2.2.7 Ethical Clearance for field data collection

Upon submission of the consultancy's revised inception report with revised tools, RCSP gave the consultant the consent to seek a research visa from the National Institute of Statistics and Research (NISR). The consultancy sought the research visa from NISR to conduct research with revised tools (*translated into Kinyarwanda*). A research visa was subsequently approved and issued to the consultant to conduct the study. During the interactions with respondents, every effort was made to explain the purpose of the study and assurance guaranteed to ensure anonymity and confidentiality where necessary.

2.2.8 Pre-testing of tools

The approved tools (*questionnaires and checklists*) were piloted in Remera sector of Gatsibo district to ensure their validity and reliability in collection of precise data. The tools were reviewed after a pre-test prior to actual data collection from the respondents in targeted areas of the study.

2.3 Quality Review

The lead consultant ensured that clear quality control measures were in place during the study. Initial findings from the field were shared in plenary session for the Research Assistants and the consultants for validation of causal links in costs and pricing of inputs, crop production and value addition in relationship to the end market prices. Variances in data trends were harmonized through triangulating with secondary data and field observations. Different tests, such as range tests, were used in discussions to ensure the accuracy of information.

2.4 Limitations to the Study

Every study has its limitations and invariably time is often one of them, the field work for this study was carried out within tight time lines. The study team had thus to go out of their way to enable facilitate the same and conclude within the agreed timeframe. The selected study sites were far apart besides teams being faced with the Parliamentary campaign period and start of rains which were by-passed by the consultants' flexible innovations to manage respondents' tight schedules. The above challenges notwithstanding, the consultants believe that the information received was sufficient to arrive at the conclusions and recommendations presented here-in. The limitations did not negatively affect the findings.

2.5 Delimitations to the Study

The study was delimited to the eight (8) selected districts given the priority and importance of the selected intensified crops to the geographical area and livelihoods of the target population. The areas reached were purposely narrowed down to two (2) Districts in every Province and two (2) cooperatives drawn from each of the Districts. The study was therefore, delimited to a target population of 575 respondents drawn from individual farmers, farmer groups, cooperative officials, government officials, Traders and consumers in the three intensified crops (*Irish potatoes, Maize and Rice*). Although production and marketing processes were numerous, this study was delimited to the three (3) CIP crops targeted by the study with focus on access to inputs; cooperation and collaboration between farmers and relevant stakeholders; role of farmers and its implications upon the entire VC; and finally farmers' perception with regard to development of the entire VC and its implications. The study was therefore delimited in terms of objectives to the three (3) CIP crops supported by the RAB. Finally, the study was delimited to specific qualitative and quantitative approaches in gathering information, data analysis and presentation.

3.0 RESULTS OF THE VALUE CHAIN ANALYSIS

This section presents results of the study on the three (3) intensified VCs (*Irish Potatoes, Maize and Rice*) drawn from the eight (8) selected Districts from the four (4) provinces (*East, North, West and South*) of Rwanda. The first section gives an outline of the socio-demographic profile and characteristics of the respondents.

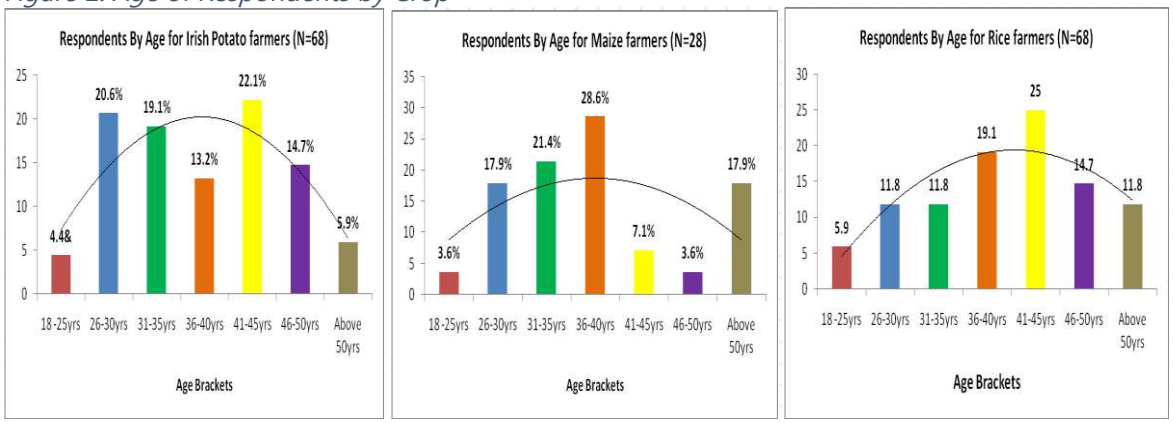
The second section presents results of analysis for the three intensified crops based on the four objectives of the study under the following sub-topics; Facilitation of Farmers access to inputs; Cooperation and collaboration between farmers and other relevant stakeholders; the role of farmers/cooperatives in the entire VC; Farmers' perception in regard to the entire VC.

3.1 Socio-Demographic Results

3.1.1 Age of Respondents and Intensified crop grown

The age of cooperative members was an important demographic variable considered in this study. Overall, the biggest proportion of sampled farmers was 40 years old or younger (*Irish potatoes, about 57.3%, 71.5 % for Maize and 46% for Rice*). See *Figure 2*.

Figure 2: Age of Respondents by Crop



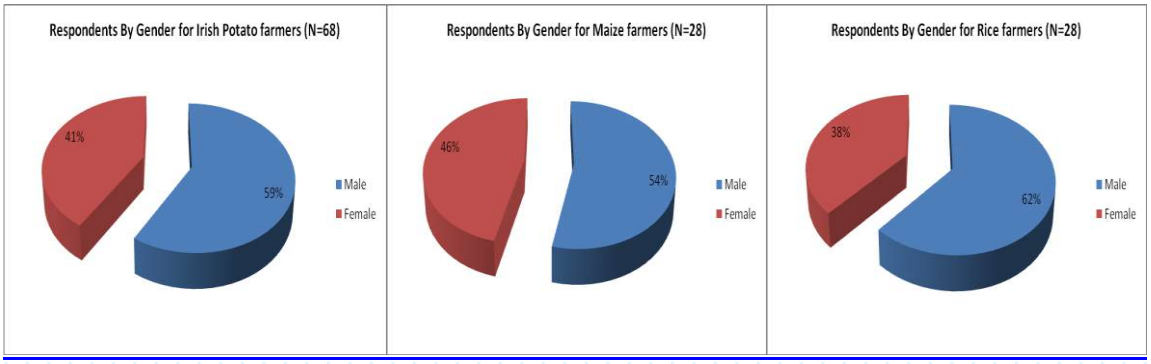
Source: Results of the Intensified crops VC study August 2018

When analyzed in the context of the current effort by the government of Rwanda to encourage the youth to embrace commercial farming, the age of individuals who joined cooperatives presented positive prospects. Such a youthful category is believed to be energetic, industrious, risk taking and adoptive to new technological developments that can be applied to Agriculture. However, it's also an age bracket that needs support in terms of startup capital to engage in commercialized agriculture. Quite often, such an age bracket does not have collateral to start commercial farming business. This challenge is compounded by the fact that the youth, just like most other age categories have traditionally not valued Agriculture as a professional activity, often considering it as fit for rural people with low education levels. A systematic approach will have to be adopted to change the negative mindset of most youth visa a vis embracing Agriculture as a profession and a business.

3.1.2 Gender of Respondents and Intensified crop grown

The gender of sampled farmers across all the three (3) VCs was a crucial unit of analysis in this study. From all the VCs, we noted that majority of the cooperative members were Male. For example, from the 68 Irish Potatoes farmers who participated in this study, 59% were male and 41% were female farmers. See the *Figure 3*.

Figure 3: Gender of Respondents by crop



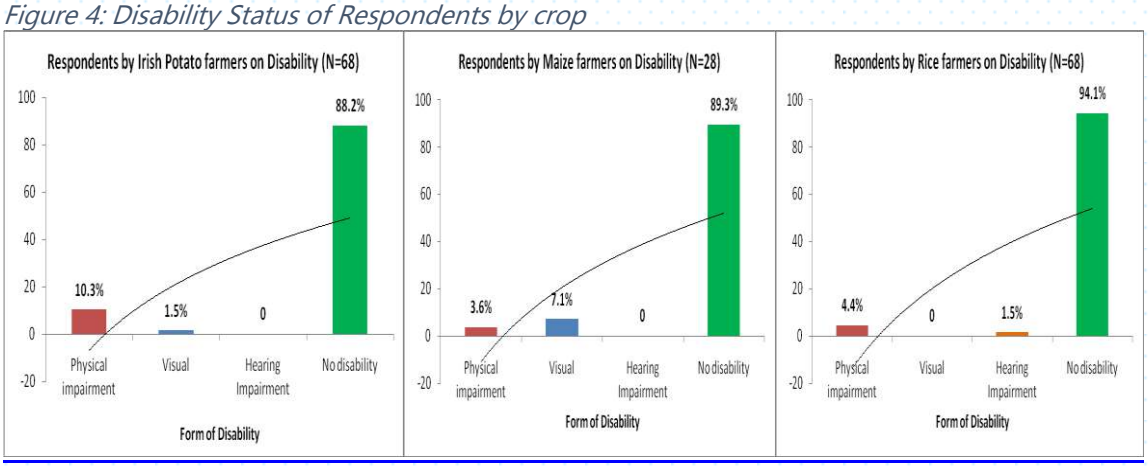
Source: Results of the Intensified crops VC study August 2018

A more or less similar gender gap was observed in the Maize and Rice VCs. Such statistics do not represent the entire gender station in cooperatives but rather the gender representation of the farmers we invited to participate in this study and those who turned out to participate.

3.1.3 Disability status of Respondents and Intensified crop grown

It was explicit in the Terms of Reference (*ToR*) for this assignment that strategies would be put in place to include diversity in our respondent categories. As noted in the graphs, a significant percentage of respondents (*88.2 % for Irish Potatoes, 89.3% for Maize and 94.1% for Rice*) indicated that they had no disability. A low percentage of respondents across the VCs indicated having some form of disability. Such a trend would be expected, especially in a field like Agriculture. See *Figure 4*.

Figure 4: Disability Status of Respondents by crop



Source: Results of the Intensified crops VC study August 2018

Most Agricultural production related work is done manually and on fields that would naturally not be friendly to people with disabilities. This said, it is important to note that just like in other areas of socio-economic development, people with varying level of disabilities are encouraged to join Agriculture. As one of the interviewees noted, "my friend is disabled but he is just as productive as everyone else in this ccoperative. Not every work we do in this cooperative is phyiscal. We have a varity of roles that everyone of us can do based on his abilities" (*excerpt from interview with the President of one of the Cooperatives sampled).*

3.1.4 Education attainment by Respondents and intensified crop grown

Farmers' levels of education constituted a critical factor of analysis for this study. Statistical information summarised in the *Table 4* indicates that a significant portion of farmers completed upper secondary school. For instance, statistics from the Maize VC revealed that a significant percentage of the farmers (*64.3%)* had formal education up to lower primary, and an almost similar trend wasobserved in other VCs. In fact, there is high percentage of farmers who completed Primary Education and did not attend secondary education.

Table 4: Respondents' Education attainment by crop

	Highest level of education Attained (N=164)					
Intensified Crop grown	None	Lower Primary	Upper Primary	Secondary	Tertiary & Above	Total
Irish potatoes	5.9%	36.8%	23.5%	29.4%	4.4%	100%
Maize	21.4%	42.9%	14.3%	21.4%	-	100%
Rice	8.9%	35.3%	17.6%	35.3%	2.9%	100%

Source: Results of the Intensified crops VC study August 2018

It should be noted that farmers with low levels of education are unlikely to adopt efficient and economical practices of farming. The study further established that although, cooperatives had sector agricultural officers who are expected to provide them with extension services, improving their knowledge to adopt new farming practices was relatively difficult.

During the interviews, it was revealed by most of the famers that computation of what they invested in crop prouction was complicated and thus, calculating their profit margins proved difficult too. The study also established that there was a problem in adopting modern farming and marketing dynamics due to the low education attainment levels coupled with the fact that the educated segment of the population was not actively engaged in agriculture for livelihood as a profession. A summary of interviews and FGD data revealed the followng about the effect of low level of education amongst farmers:

- Low level of education affect power dynamics within cooperatives whereby the majority of cooperative members may not posses the power to influence decisions.

- Low level of education was associated to resistence to change, especially regarding the adoption of new practices and technologies in farming.
- Non educated or primary level educated farmers were less likely to document records of their inputs and produce and over all farming experiences to inform subsequent practices during the cropping seasons.
- The lack of power to negotiate prices and access to information was also associated with low levels of education.

The aforementioned are among the many challenges farmers faced as a result of not having attained higher level education. Such trends also reinforced the stereotype that farming belonged to the non-educated- a potential deterent.

3.2 Value Chain Analysis Irish Potatoes

This section outlines the analysis of Irish Potato intensified crop in view of the three main objectives of the study. The first part of this section presents a typical VC map of the Irish Potato VC in Rwanda. Subsequent parts are organized as findings in line with the study objective as follows: Facilitation of Farmers' access to inputs in Irish Potato production; Cooperation and collaboration between Irish Potato farmers and other relevant stakeholders; the role of Irish Potato farmers/cooperatives in the entire VC.

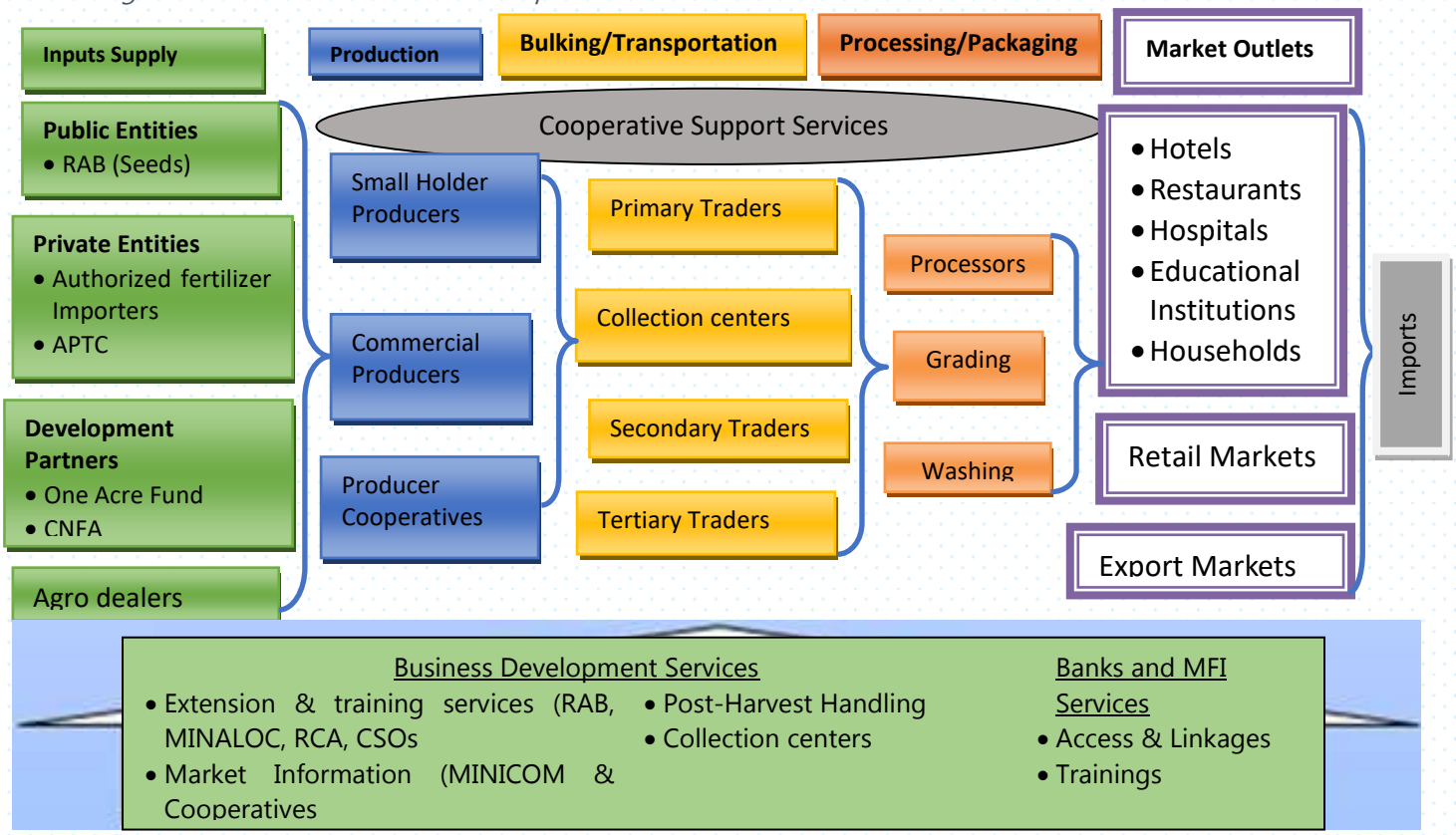
3.2.1 Irish Potato VC in Rwanda

Rwanda is the 6th largest producer of potatoes in Africa, which is significant given the relative land size of the country and is the most important vegetable produced in Rwanda (*FAO, 2008*). Irish Potatoes are cultivated across the country; however, four districts in the north-west (*Rubavu, Musanze, Nyabihu and Burera*) are responsible for up-to 90% of the production. Irish Potato is one of the most important crops in Rwanda and is one of the government's six priority crops falling under the Crop Intensification Program (*CIP*). This study focused on the Burera, Musanze (*North*) and Nyabihu (*West*) Districts.

3.2.2 Irish Potato Value Chain map

The study established a map indicating the movement and relationship within the Irish Potato VC ranging from inputs supply, production, transportation, processing and finally to the markets. A typical Irish Potato VC map is outlined in *Figure 5*.

Figure 5: Irish Potato Value Chain Map



Source: Results of the Intensified crops VC study August 2018

3.2.3 Facilitation of Farmers' access to inputs

The study established that there was an enormous support provided by the government in the recent years to subsidize input for farmers as well as help farmers to find markets for their produce. This is especially true with the support provided by RAB, MINICOM and other partners

3.2.4 Role played MINICOM in the different value chains

The government of Rwanda, through the Ministry of Trade and Industry and other partners play a critical role in developing the different stages of the value chains. Interviews conducted with MINICOM official and review of document indicated that MNICOM has supported farmers with the following initiatives among others: The following are some of the notable initiatives by MINICOM to support farmers in the different value chains. It

3.2.4.1 Support with Market for Maize

In the maize value chain, MINCOM has developed significant initiatives to facilitate farmers to acquire market for their maize grains. For instance, the Government of Rwanda through MINICOM, initiated the establishment of East African Exchange (EAX) in Rwanda which has provided drying and storage facilities to farmers on subsidized prices. In additional, MIINICOM has initiated the establishment RGCC in partnership with Private sector and the Government of Rwanda initiated African improved Foods (AIF) and other private buyers who offer relatively high prices for maize grans that match the agreed quality standards. However, it's important to note that, due gaps in the provision of extension services, some low farming skills among some famers and insufficient post-harvest handling facilities, some maize produce fail to meet the established quality standards and end up being sold at lower prices.

3.2.4.2 Mitigating Price Speculation

MINICOM has played a critical in role mitigating price speculation through setting Minimum selling prices and initiating contract farming for different value chains. This initiative has been a success, especially for farmers who are members of well managed cooperatives. Despite the great initiative by MINICOM, there still remains critical challenges at the level of cooperatives especially with regard to advocating for farmers' collective interests and protecting farmers against traders, who sometimes may take advantage of the farmers' low levels of knowledge of market dynamics. In collaboration with Rwanda Cooperative Agency (RCA), trainings in different areas were provided to farmers to equip them with bargaining power, and the same program is still ongoing.

3.2.4.3 Setting Minimum Price for Value Chains

Pricing of Irish Potato; Since 2015 in collaboration with other stakeholders determine minimum prices for the various value chains. These stakeholders include: MINICOM, MINAGRI/RAB, FEDERATION of cooperatives, cooperatives representatives, Farmers representatives, the Director of agriculture at District level and agronomist officers at sector level. The Ministry organize every season a session to calculate the cost of production and set the minimum price for farmers. Minimum prices are prices at which farmers should sell their respective value chains but also the prices at which traders should sell to consumers. For example, the following data were collected by the team and analyzed:

Rice Value Chain

- Farming cost of production from different farmer's grower's cooperatives;

- Cost of processing for rice millers,
- CIF import value and other import costs of imported rice;(for rice commodity),
- Current market prices for each commodity.

After this exercise, MINICOM convenes a wider meeting with stakeholders involved in each commodity, (depending on the season). During such meetings, discussions are made on the cost of production and consensus made on the realistic minimum price.

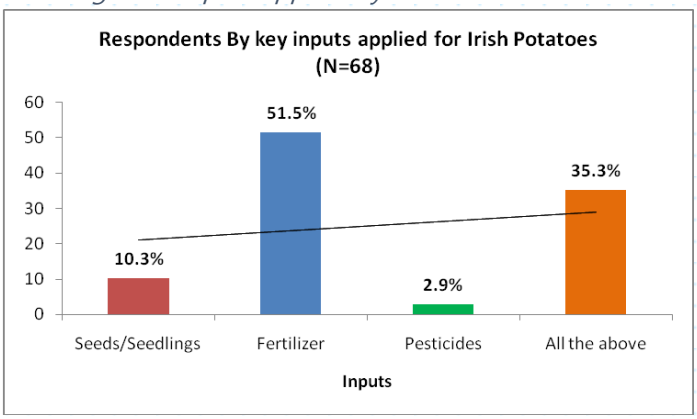
3.2.4.4 Price Monitoring

MINICOM is also responsible for conducting price monitoring to ensure fairness among all actors. On regular basis, price monitoring is done in mainly Irish potato markets in Kigali and traders who don't respect the fixed price are reported to the Ministry and punished. However, findings indicate that whereas price monitoring was effective at collection centers (farm gate), tend to risk potential punishments and take advantage of acute scarcity and sell Irish Potatoes at Prices that are almost double the minimum price set by MINICOM- a practice that actually may have been cause to the higher percentage of farmers expressing that they were Price takers than Price negotiators even though they (farmers) have representation in the price setting forums.

3.2.5 Inputs applied by Irish Potato farmers

The study established that the main inputs used by the Irish Potato farmers on farm during production included organic fertilizers leading at 51.5% followed by those who used other fertilizers, seeds and pesticides combining at 35.3%. The farmers who purchased seedlings stood at 10.3% and lastly pesticides at 2.9%. It was also established from the FGDs with farmers that organic fertilizers were easily available at the farm gates as compared to other inputs which farmers had to purchase. *See Figure 6 overleaf.*

Figure 6: Inputs applied by Irish Potato farmers



Source: Results of the IC VC study Aug 2018

3.2.5.1 Sources of inputs applied by Irish Potato farmers

Seeds and Seedlings: The study established that there were three (3) main types of Irish Potatoes thus Kinigi (*red, highest quality, good for chips*), other red types and white types

(Peco). The farmers obtained Irish Potato seed from four main sources namely: from own harvest, other farmers, the local markets and the formal seed sector. Findings from the key informants (*from the RAB and cooperatives*) established that the RAB provides vitroplants to greenhouse seeds multiplication units, then transferred the cultivated seeds to farms for multiplication before they reached farmers. Some of the farmers obtained seeds for re-planting from their produce.

RAB imported improved seeds then undertook multiplication at farm level in farmers' Green Houses through contract farming. The green houses were generally owned by large scale farmers who sold the seeds to agro dealers for onward selling to farmers. The seeds were finally sold to farmers in possession of two (2) to four (4) Hectares of open field for planting. The study established that a new private company SPF Ikigega Ltd (*Seeds Potato Funds*) is working on multiplying seeds. From key informant interviews, RAB indicated that it will stop the importation of seeds since there was very little value added. In fact, the imported seeds turned to be very expensive and rarely adapted to local conditions. Interviews with farmers established that seeds produced were not able to meet the demand by farmers for instance farmers from Nyabihu travelled to Burera for seeds (*30 Kilometers away*).

***Organic manure*;** the farmers generally used organic manure which was locally sourced from their neighbors or their own farms and always affordable. Trainings on Good Agricultural Practices (*GAP*) by various partners also encouraged use of organic fertilizers.

***Other fertilizers*;** The findings from the KIIs and FGDs showed that farmers accessed imported fertilizers at subsidy (*Fertilizer subsidy varies with variety eg DAP*). The Fertilizers were imported by government appointed agents who then handed over to distributers at district level, then to sector traders, then finally to farmers.
The study established that farmers enjoyed 15% subsidies on NPK fertilizer from the Government, under the "*Smart nkunganire system*".

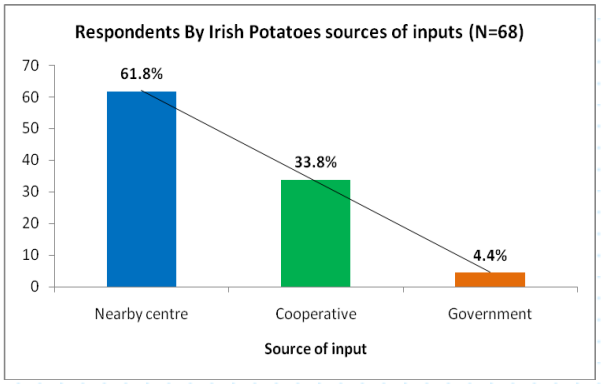
***Pesticides*:** The major Irish Potato pests and diseases in Rwanda are late blight, bacterial wilt, Potato virus, tuber moth and aphids. The main pesticides used by the farmers were Dithane M45 and Ridomil. Farmers purchased pesticides from local agro dealers within reasonably short distances. The study established that the application of pesticides varied depending on knowledge and purchasing power of the farmers, which immensely affected production.

Other inputs: This included Farm machinery (*land preparation, irrigation equipment*). It was noted that most farmers could not access tractors resulting in delays and poor preparation of farmland. The study also established that most farmers lacked capital to access equipment and resorted to rudimentary approaches to farming. The Cooperatives lacked the financial capacity to support farmers' access to farm equipment in a timely and regular manner (*land*

preparation and post harvest handling equipment). The identified gaps resulted in poor quality produce associated with low buying prices. The poor production led to farmer-buyer/ processor conflicts when quality standards did not meet those stipulated in contracts.

The quantitative survey results indicate that the farmers who obtained their inputs from nearby agro dealers were 61.8%, Cooperatives at 33.8% and Government 4.4%. The nearby Agro dealers (*centers*) implied direct purchase by the farmers. It was expressed by most cooperative managers that if cooperative members can be capacity built to engage in selling inputs to their members, the profit would remain in their hands and help them to do their farming business. See *Figure 7*.

Figure 7: Sources of Inputs for farmers



Source: Results of the IC VC study Aug 2018

The alternative strategy of engaging farmers' cooperatives to sell inputs, especially fertilizers, to their members can be explored and implemented if found beneficial to the farmers. Other stakeholders also seemed to have similar opinion. KIIs with MINICOM and RCA underscored that in as much as the purpose for establishing cooperatives was farmer - driven with very noble intentions, several players have come on board weakening the benefits the farmers derived through the cooperatives. According to the RCA official, the restructuring of RCA has been approved by Law, and this will potentially enhance the capacity of RCA to have sufficient personnel to enhance the capacity and operation of cooperatives.

3.2.5.2 Support to Irish Potato farmers by various partners

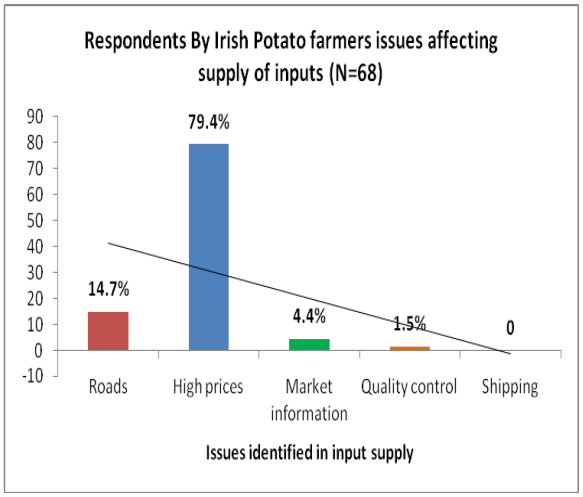
Inputs support; Agro Processing Trust Corporation Limited (*APTC*) is currently in charge of distribution of fertilizers imported by appointed private dealers. RAB has a range of people responsible for providing agricultural services including the Farmer Promoters (*CIP Coordinators- extension agents/focal persons*) at different administrative levels. Among other responsibilities, they advise farmers on quality of inputs and postharvest handling. RAB facilitates trainings to farmers in partnership with NGOs like the One Acre Fund and CNFA amongst others, where the teams develop extension materials together for use on farm.

3.2.5.3 Issues affecting supply of inputs to Irish Potato farmers

The farmer response survey on 68 farmers showed that the main issues that affected supply of inputs included high prices showing 79.4% respondents followed by roads at 14.7%. Market information and quality control scored 4.4% and 1.5% respondents respectively. This confirms that the cost of inputs to farmers was a major impediment to

successful Irish Potato farming. From interaction with key informants and literature, the CIP was focusing on developing inclusive business models throughout the Irish Potato VC. See *Figure 8*.

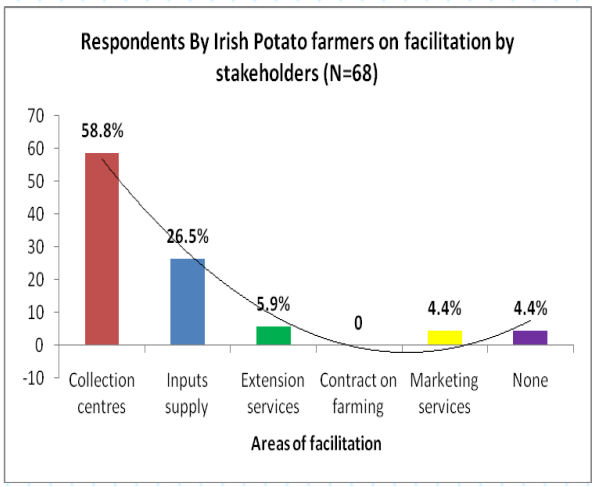
Figure 8: Issues affecting supply of inputs



Source: Results of the IC VC study Aug 2018

3.2.6 Cooperation and collaboration for Irish Potato farmers

The study established that there were various players who facilitated the commercialization of Irish Potato farmers to improve productivity and participation in determination of prices for their produce. The study established the key areas of facilitation by various players in collaboration for commercialization of the farmers. This was centered around the collection centers at 58.8%, inputs supplies second at 26.5% and extension services third at 5.9% of the 68 respondents. Marketing services scored only 4.4%. See *Figure 9*.



Source: Results of the IC VC study Aug 2018

Figure 9: Facilitation of farmers by stakeholders

The foregoing analyses of the findings indicate that there was less support to farmers to enhance production as compared to support at collection centres. The Irish Potato farmers expressed concerns that they did not have control of what happened to their produce beyond harvesting.

Business Development Services: The key informants' interview findings from the cooperatives department indicated that there were several support mechanisms already in place to improve the Irish Potato farming. For instance the PASP is now constructing warehouses/stores/green houses for the ease of distributing seeds within localities/ Sectors and cells. Discussants felt that the chain should be shortened for seeds so that APTC works

directly with farmers. Beyond bringing their produce to collection centers, the cooperatives have very negligible control in terms of pricing for their produce.

Hollanda Fair Foods, trading as "Winnaz Potato crisps" is also a strategic collaborator in value addition to Irish Potatoes from the farmers. "Hollanda works directly with Rwanda's potato farmers and cooperatives in order to create sustainable market for the Irish Potato farming communities, while increasing economic opportunity and ensuring use of environmentally-friendly farming techniques. It is worth noting that the upgrade of their plant in Msanze in 2018 is a result of partnership between "Winnaz" and the United States Agency for International Development (*USAID*), through its Private Sector Driven Agricultural Growth Project (*PSDAG*). In the FGD sessions with farmers, it was expressed that "this partnership will ultimately help farmers achieve great results." However, it was also noted that often times, this Processing plant has had to import Irish Potatoes from Kenya, largely due to the fact that there are concerns in the quality of locally produced Irish Potatoes.

The study established that a new private company SPF Ikigega Ltd (*Seeds Potato Funds*) is working on multiplying enough seeds to help farmers access seeds in time and of good quality. The study also established that VIP Company Limited is the main input supplier working in Kinigi sector, Musanze District in Northern Province. The input suppliers and companies are certified at the District level by the RAB to provide the service to the farmers.

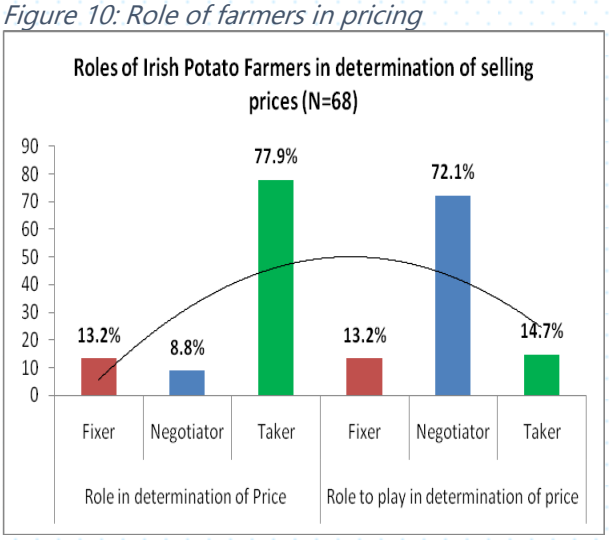
Gaps in input supply; the study established that there was general lack of capacity by the farmers to buy/access inputs which they felt were high due to high cost of transportation to farmers and high cost of planting materials, some of which, from MINICOM sources, are imported from Uganda. There is also low knowledge for applying the inputs by the farmers. The FGD discussants expressed the need of forging partnerships between RAB, local NGOs and input suppliers to support farmers to increase productivity. Essentially, this inadequate coordination was cross-cutting as it was in the marketing process of Irish Potatoes as well. There needs to be mechanisms to protect farmers against what they called exploitation. The farmers also needed to be empowered to participate in VC activities beyond production.

Financial Services support; Linking the farmers to financial institutions for access to credit was negatively perceived by farmers during the FGD sessions. The farmers revealed that they had past bad experiences with financial institutions. This was noted in the event of poor harvests and pricing and farmers failing to repay the loans. This trend created fear among farmers therefore shying away from securing credit as discussed during FGD sessions. The key strategies suggested for improving quality of services to the farmers included improving the partnership with RAB in the NKUNGANIRE Program which helped farmer's access inputs at subsidized rates, marketing of the products and partnership with farmers' cooperatives for supplying inputs. Better still, there should be practical and jointly owned strategies to improve coordination and timely delivery of fertilizers.

3.2.7 The role of Irish Potato farmers/cooperatives in the entire VC

The study sought to establish the role the Irish Potato farmers played by probing their level of involvement in decision making on issues that affect them, frequency and the implication of their actions in the level of their decision making. The analysis was undertaken in terms of the current situation and the same parameters were flipped over to establish how the farmers wished to manage their affairs with regard to selling prices.

Figure 10: Role of farmers in pricing



Source: Results of the IC VC study Aug 2018

The current situation depicts that farmers were mainly the "Price Takers". Although the farmers were represented in price determination at National Level, the Focus group discussants felt that the farmers only accepted whatever price they are given for their produce from the National level. From the 68 respondents, 77.9% confirmed they were typically price takers, followed by those who felt they were price fixers at 13.2% and those who said they were negotiators constituted a meager 8.8%.

On the flipside the desire to become a negotiator in price determination was the farmers' highest priority at 72.1% with fixer remaining the same at 13.2% and lastly takers standing at 14.7%. See *Figure 10 above*.

This trend confirms the gap in recognition of farmers' voices in terms of decision making in the Irish Potato VC. Key informants interviewed (*MINICOM and RCA*) expressed that cooperative movement is meant to be farmer driven to deliver noble intentions. Findings from the FGD indicates that several players have come on board with different intentions and hence diluted the benefits that the farmers are supposed to derive from the cooperatives.
Whereas MINICOM expressed that they do price monitoring, farmers expressed that price monitoring is mainly implemented at the level of cooperative where farmers sell at the agreed Minimum Price but not at the end market where traders sell at prices they sometimes set for themselves. For example, one farmer in Musanze wondered why he is obliged to sell a Kg of Irish Potatoes at 190 Rwf but the same variety sells at more than 450 Rwf per Kg!

Main Irish Potato markets; this study established that the main Irish Potato markets in the entire VC cut across various locations, right from seedlings, production to marketing at Kigali, some markets being specifically recognized for selling seedlings. The Musanze (*Musanze and Kinigi markets*), Nyabihu (*Mukamira, Kabatwa and Jenda markets*) and Burera (*Nyagahinga – mainly seeds, Rugarama and Butaro*) are the key markets at production while

in Kigali (*Kimironko, Nyamirambo, Kimisagara and Mulindi*) are the main outlets for consumers. From the FGD sessions, it was revealed that APTC has assumed the role of centralized marketing. However, although centralized marketing potentially reduced middlemen in the value chain, farmers noted that centralized marketing and harvesting instructions have sometimes been associated to loses on the part of the farmer. For instance, according to the farmers, there are times when they have been advised not to harvest their Irish Potatoes due to rotational harvesting when a specific cooperative or cooperatives in a given region is expected to bring to market a specified quota of produce. According to them, this delayed harvesting. The cost of seedlings in the markets was dependent on the variety. The Kinigi variety was the most expensive going between 200 to 600 Rwf depending on demand and supply. Other varieties like White Potato (*Peko*) was the cheapest selling at between 100 – 150 Rwf. See *Table 5* for markets.

Table 5: Key Irish Potato Markets

SNo	District	Identified Markets			
1.	Burera	Nyagahinga (mainly seeds)	Rugarama	Butaro	
2.	Musanze	Musanze	Kinigi	Byangabo	
3.	Nyabihu	Kabatwa	Jenda	Mukamira	
4.	Kigali	Kimironko	Nyamirambo	Kimisagara	Mulindi

Source: Results of the IC VC study Aug 2018

Pricing of Irish Potato; The study established that farm gate prices proved to be relatively low compared to prices at which the traders sold potatoes at retails markets. Whereas the prices well regulated at Farm gates, the prices improved in the VC as we moved up the markets up to Kigali and the designated Depots to almost twice the Minimum prices set by MINICOM. For example, as opposed to what is indicated in Table 7 (Retail price for Kinigi Irish Potato Variety being 255-260 Frw per kilo) It was revealed that traders sold a kilo for an amount between 450 -500 Frw as of September 9th 2018. Although MINICOM has tried to regulate prices even at retail markets, the retail market is too wide and complex that traders sometimes violet MINICOM prices.

Table 6: Irish Potato prices set by MINICOM as at 4th August 2018

Variety	Farm price Frw/kg	Collection center price	Kigali collection center/Depot price	Retail price
Kinigi	186-191	204-209	235-240	255-260
Other varieties (Mabondo, Kuruseke, T-58, Kuruza, Kirundo, Rwashaki, Makoroni, Sangema, Rwangume & Victoria)	148-153	166-171	195-200	215-220
Peco	141-142	159-160	188-189	208-209

Source: MINICOM and Results of the IC VC study Aug 2018

The study established that the MINICOM sets the prices of Irish Potatoes Nationally. Although farmers noted that there were Price Monitoring strategies by APTC to ensure farmers sold their produce at Farm Price, the same level of price monitoring was not

efficiently implemented due to the complexity of the retail market. For example, whereas retail price was set at 255-260 per Kg, in Kimironko market, Irish Potatoes were sold at 450-500 per Kg. The same trend was observed in Kigali retail market in Mid-September. See *Table 7.*

On the other hand, this study established that some farmers produced less than 12 tons per Ha as a result of using cheaper, substandard seeds and other unexpected hazards like rain and extreme drought. The distance travelled by some farmers or traders to avail seeds also made it very inaccessible. The study showed that farmers lacked capacity to determine the prices at which they sold their produce. This lowered pride in ownership of farming as a sustainable source of livelihood. Increased distrust was also seen amongst farmers, cooperatives' management and government agencies. The weakened cooperatives affected implementation of PSTA4. There was potential farmer boycotts in production of ICs, especially Irish Potatoes. Some farmers expressed reluctance to continue engaging in farming.

3.3 Value Chain Analysis of Maize

This section outlines the analysis of Maize based on the three objectives of the study with the first part presenting a typical VC map of the Maize VC. The second part is organized as findings in line with the study objective viz: Facilitation of Farmers to access inputs for Maize production; Cooperation and collaboration amongst Maize farmers and other relevant stakeholders; the role of Maize farmers/cooperatives in the entire VC.

3.3.1 Maize VC in Rwanda

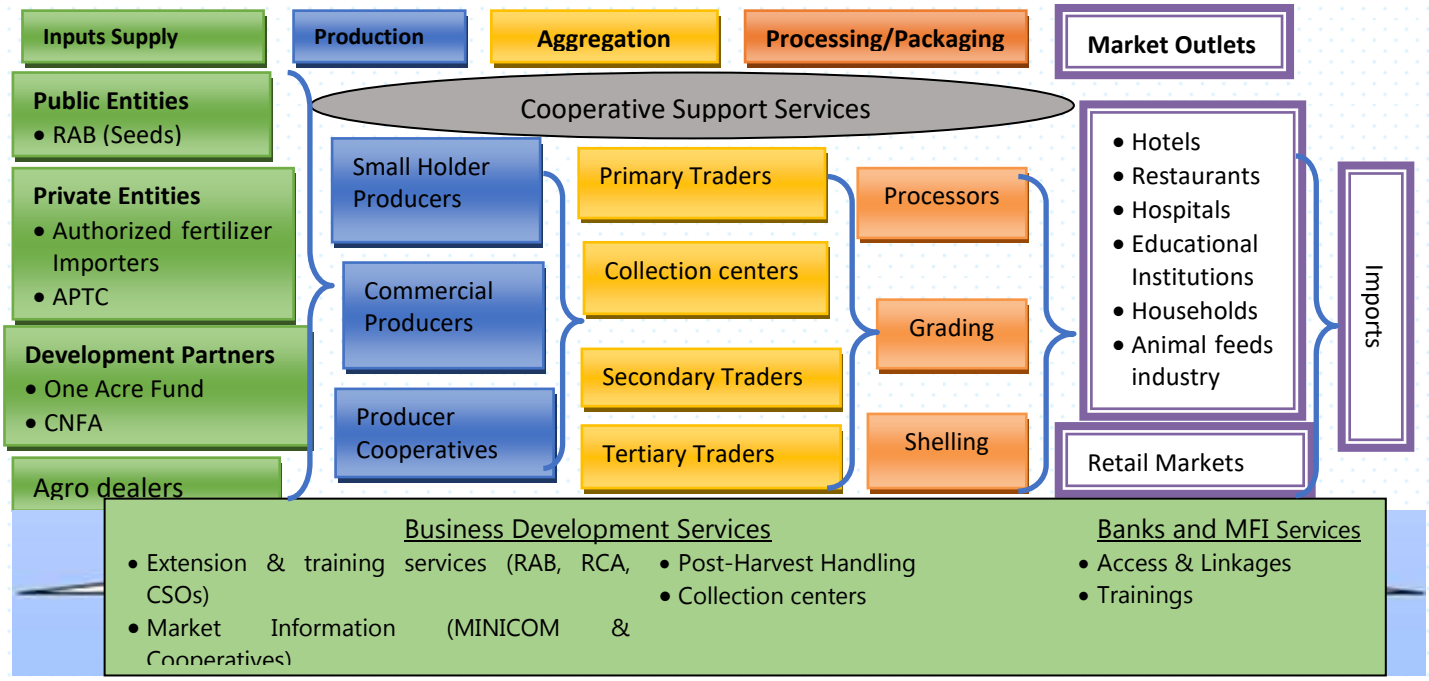
Maize cultivation in Rwanda is undertaken in all ecologies that include semi-arid mid-altitudes, moist mid-altitudes and the highlands and constitutes one of the most important cereals in Rwanda and is grown in almost all geographical regions of Rwanda on both small and large scale[1]. According to MINAGRI (NISR 2012), Maize is grown on an estimated area of 223,414 Hectares with an annual growth of 11.6% MINAGRI (*2011)* and FAO (*2010*) further notes that maize constitutes the highest average grain yield (*4.5 t/ha*) as compared with other major cereals grown in Rwanda such as Wheat (*2.1 t/ha*) and Rice (*3t/ha*). Maize remains one of the most important cereals in the CIP. The importance of Maize is associated with its nutritional value and the potential to enhance Rwanda's food security and economic growth standards especially when it's produced for commercial purposes. This study of Maize focused on the Nyagatare, Gatsibo (*East*) and Ruhango (*South*) Districts.

[1] NISR (2012)

3.3.2 Maize VC Map in Rwanda

The study established a map indicating the movement and relationship within the Maize VC ranging from inputs supply, production, transportation, processing and finally to the markets. A typical Maize VC map is outlined in the *Figure 11*.

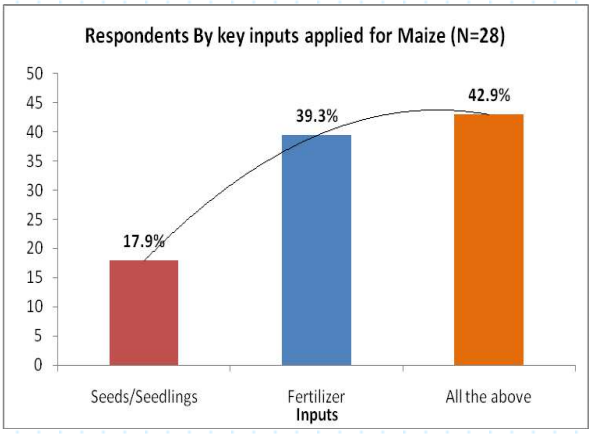
Figure 11: Maize Value Chain Map



pesticides, 31% compost and 16% mineral fertilizers. On the whole, the sector has received considerable policy support in terms of input subsidization under the Crop Intensification Program (CIP) in Rwanda.

3.3.3.1 Inputs applied by Maize farmers

The VC study established that the key inputs applied by the Maize farmers for production mainly combined seeds and fertilizers showing 42.9% of the 28 Maize farmers interviewed. The Maize farmers who applied Fertilizers stood at 39.3% of the 28 Maize farmers reached. The maize farmers who applied seeds as inputs stood at 17.9% of the 28 Maize farmers reached. See *Figure 12*.

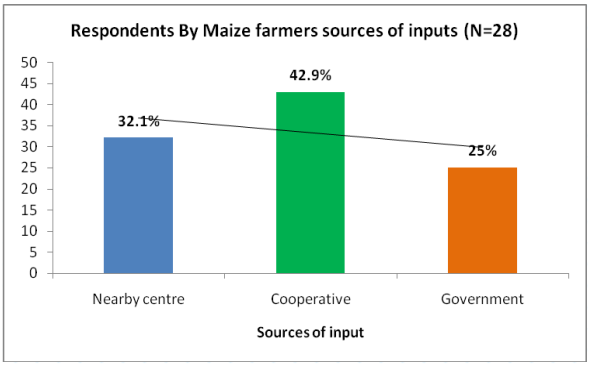


Source: Results of the ICs VC study August 2018

Figure 12: Inputs applied by Maize farmers

3.3.3.2 Sources of inputs applied by Maize farmers

Figure 13: Sources of inputs for Maize farmers



Source: Results of the ICs VC study Aug 2018

The quantitative survey results indicate that the farmers who obtained their inputs from Cooperatives were the majority at 42.9%, followed by nearby centers at 32.1% and lastly Government sources at 25%. Input supply in Rwanda is managed by the Ministry of Agriculture under the Crop Intensification Program (CIP). See *Figure 13*.

Seeds: Through secondary data, the study established that Maize seed varieties included Three Way Cross Hybrids (TWCH) and Double Cross Hybrids (DCH), developed through Rwandan inbred lines using Open Pollinated Varieties (OPVs) and introduction of inbred lines from CIMMYT.[2]

Secondary data from the United Nations Industrial Development Organization (*UNIDO*)[3] further indicates that under the CIP, the use of improved seeds is encouraged in order to increase agricultural production. FGDs confirmed that at the start of every planting season, a variety of high yielding Maize seeds are distributed to farmers through Agro Dealers. Estimation of the quantities of required seeds follows a bottom up approach. Normally, farmer Cooperative members, with the support of sector and Agricultural extension officers estimate the quantities of seeds they want for the next season based on the size of their farmlands. This information is centrally collected and forwarded to the RAB for computation of importation quotas for the required Maize seeds and distributes to the farmers through Agro Dealers.

Findings from the FGDs with farmers from Abiyunze Kinazi Cooperative in Ruhango District/Kinazi sector established that the farmers received seeds from the Cooperative at price set by the government of Rwanda through RAB (NKUNGANIRE program). The farmers expressed that the seeds were available in stock and of the right quality but depended on their purchasing power and size of land. This sometimes resulted in farmers using inadequate quantities thus affecting production. Some of the farmers obtained seeds for re-planting from their produce. Interviews with RAB indicated that several improvements have been witnessed among Maize farmers in the areas of use of inputs, adoption of Good Agricultural Practices (GAP) and ultimately improved yields overall since the introduction of the Crop Intensification Programme (CIP). During FGDs with the Maize farmers in Nyagatare, the farmers expressed concerns that improved seeds from RAB were still too expensive and beyond their reach. Whereas they mentioned that they bought a Kg of improved Seeds from

[2] Policy brief 38202 | February 2017, International Growth Center (IGC) Rwanda
[3] www.unido.org

RAB at 550 Rwf per Kg, the retail market for Maize in September was 170 Kg for farmers in Cooperatives in Gatsibo and 80-90 Frw per Kg for farmers who were not in cooperatives.

Fertilizers: The study established through the FGDs and further confirmation from secondary data that the Maize farmers generally used organic manure which was locally sourced from their neighbors or their own farms and always affordable. In addition, they used DAP during the planting period and UREA during the weeding season. Trainings on Good Agricultural Practices (GAP) by various partners like One Acre Fund and CNFA also encouraged use of the correct quantities and quality fertilizers.

***Pesticides*:** The study established from the interviews with District and sector agronomists across the districts of study that the main Maize diseases and pests included maize lethal necrosis (*MLN*), striga weed (*Striga asiatica or Striga hermontheca*), maize stalk borers (*Busseola fusca*), maize streak virus, "Kulisuka" (*meaning zero yield*)[4], leaf blight, striga weeds, greater grain weevils (*Sitophilus spp.*) and tropical warehouse moth (*Ephestia cautella*), which are not a threat yet, attributed to low maize production with no need for storage for long periods. "Push-pull" technology as an Integrated Pest Management (IPM) tool and resistant varieties and cultural practices are used largely. Use of pesticides in Maize is not common but mainly associated with external support for some projects or NGOs. Hermathic is used during storage.

3.3.3.3 Support to Maize farmers by various partners

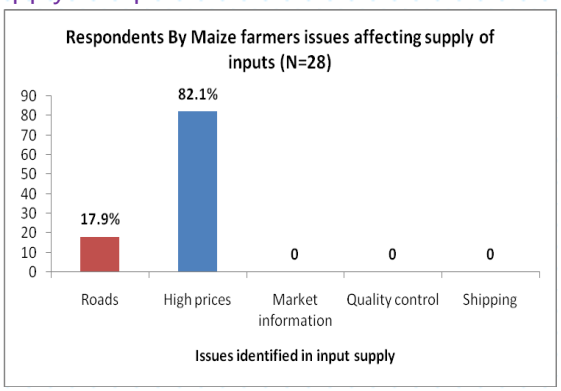
Inputs support;

On the whole, the sector has received considerable policy support in terms of input subsidization under the CIP in Rwanda. The study established from KIIs with RAB that they worked through Farmer Promoters (*CIP Coordinators- extension agents/focal persons*) at the village level and Facilitators at cell level to advise on Maize farming practices in the areas of seeds, disease and pest control. RAB facilitated trainings to farmers in partnership with NGOs like One Acre Fund and CNFA where the teams developed extension materials together for use on farm. Secondary data indicates that Rwanda Grain and Cereal Corporation (*RGCC*) buys 30% of all maize, from 60-70 affiliated cooperatives and sell it to institutional buyers, millers, and processors in Rwanda and Kenya.

[4] The National Integrated Pest Management (IPM) Framework for Rwanda; Final Draft, Report; First edition, June 2009, updated in May 2011

3.3.3.4 Issues affecting supply of inputs to Maize farmers

The farmer response survey on the 28 Maize farmers showed that the main issue that affected supply of inputs was high prices with 82.1% and roads 17.9% respondents. Market information and quality control were not a major concern to the Maize farmers reached. This trend again confirms that the cost of inputs to farmers was a major impediment to successful Maize farming. See *Figure 14.*



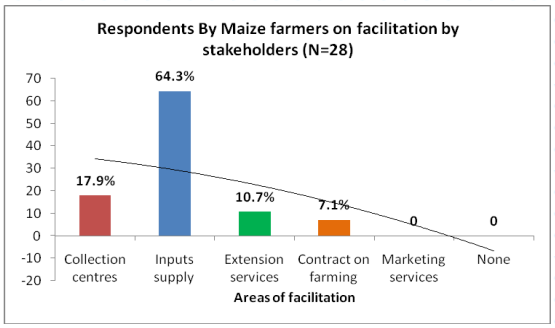
Source: Results of the ICs VC study Aug 2018

Figure 14: Issues on inputs for Maize farmers

Other challenges established in Maize production from secondary data and interviews with sector agronomists and RAB included declining soil health, poor post-harvest handling regimes, inaccessibility to credit, natural hazards coupled with absence of insurance schemes for agricultural products. Maize processing VC actors fall short of supply and produce below capacity or unexpected over production as was observed in Nyagatare during field data collection. According to interview data with Processors, its partly due to such instabilities that processing plants operate at 50% capacity

3.3.4 Cooperation and collaboration for Maize farmers

The study established from the quantitative questionnaires that the key areas of facilitation by various players in collaboration for commercialization of the Maize farmers was centered around supply of inputs at 64.3%, followed by collection centers at 17.9%, extension services third at 10.7% and lastly contract on farming at 7.1% of the 28 Maize farmers reached. See *Figure 15*.



Source: Results of the ICs VC study Aug 2018

Figure 15: Facilitation by stakeholders

Marketing services appeared to be of least concern to the farmers reached. FGDs with Maize Farmers in Nyagatare noted that although contract farming is beneficial to them, some buyers fall short of committing to their contractual obligation. According to them, some buyers who have contracts with them will continuously postpone coming to take the harvest from the farmers from drying shades or stores. For fear of produce declining in quality, some farmers will even volunteer to transport it themselves to the buyers at no charge. In Rwangigo Rice field, the research team witnessed this reality. There are farmers who have spent more than 10 days after harvest, waiting for buys with sacks of Maize stationed. The cost of paying a night guard to keep the produce safe is incurred by the farmers. A MINICOM official noted that MINICOM reinforces the adherence to contractual obligation

but the reality is that right holders (farmers) should be empowered to claim their rights from duty bears, who, in this case are traders.

Business Development Services: Findings from the study through KIIs with RAB, MINICOM RCA, Farmers' Cooperatives officials besides FGDs with farmers, indicated that there were several support mechanisms already in place to improve the Maize IC VC. KII with RAB established that seed multiplication has started in collaboration with local seed companies with the objective of reducing the needs in hybrid maize seed importation by 60% for the financial year 2018-2019 and by 100% for the financial year 2019-2020. The study also established from secondary sources that Cooperatives pooled farmers' Maize produce and supplied to the National Strategic Grain Reserve (NSGR) constituting 40% of the total maize NSGR buys. Interviews with actors revealed four institutional buyers exist in the categories of NGOs, RGCC (*buys 30% of all maize -from 60-70 affiliated cooperatives and sell it to institutional buyers, mills, and processors in Rwanda and Kenya*), NSGR, and World Food Programme (WFP) and Minimex Processing plant, a non-institutional buyer. Secondary data sources indicated that storage proved to be a big challenge with current capacity being only 50,000 MT against an estimated need of 200,000 MT.[5]

Gaps in input supply for Maize; the study during FGDs with the Maize farmers and interaction with the agro dealers established that the high cost of high yielding maize varieties is double sided. On one hand, the high cost is mainly associated to the cost of importation of the same varieties, and on the other, the cost of quality seeds multiplication incurred by farmers who multiply these seeds. According to RAB, the importation of high yielding varieties by MINAGRI is expected to end by 2018. After 2018, seeds are expected to be multiplied within the country. Whereas MINAGRI anticipates that there won't be huge gaps, farmers are worried that there will be scarcity and potentially, an increase in the price of high yielding seeds. Farmers already have concerns about the current prices of Maize varieties supplied by RAB and any slight increase may worsen their worries.

Overall, interviews with key informants from RAB, Sector Agronomists and local agro dealers and FGDs with various farmers and other stakeholders indicated the following concerns with regards to seed quality, distribution, access and pricing; -

- The price of high yielding seeds is still very high relative to the low selling price after all other input costs have been computed.
- The quantity and quality of farmers produce, even when provided with the right seeds may be low because of lack of close morning and lack of regular agricultural support services.
- There have been incidences where seeds have been delivered to farmers – causing delays in planting maize or planting without using fertilizers. In both incidences, the

[5] Maize VCs in East Africa Policy brief 38202 | February 2017, International Growth Center - www.theigc.org

farmers incurs loses because he still has to pay the cost of seeds when they are delivered late.

- That there are incidences when RAB seeds varieties are altered during the time crops are on the field, largely due to cross pollination from other surrounding maize fields. This incidence also results into loses on the part of the farmer who has to sell the altered quality at a low price.

The KII with RAB established that there was need to advocate for Private individuals and companies to invest in agriculture for instance on seeds and farming itself, urging citizens to take up farming as a business and ultimately advocacy around taking up agriculture positively. Finally, there should be more research in agriculture to support innovation.

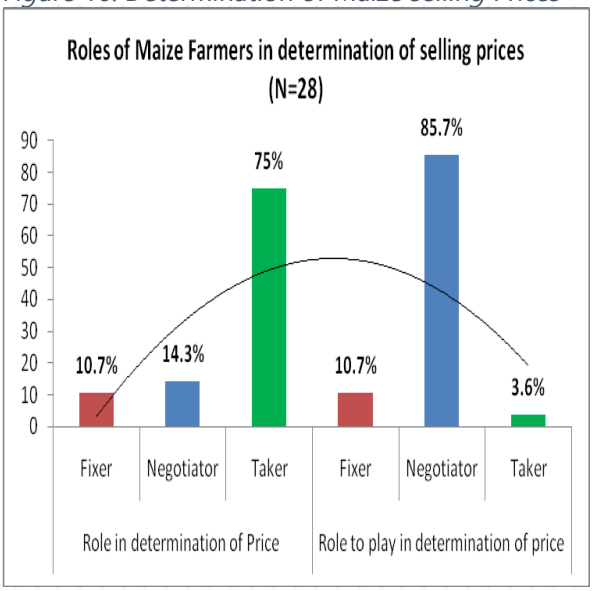
Financial Services support; Linking the Maize farmers to financial institutions for access to credit was negatively perceived by farmers during the FGD sessions. The farmers revealed that they had past bad experiences with financial institutions. This was noted in the event of poor harvests and pricing and farmers failing to repay the loans. This trend created fear among farmers therefore shying away from credit as discussed during FGD sessions.

The strategies suggested for improving quality of services to the maize farmers also included improving the partnership with RAB in the NKUNGANIRE Program, marketing of the products and partnership with farmers' cooperatives for supplying inputs. However, some farmers expressed very cordial collaboration with financial institutions, for instance, COPEDU is one of the financial institutions that was said to render financial loans.

3.3.5 The role of Maize farmers/cooperatives in the entire VC

The study sought to establish the role the Maize farmers played by probing their level of involvement in decision making on issues that affected them, level, frequency and the implication of their actions in the level of their decision making. The analysis was undertaken in terms of the current situation and the same parameters were flipped over to establish how the farmers wished to manage their affairs with regard to Maize selling prices.

Figure 16: Determination of Maize selling Prices



Source: Results of the ICs VC study Aug 2018

The quantitative questionnaires from the study indicated that the current situation depicts that farmers were mainly the "Price Takers". Although the study established through FGDs with cooperative leaders that the farmers were represented in price determination at National Level, the farmers' group discussants felt that the farmers only accepted whatever price they were given for their produce from the National level. From the 28 Maize farmers, 75% confirmed they were typically price takers, followed by negotiator at 14.3% and fixers 10.7%.

On the flipside becoming a negotiator in price determination was Maize farmers' highest priority at 85.7% with a price fixer remaining the same at 10.7% and lastly, price takers as low as 3.6%, see *Figure 16*. This trend confirms the gap on recognition of farmers' voices in terms of decision making in the Maize VC.

KIIs with MINICOM and RCA expressed that the cooperative movement is meant to be farmer driven to deliver noble intentions. Findings from FGDs indicated that, several players have come on board with different intentions and hence diluted the benefits that the farmers were supposed to derive from the cooperatives.

Main Maize markets; Observations, KIIs with Sector Agronomists and FGDS with the Maize reached in this study established that the main Maize markets in the entire VC cut across various locations. See *Table 8*.

Table 7: Main Maize Markets in Rwanda

SNo	District	Markets			
1.	NYAGATARE	Nyagatare	Karangazi	Rwimiyaga	Rukomo
2.	GATSIBO	Gatsibo	Kabarore	Remera	Rwimbogo
3.	RUHANGO	Ruhango	Kinazi		
4.	KIGALI:	Kumulindi			

Source: Results of the ICs VC study Aug 2018

3.4 Value Chain Analysis of Rice

This section outlines the analysis of Rice based on the three (3) main objectives of the study. The first part presents a typical VC map of the Rice VC in Rwanda. The second parts are organized as findings in line with the study objective as follows: Facilitation of Farmers to

access inputs for Rice production; Cooperation and collaboration between Rice farmers and other relevant stakeholders; the role of Rice farmers/cooperatives in the entire VC.

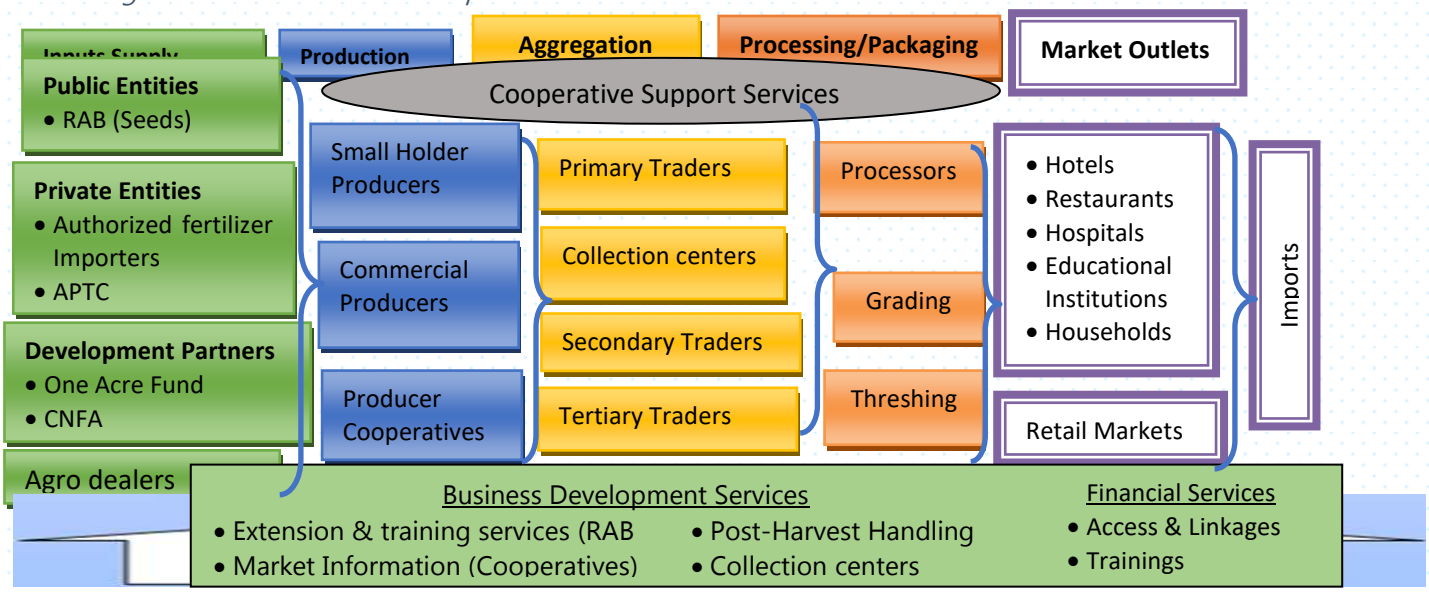
3.4.1 Rice VC in Rwanda

In Rwanda, rice a priority food crop, is cultivated mainly in the marshlands over an area of 12,400 Ha of marshlands in two seasons with an average productivity of 5.8 t /Ha. It is mainly cultivated by resource-poor smallholders who grow the crop through farmer-cooperatives, and around 45% of rice growers are women (MINAGRI, Oct 2011). The production of rice is mainly undertaken in the marshlands of the distributaries of Akanyaru and Nyabarongo rivers on the upstream part of Nile basin of Rwanda. Rwanda annually imports an average of 26,736 t of milled rice. Furthermore, the quality of locally produced rice lags behind that of imported rice. Thus Rwanda's rice sector is confronted with how to sustainably raise both the production and quality of locally grown rice to meet the consumer demands. This VC study focused on the Gatsibo, Nyagatare (*East*), Rusizi (*West*) and Gisagara (*South*) Districts.

3.4.2 Rice VC Map in Rwanda

The study established a map indicating the movement and relationship within the Rice VC ranging from inputs supply, production, transportation, processing and finally to the markets. A typical Rice VC map is outlined in *Figure 17*.

Figure 17: Rice Value Chain Map



Source: Results of the ICs VC study August 2018

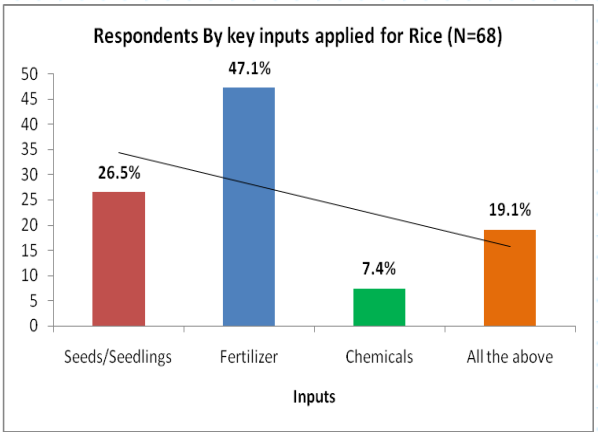
3.4.3 Facilitation of Rice Farmers' access to inputs

The study established the extent that Rice farmers were facilitated to access farming inputs such as fertilizers and agro-chemicals used in rice production in Rwanda. A general trend showed that farm inputs were imported from other countries resulting in high cost of inputs for rice production in Rwanda. The high costs of inputs for production made the price of locally produced rice compared to imported rice.

3.4.3.1 Inputs applied by Rice farmers

The study established that the main inputs used by farmers on farm during production were fertilizers with a significant 47.1% from the 68 respondents.

This was followed by seeds with 26.5%. Farmers that received a combination of fertilizer and seeds inputs were at 19.1% and lastly only an insignificant 7.4% of the Rice farmers applied pesticides during Rice production. It was also established from the FGDs with farmers and KIIs of cooperative officials that organic fertilizers (*manual)* were easily available at the farm gates as compared to other inputs which farmers had to purchase. See *Figure 18*.

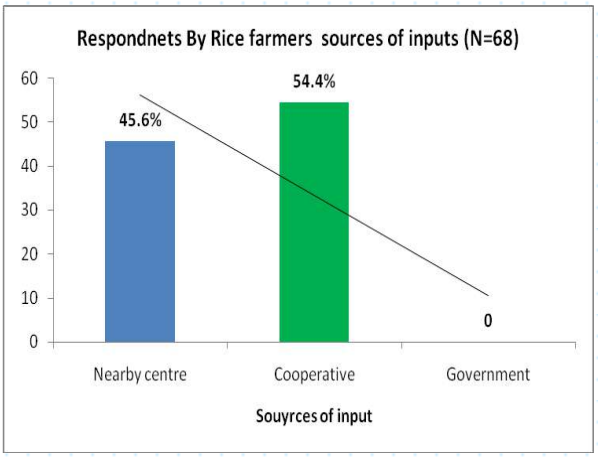


Source: Results of the ICs VC study August 2018

Figure 18: Inputs applied by Rice Farmers

3.4.3.2 Sources of inputs applied by Rice farmers

This section discusses the source of farm inputs (Fertilizers, seeds, pesticides and organic manure) used by the Rice farmers in Rwanda. The quantitative survey results indicate that the Rice farmers did not receive any inputs through the Government sources. Precisely, out of the 68 Rice farmers reached, majority at 54.4% obtained their inputs from Cooperatives and 45.6% got their inputs from nearby centers. See *Figure 19*.



Source: Results of the ICs VC study August 2018

Figure 19: Sources of input for Rice Farmers

This could be attributed to the fact that cooperatives in Rwanda played a great role, in distributing subsidized inputs especially mineral fertilizers and improved Rice seeds in joint production. The nearby centers also meant that the Rice farmers accessed the inputs easily and within reach.

Seeds and Seedlings; the study established that two main types of rice grains that are cultivated in Rwanda. The grain types are namely the short and bold (*japonica*) and the long and medium/slender (*indica)* types. Almost all the imported rice grains in Rwanda are of the indica type. The findings from literature reviewed indicate that Rwanda Bureau of Standards (*RBS*), in alignment with that of EAC standards, regulated the standards of rice seeds and seedlings (MINAGRI 2013). The quantitative study established that cooperatives were a

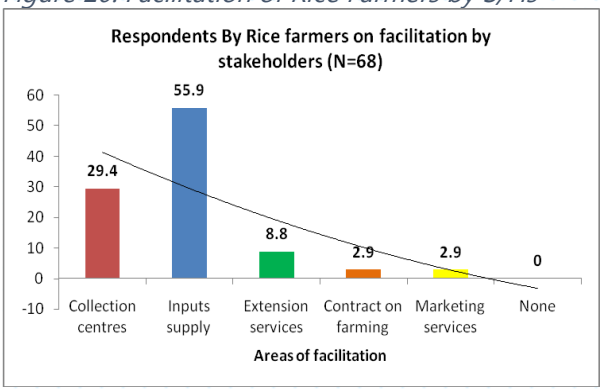
significant source (54.4%) of farm inputs for Rice farmers, followed by supply from locally appointed agro-dealers (45.6%). KIIs with the RAB established that it is the government that controls the Rice seed supply chain by importing *rice cultivars* which are adopted to local conditions at selected RAB research stations.

Organic manure; The KIIs with key cooperatives officials established that farmers generally applied organic manure which was always affordable and locally sourced from their neighbours or own farms. The KIIs also showed that Trainings on Good Agricultural Practices (*GAP*) were offered by various partners (*One Acre fund and CNFA*) that also encouraged use of organic fertilizers.

Pesticides; The study established through KIIs with sector agronomists that major pests in Rice farming are birds and rats, on the other hand the major diseases experienced by the Rice farmers in Rwanda included Rice blast *(Pyricularia oryzae)*, stalk-eyed borer (*Diopsis thoracica*), often controlled using pesticides and use of resistant varieties like Kigori, Yuni and Zongeng or moderately tolerant varieties like "Intsinzi, Gakire, and Intsindagirabigega" combined with rotational planting of varying Rice varieties. Traditional methods were also applied in combination with Fungicides like Kitazine/IBP. Overall the farmers employed IPM techniques in Rice production.

3.4.3.3 Support to Rice farmers by various partners

Figure 20: Facilitation of Rice Farmers by S/Hs



Source: Results of the ICs VC study August 2018

The study established that the key areas of facilitation by various players for the Rice farmers was centered around the inputs supply at 55.9%, collection centers second at 29.4% and extension services third at 8.8% of the 68 respondents. Contract on farming and Marketing services both stood at 2.9%. See *Figure 20*.

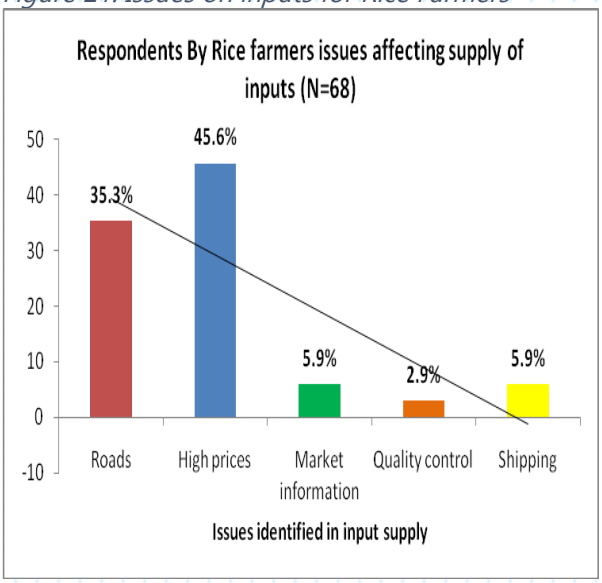
Inputs support; The study established through KIIs with RAB that the government of Rwanda has been proactively supporting the local production of Rice through various VC activities and policies and enabling environment with strategic focus on MINAGRI supporting expansion of land area under Rice and raising productivity of the rice crop. Rwanda Bureau of Standards (*RBS*) plays supports implementation of policies related to rice inputs supply and processing industry in terms of adherence of general standards of production and supervisory role in ensuring the quality (*grades and purities*) of locally processed rice products and imported fertilizers, chemicals, machinery and seeds.

The study further established that MINICOM oversees the implementation of government policies on rice trade encompassing imports, exports and local markets. The study also established through interview with the Rwanda Cooperative Agency (RCA) that the government is constantly encouraging cooperatives in owning and maintaining the irrigation infrastructure in marshlands so as to sustainably raise the productivity. Secondary data indicated that CIP is the link between MINAGRI and the Rice farmers and facilitates accessibility to markets, for both input and outputs (*MINAGRI, 2014*).

3.4.3.4 Issues affecting supply of inputs to Rice farmers

The main issues that affected supply of inputs according to the 68 Rice farmers interviewed included high prices (45.6%), followed by roads (35.3%) and Market information and Shipping/Transportation (each at 5.9% of respondents interviewed). Quality control was of least concern to the Rice farmers standing at 2.9% of the respondents. See *Figure 21*.

Figure 21: Issues on inputs for Rice Farmers



Source: Results of the ICs VC study August 2018

A key informant at RAB indicated that direct costs on inputs such as seeds, chemicals and other fertilizers required to be reduced through increased participation of private sector along the Rice VC, besides the ongoing schemes in subsidies on fertilizers. One other suggestion was innovative approaches towards credit facilitation to farmers and their cooperatives aimed at reducing costs while promoting the use of appropriate inputs for mechanization. This study confirms that the cost of inputs to farmers was a major impediment to successful Rice farming.

3.4.4 Cooperation and collaboration for Rice farmers

The study sought to establish how various commercialization players facilitated the Rice farmers to improve productivity in Rice farming and participating in determination of prices for their produce.

Business Development Services; the study established from interviews with Sector Agronomists and farmers' cooperatives officials that there are several support mechanisms already in place to improve the Rice farming, especially through several government departments, the local farmers' cooperatives and the Rice Millers across the Value Chain. The study established through key informants at MINICOM that they were mandated with setting of prices for short and long grain paddy each season, in consultation with Ministry of

Agriculture, the RAB, Rice farmers' cooperatives and government licensed millers in order to achieve for farmers the prices as set by MINICOM. Interviews with key Rice Millers at Gatsibo and Nyagatare indicated that the local traders continued to import large quantities of rice from other rice growing countries in Asia and East Africa.

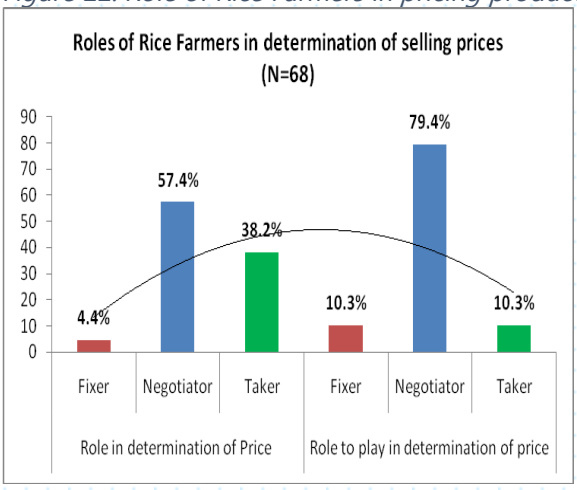
Gaps in input supply; the study established from the RAB key informant that there is general lack of capacity by the farmers to buy/access inputs which they felt costs were high emanating from high cost of transportation of input to farmers and high cost of marketing of planting materials. There is also low knowledge for applying the inputs by the farmers. The discussants during FGDs urged for forging partnerships between RAB, local NGOs and input suppliers to support farmers to increase productivity.

Financial Services support; The study established from interviews with cooperative officials and FGDs with farmers that linking farmers with financial institutions to access credit worked negatively for the farmers especially in the event of poor harvests and pricing and farmers failing to repay the loans. This trend created fear among farmers therefore shying away from credit as discussed during FGD sessions.

3.4.5 The role of Rice farmers/cooperatives in the entire VC

The study sought to establish the role Rice farmers played by probing their level of involvement in decision making on issues that affect them, level, frequency and the implication of their actions in the level of their decision making. The analysis was undertaken in terms of the current situation and the same parameters were flipped over to establish how the farmers wished to manage their affairs with regard to selling prices.

Figure 22: Role of Rice Farmers in pricing produce



Source: Results of the ICs VC study August 2018

Analysis of the quantitative questionnaire indicated that the current situation depicted the farmers mainly as "Negotiators" which indicated a major shift from the trend of Irish Potato and Maize VCs where farmers were majorly "Price Takers" accepting any prices set by the market forces. From the 68 Rice farmers reached, 57.4% confirmed they were typically negotiators, followed by "takers" at 38.2% and fixers a meager 4.4%. On the

flipside becoming a negotiator increased to 10.3%.
79.4% with both "fixers" and "Takers" tying at
This trend confirms the gap on recognition of farmers voices in terms of decision making in the Rice VC See *Figure 22*.

Main Rice markets; this study established from interviews with Cooperative officials and FGDs with Rice farmers that the main Rice markets in the entire VC cut across various locations, right from seedlings, production to marketing at Kigali. See *Table 10*.

Table 8: Main Rice Markets in Rwanda

SNo	District	Markets			
1.	Nyagatare	Nyagatare	Ryabega		
2.	Gatsibo	Kiramuruzi	Kabarore	Rwagitima	
3.	Rusizi	Bugarama	Kamembe		
4.	Gisagara	Gikonko			

Source: Results of the ICs VC study August 2018

3.5 Farmers' perception in regard to the entire VC

This study sought to evaluate farmers' perception with regard to various stages of their involvement in the entire value chain and the implications there-of. To respond to this objective, a farmers' perception survey tool was developed and administered to 164 farmers using a 1-5 likert scale. See *Table 12*.

Table 9: 1 -5 Likert Scale for Farmers' overall Perceptions

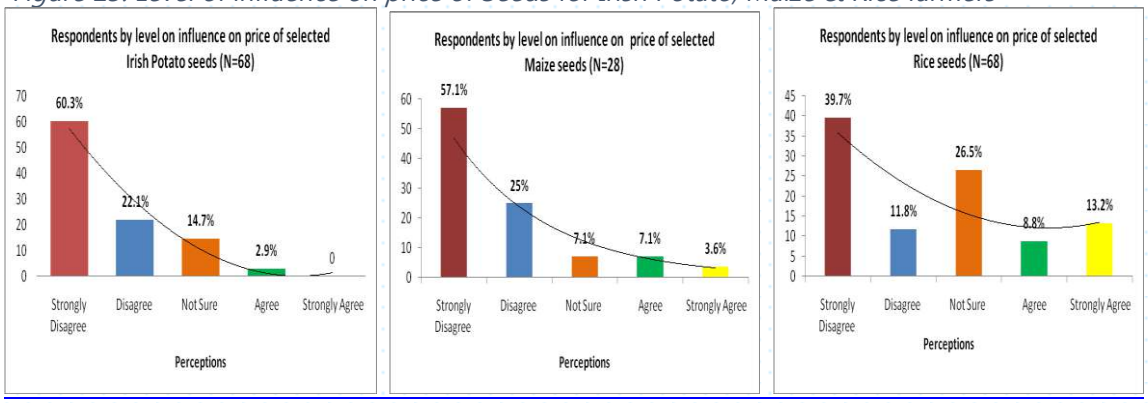
5-Point Scale	Response Category
Totally disagree	1
Disagree	2
Neither Agree Nor Disagree	3
Agree	4
Strongly Agree	5

The *Figures 23 to 30* summarize farmers' perceptions regarding their perceived influence in the determination of prices for input (seed, fertilizers, pesticides, machinery etc) for the three intensified crops (*Irish Potatoes, Maize and Rice*). The summary is provided as follows under eight dimensions;

3.5.1 Perception on power to influence the price of Seeds

This section introduces the farmers' perception of farmers in regard to their perceived influence in determination of prices for selected seeds across the three intensified crops. *Figure 23* provides an overview of the farmers' responses.

Figure 23: Level of influence on price of Seeds for Irish Potato, Maize & Rice farmers



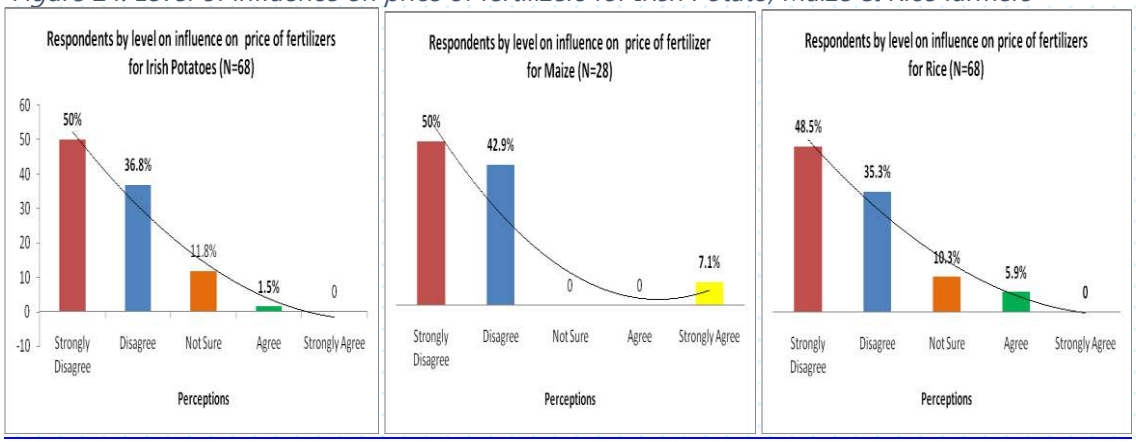
Source: Results of the ICs VC study August 2018

This statistic is further completed by information from Focus Group Discussions (FGDs) and key informant Interview findings from farmers. Although they expressed that they were informed about the prices, they usually they expressed that their views were not well considered. Perhaps, this finding collaborates well when the cooperative members' levels of education are further analyzed. For example, in the Irish Potatoes VC, a significant percentage of respondents (76.2%) had not completed secondary level of education. Therefore, low level of education indicators is associated to less influence to decision making mechanism.

3.5.2 Perception on power to influence the price of fertilizers

This section introduces the farmers' perception of farmers in regard to their perceived influence in determination of prices for fertilizers across the three intensified crops. In terms of price of fertilizers, the results of this study indicates that a significant 86.8% of the 68 Irish Potato farmers reached did not have power to influence prices of fertilizers for Irish Potatoes crop production. As noted in the preceding figures, we observed a relatively similar trend whereby a significant 92.9% of the 28 maize farmers reached noted that they did not have power to influence prices at which they bought fertilizers for Maize crop production. Again, a significant 83.8 % of the 68 Rice farmers reached expressed that they did not have power to influence prices at which they bought fertilizers for Rice production, *Figure 24*.

Figure 24: Level of influence on price of fertilizers for Irish Potato, Maize & Rice farmers



Source: Results of the IC VC study Aug 2018

It should be noted that apart from organic fertilizers which farmers produced (*manure*), the farmers reached did not have influence to determine the price of imported chemical fertilizers. The Crops Intensification Program CIP) under MINAGRI has clear guidelines on the fertilizers price determination functions. Under this program, farm inputs such as improved seeds and fertilizers were imported and distributed to farmers through public-private partnerships, and extension services on the use of inputs and improved cultivation practices. As a result, the crop productivity was reported to have increased especially for maize and rice farmers. FGD processes with farmers established that fertilizers are imported and seeds distributed through vouchers that are called "Nkunganire" in Kinyarwanda. Vouchers are for farmers who have 1.5 hectares of farm, with those having less hectare-age signing contract with an agro dealer within his community. The Rwanda Agricultural Board has planned to exit seed importation to address sustainability.

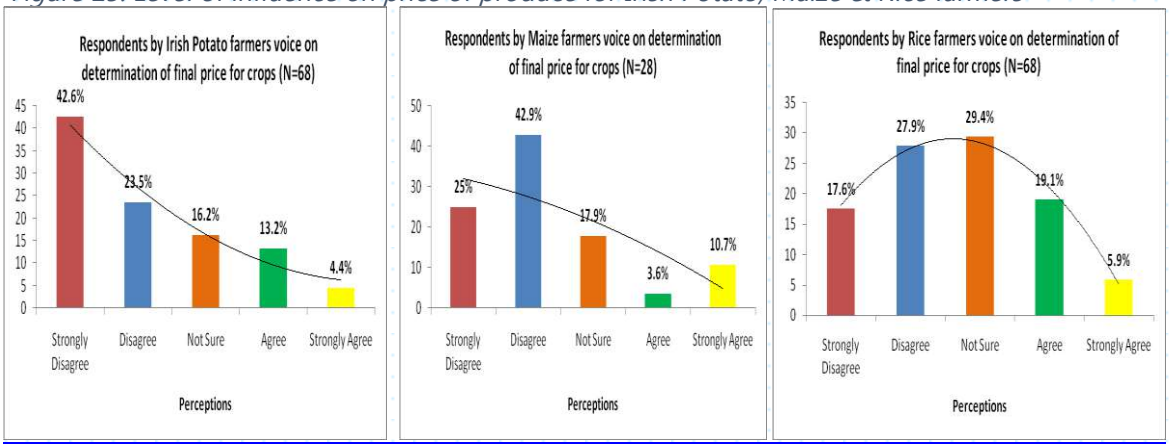
In the FGD's farmers from selected cooperatives also established that fertilizer price determination was a National inter-ministerial committee function comprising of MINICOM, MINAGRI, RCA, Farmers cooperatives representatives, Sector agronomists, District department of business services, executives, security agencies, and the MINISTRI of interior. This implies that there exists inter-sector consultation at the National level with representation of cooperatives. However, the key informants among the cooperative officials interviewed across the three ICs established that they have no equal participation and ownership of the process of price determination of fertilizers.

3.5.3 Perception on power to determine the final price for produce

This section summaries farmer's views with regard to whether or not they felt their voices counted in fixing the final prices at which they sold their produce. Price fixing has been a controversial issue in recent times with most farmers complaining that they do have a fair share of the profit from their produce. As indicated by the foregoing analysis of statistics, 66.1% of the Irish potato farmers noted that they did not have a say in determining the final

price at which they sold their produce. A similar trend was observed among Maize farmers at 67.9% and for Rice farmers at 35.1%, *Figure 25*.

Figure 25: Level of influence on price of produce for Irish Potato, Maize & Rice farmers



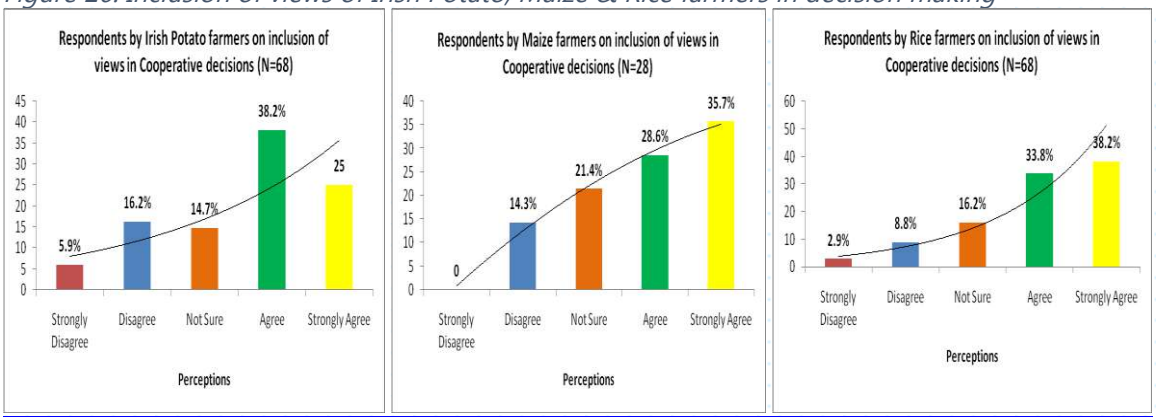
Source: Results of the IC VC study Aug 2018

Perhaps, the slightly different trend in Rice is influenced by the fact that Rice has traditionally been a cash crop oriented cereal and has relative stability and a more business oriented approach to farming. In this study, the information gathered during FGDs and KIIs indicate that the scarcity of Potatoes has resulted in a steady increase in the final price at which consumers buy Potatoes. However, cooperative farmers expressed concerns that they still sold at Minimum prices set by set by the MINICOM. For instance as of September 9th 2018, the price of Kinigi variety Irish Potatoes cost 500Frw but the farmers still sold at 190 Rwf at the level of cooperatives. Farmers have access to information on these hiked prices and during the FGDs, they often expressed concerns as to why they did not have a fair share from the price increases during scarcity.

3.5.4 Perception on value of farmers opinions by cooperative officials

This study sought to incisively understand the decision making processes, especially as farmers navigated the complex process of making critical decisions on issues related to VCs.

Figure 26: Inclusion of views of Irish Potato, Maize & Rice farmers in decision making



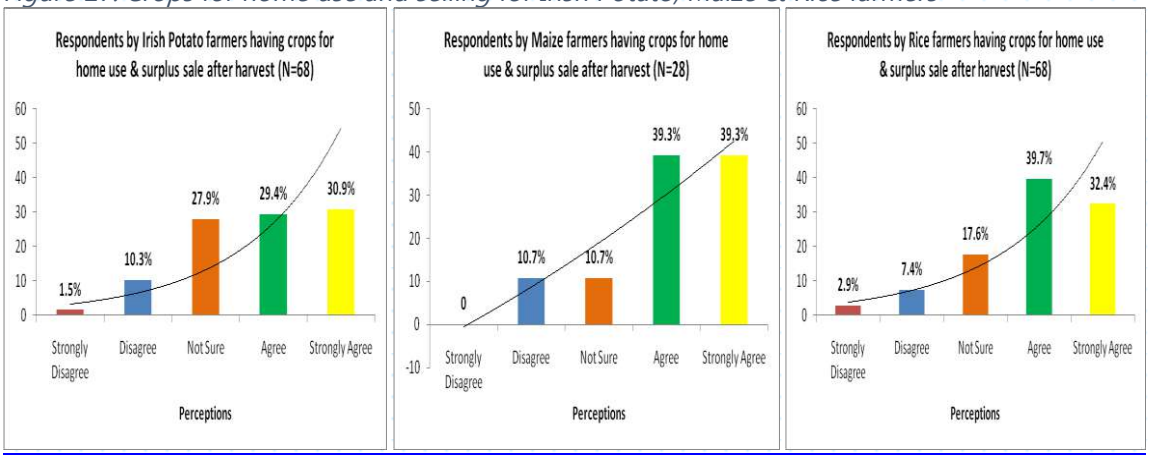
Source: Results of the IC VC study Aug 2018

63.2 % of the 68 Irish Potato farmers affirmed that they felt their views were considered by cooperative officials when taking decisions that affected cooperative members. For Rice farmers, 80 % of the farmers were of the view that their views were included and 63.1% of Maize farmers interviewed also agreed that cooperative officials were considerate of their views when taking decisions on behalf of the members, *Figure 26*. The implication of this trend is that cooperative members have a relative sense of ownership of cooperative decisions and a sense of trust of their officials.

3.5.5 Farmers' views on crops for consumption and surplus for sale

The findings of the study indicated variations across the three (3) VCs regarding the statement about whether or not farmers after harvest had surplus crops for consumption after sales. Compared to the other two VCs, Maize farmers had a high percentage of farmers (78.3 %) saying they had sufficient produce for home consumption after sale. The reality though, is that the surplus mentioned by the Maize farmers was largely due to lack of market for the produce especially at the end of the harvesting season A. On the contrary, a relatively low percentage of 60.3% of the Irish Potato farmers said they had surplus, *Figure 27.* Again, the reality is that Irish Potatoes were in scarcity at the end of the season A, and this could imply that most of the produce was marketed and sold. Rice stood at 72.1%.

Figure 27: Crops for home use and selling for Irish Potato, Maize & Rice farmers



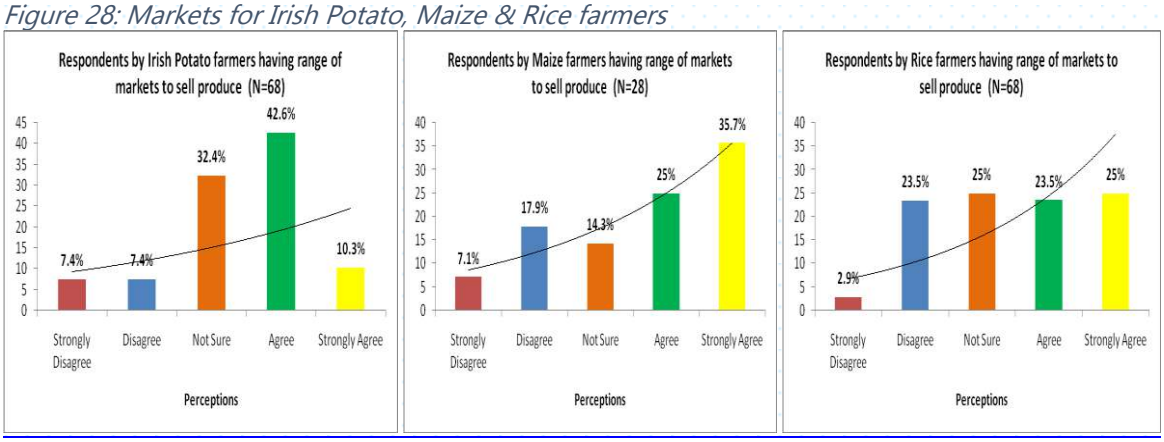
Source: Results of the IC VC study Aug 2018

During the field data collection process, it was observed that Maize farmers had not harvested some of their Maize almost a month past the appropriate harvest time. The information gathered during FGDs with farmers in Gatsibo District indicated that they had postponed harvesting due to lack of Market, and for fear that if they harvested, they would have to store it for a long time before they identified market, an option that would reduce crop quality especially that they did not have sufficient drying shades. Nonetheless, delayed harvesting also affected quality of crop produced.

3.5.6 Markets where farmers can sell produce

This section provides an analysis of farmers' perception in regard to the range of markets available for their final produce for the selected three (3) ICs. The results of this study indicate that a significant 52.9% of 68 Irish Potato farmers stated that they had a range of markets available to sell their final Irish Potato produce. Maize had 60.7% on the affirmative and 48.5% for Rice.

Figure 28: Markets for Irish Potato, Maize & Rice farmers



Source: Results of the IC VC study Aug 2018

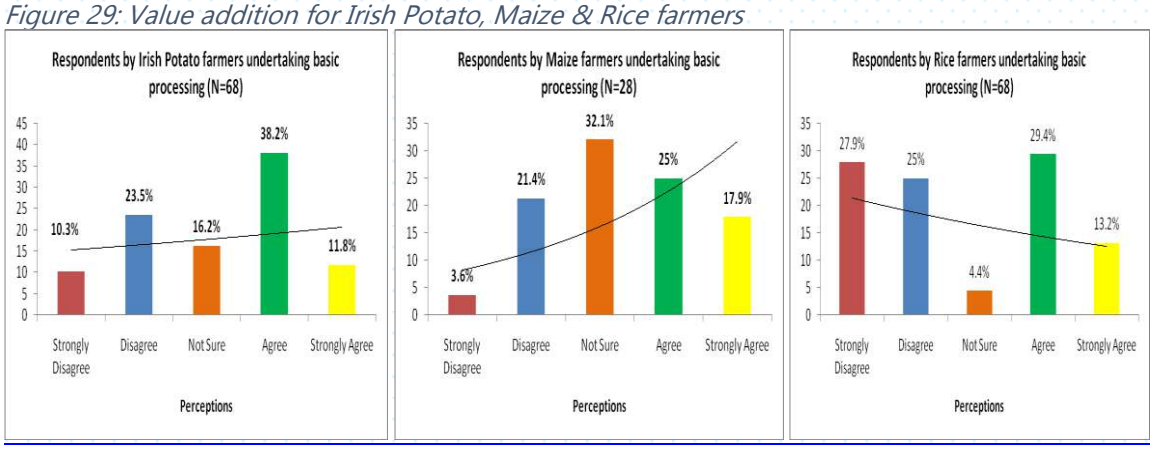
A significant 32.4% of the 68 Irish Potato farmers were not sure if there were other alternative markets for Irish Potato produce. The results confirm the validity of the East African Community Potato Market Analysis (*2016*) study that indicates that farmers did not have access to market information. Similar trends are also noted in the preceding figures, whereby a significant 60.7% of the 28 maize farmers indicated having a range of markets available to sell their final Maize produce. Another significant 48.5 % of the 68 Rice farmers expressed that they had a range of markets available to sell their final Rice produce, but an insignificant 25% were not sure if there were any other alternative markets for their Rice produce, *Figure 28*.

3.5.7 Farmers undertaking basic processing for value add

This section provides an examination of farmers' perception in regard to basic value addition on their final produce to increase price for the selected three (3) ICs. The results of this study indicate that a significant 50% of 68 Irish Potato farmers pointed out that they could undertake appropriate value addition on the Potato produce with a view to enhancing their market prices. An insignificant 16.2% of 68 Irish Potato farmers were not sure of alternative value addition options to undertake. FGD results confirm similar findings. A significant 42.9 % of the 28 Maize farmers indicated that they could enhance market prices of their current Maize produce through engaging in appropriate value addition practices. Contrary to this having appropriate value addition alternatives to enhance prices in Irish potato and Maize intensified crops, a significant 52.9% of the 68 Rice farmers felt that there were no alternative value addition mechanisms available for them to enable them enhance the price of their

produce. On the other hand a significant 42.6% of the 68 Rice farmers indicated that there were alternative options of adding value to the Rice produce, *Figure 29*. The results are qualified by views from the KIIs with the processors who felt that value addition can be enhanced by close monitoring of production and post-harvest handling procedures like proper drying materials and sorting.

Figure 29: Value addition for Irish Potato, Maize & Rice farmers

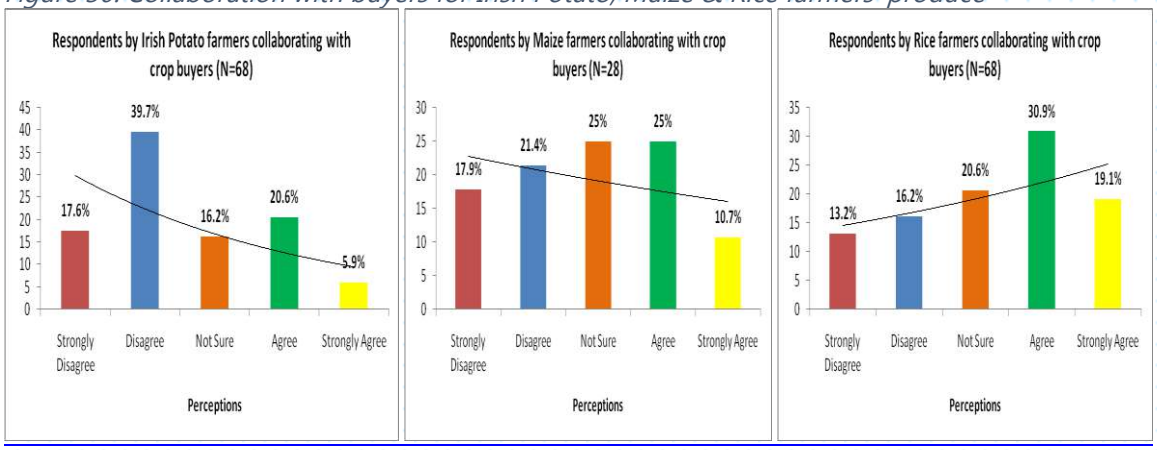


Source: Results of the IC VC study Aug 2018

3.5.8 Collaboration with buyers

This section gives an outline of farmers' perception in regard to collaboration with buyers for the selected three (3) ICs.

Figure 30: Collaboration with buyers for Irish Potato, Maize & Rice farmers' produce



Source: Results of the IC VC study Aug 2018

The results of this study indicate that a significant 57.3% of 68 Irish Potato farmers with similar trend noticed in Maize where a significant 39.3% of the 28 Maize farmers showed that they did not collaborate well with buyers of their produce. A relatively insignificant 35.7% of the 28 maize farmers showed that they collaborated well with buyers of their produce. The results confirm the findings from the KIIs that some farmers obtained good deals for labour, shelling and transportation but with a loss of by-products (*cobs which could be used as*

domestic fuel, animal feed and manure). Contrary to findings from the Irish potato and Maize ICs, a significant 50% of the 68 farmers in the intensified Rice crop showed that they collaborated well with buyers of their produce. Only an insignificant 29.4% of the 68 Rice farmers indicated that they did not collaborate well with buyers of their produce, *Figure 30*.

4.0 INTERNATIONAL BEST PRACTICES

This section presents best practices based on literature and documentation from both local and international sources. Examples were drawn and discussed around three (3) components/ thematic areas of best practices in ***governance*** of farmers' cooperatives; best practices in ***production*** of selected value chains; and finally ***marketing*** aspects.

4.1 Case study of Governance of cooperatives - Kenya

The farmers' cooperatives Operating Principles are founded in the philosophy of cooperation and its central values of equality, equity and mutual self-help recognizing the varied practices in the implementation of cooperatives' philosophy worldwide. A Code of Best Practices and Corporate Governance in Kenya was been developed and st the heart of farmer cooperatives movement is the concept of human development and the brotherhood of man expressed through *people working together to achieve a better life for themselves and their community;*

- In Kenya, Code of Best Practices and Corporate Governance has been developed:
    - Part of the code includes Cooperatives having retail selling outlets to avoid middle men! Can this possibility be tried in Rwanda?
    - Cooperative Managers to have Minimum Skills levels (*Qualifications*).
- This is ready for replication in Uganda, Tanzania, Rwanda and Burundi especially on Co-operative Governance.

In Kenya, the four-tier Co-operative structure is fully developed and operating smoothly structured as; Apex (the Cooperative Alliance of Kenya), successor to the Kenya National Federation of Cooperatives (KNFC), Tertiary (*NACOs*), Secondary (*County/District Unions*) and Primary. Strengthening Management capacity of cooperatives should focus on regulation. In Kenya the SACCO Societies Regulatory Authority (SASRA) oversees transparent and accountable operations of SACCOs, while the ethics Commission for Co-operatives (ECCOS) promotes and enforces the cooperative ethical conduct and anti-corruption. The Co-operative Tribunal hears and settles co-operative disputes. The Co-operative College, now upgraded to the Cooperative University of Kenya (*CUK*) under the Ministry of Higher Education, trains leaders and members in cooperative systems increasing cooperative productivity. Cooperative autonomy is critical for the success of cooperatives.

In conclusion, whereas at the individual member level what is required is integrity, competence and commitment, internally what is crucial to observe in a Co-operative is the structure, continuity, balance in the composition of the Board and accountability. There is also need for the Board members to ensure transparency and compliance with the regulations.

4.2 Case study of Production diversification - Rwanda

In all the districts of Eastern province of Rwanda, Maize has the potential to contribute to strengthening nation food security and decreasing rural poverty through the adoption of use of recommended inputs (*improved seeds, fertilizers and pesticides*) in crop intensification program showed by MINAGRI (2011). In the Case of Gatsibo in Eastern Province, Rwanda, the COPRORIZ, predominantly grew rice but have diversified to a Hotel and are also investing in Poultry production. The support has resulted in increase in production per hectare. One of the major problems limiting the expansion of Maize production in East Africa includes no use of fertilizers, climate change, high post harvest losses and low price at harvesting period.

4.3 Case study of Marketing – East Africa

The Land O'Lakes, Cooperative Development Program (*CDP*), seeks to assist dairy cooperatives in East Africa in responding to increased competition by achieving and sustaining economies of scale through horizontal and vertical integration. The program was implemented between the years 2010 and 2015 in Uganda and Kenya and in 2013, expanded to Ethiopia and Rwanda. The programme highlights the need for vertical integration of the Value Chains within the cooperative. For example, the possibility of integrating processing activities was a major success factor for the Meru cooperative in Kenya, a major issue, since being tied to a single buyer exposes the cooperative to low market power and to price variability.

The program emphasizes the important role of governance structure, as a multi-level organization can have a comparative advantage for instance second-level organization (*union*) that collects milk from a number of primary groups has a greater capacity to enforce rules among members. The side-selling problem and the underlying needs - typically non-processing cooperatives cannot manage to offer prices that are competitive vis-à-vis prices offered by middlemen, clearly providing incentive to side selling; at the same time, farmers continue selling part of the milk to the cooperative as a saving device. This calls for an accurate analysis of the needs underlying sale decisions of small producers.

In terms of dairy income, the project end line survey showed that cooperative members in the Meru milkshed had a statistically significant growth in income of 25.2%. The project also emphasized the important role of governance structure, for comparative advantage, for instance, a second-level cooperative that collects milk from a number of primary groups has a greater capacity to enforce rules among members. One major problem for a non-processing cooperative is that typically, they cannot manage to offer prices that are competitive vis-à-vis prices offered by middlemen. This provides a clear incentive to side selling; at the same time, farmers continue selling part of the milk to the cooperative as a saving device. This calls for an accurate analysis of the needs underlying sale decisions of small producers.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This section presents Conclusions and Recommendations to inform on thematic issues to take up advocacy in public policy dialogue (VC upgrading) based on the field findings.

5.1 Conclusions

This section discusses the conclusions of the study based on the findings. It is presented based on the four (4) set objectives of the study and by the Intensified Crops.

Farmers' access to inputs for crop production: Planting materials and seedlings, chemical fertilizers and pesticides are mainly sourced outside the country and thus quite expensive for farmers. Farmers sometimes did not adequately use the required quantities of fertilizers largely due to the high cost involved in relation to the price at which they sold their produce. In some instances, where producers engaged in provisional contracts and committed to buying fertilizers for farmers, such commitments were negatively affected by the processors themselves not having markets to sell their processed produce for instance maize millers. Therefore, not only does inadequate use of fertilizers affect crop production but also the quality. The main decision makers on prices of input supply are RAB, MINICOM authorized importers, the APTC as a national distributor, and Processors. Although farmers get a subsidy of about 50% from the cost of imported fertilizers, farmers still find it difficult to buy sufficient fertilizers at the current cost. If possible, these stakeholders, together with farmers should regularly review prices for inputs against the farmer's profit margins.

Cooperation and collaboration between farmers and other relevant stakeholders: There is an indication that collaboration and cooperation of stakeholders are concentrated at the collection centers and input supplies which are relatively easy points to control. However, less emphasis in collaboration and cooperation is noted on provision of extension and marketing services which are critical in the VC. From these statistics, we note that there is less collaboration at the marketing stage, which is a critical step for farmers.

The role of farmers/cooperatives in the entire value chain: The farmers / cooperative predominantly played a role of price takers in the entire VC (*input supply and sale of final produce*). Although there are many selling options for the final produce, the farmers are limited to selling at the collection center and price monitoring is very strict and this point. Farmers tended to believe that fixing the Minimum price was done without due regard to their voice, even with representation by the Union of Cooperative Managers.

Perception of farmers: Farmers can easily fetch higher prices for their produce through value addition. They are however constrained by capacity and inadequate access to capital for investment coupled with limited post –harvest handling skills. The farmers also tended to rush produce to the market because they did not have adequate storage facilities leading to exploitation by traders.

5.2 Recommendations

This section presents the recommendations that will inform the improvement of the Irish Potatoes, Maize and Rice intensified crops in view of the four main objectives of the study. For precision, the recommendations are directed to specific agency or agencies that are primarily responsible for addressing the identified gaps within the three value chains studied.

5.2.1 Recommendations to Rwanda Agricultural Board

1. Most of the farmers are concerned about high prices of inputs that have invariably affected the quantity and quality of produce. The timing of this concern coincides with RAB's plan to discontinue importation of inputs like improved seeds. RAB should focus on developing strategic partnerships with the private sector, and other research institutions through public private partnerships (PPPs) to expand the in-country seed production and multiplication capacity.

2. Findings further indicate that farmer support in terms of extension is well articulated by RAB under the Crop intensification programs. However, findings revealed substantial gaps with regard to monitoring of farmer support programs. RAB should further invest in farmer field schools and ICT-based extension support services as well as reinforce accountability mechanisms to ensure the farmers have access to such services.

3. It was noted during this research that the quality of crop produce was affected by poor post–harvest handling techniques. RAB together with line Ministries and private sector should explore strategies to promote investment in Modern post-harvest techniques and equipment like solar driers, Modern storage sheds and packaging bags.

5.2.2 Recommendations to Ministry of Commerce

1. More that 75% of the farmers across the three (3) VC expressed that they perceived themselves as price takers when determining the price of their produce. This perception still remains through the price setting forum includes farmers' representatives. MINICOM should explore strategies to ensure meaningful participation, contribution and ownership by all stakeholders (*especially farmers, consumers and CSOs during price setting forums*). In addition, effort should be made to communicate to farmers the criteria used to set Minimum prices as most of them expressed ignorance over on this issue.

2. It was also noted that there were strict measures to ensure that cooperative farmers sold their produce at prices set by MINICOM and line partners but the same level of strict adherence to set prices was not implemented at consumer markets. This variation is largely due to the complex nature of the retail market in terms of scope but also due to unfair practices of some traders. MINICOM should reinforce mechanisms to ensure the

adherence to set Minimum prices are established at retail/consumer markets the same way they are ensured at cooperative level, and where possible (*Collection centers*).

3. Findings revealed that although contractual farming is beneficial to farmers and buyers, some crop buyers tend to breach contract obligations especially when they have alternative sources of supply. MINICOM should proactively intervene to make sure that both buyers and farmers commit to contractual obligations because the quality of produce decreases as farmers struggle to find alternative buyers when some buyers with whom they have crop buying contracts have withdrawn.

5.2.3 Recommendations to MINAGRI

1. Findings revealed that the voice of farmers and other VC actors was not sufficiently represented when developing some of the policies that affected farmers. MINAGRI should develop consultative dialogue with key actors like CSOs, farmers and other concerned actors to ensure a participatory approach to policy formulation and by so doing, increase the uptake of CIP-related policies.

2. To ensure that Agricultural policies respond to contextual realities, MINAGRI should ensure that CIP related policies are informed by well researched and triangulated data. For example, the in-country capacity to produce and multiply improved seeds should be well researched to make accurate predictions about the quantity and quality of improved seeds and fertilizers that will be available at the local markets when importation of improved seeds and fertilizers stops.

5.2.4 Recommendations to the Rwanda Cooperative Agency (RCA)

1. Findings indicate that cooperative members predominantly play a role of price takers in the entire VC (*input supply and sale of final produce*). RCA will need to enhance an enabling environment where cooperative members will be increasingly empowered to negotiate prices at which they sell their produce. For example, connecting cooperatives with financial institutions could enhance the cooperatives' access to post-harvest handling technologies that can enhance the quality of crop produce, and thus, the farmers' power to negotiate for fair prices.

2. Findings indicated that their level of trust of cooperative member's vis-a vis cooperative leaders was low. RCA and line agencies should ensure that there is regular monitoring and audit of cooperative activities to identify performance gaps and potential cases of corruption and embezzlement of cooperative funds.

3. Finding indicated that that during capacity building sessions, cooperatives are represented by people based on "membership" and not mainly based on managerial capacity. Cooperatives should ensure that the criteria for attendance should be based on

someone's capacity to disseminate skills to cooperative members, and where possible hold those who attend trainings accountable in terms of disseminating the acquired skills.

5.2.5 Recommendations to the Civil Society Organizations

1. CSOs should focus on advocacy issues that will lead to capacity building of farmers at grassroots to reap the advantages of quality extension and marketing services, including being on forums that set Minimum Selling Prices for the different VCs. Further, advocacy on transforming policy into practice that will be enhanced by duty bearers for proper coordination within the VC should be championed by CSOs for rights holders (*farmers*).
2. The CSOs should devise advocacy strategies that will empower the farmers to have voice and capacity to negotiate during the determination of prices for the final produce on market. Further, advocacy should be made to widen the farmers selling options so that they have a fair share of profit from their final produce.

3. Civil Society Organizations should concentrate on advocacy issues that mainly focus on finding markets for farmers' produce. In addition, efforts should be made to facilitate farmers with post storage facilities because it was noted that some produce always lose quality during the post-harvest and the actual time the produce is marketed. Further, MINICOM should proactively intervene in advocating for buyers to adhere to contractual obligations made in *Contract farming agreements*.

6.0 GALLERY OF PHOTOS

Photo 1: Irish Potato farm and harvested stock in sacks at collection center

Photo 2: Harvested Maize being sorted awaiting collection and Packed into lorry to Kigali. There is noted lack of post-harvest handling facilities considering that weather conditions may often be unpredictable.

Photo 3: Rice Processing Machinery, Packed Rice for Distribution to markets. Some Rice processing plants operate at 50% !

7.0 ANNEXES

7.1 Terms of Reference for the Consultancy Services

I. JUSTIFICATION OF THE ASSIGNMENT

Rwanda Civil Society Platform (RCSP) is a non-profit making umbrella organization that was created in 2004 with the objective to set up a platform for information sharing, consultation and advocacy among CSOs and their partners. RCSP is composed of 9 national umbrella organizations with more than 500 members. The mission of RCSP is to act as a framework of exchange, strengthening solidarity and the capacity of its members, to be the people's voice and defend the public interests and interests of its members at national, regional and international levels.

RCSP, with the support of Norwegian People's Aid (NPA) through Public Policy Information, Monitoring and Advocacy (PPIMA) project and in line with evidence based advocacy, identifies an issue that needs to be advocated for and that becomes a subject of an annual public policy dialogue. For this year's theme, RCSP, through consultations with PPIMA project partners identified a number of issues linked to the value chain of some agricultural products. In this framework, RCSP would like to hire a consultant or a consulting company with extensive experience in research methods to conduct an in-depth research for the topic **"Analysis of value chain for intensified crops and market price in Rwanda; the case study: Irish potatoes, maize and Rice**", of which its findings will inform the public policy dialogue. Given the zoning of the selected crops (Irish potatoes, Maize and Rice), the research should purposively target, among others, the following districts: Musanze, Burera, Nyabihu, Gatsibo, Nyagatare, Ruhango, Gisagara and Rusizi. The assignment is to be carried out within a period of 2 months maximum.

II. OBJECTIVES OF THE ASSIGNMENT

2.1. Overall objective

- Assess the correlation between crop production and market price by clearly highlighting current aspects involved in the entire value chain and pricing mechanisms in relation to cost of production.

2.2. Specific objectives

- Assess how farmers are facilitated to get inputs (improved seeds and fertilizers) for rice, Irish potatoes and Maize to improve production and facilitating easy commercialization;
- Analyze the cooperation and collaboration between farmers and other relevant stakeholders involved in commercialization of the intensified crops in establishing market price;

- Assess the role of farmers (or farmers' cooperatives), levels of involvement, consistency, and its implications upon the entire value chain (from production to market);
- Evaluate farmers' perception with regard to the entire value chain and its implications (underlying consequences to the farmers' development).

III. SCOPE OF THE WORK AND METHODOLOGY

The consultant (s) will be expected to undertake the following tasks:

- Attend consultative meetings between RCSP and NPA or any other relevant meeting;
- Review relevant documents to understand the institution;
- Develop and submit a detailed work plan to RCSP;
- Produce and present an inception report to RCSP and its members;
- Present a draft report during a pre- validation meeting;
- Present a draft report during a validation meeting;
- Present a final report with recommendations during a public policy dialogue;
- Draw a position paper based on the public policy dialogue recommendations.

IV. DELIVERABLES AND TIMELINE

The assignment will be performed in **2 months maximum**. The consultant (s) should therefore consider the following as deliverables:

- Inception report approved by RCSP (five days after signing the contract);
- Work plan approved by RCSP (five days after signing the contract);
- Draft report of the research ready for validation (one month from the approval of an inception report);
- Final report of the research integrating recommendations for the public policy dialogue (by 2 weeks after the validation);
- Draw key messages, conclusions and recommendations from the research;
- Position paper with recommendations approved by RCSP.

V. REPORTING AND FEEDBACK

The consultant will directly report to the Executive Secretary of the RCSP. He/She will also be required to submit regularly a progress report to the Management of RCSP.

VI. EXPERTISE REQUIRED

A consultancy firm or an experienced individual consultant should:

- Hold a Master's degree in project management, economics, development studies, agriculture studies, rural development, agri-business, political sciences, Public policy or any other related field.

- Have experience of at least 5 years in conducting researches and assessment related to policies or related works preferably in agriculture ;
- Possess strong monitoring, evaluation and analytical skills and having worked with Civil Society Organizations is an added value;
- Have good knowledge of the Rwandan policy framework and comprehensively understand the work of civil society and advocacy;
- Have strong knowledge and understanding of the agriculture sector and its policies in Rwanda;
- Be fluent in English and Kinyarwanda, a working knowledge of any other language used in Rwanda would be an asset.

Other competencies include:

- Display a sound judgment that enables independent work;
- Be creative, pro-active and able to tap information from various sources;
- Be able to work effectively under tight deadlines;
- Possess the capacity to adequately approach the population and to advise the management team;
- Excellent leadership skills to coordinate the field agents during data collection.

VII. APPLICATION DOCUMENTS

The following documents are expected to be included in the proposals:

- Application letter addressed to the Executive Secretary of RCSP;
- Detailed CV and relevant education documents;
- Two certificates of successful completion of similar directed researches;
- The RRA Tax Clearance and registered in VAT.

VIII. SUBMISSION

Interested candidates should hand submit documents including a technical and financial proposal addressed to the **Executive Secretary of RCSP.**

Applications should be submitted not later than **Friday, 29th June, 2018**, at RCSP head office located at Kicukiro, Kagarama, KK 731st, Plot number 4. For any query, please contact: 0788298843.

Done at Kigali, 18th, June 2018

Ag. Executive Secretary of RCSP

7.2 GANNT Chart for Implementation

The duration of this baseline study WAS 60 days in total. The assignment WAS implemented in 8 stages outlined in details as shown;

	ASSIGNMENT 1	**PERIOD IN DAYS/WEEKS/MONTHS**							
		July 25 - 27	**July 30 - 3 Aug**	**Aug 6 -10**	**Aug 13-17**	**Aug 20-24**	**Aug 27-31**	**Sept 3-7**	**Sept 10-14**
No	**ACTIVITIES**	**Week 1**	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**	**Week 7**	**Week 8**
1	Inception meeting & contractual obligations (Signing of agreements with RCSP).								
2	Inception report including review of project documents, develop tools & finalization of report format (five days after signing the contract);								
3	Work plan approved by RCSP (five days after signing the contract);								
	Secure Recommendation from RCSP Apply for and secure Research Visa from NISR								
4	Stakeholder consultations and Field data collection concurrently in the eight districts.								
5	Draft report of the research ready for validation (one month from the approval of an inception report).								
6	Final report of the research integrating recommendations for the public policy dialogue (by 2 weeks after the validation).								
7	Drawing of key messages, conclusions and recommendations from the research;								
8	Develop a position paper with recommendations approved by RCSP.								

7.3 Study Tools

Rwanda Civil Society Platform (RCSP)

Analysis of value chain for intensified crops and market price in Rwanda; the case study: Irish potatoes, Maize and Rice.

7.3.1 Assessment Questionnaire

Introduction

Request for Participation;

Hallo, my name is _____ contracted on behalf of Rwanda Civil Society Platform (RCSP) which is a non-profit making umbrella organization working in Rwanda. RCSP has a framework of exchange, strengthening solidarity and the capacity of its members, to be the people's voice and defend the public interests and interests of its members at national, regional and international levels. RCSP was founded in 2004 and has 9 national umbrella organizations with more than 500 members. RCSP is supported by Norwegian People's Aid (NPA) through Public Policy Information, Monitoring and Advocacy (PPIMA) project and in line with evidence based advocacy, identifies an issue that needs to be advocated for and that becomes a subject of an annual public policy dialogue.

The PPIMA project partners identified a number of issues linked to the value chain of some agricultural products. We are conducting an in-depth research to **analyze value chains for intensified crops and market price in Rwanda; the case study: Irish potatoes, maize and Rice."** Findings from this study will inform the public policy dialogue. This research will purposively target Burera, Gatsibo, Gisagara, Musanze, Nyabihu, Nyagatare, Ruhango and Rusizi districts.

You were randomly chosen from among other stakeholders and all your responses will be kept confidential. The exercise will last for 30 minutes. Your participation is voluntary.

Enumerator Identification	
District	Burera☐ Gatsibo ☐ Gisagara☐ Musanze☐ Nyabihu☐ Nyagatare☐ Ruhango☐ Rusizi☐
Sector	
Household Number and Head	
Telephone Contact (if any)	
Date	

PART A

SECTION 1: SOCIO-DEMOGRAPHIC PROFILE – PRIMARY BENEFICIARIES (Kindly complete this part fully)

1.1. Category of respondents (check relevant box)
☐ Individual farmer ☐ Cooperative member ☐ Broker/Middleman ☐ others (please name)
1.2. Age
☐ 18 -25yrs ☐ 26-30yrs ☐ 31-35yrs ☐ 36-40yrs ☐ 41-45yrs ☐ 46-50yrs ☐ Above 50yrs
1.3. Gender
☐ Male ☐ Female
1.4. Any form of Disability
☐ Physical impairment ☐ Visual ☐ Hearing Impairment ☐ Others (Please specify).....
1.5. Highest Education Level Completed
☐ None ☐ Lower Primary ☐ Upper Primary ☐ Secondary ☐ Tertiary & Above ☐ Other (Specify) _____
1.6. Marital Status
What is your marital status? ☐ Married ☐ Single ☐ Divorced ☐ Separated ☐ Widowed
1.7. Household size (Number of persons living in the house)
☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7 Plus
1.8. What do you do for a living
☐ Employed ☐Self Employed (Probe for nature of work) ☐ Retired ☐ Other specify _____
1.9. Do you have any leadership positions?
☐ Government ☐Church ☐ Women ☐ Youth ☐ Cooperative ☐ Other specify _____

PART B

SECTION 2: VALUE CHAIN ASPECTS

2.1 Type of intensified crop/s grown
☐ Irish potatoes ☐ Maize ☐ Rice
2.2 Purpose for growing intensified crops?
☐ Food Security ☐ Commercial purpose ☐ other reasons (please specify)
2.3 Name other alternative crops grown on your farm?
☐ ☐ ☐
2.4 What purpose do you grow alternative crops for?
☐ Food Security ☐ Commercial purpose ☐ other reasons (please specify)
2.5 Types of key inputs applied in intensified crop production
☐Seeds/seedling/planting material ☐Fertilizer ☐Chemicals ☐others (please specify)
2.6 Source of inputs supply?
☐ Nearby centre ☐ Cooperative ☐ Government ☐ Others (please specify).
2.7 Issues concerned with access to key inputs?
☐ Roads ☐ High prices ☐ Market information ☐ Technical advice ☐ Quality control ☐ Shipping ☐ Others (please specify)….

PART C

SECTION 3: OTHER ENABLING FACTORS OF PRODUCTION ASPECTS

3.1 What factors in your opinion have facilitated you to produce of intensified crop/s?
☐ Good climate conditions ☐ Access to irrigation facilities ☐ subsidized inputs supply ☐ Collective land accumulation ☐ Technical extension services ☐ Harvesting coordination ☐ Others (please elaborate)
3.2 Factors that impeded production of intensified crops?
☐ Dependency on rain-fed production ☐ Inputs supply ☐ Technical advice ☐ Limited land size ☐ Market dynamics ☐ Exploitation by others (name them) ☐ Limited coordination ☐ Others (please specify).

PART D

SECTION 4: MARKETING DYNAMICS ASPECTS

4.1 Who do you sell your intensified crops to and at what price?
☐ Urban cereal traders Price (RWf)……
☐ Cooperatives Price (RWf)……
☐ Middlemen Price (RWf) ……
☐ Urban traders in other towns Price (RWf) ……
☐ Others (please provide name) Price (RWf) ……
4.2 **On what basis did you choose your crop in relation to the above points?**
☐ Own choice ☐ Lack of market information ☐ Contractual terms ☐ Prevailing market conditions
☐ Only point of sell ☐ Others (please elaborate)……..
4.3 What percentage of your intensified crops do you offload to the market and why?
☐ 100% ☐ 80-99% ☐ 50-79% ☐ 25-49% ☐ Less than 25%
Reasons…….
4.4 Who are the key players in your area in the intensified crop that you grow?
☐ Cooperatives ☐ Middlemen ☐ Exporters ☐ Traders from other towns ☐ Schools
☐ Supermarkets ☐ Others (name them).
4.5 What is your relationship with the above key market players in the intensified crop?
☐ Very good ☐ Good ☐ Poor ☐ Very poor ☐ No relationship

PART E

SECTION 5: PERCEPTION SURVEY

5.1 Do you think you/farmers get value for money from your investment in producing your intensified crop?
☐ Yes ☐ No
5.2 If yes to above, what is your profit margin?
☐ Yes (RWf)……
5.3 If no to above, what major factors impede you from getting the value for your money?
☐ No (Factors)……
5.4 How satisfied are you with the price you get from the sales above?
☐ Very satisfied ☐ Satisfied ☐ Partially satisfied ☐ Not satisfied
5.5 What kind of solutions can you propose to enhance value chain development of the intensified crop that you grow? (Please list them below)
5.6 What facilities or incentives do you get from the business engagement with stakeholders that you engage with?
☐ Collection centres ☐ Inputs supply ☐ Extension services ☐ Contract on farming ☐ Marketing services ☐ Others (please specify)……
5.7 What role should farmers play in determination of market price of the intensified crop?
☐ Fixer ☐ Negotiator ☐ Taker ☐ Others (please specify)

Analysis of value chain for intensified crops and market price in Rwanda; the case study: Irish Potatoes, Maize and Rice.

7.3.2 Key Informant Interview Guide

Date :

Respondent Name : **District:** **Sector:**

1.10. Category of respondents (check relevant box)
☐ Trader ☐ Cooperative member ☐ Government official ☐ Broker ☐ Civil society official ☐ Opinion leader from the community ☐ others (please specify)
1.11. Age
☐ 18 -25yrs ☐ 26-30yrs ☐ 31-35yrs ☐ 36-40yrs ☐ 41-45yrs ☐ 46-50yrs ☐ Above 50yrs
1.12. Gender
☐ Male ☐ Female
1.13. Highest Education Level Completed
☐ None ☐ Lower Primary ☐ Upper Primary ☐ Secondary ☐ Tertiary & Above ☐ Other (Specify) __
1.14. Do you have any leadership positions?
☐ Government ☐ Church ☐ Women ☐ Youth ☐ Cooperative ☐ Other specify _____

Facilitation for inputs

1. Which of the following crops do you grow? (*Maize, Irish Potatoes, Rice*)
2. Do you receive selected seeds for the crop(s) you have identified above? Please explain.
3. Do you receive fertilizers for the crop you have identified? Please explain.
4. Where do you get seeds/planting material and fertilizers?
5. Do you receive the right quantities of fertilizers with respect to the size of your farm land? Please explain your response.
6. Do you receive the right quality of seeds/planting materials and fertilizers? Please explain your response.

7. Do you receive seeds/planting material and fertilizers at the appropriate time? Please explain.
8. How do you transport seeds/planting materials and fertilizers from the distribution source to your farmland?
9. Do you transport the seeds/planting materials and fertilizers yourself or you receive facilitation? Please explain.
10. What do you suggest should be done in respect to the following?
    a. Availing quality seeds/ and fertilizers to farmers at the right time

……

    b. Availing quality seeds/ and fertilizers in right quantities

……

    c. Incorporating farmers voice when deciding the cost and distribution of fertilizers and seeds

……

11. How often are you visited by an agricultural officer? (*During the crop cycle*)
12. What is your overall appreciation about the quality of services you are provided by the agricultural officer?
13. How does the cost of fertilizers, seeds and other inputs affect the overall pricing of your crops?

Cooperation and collaboration between farmers and other relevant stakeholders

1. What is your role in determining the price at which you sell your crops?
2. How do traders determine the prices at which they buy your crops?
3. What would you say are the factors that influence selling prices for your crops?
4. What factors in your opinion have facilitated you to produce intensified crop/s?
5. Do you have platforms with other stakeholders where you jointly set prices for the crop you produce?
6. What do think should be done to establish fair prices for your crops?

Role of farmers*;*

1. How are farmers involved in influencing the costs of seeds and fertilizers for their crops?
2. How do cooperatives influence the prices at which farmers buy seeds and fertilizers?
3. How are farmers involved in post-harvest storage and marketing?
4. Do farmers determine selling prices for their crops?
5. How best can farmers be involved in influencing selling prices?

Farmers' perception

To what extent do you agree with the following questions as they apply to you? Use the rating scale below:

1 – Totally disagree 2 – Disagree 3 – Moderately Agree 4 – Agree
5 – Strongly agree highly

QUESTIONS	LIKERT SCALE				
	1	2	3	4	5
1. I have the power to influence the price at which I buy selected seeds					
2. I have the power to influence the price at which buy fertilizers					
3. My voice is represented when final prices for my crop are being determined					
4. My view are very valued when cooperative officials are taking decisions that affect cooperative members					
5. After harvest season, I have can have sufficient crops for home consumption and have surplus for sale					
6. I have a range of markets where I can sell my produce					
7. I can do basic processing to improve the value and cost of my produce					
8. Farmers collaborate well with crop buys					
9. I have the power to negotiate a produce the final cost of my crop					

Analysis of value chain for intensified crops and market price in Rwanda; the case study: Irish potatoes, maize and Rice.

7.3.3 Focus Group Discussions (FGDs) Guide

Facilitation for inputs

1. Which of the following crops do you grow? (*Maize, Irish Potatoes, Rice*)
2. Do you receive selected seeds for the crop(s) you have identified above? Please explain.
3. Do you receive fertilizers for the crop you have identified? Please explain.
4. Where do you get seeds/planting material and fertilizers?
5. Do you receive the right quantities of fertilizers with respect to the size of your farm land? Explain your response
6. Do you receive the right quality of seeds/planting materials and fertilizers? Please explain your response.
7. Do you receive seeds/planting material and fertilizers at the appropriate time? Please explain.
8. How do you transport seeds/planting materials and fertilizers from the distribution source to your farmland?
9. Do you transport the seeds/planting materials and fertilizers yourself or you receive facilitation? Please explain.
10. What do you suggest should be done with respect to the following?

a) Availing quality seeds/ and fertilizers to farmers at the right time
……

b) Availing quality seeds/ and fertilizers in right quantities
……

c) Incorporating farmers voice when deciding the cost and distribution of fertilizers and seeds ……

11. How often are you visited by an agricultural officer? (*During the crop cycle*)
12. What is your overall appreciation about the quality of services you are provided by the agricultural officer?
13. How does the cost of fertilizers, seeds and other inputs affect the overall pricing of your crops?

Cooperation and collaboration

1. What is your role in determining the price at which you sell your crops?
2. How do traders determine the prices at which they buy your crops?
3. What would you say are the factors that influence selling prices for your crops?
4. Do you have platforms with other stakeholders where you jointly set prices for the crop you produce?
5. What do think should be done to establish fair prices for your crops?

Role of farmers

1. How are farmers involved in the influencing the costs of seeds and fertilizers for their crops?
2. How do cooperatives influence the prices at which farmers buy seeds and fertilizers?
3. How are farmers involved in post-harvest storage and marketing
4. Do farmers determine selling prices for their crops?
5. How best can farmers be involved in influencing selling prices?

Farmers' Perception

To what extent do you agree with the following questions as they apply to you? Use the rating scale below:

1 – Totally disagree 2 – Disagree 3 – Moderately agree 4 – Agree 5 – Strongly agree highly

QUESTIONS	LIKERT SCALE				
	1	2	3	4	5
1. I have the power to influence the price at which I buy selected seeds					
2. I have the power to influence the price at which I buy fertilizers					
3. My voice is represented when final prices for my crop are being determined					
4. My views are very valued when cooperative officials are taking decisions that affect cooperative members					
5. After harvest season, I can have sufficient crops for home consumption and have surplus for sale					
6. I have a range of markets where I can sell my produce					
7. I can do basic processing to improve the value and cost of my produce					
8. Farmers collaborate well with crop buyers					
9. I have the power to negotiate/ produce the final cost of my crop					

7.3.4 Field Observations Guide

This implies that the researchers will be keen to scan documents and observe apparences of key actions and facilities in relation to the three objectives of the study. The researchers should be keen to document but not limited to the following aspects in the three objectives.

Facilitation for inputs

1. Observe and document presence of inputs suppliers (seeds/planting materials and fertiliser) in respective centres. *Taking pictures will be ideal.*
2. Scanning for cooperative's to establish existence of service charters on inputs supply and marketing of intensified products.
3. Observe and document during interviews on the relationship between farmers/cooperatives and extension service providers.

Cooperation and collaboration

1. Check and document existence of cooperative rules and regulations regarding inputs supply.
2. Observe and document existence of rules and regulations regarding marketing of intensified products at the cooperatives with price taking decisions.
3. Observe and document cooperative's rules and regulations regarding provision of extension services.

Role of farmers

1. Observe and document minutes of cooperatives (annual general) meetings regarding farmers voice in decision making on inputs supply, marketing and pricing of intensified produce.
2. Check at cooperative's level to document visibility of post-harvest facilities (shelling machines, solar dryers, storage facilities for inputs and harvested produce).

7.3.5 Key informant interview guides

KEY INFORMANT INTERVIEW GUIDE FOR RCA OFFICIALS

1. Kindly briefly share guidelines on management of cooperatives, if there are any.
2. What is the role of RCA in regulating the price at which farmers and cooperatives sell crops?
3. What would you say are the factors that influence market prices for different value chains?
4. What do you think should be done to establish fair prices for farmers/producers?
5. What is the role of your institution in determining the costs of farm inputs for intensified crops? (*Probe for seeds, fertilizers, equipment e.t.c)*

6. How is your institution involved in post-harvest storage and marketing of farmers produce?
7. What strategies can you recommend for involving farmers in post-harvest handling of their produce? (*Probe for storage, marketing, selling of the produce, legal frameworks e.t.c*)

KEY INFORMANT INTERVIEW GUIDE FOR MINAGRI OFFICIALS

1. What is the role of the MINAGRI on the following aspects of the value chain for intensified crops?
    a) Developing and implementing policy frameworks on agricultural production, post-harvesting and marketing.
    b) Helping farmers with quality selected seeds and fertilizers.
2. What strategies has MINAGRI put in place to help farmers access quality inputs (*Probe for programs and projects that provide support for seeds, fertilizers and machinery*).
3. What are the challenges MINAGRI faces in making sure that the right quantity and quality of seeds and fertilizers are availed to farmers and at the right time?
4. What mitigation measures have you put in place to mitigate the aforementioned challenges?

KEY INFORMANT INTERVIEW GUIDE FOR MINICOM OFFICIALS

1. What is the role of MINICOM on the following aspects of the value chain for intensified crops?
    a) Developing and implementing policy frameworks on seed, fertilizers and agricultural machinery importation.
2. What strategies has MINICOM put in place to ease farmers' access to Value chain inputs? (*Probe for programs and projects that provide support for seeds, fertilizers and machinery importation*)
3. What are the challenges MINICOM faces in making sure that the right quantity and quality of seeds and fertilizers are imported or traded within Rwanda?
4. What mitigation measures have you put in place to address the aforementioned challenges?

KEY INFORMANT INTERVIEW GUIDE FOR NGOS WORKING ON VALUE CHAIN

1. What role does your NGO play in supporting farmers at different levels of the intensified crops Value chains?
    a) Policy advocacy
    b) Capacity building in the areas of;
        i. Extension services
        ii. Input provision
        iii. Post-Harvest handling
        iv. Marketing

2. What strategies does your NGO use to ease farmers' access to Value chain inputs? (*Probe for programs and projects that provide support for seeds, fertilizers and machinery provision, post –harvest facilities*)
3. What challenges do farmers face in your areas of operation?
4. What mitigation measures have you put in place to address the aforementioned challenges?
5. Do you have any success or failure stories with respect to any of the intensified crops Value chains in your area of operation?

KEY INFORMANT INTERVIEW GUIDE FOR AGRONOMIST

1. What is your role as an Agricultural officer in the following aspects of the value chain for intensified crops?
    a) Supporting policy implementation on crop production, post-harvest handling and marketing.
    b) Helping farmers with capacity building on crop production, post-harvest handling and marketing.
    c) Production of quality selected seeds and fertilizers.
2. What strategies have you put in place to help farmers access quality inputs (*Probe for programs and projects that provide support for seeds, fertilizers and machinery*)
3. What are the challenges do you face in making sure that the right quantity and quality of seeds and fertilizers are availed to farmers at the right time?
4. What mitigation measures have you put in place to mitigate the aforementioned challenges?

KEY INFORMANT INTERVIEW GUIDE FOR INPUT SUPPLIERS

1. How do you source for your inputs (*Probe for tendering procedures, legal framework for licensing in-put suppliers, cost implications*)
2. Comment about the sufficiency and quality of your input supplies to farmers.
3. How do you ensure that that customers access quality inputs (*Probe for timely delivery of inputs, knowledge of input usage, agronomic practices etc*)
4. What challenges do you face in ensuring that the right quantity and quality of seeds and fertilizers and other planting materials are availed to customers at the right time?
5. What challenges do you face in your business as an input supplier?
6. What mitigation measures have you put in place to mitigate the aforementioned challenges?

KEY INFORMANT INTERVIEW GUIDE FOR PROCESSORS

1. Where do you source your raw materials from for the intensified crops value chain (*Rice, Maize, Irish Potatoes*)? Probe for the following;
    a) Source/
    b) Price
    c) Quality

d) Equipment for processing and packaging

2. Do you get sufficient quantities and quality of raw materials at all seasons? Explain please.
3. Where do you sell your value –added products? (*Probe for destination and pricing*)
4. Do you have sufficient market for your processed products? Explain please.
5. How many Kilograms of crop X yield to the Kilogram processed for crops X?
6. Which by products do you get after processing crop X? What is their value in RfW?
7. Where do you dispose of the byproducts?
8. What strategies would you recommend to ensure that you have sufficient raw materials and market for processed products and by-products for your customers?
9. Which strategies do you propose to ensure sustainable relationship with raw material suppliers and consumers? (*Probe for pricing of raw materials, packaging materials, quality assurance etc*)

KEY INFORMANT INTERVIEW GUIDE FOR FINAL CONSUMERS

1. As a consumer, what factors do you think affect the availability of the intensified crops? (*Rice, Maize, Irish Potatoes*)
2. What do you think affects the pricing of the intensified crops? (*Rice, Maize, and Irish Potatoes*).
3. As a consumer, what factors do you think affect the quality of the intensified crops (*Rice, Maize and Irish Potatoes*?
4. What strategies do you think can be put in place to protect you from over pricing and ensuring access to good quality crops? (*Rice, Maize and Irish Potatoes*) – *Probe for appropriate consumer protection in place).*

HIGHLIGHTS FROM THE NATIONAL DIALOGUE

CIVIL SOCIETY PUBLIC POLICY DIALOGUE

"ANALYSIS OF THE VALUE CHAINS OF INTENSIFIED CROPS AND MARKET PRICE IN RWANDA".

Kigali
Marriott Hotel, 6th November 2018

Introduction

On Tuesday 6th November 2018, The Rwanda Civil Society Platform organized a public policy dialogue on the **"Analysis of the Value Chains for Intensified Crops and market prices in Rwanda"- Case of Irish Potatoes, Maize and Rice.** Both the public policy dialogue and the study have been undertaken under the auspices of the Public Policy Information Monitoring and Advocacy (PPIMA), funded and supported by the Norwegian People's Aid (NPA). The purpose of this document is to briefly account for the deliberations of the public policy dialogue and report its recommendations.

Opening Session

Welcome remarks were delivered by Mr. Jean Leonard SEKANYANGE, Chairperson of the Rwanda Civil Society Platform (RCSP), who thanked everyone present for having responded to the RCSP's invitation. He briefly described the Rwanda Civil Society Platform as a collection of umbrellas and networks of civil society

organizations in Rwanda, with a constituency of more than 1500 organizations. In the regular discussions that RCSP holds with its members, issues on the prices given to farmers, land consolidation process and Intensified crops program regularly came up and the members asked the RCSP to advocate on these issues. In keeping with its established tradition, RCSP undertakes only evidence-based advocacy, where the relevant information is meticulously collected and analyzed, the underlying problems thoroughly examined and understood and then the appropriate advocacy steps taken. It is against this background that the study was commissioned. Mr. SEKANYANGE went on to justify the choice of the crops that are the focus of the study as being among the important ones in agricultural production and the livelihood of many households depends on them. The 8 districts covered by the study are the ones in which those crops are mostly produced. The RCSP Chairperson concluded his remarks by thanking the participants for their presence, urging them render their contributions to the debate. He then invited the guest of honor, the Permanent Secretary in the Ministry of Commerce and Industry (MINICOM) to deliver the key note address.

In his key note address, Mr. Michel M. SEBERA, Permanent Secretary in MINICOM, conveyed the greetings of the Minister of MINICOM he was representing and congratulated the RCSP and its partners for a well conducted research study. He noted that the study generated informative and substantive findings that would guide all stakeholders in adopting corrective measures where needed. He lauded the public policy dialogue as an opportunity for frank, open and fruitful discussions between stakeholders, in order to achieve their common ultimate goal- the development of Rwanda. He noted that much has been done by the Government of Rwanda in order to ensure a conducive environment for investments in agriculture, in terms of guaranteeing a fair price to farmers and assuring that consumers are protected from fraudulent practices and substandard products. He also acknowledged, however, that much more remains to be done. He emphasized that the time has come to break away from subsistence farming and embrace business orientation in the agriculture sector. For this to happen, value chains must be organized and improved and farmers must be empowered with technical and institutional skills. The problems facing the agriculture sector are multidisciplinary and multidimensional and require interventions from different actors. Dialogues like the public policy the RCSP has organized are indispensable for effective and coherent solutions. On that note, he wished all participants productive deliberations and declared open the public policy dialogue on the Analysis of the Value Chains of Intensified Crops and market price in Rwanda.

Presentation of the Research Findings

The findings of the research were presented by Dr. Michael TUSIIM, the lead research on the study. He started by thanking the RCSP for the confidence placed in his team to undertake the study and expressed his appreciation to all those who had assisted the researchers: the various categories of respondents, the local authorities

from the district covered by the study and the government institutions they have interacted with. After recalling the rationale of the study, he briefly described the background, the objectives and the scope of the study. He then devolved much of his time to presenting the findings. The elements below very summarily represent the highlights of the findings[6]:

- The study collected information from around 580 people in different categories: farmers, traders, inputs suppliers, consumers, processors etc. Interviews, focus group discussions, observation guides and review of documents were employed in data collection.
- The farmers demographics show that many of them are aged 40 years and below. Many of them have completed upper primary level, while there are very few who have achieved higher levels of education.
- Rwanda Agricultural Board (RAB) is the major interlocutor in the provision of seeds, fertilizers and other agricultural inputs.
- The import of seeds is going to be phased out in favor of locally produced seeds and farmers have expressed concerns that there might seeds be shortages in the transition period.
- Many of the farmers interviewed perceive the price of selected seeds as disproportionately high I comparison to the prices at which they sold their produce and say that they exert no influence in fixing those prices.
- The Ministry of Commerce and Industry spearheads consultations that determine the minimum prices that should be guaranteed to the farmers. However, many of the farmers who spoke to the researchers perceive the minimum prices as totally unfair to them, compared to the retail prices. Furthermore, they seem to be unaware of the very consultations determining those prices. A significant majority of the farmers interviewed describe themselves as "price takers", expressing the sentiment that they play a peripheral role, if any, in the determination of the minimum price.
- In some cases, farmers complain that they cannot sell their productions while processors of crops like maize have to import the bulk of the quantities they process. It is unclear if the target of having a rice production that satisfies the local market by 2018 is being achieved. Contract farming has improved the situation, but there are challenges that need to be addressed, including poor postharvest handling which affects the quality of the harvest.
- The process of fertilizers procurement and distribution has been improved over the last few years, but there is room for further improvements. However, "**Smart Nkunganire**" is very much appreciated by the farmers.
- Pesticides are also important factors in the crops production and their prices are perceived as quite onerous to the farmers. As a matter of fact, many farmers either use insufficient quantities or do not use them at all, leaving their crops exposed to different diseases.

[6] Interested reader can refer to the report of the study for a detailed presentation of the findings and recommendations of the study.

- The farmers recognize and appreciate the support they get in the early stages of the production cycle, but deplore that help decreases at the later stages, especially in the post-harvest handling, where basic infrastructures like dryers for maize farmers are insufficient as well as during the marketing phase
- Trust and confidence of the farmers in the policies, programs and processes designed to assist them is of paramount importance. All stakeholders should proactively engage in the dissemination of the relevant information to the farmers, especially vulnerable groups, to allow them to seize the various opportunities offered by those arrangements.

Panel and Plenary Discussions

The panel discussions started with each panelist giving a few remarks, answering pointed questions by the moderator about what strategies are already in place or in preparation to address the issues revealed by the study and the questions posed by the farmers in the short documentary that was screened at the end the researcher's presentation.

The Executive Director of the Rwanda Civil Society Platform reminded participants that the Rwanda Civil Society Platform has among its responsibilities to advocate on behalf of its constituency. In this specific case, Civil Society Organizations operating at the grassroot level have regularly reported issues in the value chains of different crops that affect the farmers, especially the perception that farmers do not receive a fair price for their production. In order to get a sense of the real issues and their extent and engage in evidence-based advocacy, the Rwanda Civil Society Platform, with the financial support of the Norwegian People's Aid, has commissioned the study whose findings have been presented. He emphasized that this public policy dialogue provides a space for the different stakeholders to have a common understanding of the issues and problems, share information about existing policies and programs and their potential shortcomings and finally identify everyone's responsibility in solving the problems.

The Ministry of Commerce and Industry was represented by Mr. Cassien KARANGWA, Director of Internal Trade. He described in detail the minimum price setting process, the actors involved, the factors taken into consideration and the complexities of the process. He reaffirmed that the process has significantly improved, compared to past years. He reiterated that farmers are represented in the minimum price setting process, while the interventions both from the audience in the room and the calls and short messages from the audience tuning into the radio stations that were broadcasting the event live, as well as the findings of the study, all point out the fact that a significant proportion of farmers feel that they are not represented in the price setting consultations. The explanation of these seemingly contradictory perceptions could be a combination of the following, as hypothesized buy some members of the audience:

(1) The process has not been sufficiently explained to the farmers.
(2) The farmers representatives do not provide feedback after the price setting consultations.
(3) The farmers do not trust their representatives.

It appears here that GoR institutions, local authorities, Civil Society Organizations have to set up their efforts to inform farmers about the existing arrangements designed to protect them. Another aspect highlighted by Mr. KARANGWA is that the Ministry of Commerce and Industry has to protect consumers and farmers alike. The minimum price setting is constrained by many factors, some of which are beyond the control of the GoR. He promised that more efforts will be put in explaining the process to farmers.

The Director General of the Rwanda Cooperatives Agency (RCA), Prof. Jean Bosco HARELIMANA, insisted on the ongoing reforms of cooperatives explained in detail the substantive benefits that are expected to accrue from those reforms.

The Director General in the Ministry of Agriculture, Mr. Charles KAREKEZI addressed several critical issues raised by different participants as well as the report of study. The main issues tackled and the points he made are summarized below:

(1) Regarding seeds, the main issues are quality, affordability and timely delivery. As far as quality is concerned, Mr. KAREKEZI reaffirmed that the GoR makes every effort to ensure that only quality seeds are brought on the Rwandan market. On the issue of affordability, he mentioned that previously seeds were imported and Rwanda has no control over international market prices. The long-term remedy lies in having quality seeds locally produced. The Rwanda Agriculture Board has reached the quality desired in its laboratories. Efforts are underway to help farmers get involved in seeds multiplication and dissemination, while preserving the required standards.
(2) Similar issues were raised about the fertilizers. Again, it was recalled that fertilizers are imported and the GoR of Rwanda does not have any control over their prices. However, recognizing the criticality of fertilizers, the GoR of Rwanda has taken the decision of heavily subsidizing fertilizers through the program dubbed "**Smart Nkunganire"**, very much appreciated by the farmers.
(3) Another underlying problem is the limited land available for cultivation in Rwanda. For this reason, the land is overcultivated, necessitating much inputs for decent productivity, which drives up the costs of production, making the harvests much less competitive, compared to neighboring countries. On this point, especially regarding the maize imported from fellow east African countries, Mr. KAREKEZI noted that the Rwandan farmer is far better supported than his peers in neighboring countries. The best hope to improve the situation is to have quality seed locally produced and refine fertilizers distribution in order to improve the quality and quantity of the production.
(4) Another important aspect which has a strong bearing on the price is the post harvesting losses which are still high, mainly due to inadequate

infrastructures such as dryers for maize, processing factories for rice and conservation techniques for Irish potatoes. Much progress has been made on this front, but further improvements can be achieved. In fact, post harvesting losses were estimated at 30% of the entire production in 2010, but they have been reduced to around 10%.

(5) The issue of quality assurance along the different stages of the value chain, including post harvesting handling of the production was underscored. The study revealed that quality is one the most recurrent issues in the execution of contract farming, whereby buyers contend that the products harvested do not meet the agreed upon standards in the contracts.

From the various interventions by the audience in the room and those listening into the different radio stations broadcasting the event, there appear to be an agriculture sector at two different speeds:

(1) There are farmers, mainly grouped into well-functioning cooperatives, that have a good grasp of the value chains of the crops, including the markets dynamics. Their preoccupations are related to how they can be facilitated in setting up their own processing facilities or acquiring a stake in the factories, insurance schemes that protect their investments in an effective, reliable and dependable way, more tax relieves and better payments and similar demands.

(2) Other farmers are not in cooperatives or are in cooperatives that are not well functioning. Those farmers are unaware of the various programs designed to help them, are poorly informed and do not trust their representatives. They seem disenchanted and have no faith in the various initiatives designed to support them.

Both categories need to be supported but obviously the second category needs more attention. The fact that Rwanda has not influence on international fertilizers and seeds prices leaves not much room of maneuver. The long-term solution lies in producing good quality seeds and fertilizers in the country. Luckily seeds production has already started and needs to be scaled up rapidly, and promising prospects of foreign investment in local production of fertilizers exist.

Ultimately, efforts must be multiplied to achieve the following:

(1) Policies and programs in place must be implemented with care and regularly monitored and adjusted, to make sure that they remain relevant, cost efficient and inclusive.

(2) Good quality and affordable fertilizers, seeds and pesticides are of paramount importance to increase productivity.

(3) Farmers must be supported to maintain quality of their harvests and minimize post-harvest losses.

(4) Farmers need to be grouped in well-functioning, accountable and transparent cooperatives, in order to increase their bargaining power and negotiate better deals, share costs and commend the trust and confidence of their members.

Regarding the study itself, many participants found it informing and its findings valid. Some participants requested further analysis as to why there are few professional and skilled farmers, particularly reflecting on why very few agriculture science graduates embrace farming as a profession. It was noted that a fellowship scheme that facilitates these graduates to gain further knowledge in Centers of Excellence exists. Some beneficiaries of this program have graduated from the Centers of Excellence and have developed promising projects. A participant suggested that a similar study be carried out for animal farming.

Closing Session

Before presenting a brief summary of the public policy dialogue discussions and the recommendations, the Executive Director of the Rwanda Civil Society Platform, Mr. John Bosco NYEMAZI thanked the participants for their attendance and active participation. He also thanked those who were following the discussions through media outlets and had contributed through telephone calls and short messages. He reiterated his gratitude to the different government institutions that have contributed to the study and the public policy dialogue, the Norwegian People's Aid which supported it, the different local authorities who have assisted in the study, the Mayors, Vice -Mayors, Directors of Agriculture and other local officials. He expressed his appreciation for the development partners, international NGOs, local Civil Society Organizations and farmers from across the country for their participation and their invaluable inputs. He promised that the Rwanda Society Platform will keep the momentum and follow up the commitments and resolutions taken in the public policy dialogue as well as the recommendations made by the study.

The discussions of the public policy dialogue on the Analysis of the Value chains of Irish potatoes, maize and rice have been very lively and fruitful and the following are the main recommendations that emerged. Most of these had already been captured by the research team. They are repeated here for emphasis;

(1) The Consultations for the minimum price setting should be broadened and made more transparent, in order to secure the buy-in from the farmers and improve their trust and confidence in the process.

(2) A flexible price monitoring mechanism should be put in place in order to timely and effectively follow the market dynamics, especially to ensure that the farmers get a fair share when prices go up on the retailer market.

(3) Efforts should be deployed to increase the availability of basic infrastructures such as irrigation structures, tractors and dryers at affordable prices.

(4) The efforts underway to locally produce quality seeds should be scaled up and quality assurance mechanisms should be set up in order to guarantee the availability of quality seeds, at affordable prices and in a timely manner.

(5) Harvest distribution mechanisms should be fine-tuned in order to make sure that farmers are able to sell their productions beyond the production areas.

(6) Storage facilities and conservation techniques should be improved in order to ensure that the quality of the harvest is maintained before it is taken to the markets.

(7) Skills development programs should be designed and executed in order to help farmers obtain and maintain quality and quantity of their harvest, including in the post-harvest handling of their productions. The skills developed would include a better understanding of the different stages of the value chains and the interplay between the different factors affecting pricing and price monitoring.

(8) Encourage the banking sector to put in place flexible and reliable insurance schemes for the farmers and other actors in the agricultural sector.

(9) Speed up the ongoing reforms of the farmers' cooperatives and ensure that the they are viable and competitive business entities that effectively represent the interests of the farmers, have strong accountability mechanisms and enjoy the trust and confidence of their constituencies.

(10) Put in place measures to curb the sometimes-considerable delays in the payment of the farmers by factories and facilitate the acquisition of shares in the factories processing their harvests.

(11) Farmers are encouraged to seek information about their rights and responsibilities, take advantage of the opportunities availed by the policies and programs in place and proactively engage the different government institutions in charge of supporting them.

The Closing remarks were given by Prof. Jean Bosco HARELIMANA who also thanked the RCSP, its partners and the researchers for a well conducted study. He emphasized the importance of applied research, which is geared towards finding concrete solutions to practical problems that affect the day-to-day lives of the population. He thanked all the participants, whether in the room or those tuning into different radio and television stations where the event was broadcast live, for their very insightful discussions and contributions and congratulated RCSP for a well-planned and conducted event. Prof. HARELIMANA pledged the RCA full support for the follow up and implementation of the recommendations and pleaded with all other stakeholders to make the same commitment. He concluded by wishing participants a safe journey on their way home and declared the public

policy dialogue on Analysis of the Value Chains of Intensified Crops and market price in Rwanda closed.