



SEED COOPERATIVE ALLIANCE SEMI-ANNUAL REPORT

June – December 2015

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Submitted to

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SEED COOPERATIVE ALLIANCE SEMI-ANNUAL REPORT

I. PROJECT SUMMARY

To test the Seed Cooperative Alliance (SCA) development hypothesis that cooperative alliances can provide a commercially sustainable supply chain for distribution of improved hybrid maize seed in Rwanda and Tanzania, the SCA project is conducting a series of interrelated diagnostic, strategic planning and capacity building services. The program has started by assessing the market feasibility of seed alliances and by conducting strategic fit assessments to identify the potential for cooperative alliance formation in Tanzania and Rwanda.

USAID resources, with matching contributions from Land O'Lakes, Seed Co Limited (Seed Co) and local cooperatives have been used to undertake the diagnostic and strategic planning work in Rwanda and Tanzania including: 1) a market feasibility assessment; 2) a strategic fit assessment with local agricultural cooperatives; and, 3) partnership alliance meetings with high-potential cooperative alliance partners. Although the ultimate goal of these potential alliances is the commercial distribution of new maize seed varieties; formal product testing, validation and commercialization is not within the scope of the activity. A primary outcome of this work will be the documentation and dissemination of processes, tools and learning from the diagnostic and strategic planning work which Land O'Lakes resulting in more and better cooperative alliances in the future. In addition, the project will significantly bolster cooperative performance through capacity building and learning events during the project duration. As part of the project efforts, Land O'Lakes will conduct gender training for cooperative management/board and research on the influence of social capital and networks in cooperative alliances.

II. PROJECT PERFORMANCE RESULTS TO DATE

Highlights of program activities include (bolded items are highlights since last report):

- 1) Market feasibility assessments were completed by alliance facilitators in Tanzania and Rwanda.
- 2) A Market feasibility assessment trip took place in February 2014. During this trip, Director Keith Newhouse from Winfield Solutions assessed the market opportunity by providing insights based on decades of experiences in the seed and ag-industry.
- 3) Land O'Lakes Supply Chain intern Katie Bolssen conducted an analysis of seed supply chains in Tanzania and Rwanda.
- 4) A Winfield commercial viability assessment and analysis was completed.
- 5) Strategic fit assessments for selected cooperatives in each country were completed.
- 6) Successful cooperative and input provider partnership alliances in Rwanda were formed as a result of intervention.
- 7) Short term technical assistance was provided by Dr. Tom Herlehy, Land O'Lakes Practice Area Manager for Crops. He provided technical support to the cooperatives / Seed Co demonstration plot partnership.
- 8) Alliance Facilitator Guide validation workshops were held in Tanzania and Rwanda.
- 9) Director Keith Newhouse of Winfield Solutions completed an additional STTA assignment to Tanzania and assessed demonstration plot sites and activity ahead of the April/May planting season

- 10) The Alliance Facilitator Guides for each country were completed.
- 11) The Social Capital team, including David O'Brien, visited Rwanda to meet with cooperatives and partner organizations to prepare a questionnaire for a follow-up household survey. The social capital study will help SCA understand the trust networks leveraged in these cooperatives that enhance cooperative alliances.
- 12) Social Capital data collection completed and draft paper containing synthesis and insights submitted to project team.**
- 13) Group training session held in Rwanda for 20+ cooperative leaders ahead of 2015 Season B planting season in October.**
- 14) CSDI completed a series of three training sessions for seven cooperatives focused on seed input distribution, strategic planning, governance and financial management. Sessions were completed in three major areas in the Northern Tanzania region.**
- 15) IPSOS conducted data collection on the economic analysis of both users and non-users of hybrid maize seed in Rwanda from the 2014 season.**
- 16) Dr. Tom Herlehy conducts visit to Rwanda and Tanzania to assist in development of coop based demonstration plots, building off work from previous planting season.**

III. PROJECT PERFORMANCE TABLE

Indicator Name	Unit of measure	Baseline		Year 1 ¹ April–Dec 2013		Year 2 Jan–Dec 2014		Year 3 Jan–Dec 2015			Year 4 Jan–Dec 2016	LOP
		Year	Value	Target	Actual	Target	Actual	Target	Actual	Cumulative total/commen- ts	Target	Target
Outcomes												
Number of cooperative alliances formed	Number (#)	2014	0	1	3	1	5	1	5	5 input distribution alliances and 5 demonstration plot only alliances	2	5
Percent increase in agro-input sales (Tanzania)	USD (\$)	2015	80,496	NA	NA	NA	NA	NA	NA	NA	8%	8%
Percent increase in agro-input sales (Rwanda)	USD (\$)	2014	4,142	NA	NA	NA	NA	5%	67% (USD \$6,931)	67% - Only two cooperatives sold inputs to members in 2014 and 2015. This will change in the next reporting period	8%	8%
Percent increase in agro-input sales (Both Countries)	USD (\$)	2014		NA	NA	NA	NA	5%	67% (USD \$6,931)	67%	8%	8%
Percent of active members who are women (Tanzania)	Percentage (%)	2015	9%	NA	NA	NA	NA	NA	NA	9% of all members are women	9%	9%
Percent of active members who are women (Rwanda)	Percentage (%)	2015	46.3%	NA	NA	NA	NA	NA	NA	46% of all members are women	46%	46%
Percent of active	Percentage (%)	2015	27.6%	NA	NA	NA	NA	NA	NA	27.6% of all members are women	27.6	27.6%

¹ This report has shifted the yearly timeframes given the supplemental funding awarded in September 2014

² Indicator to TZ cooperatives – average from 7 surveyed

³ Audited accounts were validated by alliance facilitators in both countries. It is a legal requirement for established coops and all coops were compliant.

Indicator Name	Unit of measure	Baseline		Year 1 ¹ April–Dec 2013		Year 2 Jan–Dec 2014		Year 3 Jan–Dec 2015			Year 4 Jan–Dec 2016	LOP
		Year	Value	Target	Actual	Target	Actual	Target	Actual	Cumulative total/comments	Target	Target
members who are women (Both Countries)												
The average satisfaction rating on perception of men on inclusion of women in cooperative leadership (Rwanda)	Percentage (%)	2015	64%	NA	NA	NA	NA	NA	N/A	Only 64% of males strongly agree that women should be included in cooperative leadership.	67%	TBD
The average satisfaction rating on perception of men on inclusion of women in cooperative leadership (Tanzania)	Percentage (%)	2015	46%	NA	NA	NA	NA	NA	N/A	Only 46% of males strongly agree that women should be included in cooperative leadership.	49%	TBD
The average satisfaction rating on perception of men on inclusion of women in cooperative leadership (Both)	Percentage (%)	2015	55%	NA	NA	NA	NA	NA	N/A	Only 55% of males strongly agree that women should be included in cooperative leadership.	58%	TBD
Number of cooperatives whose financial accounts have been audited	Number (#)	2015	NA	NA	NA	NA	NA	N/A	NA	All cooperatives have audited accounts	3	17
Member satisfaction with cooperative leadership improves (Tanzania)	NPS score	2015	68.9	NA	NA	NA	NA	NA	N/A	From the baseline results, 68.9% of respondents would recommend the cooperative	71	

Indicator Name	Unit of measure	Baseline		Year 1 ¹ April–Dec 2013		Year 2 Jan-Dec 2014		Year 3 Jan-Dec 2015			Year 4 Jan-Dec 2016	LOP
		Year	Value	Target	Actual	Target	Actual	Target	Actual	Cumulative total/comments	Target	Target
										to a friend or relative		
Member satisfaction with cooperative leadership improves (Rwanda)	NPS score	2015	98.7	NA	NA	NA	NA	NA	N/A	From the baseline results, 98.7% of respondents would recommend the cooperative to a friend or relative	98	
Member satisfaction with cooperative leadership improves (Both)	NPS score	2015	84.5	NA	NA	NA	NA	NA	N/A	From the baseline results, 98.7% of respondents would recommend the cooperative to a friend or relative	84.5	
Outputs												
Number of business cases developed	Number (#)	2013	0	0	0	2	2	0	0	2 – Target already achieved	0	2
Number of validation workshops conducted	Number (#)	2014	0	NA	NA	2	0	2	2	Two workshops held in Tanzania and Rwanda in 2015.	0	2
Number of proof of concept pilot studies completed	Number (#)	2014	0	NA	NA	2	5	1	0	5 – Target already achieved.	1	2
Number of cooperative alliance strategic fit assessments completed	Number (#)	2014	0	NA	NA	2	10	10	10	10 – Target already achieved.	0	2
Number of individuals receiving short term agricultural productivity training or implementing alliance partnerships	Number (#)	2014	0	NA	NA	Target will be in 2015	0	50	543	Individuals attended the trainings in Kigali and in three locations across Northern Tanzania. CSDI used the guide as a basis for	150	200

Indicator Name	Unit of measure	Baseline		Year 1 ¹ April–Dec 2013		Year 2 Jan–Dec 2014		Year 3 Jan–Dec 2015			Year 4 Jan–Dec 2016	LOP
		Year	Value	Target	Actual	Target	Actual	Target	Actual	Cumulative total/commen- ts	Target	Target
										tailored trainings		
Study on social capital completed	Number (#)	2015	0	NA	NA	NA	NA	0		Baseline survey underway. Data collection complete.	1	1
Agro-input conference held	Number (#)	2015	0	NA	NA	NA	NA	0	0	0 Conference to be held in 2016	1	1
Number of cooperatives receiving USG-funded technical assistance to improve management practices related to the evaluation and initiation of strategic business alliances	Number (#)	2013	0	0	0	Target will be in 2015	0	8	17	10 in Rwanda and 7 in Tanzania	10	10
Number of cooperatives receiving cooperative alliance guide one on one coaching	Number (#)	2013	0	0	0	Target will be in 2015	0	8	0	0 Guides were completed in 2015	10	10

By this reporting period, ten cooperatives in Rwanda have successfully formed business partnerships with Seed Co (seven with input distribution arrangements and three with demonstration plot collaboration agreements). Yara Rwanda received official registration in 2015 and has begun to distribute fertilizer. In Tanzania, there was a discussion between Koboku Cooperative and Seed Co about an input distribution partnership, but to date, this has not resulted in a successful partnership. Ahead of planting season A (Sept/Oct 2015), Yara formed the first successful distribution partnership both Tarakea and Mashima cooperatives Tanzania. The cooperatives paid for fertilizer inputs using cash reserves and will be distributing to members as well as members of one other neighboring cooperative. In 2015, these partnerships netted over 61M TZS of fertilizer sales. This was an exciting breakthrough and there is hope more coop partnerships will form between cooperatives and input providers in Northern Tanzania.

It is important to note that cooperatives in TZ are distributing fertilizer and seed, just not in direct relationship with the input provider. Most are purchasing through agro-dealers and wholesalers. As a result, the coops and farmers are not capturing as much value as through possible direct linkages. In addition to challenges gaining autonomy in business decisions, seed companies are mandating a very high minimum purchase in order to facilitate direct distribution. Cooperatives have shown interest to purchase more inputs in the long run, but are more comfortable near term testing with a smaller purchase before committing to large bulk purchases. If seed companies and coops can reach better agreement on volume requirements it could open more opportunities for direct coop distribution.

The SCA program does not expect to achieve other targets in the project performance plan until end of year three and/or the project end. There is overwhelming interest from cooperatives in Rwanda to work with Seed Co following several initial successful partnerships in 2014. Out of five cooperatives that did not have an input distribution partnership with Seed Co in 2014, two of them have engaged in input distribution partnership in 2015 and only three are remaining with continued partnerships to develop demonstration plots. The program is optimistic that many of these will lead to business partnerships with both input providers in future planting seasons.

Input partnership with SeedCo and/or other seed companies by season

Cooperative	2014 Season A	2015 Season B	2015 Season A	2015 Season B
Unicopromanya/ Kotebaru	Yes	N/A	Yes	TBD
Kaboku	Yes	N/A	Yes	TBD
COACMU	Yes	N/A	Yes	TBD
Koremu	Yes	N/A		TBD
Impabaruta	Demo only (2 plots)	N/A	Demo plot only	TBD
Ibyizabirimbere	Demo only (1 plot)	N/A	Demo plot only	TBD
Coparwamu	Demo only (1 plot)	N/A	Yes	TBD
COAMV	Demo only (2 plots)	N/A	Demo plot	TBD
IABM	Demo only (3 plots)	N/A	Yes	TBD
Bugesera Agribusiness Company*	Yes	Yes	Yes	TBD

*Note – Bugesera is a privately owned milling operation that works with a network of 11 cooperatives in three different districts

IV. PROJECT PARTNERS

A summary of the key partners are listed below:

Winfield Solutions

Land O'Lakes subsidiary Winfield Solutions is the largest wholesaler of crop seed and crop protection products in the United States. The business brings significant expertise in business-to-business relationships through cooperative models and the distribution of inputs and crop solutions. Winfield also has some early stage exploratory partnerships to develop tropical varieties of hybrid maize seeds. The business is a key partner of the Seed Alliance in assessing the viability of business models for cooperative alliances in Tanzania and Rwanda. Winfield supports technical assistance work by leveraging their experience and expertise working with cooperative-cooperative models in the United States.

Seed Co

Seed Co is a Zimbabwe based company (www.Seed Co.co.zw) that develops and markets hybrid maize seed, cotton seed, wheat, soya bean, barley, sorghum and ground nut seed. Currently Seed Co has presence in 13 countries – primarily markets in Eastern and Southern African. Seed Co is actively expanding in the two targeted countries of the Seed Alliance. In Tanzania, Seed Co operates a network of distribution agents and produces around 40% of the needed seed in country. In Rwanda, the business is also rapidly growing through a combination of public / private partnerships. The company sees high potential to work with cooperatives, given their reach and span in many rural communities. However, there have been historic challenges in reaching effective alliances with different organizations. Seed Co works with the project team by leveraging its depth of expertise in seed markets and distribution channels.

CSDI Tanzania

Center for Sustainable Development Initiative (CSDI) has been contracted to serve as an alliance facilitator in Tanzania. CSDI brings extensive experience and in-depth knowledge of the Tanzanian ag-sector and cooperatives. Lead consultant William Massawe has worked closely with many agribusinesses and cooperatives in the Southern Agricultural Growth Corridor (SAGCOT) as part of partnership with the African Development Foundation (ADF).

ADC Rwanda

African Development Consultancy (ADC) was contracted to serve as an alliance facilitator in Rwanda. ADC has extensive experience in the Rwandan market as a key implementer of ADF program activities in Rwanda. The lead consultant John Bosco Ruzibuka has worked closely with cooperatives in the maize sector and was previously engaged as a value chain consultant with the USAID post-harvest loss program led by CARANA. John Bosco also lived and worked in Tanzania for over a decade. His knowledge of both countries and maize markets greatly benefits the Seed Alliance Program.

The contract with ADC ended in early 2015 and JohnBosco Ruzibuka was under a consulting agreement with the project to continue key Alliance Facilitator activities. In December Land O'Lakes has hired Willy Nyirigira as our Cooperative Development Manager in Rwanda and in this role is taking over much of the work that was previously contracted out to ADC and short term consultants.

V. PROGRESS IN ACTIVITIES

Below are highlights from the program activities.

Activity 1.1 Prepare for In-country Analytic Work

Work plans are done yearly. The Scopes of Work for the market feasibility and strategic fit assessments were completed in year one.

Activity 1.2 Conduct Market Feasibility Assessment (MFA)

This assessment was completed in first half of 2014.

Activity 1.3 Conduct Cooperative Alliance Strategic Fit Assessment (SFA)

Strategic fit assessments were finalized in the second half of 2014.

Activity 1.4 Build the Business Case in Two Countries

Validation for the Alliance Facilitator guide was conducted in March 2015. Land O'Lakes, together with Seed Co, Yara and cooperative alliance partners evaluated the business case for entering into cooperative alliances in Rwanda and Tanzania. At the workshops the Alliance Facilitators included an agenda topic on pursuing commercial partnerships.

Since the last semi-annual report, there has been significant uptake of cooperative partnerships in Rwanda. However, there are continual challenges with policy and the enabling environment. Most recently, ahead of season A planting season in 2015, the Ministry of Agriculture did not announce the final details of the subsidy program until 1 month before the planting season. This created tremendous challenges for both producers and input providers who had to figure out how to import and distribute seed under a condensed schedule. The government's gradual withdrawal of subsidies has also not happened as quickly as originally planned. In the most recent planting season, seed was being subsidized at high rates around 85% and fertilizer was still being subsidized at 50%.

Nonetheless, Seed Co was able to enter into numerous new arrangements with cooperatives and by team estimates is now in direct distribution arrangements with over 30 cooperatives in the country. The rapid growth of distribution partnerships in Rwanda is evidence that there is a solid business case for farmers, coops and seed companies. A number of cooperatives have entered into partnerships with more than one seed provider. The program is currently evaluating the financial returns to both farmers and cooperatives to better assess the economic value of input supply partnerships.

Despite, the number of successful partnerships, the SCA program has concern about the long term ability to invest in infrastructure and operational positions. As discussed in the last semi-annual report - at current volumes, cooperatives do not generate enough revenue to cover capital investments required for upkeep of storage facilities and post-harvest handling. Revenues also do not adequately cover full time staff, such as agronomists – important change agents to improve agronomic practices.

In Tanzania there is little evidence of a successful cooperative alliance partnerships with input suppliers after two full years of pilot. The lone exception occurred in 2015 when Yara successfully formed a partnership to distribute fertilizer through Koboku cooperative. Koboku is primarily a coffee cooperative, but has interest in distributing inputs for maize farmers. Yara contends that fertilizer is being utilized for both coffee and maize production, but the project team has not validated this with farmers. The SCA program is hopeful that this model will inspire collaboration and partnership with seed providers and expand the co-development of demonstration plots with expertise being provided by both input suppliers and cooperative agronomists.

Activity 1.5 Build Cooperative Capacity to Evaluate, Initiate and Implement Alliances in two countries

This activity was conducted in the previous reporting periods.

Activity 1.6 Design Cooperative Alliance “Proof of Concept” pilot in Two Countries

The program selected IPSOS, an international market research firm to conduct economic analysis of input providers in Rwanda. In November the IPSOS team collected data from Rwandan producers, clustered in several segments 1) coop members who used improved hybrid maize seeds 2) coop members who did not use hybrid maize seeds 3) non-coop members who used hybrid maize seeds and 4) non-coop members who did not use hybrid maize seeds. The goal of this analysis is to assess the value that is being created in several of the pilot partnerships in Rwanda from season A 2014 to season A 2015. IPSOS will be collecting additional data in 2016 following harvest and sale and drawing comparisons between 2014 production and 2015 production by four different segments of producers.

Initial analysis from the first phase of the survey provided several interesting findings that cooperative members using improved hybrid seeds:

- Appear to be living better than the others sampled
- Have allocated more land to maize production
- Practice mono-cropping and thus are able to plant more maize seed
- Realize higher yields per acre
- Are more likely to use modern fertilizer
- Seem to obtain better prices for their maize

Activity 1.7 Disseminate Learning and Innovation

No major learning events were conducted in the reporting period. The program submitted a blog post to USAID Agrilinks to highlight the social capital work and draw attention to some

of the early insights and findings from the network analysis. Larger scale learning events are planned for 2016.

Activity 1.8 Build Cooperative Capacity to Implement Pilot in Two Countries

During the reporting period, new training was conducted in both Rwanda and Tanzania. JohnBosco Ruzibuka facilitated a workshop on October 30th that focused on strengthening the capacity of cooperatives and input providers that have formed business partnerships. Forty three people attended the training. The agenda included a review of the facilitator guide, competencies required to manage and alliance, business principles for input distribution and broader discussion around lessons learned from cooperative partnerships in season A 2014. Training summary is provided in Appendix A.

In Tanzania, CSDI conducted a series of three separate training events across seven cooperatives in Northern Tanzania. The first training series took place from Aug 11-14. Over 300 individuals attended the training. The training sessions focused on two core topics 1) Member empowerment and 2) Basic business management skills. The objective was to improve overall cooperative governance by providing members exposure to rights, responsibilities of cooperative members and access to knowledge about cooperative business performance. The goal was also designed to build foundational knowledge for coop manager to develop business plans for engaging with private sector input providers.

Phase II training was conducted by CSDI between Sept 22 and 25. Over 200 participants across all cooperatives were engaged. The curricula for the second training focused on building off the principles from phase I, with particular emphasis on crop nutrition and input distribution and the implications of the New Cooperatives Act of 2013. The former topic was addressed by SeedCo and Yara. Representatives from both companies presented on the importance of agronomy and improved inputs on crop yield. This was also an opportunity for members (not just managers) to interface directly with the input providers and to ask questions. Professors from the Moshi College of Cooperatives delivered a session on the new Cooperative Act. The goal was to inform cooperative leaders and members of the rights under the new law, in particular the limitations of power of the cooperative registrar and district regarding cooperative business decision making. One of the main obstacles in coop partnerships with input suppliers has been the interference of coop district officers who maintain that they must provide approval for such partnerships, when in fact the law has removed this requirement. A lesson learned has been that former practices and power structures are hard to overcome, even with changes in the law.

Phase III of the training was conducted Dec 1-3 and focused on business management skills and financial reporting. The training was focused on providing cooperatives the basic skills to enter and manage business partnerships. Training was divided into several main components:

- Improved understanding of core business (be coffee or maize or any other potential one) and conduct participatory plans on how to improve it. CSDI focused on a commercial view of managing the cooperative business
- Participants were provided with tools/steps they may pursue to come up with business plans (short term, mid-term and even long-term) and asked to prepare one year plan within this month and start implementing by next year. The Board members agreed to implement the exercise.

- Participants were trained on the importance of setting up a proper system of operation that will require minimal supervision by the board or even the members. Trainers provided examples of financial manuals, human resource manuals and highlighted the need to employ right people to fill in key office positions like accountant, manager, extension service officer or even marketing officer;
- Participants were exposed to basic financial management skills that include proper record keeping, bank reconciliation, preparing financial statements, audit issues and separation of roles in an organization.

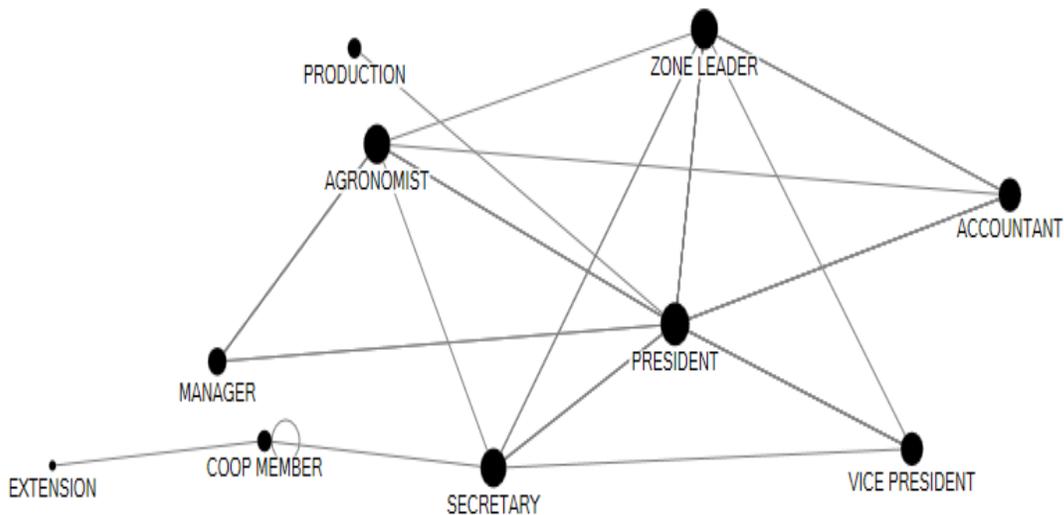
Summary reports of CSDI trainings can be found in Appendix B.

A priority area for early 2016 is to conduct gender training for each cooperative with the goal of improving the metric related to the average satisfaction rating for men’s perception on women in cooperative leadership.

Activity 1.9 Study Impacts of Seed Cooperative Alliances on Social Capital

Dr. David O’Brien of the University of Missouri, and Dr. Elliot Meador have produced a draft report highlighting the results of analysis of the baseline social capital data and network analysis in Rwanda. A number of interesting insights emerged from this preliminary analysis. One insight was that the strict hierarchical chain of command found in many Rwandan cooperatives, may not actually function in the way it was designed. Zone leaders, agronomists, coop managers, and staff all have roles in dissemination of information. The analysis discovered that coop Presidents (as opposed to Zone leaders) actually have the highest number of social linkages and points of contact for member questions on agronomy and input technologies. This raises questions about who is ultimately in the best position to provide Agricultural advice within the cooperative.

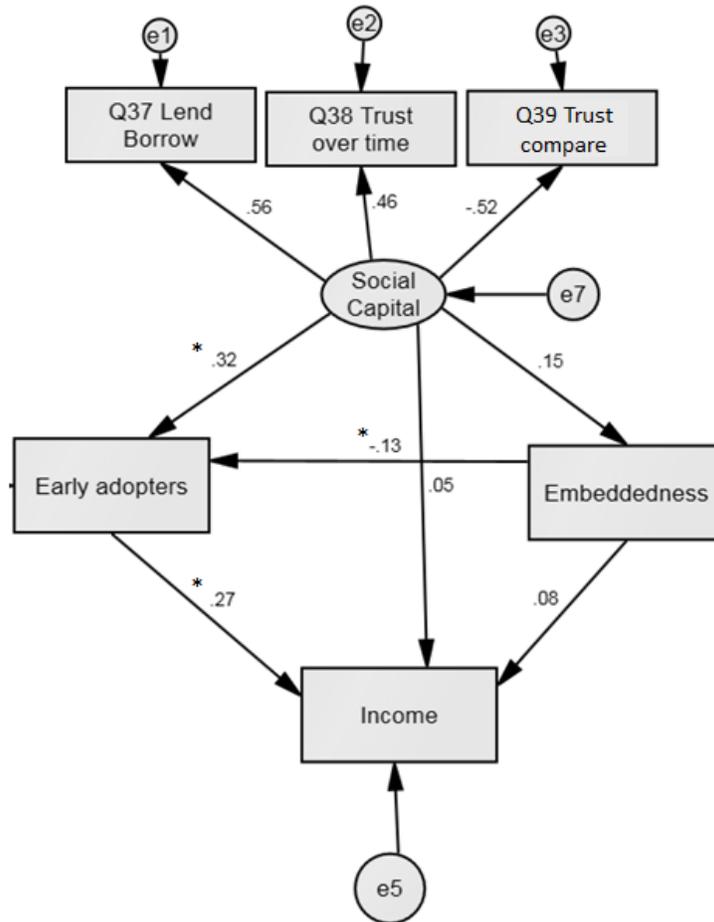
The diagram below is an illustration from the draft report that showcases the social network map from Rwanda.



The research also applied a structural equation model to assess the relationship between embeddedness in the cooperative and adoption rates / income. Analysis showed a positive

and significant relationship between social capital and early adoption of inputs (and higher incomes). In contrast, higher levels of embeddedness actually had a negative relationship with reduced incomes and lower numbers of early adopters.

The illustration and corresponding table below show the effects of the relationships (note: all were significant at a .05 alpha level).



- Early adopters (+) → Income, .27
- Social capital (+) → Early adopters, .32
- Embeddedness (-) → Early adopters, .13
- Social capital (+) → Income, .09
- Embeddedness (-) → Income, -.04

The full report is available in Appendix C.

Activity 1.10 Hold Agro-Inputs Conference Promoting Role of Cooperative Alliances

This activity will occur towards the end of the project.

Appendices

Appendix A: Rwanda Training Summary, October 30, 2015

Appendix B: Tanzania Training I, II and III Summaries

Appendix C: Draft Social Network Study Report

REPORT OF THE TRAINING WORKSHOP ON USE OF ALLIANCE FACILITATOR GUIDE AND FOCUSING ON DOING BUSINESS FOR COOPERATIVES

OCTOBER 30 2015, HILLTOP HOTEL AND COUNTRY CLUB, KIGALI RWANDA.

By: John Bosco Ruzibuka (Consultant)

1. Introduction:

This report is on the training of cooperatives on the use of Alliance Facilitator Guide and focusing on doing business held at Hilltop hotel, in Kigali, Rwanda.

The training was meant for all the cooperatives, Bugesera maize union and business company that are members of the Seed Cooperative Alliance

This training is part of the capacity building program of the Seed Cooperative Alliance project funded by the USAID and implemented by the Land O Lakes in Rwanda

2. Purpose of the training:

The main purpose of the training is to strengthen the capacity of all members of the Seed Cooperative Alliance (the cooperatives, the union, the business company from Bugesera, Seed Co- Rwanda and Yara- Rwanda) on the use of the Alliance Facilitator Guide and focusing on doing business by the all partners in the alliance and in particular the cooperatives that distribute both Hybrid seeds and fertilisers.

This was a one day training activity and had 50 participants invited for this event.

The training schedule was as follows:

SCA TRAINING PROGRAM FOR THE COOPERATIVES

TIME	ACTIVITY	PRESENTER
8.00 -8.30 am	Arrival of participants and registration	JBRuzibuka
8.30 -8.45	Introduction to the day's program	JBRuzibuka
8.45- 9.00	Brief review of the whole SCA(under LoL) program in Rwanda	JBRuzibuka
9.00 -10.00	<ul style="list-style-type: none"> ▪ Introduction to the Alliance Facilitator Guide. The purpose, the meaning, policy /enabling environment in Rwanda. Key stakeholders. How stakeholders benefit from the SCA (economics of SCA in Rwanda).. ▪ Principles of the SCA. Factors to consider in alliance formation. Management of the alliance. Competences required for the coops in the alliance. Due diligence, 	JBRuzibuka
10.0 -10.30	Coffe / Tea Break	All
10.30 -11.30	<ul style="list-style-type: none"> ▪ . Focusing on doing business in Hybrid Seeds and Fertilisers distribution. The gains to farmers, cooperatives in doing this distribution business ▪ Conclusion and way forward ▪ Question and Answer session/ Discussion and distribution of copies of Alliance Facilitator Guide 	JBRuzibuka
11.30 -12.30	Presentation by SEED CO	Rolland Kayumbu

Appendix A

	Questions and answer session	
12.30 -1.30	Lunch break	All
1.30- 2.30	Presentation by YARA Questions and answer session	Amos Kagabo
2.30- 3.30	Way forward General comments by Participants	All trainers led by JB Ruzibuka
3.30 – 4.30	Transport reimbursement to all participants	JB Ruzibuka
4.30	Departure to the home districts	All participants
4.30 -5.30	Finalise payment for services with HILL TOP Hotel	JB Ruzibuka

3. Comments and information sharing from participants:

After each session the participants had sufficient time to make comments and suggestions. Basically all appreciated the presentations made by SCA, SEED CO, and YARA. They agreed that this training came at the right time because it strengthened the understanding and the need to be fully involvement in the inputs distribution business. It also strengthened the understanding on the importance and gains they will obtain from involvement in inputs distribution, including what cooperatives need to do in terms of advance planning in order to benefit fully from the partnership with inputs suppliers such as Seed Co and YARA, as well as the banks.

Regarding resolving a critical problem of markets for the maize harvested by the cooperatives, the Bugesera Agri-business Company member present informed the leaders of cooperatives what the company is doing in terms of buying maize from cooperatives and farmers. The company has already signed agreements with about 22 cooperatives from Bugesera(12) and other districts (Ngoma, Kirehe, Musanze, Gatsibo, Kamonyi), so that they can sell th maize harvested to the company each season. He invited them to come and sign an agreement so that they can also be apart of this growing business. The participants also mentioned that having an alliance facilitator guide in Kinyarwanda will help them read and share with all cooperative members of the cooperatives. Also that bringing more members of the leadership team to this training will make it easy for the cooperatives to do advance planning and focus more on doing business on inputs distribution as it improves their decision making including doing right things at the right time.

4. Conclusion:

The participants believe that more training focusing to the zone leaders of each cooperative will be helpful to continue spread the message on advantages if inputs distribution business among cooperatives. It was agreed that if any future training is planned SCA project will communicate to the cooperatives soon. However, they cooperatives will continue linking with the input companies for doing business.

Appendix B

 <p>USAID FROM THE AMERICAN PEOPLE</p>	CDP	 <p>LAND O' LAKES, INC. INTERNATIONAL DEVELOPMENT <i>Innovative Solutions for Global Prosperity</i></p>
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LAND O' LAKES INC.
INTERNATIONAL DEVELOPMENT
“CDP – SEED ALLIANCE PROJECT”

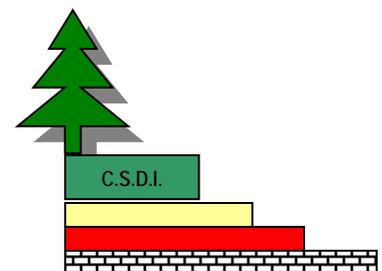
COOPERATIVES TRAINING SUMMARY REPORT

PHASE I

11TH – 14TH AUGUST 2015

Submitted by.

Centre for Sustainable Development Initiative (CSDI)
SINZA MORI Road; Plot No 16
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1. OVERVIEW INFORMATION

Center for Sustainable development Initiatives (CSDI) has entered into a contract with Land O' Lake (LOL) to conduct intensive training to seven (7) cooperatives located in the Northern Tanzania for a period between July 2015 and March 2016. The training period is comprised of three different training phases each of which will cover two modules.

The Phase I training commenced on **11th August 2015 and ended on 14th August 2015**. The training took place at three different centers and was attended by total **310 cooperative members** out of the targeted 375 cooperative members and leaders representing **83%** attendance performance as detailed below:

Number	Name of Cooperative	Number of Attendants	Name of the Center
1	Tarakea AMCOS	56	TARAKEA AMCOS
2	Mashima AMCOS	43	
3	Usseri AMCOS	31	
4	Koboko AMCOS	45	KOBOKO AMCOS
5	Siha – Kiyeyo AMCOS	29	
6	Gallapo AMCOS	79	GALLAPO AMCOS
7	Gendi AMCOS	27	
TOTAL		310 (83%)	

2. TRAINING LOGISTICS

Each cooperative Chairman was informed of the training plan by a written letter followed by direct phone calls and emails (*Please see the attached invitation letters*). The chairmen and the Board members were fully involved in deciding appropriate training venue and asked to arrange for refreshments during the training. CSDI engaged services of experienced cooperative trainer from Moshi Cooperative University (MoCU) Prof. Suleman Chambo to conduct the member empowerment sessions. CSDI conducted the basic business skills sessions.

3. TRAINING METHODOLOGY

Quite aware of the age composition of the participants, CSDI employed adult learning techniques to ensure the members understand the subject matter and prepare to attend the follow on training phases (2 & 3) after which they will be required to train fellow members from respective cooperatives who were not selected to participate in the course. The techniques used included Power Point Presentation, role models and allowed wider discussions than just teaching.

4. TRAINING OBJECTIVE

As stated above, the overall training objective was to augment knowledge and build capability of the beneficiary cooperative members with focus on a) Membership Empowerment and b) Basic business management skills. The ultimate goal is to prepare the cooperatives enter into strategic cooperative alliance with input suppliers such as YARA International and SEEDCO Company Limited; and enhance management efficiency.

5. TARAKEA CENTER

Total of **129 members (78% target)** from three cooperatives namely Tarakea, Mashima and Usseri AMCOS gathered at Tarakea Center for one-full day training as indicated on the attached training schedule. The participants were very attentive to the training indicating that there was huge need for this training. There was a good balance of men and women attendance. (Ref: Annex 4)

Action Plan: Participants had time to discuss about the CSDI's proposed training plan and suggested that since the next maize production calendar will commence on October, it will be useful for them to switch the modules for Phase III to Phase II such that they can learn about the crop nutrition, distributorship and the new cooperatives law 2013 before the season starts. The intention is to try and be able to structure a contract for supply of the inputs from Yara International and Seedco Ltd well on season.

Below photos indicate one of the training sessions.

PHOTO 1: Participants at Tarakea AMCOS listening from CSDI Trainer Mr. Ulrich Mwinyiechi (center).



PHOTO 2: Participants were in round-table arrangement to allow wider interactions and friendly discussion.



6. KOBOKO CENTER

Total of **79 cooperative members (75% target)** from Koboko and Siha-Kiyeyo AMCOs gathered at Koboko Center for a one day intensive training and we were able to start on time due to geographical advantages. Fortunately there was a good balance of men and women participants but very few young men. Participants at this center shared their experiences in running the cooperatives (strengths and challenges).

Action Plan: When asked about the training plan and contents they were excited to attend the whole program as presented because this would enable them jump into better development stage soon. Unlike Tarakea Center, they endorsed the training plan because their production calendar starts on January.

PHOTO 3: Participants at Koboko Center. CSDI used PPP where power was available and pursued closer step-by-step discussion with participants.



PHOTO 4: Koboko Center had a good attendance of women members as shown in the picture.



7. GALLAPO CENTER

Total of **108 cooperative members (102% target)** from Gallapo and Gendi AMCOS attended the training at Gallapo Center. There was a good balance of men and women members and young men attendance was relatively better. Due to geographical difficulties there was a delay of 1 hour but we were able to compensate by reducing the break time. Like other centers, the members were very active and eager to learn for the objective of improving the current situation. Officials from the government were invited making the whole training time very interactive. Uniquely, women members from Gendi showed commitment into making sure that the skills and knowledge will be shared by many fellow members who could not attend.

Action Plan: Regarding the training plan, the members unanimously approved the current plan that indicates that the last session will be on October. Maize production calendar in this area begins on December.

PHOTO 5: CSDI used role models techniques to train the participant as shown in the photo below (Gallapo Center).



PHOTO 6: Government Officials namely the District Cooperative Officer and Ward Executive Officer were invited in the training as shown in the photo (Gallapo Center).



PHOTO 7: CSDI used flip chart to guide the participants on how to do “Financial Analysis” for a successful business plan.



8. CONCLUDING REMARK

Training Phase 1 was successful and CSDI is geared for the second phase by mid September. Handouts were provided to each participant and were encouraged to read and prepare for the follow on training sessions. It important to note that those attended in this 1st phase will be the same attending the follow-on phases to complete the training package.

9. ANNEXES

Annex 1 - Signed attendance list of members from each cooperative

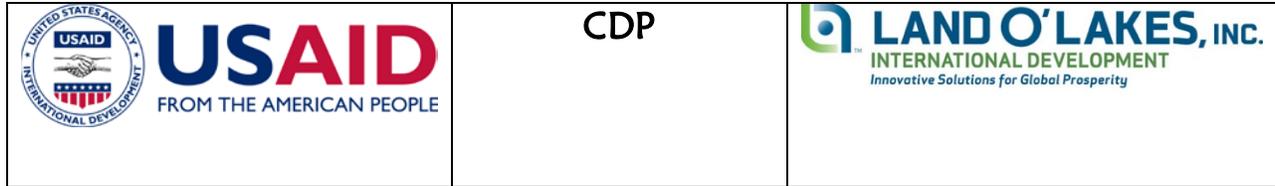
Annex 2 - Signed invitation letters

Annex 3 - Final Training Plan used in Phase 1

Annex 4- Number of Participants by gender.

ANNEX 4:

WORKSHOP PARTICIPANTS BY GENDER SUMMARY					
NO.	NAME OF COOPERATIVE	MEN	WOMEN	TOTAL	% OF WOMEN PARTICIPATION
1	TARAKEA AMCOS	43	13	56	23%
2	MASHIMA AMCOS	25	18	43	42%
3	USSERI AMCOS	23	8	31	26%
4	KOBOKO AMCOS	31	14	45	31%
5	SIHA KIYEYO AMCOS	19	10	29	34%
6	GALLAPO AMCOS	52	27	79	34%
7	GENDI AMCOS	17	10	27	37%
	TOTAL	210	100	310	32%



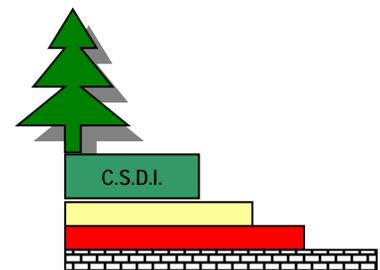
LAND O' LAKES INC.
INTERNATIONAL DEVELOPMENT
"CDP – SEED ALLIANCE PROJECT"

COOPERATIVES TRAINING SUMMARY REPORT
PHASE II

22ND – 25TH SEPTEMBER 2015

Submitted by.

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1. TRAINING OVERVIEW

This report presents summary of Cooperatives Training Phase II which commenced on **22nd August 2015** and ended on **25th August 2015**. The training involved seven (7) AMCOS located at three different training sites namely Tarakea, Koboko and Gallapo centers. The training was facilitated by the Center for Sustainable Development Initiatives (CSDI) as per Task Order Number 16 granted by Land O' Lake Inc. (LOL). CSDI collaborated with three other institutions to deliver the training as detailed in Annex I below:

Overall attendance performance on this training phase II was relatively lower than training phase I as indicated in table 2 below.

TRAINING CENTER	COOPERATIVE	ATTENDANCE		CHANGE
		PHASE II	PHASE I	
TARAKEA	Tarakea AMCOS	48	56	-8
	Mashima AMCOS	34	43	-9
	Usseri AMCOS	34	31	3
KOBOKO	Koboko AMCOS	26	45	-19
	Siha - Kiyeyo AMCOS	23	29	-6
GALLAPO	Gallapo AMCOS	31	79	-48
	Gendi AMCOS	22	27	-5
	Total	218	310	-92
<i>Overall Attendance Performance</i>				<i>70%</i>

This was attributed to varying reasons including preparations of farms for the new season (Tarakea Center); maize and pigeon peas harvesting (Koboko centre nd Gallapo), plus Tanzania national election campaigns (Koboko Center) and impact of the public holiday Eid el Haj public holiday which depended on sighting of the moon.. We had no better option given the attendance but to proceed with the training since each individual trainee is expected to train other minimum of 5 members.

2. TRAINING LOGISTICS

CSDI worked collaboratively with Yara, SEEDCO and MoCU to prepare the training materials that would suit the overall capacity building objective of establishing sustainable strategic alliance between cooperatives and business partners as a way of

revamping cooperatives in Tanzania. Further, CSDI contacted the leaders of the cooperatives to agree on appropriate training dates and making the necessary preparations for the training including invitation of members. We used individual mobile telephone numbers provided during training phase I to directly send message (sms) and make calls to the target members. Several reminders were sent to each member. Frequent communications with each cooperative leader were also maintained until the training was completed. The training schedule was circulated well in advance and participants were encouraged to keep time. Training was successfully delivered as per the attached training schedule..

3. TRAINING METHODOLOGY

CSDI maintained the previous training methodology which recognized the nature and composition of the participants. The presenters employed adult learning techniques to ensure that the members understand the subject matter as deeply as possible. Unlike phase I training style where we used Power Point Presentations, in this turn, presenters had physical items to show to the members and delivered their presentations by manner of asking questions and answers. Training tools used included flip charts, pictures, physical items (actual fertilizers and hybrid seeds).

At the end of each training session, participants were provided with material handouts for further learning and sharing with fellow members.

4. TRAINING OBJECTIVES

Training Phase II covered two additional topics agreed between CSDI and LOL to build the capacity of the cooperatives. These included:

- (i) “Crop Nutrition and Input Distributorship” – Module 5
- (ii) “New Cooperatives Act 2013 & Alliances” – Module 6

Already delivered topics are “Membership Empowerment” – Module 1 and “Basic Business Management Skills” – Module 2. Follow on modules will be delivered in November.

The overall objective of carrying out capacity building for the selected/pilot cooperatives is to create long-lasting strategic partnership or alliance between the cooperatives and various business partners and this will allow to test the hypothesis that cooperative

alliances can create more effective channels through which to supply hybrid maize seeds and other crop inputs in Tanzania.

5. TARAKEA CENTER

Total of 116 out of 135 invited cooperative **members** from three cooperatives - Tarakea, Mashima and Usseri AMCOS attended the training representing 86% attendance percentage. Trainers (Yara, SEEDCO, MoCU and CSDI) made good presentation of their knowledge and experience and the members showed their enthusiasm during the training. There was no any logistical challenge faced. Participants were grateful to see that their request to receive training on module 5 & 6 to catch with the season was respected and delivered.

It is very encouraging to note was that Tarakea AMCOS has already purchased 200 bags of fertilizer from Yara using their own source of funds. Usseri and Mashima learned a lot from this exemplary effort.

Follow on Activities:

- Each cooperative leadership will meet at their own convenient moments and make arrangements on how they will be able to source inputs sustainably and profitably for their members through Yara and SEEDCO. CSDI will be available to facilitate any negotiation launched between the parties.
- CSDI will keep working with Yara and SEEDCO to see that the cooperatives are able to formulate alliance.

Foreseeable Challenge:

We feel that even if either of the cooperative will manage to establish strategic alliance with Yara or SEEDCO, there will be a need for input purchase fund for each participating cooperative.

Recommendation:

Whereas CSDI may not be able to satisfy the need using CRGT's facility, we recommend LOL to plan for any possibility of extending Input Revolving Funds to these cooperatives.

CRGT is a CSDI affiliated Trust that provides small loans to innovative farmer group businesses. KOBOKO, Tarakea and Mashima co-ops were linked to this facility since last year, and they have already started negotiations. This is a more flexible source of credit

for these co-ops compared to their local banks as it is less bureaucratic and has better lending terms e.g. low interest rate (15%) and a negotiable grace period.

PHOTOS representing various occasions during the training at Tarakea Center:





6. KOBOKO CENTER

Total of 49 cooperative members out of invited 90 members from Koboko and Siha-Kiyeyo AMCOs attended the training held at Koboko Center thus representing 54% of the attendance performance. The low participation is attributed to on-going general election campaigns and maize harvesting activities around the area. There was adequate interaction between the trainers and the participants which for us indicates high interest by the members to learn. Again, there was no logistical challenge observed and the trainers had enough time to present their materials in its entirety.

Follow on activities: These two cooperatives expect to commence new crop season in January. So, they will each use the two months to run negotiation and try to formulate a strategic alliance with either Yara or Seedco or both under the auspices of CSDI. They have committed to provide among other things 0.5 acres for demonstration.

The following are photos indicating key training events at Koboko center:





7. GALLAPO CENTER

Total of 53 cooperative members out of 90 invited members from Gallapo and Gendi AMCOS attended the training at Gallapo Center thus representing 59% attendance performance. Key attributing factors include most members extended the aid el haji celebrations and secondly most of the members are busy in fresh harvest of Pigeon Peas and finalizing maize harvest. Pigeon Peas and maize are the main food and cash crops in the area. The training was very well attended by agricultural extension officers from the local government in Babati district and also District Cooperative Officer. Next crop season will commence in December. Therefore participants appreciated the timing of the training as it will give them enough time to run negotiation with the input suppliers – Yara and Seedco.

Action Plan: CSDI will keep collaborating with each Cooperative on one side and the input suppliers on the other to see that a successful strategic partnership is created and developed within the project period. As a way of consolidating partnership, CSDI has facilitated the two cooperatives to receive Post Harvest Handling equipment (Cocoon, metal silos and PICS bags) through AGRA support. This will give them energy to increase production next year and eventually make strategic alliance a success.

Gallapo and Gendi co-ops were recommended by CSDI to participate in AGRA's introduction of new Post Harvest Handling Technologies pilot project. Under this project, farmer groups experiencing grain storage challenges will receive storage cocoons, metal silos and pics bags. They will test them, and their preferences evaluated. We picked Gendi and Gallapo as they were experiencing storage problems. The project will end soon this year and will be evaluated and results will be prepared and presented later this year. The co-ops are not supposed to pay for these storage items during the pilot project.







Gallapo AMCOS is apparently buying Pigeon Peas from its Member as shown in the photo above. This implies that the AMCOS if well organized can coordinate good services to its members including input supplies.

8. THE MAIN TAKE AWAYS FROM THE TRAINING SESSIONS.

During the training, the farmers had an opportunity of understanding very important concepts as far as maize growing is concerned, especially through the use of appropriate seeds and plant nutrients, as well as the ways to enter into an alliance with an input distributor. The seasoned co-operative expert explained in detail on how the new co-operative law affects the way Co-ops do business. Below is a summary of the areas which members showed clearly that they were learning new and useful knowledge that would take them to the next higher level on how they secure inputs and grow maize.

8.1 YARA.

The training was conducted by a highly experienced YARA agronomist based in their Northern zone fertilizers sales and distribution office. This zone covers Kilimanjaro, Arusha and Manyara regions. This was a trainer that is experienced in this zone, and therefore he could address the farmers' questions from his experience of solving practical problems facing maize farmers in this zone. The following were the topics that highly stimulated the farmers and motivated them to learn more as far as maize plant nutrition is concerned:

- Simplified and graphical explanation of plant nutrient requirements with focus on maize, and the role of each nutrient in plant growth. This also covered the impact on the plant growth in case of the absence of some of these nutrients.
- Understanding the concept of plant's needs of Primary, Secondary and micronutrients, and their importance for a complete plant growth and hence more yields.
- The importance of soil testing so as to provide tailored fertilizer to provide appropriate plant nutrients.
- Comparison of the contents of farmers' normal fertilizers (e.g. Urea, CAN, SA, TSP, etc) and the YARA's fertilizers that provide all the required nutrients, and hence solve the problem of availability of all the primary, secondary and micro nutrients.
- The correct application of fertilizers to maize plants, and the impact of wrong application to the plant growth and hence reduction in yields.

Lastly the YARA trainer had an opportunity of explaining to the farmers on where and how to source genuine YARA fertilizers both as a co-operative or individually. This was very important to the co-op farmer members as they were very enthusiastic to use these fertilizers after understanding their potential benefits.

8.2 SeedCo.

The maize seed training was done by the experienced Northern zone sales representative, who has worked in this zone distributing seeds both with SeedCo and other seed companies in the past, therefore, he was well vested to conduct this training session and respond comprehensively on any matters concerning maize seeds from practical point of view, and his experience. The following were key take aways for the participating co-op members trainees;

- Understanding bad vs good seed.
- How to identify good seed in the context of yield potential, diseases and drought tolerance or resistance.

- Understanding of the appropriate seed varieties for highland, mid high and low lands. This was especially important for the Kilimanjaro co-ops that have all these zones.
- Why SeedCo seeds are best suited to their growing areas.
- How to ensure that one buys genuine seeds.

Lastly, the trainer explained in detail on how to source SeedCo seeds, procedures to follow so as to be a distributor, the requirements for entering into a distributor contract with Seed Co, the benefits of becoming a distributor both as an individual or a co-operative.

8.3 MuCobs.

The Co-op member participants had an opportunity of being trained by a person known as an authority in the Co-operative movement of Tanzania, with over 40 years experience in teaching co-operative officers at MuCobs, training co-operative leaders management and members, and advising the Government on co-operative matters. In his training he focused mainly on part II of his training materials of which the following were the main areas which were very important to understand as far as the impact of the new co-op law on co-op business is concerned:

- The main differences between the 2003 co-op law vs the new 2014 law, in the context of how co-ops do business and make business decisions
- The co-ops were ensured that the new co-op law empowers the co-op leadership and management to enter into contracts with no need to consult any external higher authority.
- The rights and responsibilities of co-op members.
- How to enter into a contract as a co-operative.

This session was very interactive on all the three centres as the co-op expert is an authority on co-ops, and thus he could explain the new law very well and on how it gives full freedom to co-ops in making their own business decisions.

9. CONCLUDING REMARKS

Training Phase II was successfully conducted and CSDI is geared for the third phase scheduled mid November, 2015. Participants have been encouraged to read the training handouts delivered to them and asked leaders to launch strategic discussion with Yara and Seedco.

10. ANNEXES

Annex 1 – The trainers Contacts

Annex 2 - Signed attendance list of members from each cooperative

Annex 2 - Final Training Plan used in Phase II

Annex I: The Trainers and Contacts.

Name of Organization	Name of Trainer	Contact	Subject Covered
SEEDCO Tanzania Ltd.	Daniel Mwambungi	+255 758 838 366	Quality Seeds Use & Distributorship
YARA Tanzania Ltd.	John M. Rotich	+255 754 921 705	Crop Nutrition & Distributorship
Moshi Cooperative University	Prof. Suleman A. Chambo	+255 755 804 278	New Cooperatives Law
CSDI	Ulrich Mwinyiechi	+255 753 498 549	Strategic Alliance



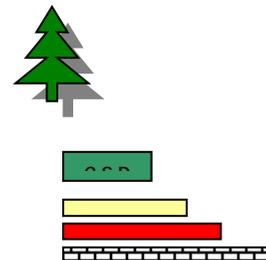
LAND O' LAKES INC.
INTERNATIONAL DEVELOPMENT
“CDP – SEED ALLIANCE PROJECT”

COOPERATIVES TRAINING SUMMARY REPORT
PHASE III

1st – 3rd December 2015

Submitted by.

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1. TRAINING OVERVIEW

This report presents summary of Cooperatives Training Phase III which was conducted from 1st to 3rd December 2015. The training was very well attended by selected cooperative members from seven (7) Agricultural and Marketing Cooperatives Societies (AMCOS) and took place in three different centers namely Tarakea, Koboko and Gallapo. The training was conducted and facilitated by the Center for Sustainable Development Initiatives (CSDI) as per Task Order Number 17 granted by Land O' Lake Inc. (LOL). CSDI trained the members the following modules:

Module 4 – “Basic Business Management Skills”

Module 5 – “Basic Financial Management Skills”

Below table indicates the training attendance performance summary:

TRAINING CENTER	NAME OF COOPERATIVE	ATTENDANCE		
		PHASE III	PHASE II	PHASE I
TARAKEA	Tarakea AMCOS	27	48	56
	Mashima AMCOS	35	34	43
	Usseri AMCOS	35	34	31
KOBOKO	Koboko AMCOS	25	26	45
	Siha - Kiyeyo AMCOS	20	23	29
GALLAPO	Gallapo AMCOS	48	31	79
	Gendi AMCOS	18	22	27
	Total	208	218	310

Comparative attendance performance for the three training sessions

2. TRAINING LOGISTICS

Unlike previous training sessions in which CSDI hired experts from YARA, SEEDCO and MoCU to prepare materials and deliver training on some of the modules, this third phase training was wholly prepared and conducted by CSDI experts in business and financial management arena. CSDI used its worth of experience to tailor appropriate materials to cover the two subjects. The materials were prepared in English and later translated and delivered in Kiswahili using power point presentation. The final Kiswahili handout which was delivered to the participants is attached to this report.

CSDI had challenge of doing invitations to the participants given the short time available. However, we used direct telephone conversation and mobilization with leaders of the cooperatives and sent short messages to each participant using the previous contact list. In this way, we achieved to reach out many participants and finally a total of 208 people

attended the training (as indicated above) representing a slight decrease of 4.8% compared to the 2nd phase training. Despite those few challenges, the training was successfully delivered and participants were very much impressed by the contents of the training materials. By our experience, lack of proper knowledge in business and financial management coupled by inadequate financial discipline has caused many cooperatives in Tanzania to fall apart.

3. TRAINING METHODOLOGY

CSDI maintained the previous training methodology which recognized the nature and composition of the participants. The presenters employed adult learning techniques to ensure that the members understand the subject matter as deeply as possible. Specially this turn, CSDI achieved to use power point presentation. Other training tools included flip charts and white board. At the end of each training session, participants had questions and answers moment after which were provided with material handouts for further learning and sharing with fellow members both in electronic copy and hard copies. *See attached the compiled training materials in Kiswahili.*

4. TRAINING OBJECTIVES

As already indicated above, Training Phase III focused on the following topics/modules:

- (i) “Basic Business Management Skills” tailored for cooperatives.
- (ii) “Basic Financial Management Skills” also tailored for cooperatives.

These two modules complimented the agreed series of 6 different modules which CSDI committed to deliver to the 7 cooperatives.

The overall objective of carrying out the capacity building for the selected/pilot cooperatives is to create long-lasting strategic partnership or alliance between the cooperatives and various business partners and this will allow testing of the hypothesis that cooperative alliances can create more effective channels through which to supply hybrid maize seeds and other crop inputs in Tanzania.

5. TARAKEA CENTER

Total of 95 out of 110 invited cooperative **members** from the three cooperatives - Tarakea, Mashima and Usseri AMCOS attended the training representing 86% attendance percentage. The trainees arrived on time and were actively listening and

asking questions because for them the topics were relevant to and will potentially have an impact not only to the cooperative itself but also to the individual participant. There was no any logistical challenge and the program was completed as planned.

Foreseeable Challenge:

Ability of each cooperative to hire capable accountant looks small in terms of paying him/her. However, there is no alternative but must hire.

Recommendations:

- CSDI advised each cooperative to ensure that they keep the training handouts for other members to benefit from the training.
- CSDI also urged the cooperatives to ensure that they hire capable accountant to manage the financials and must be provided with financial manual tailored for the respective cooperative.
- CSDI advised the cooperatives to ensure that the Board does what is supposed to do and should be able to separate duties and promote transparency especially in financial affairs of the cooperative.

Below are some photos representing various occasions during the training at Tarakea Center:

Group Picture at Tarakea Center (below):



Finance training session at Tarakea (below):



6. KOBOKO CENTER

Total of 45 cooperative members out of invited 80 members from Koboko and Siha-Kiyeyo AMCOs attended the training held at Koboko Center thus representing 56% of the attendance performance. The performance was comparatively low and this was attributed to some social challenges happened on the training day.

Foreseeable Challenge:

Koboko and Siha cooperatives have similar challenges outlined above. Apparently they have no accountant and ability to employ one is a problem. They have Manager (locally referred to as Secretary of the cooperative) who does everything for the cooperative. This is not healthy for the strategic growth of these cooperatives.

Recommendations:

- They should ensure that each cooperative hires an accountant and use him/her.
- They need to have financial manual.
- They should ensure that Board meetings are regularly held and separation of duties is observed.
- They should refocus their business approach to take advantage of other opportunities like commercial maize farming, etc.



Below - participants taking notes during financial training session at Koboko Center:



7. GALLAPO CENTER

Total of 66 cooperative members out of 80 invited members from Gallapo and Gendi AMCOS attended the training at Gallapo Center thus representing 82% attendance performance. This improved attendance performance is attributed to the fact that members were very eager to learn about how they can improve leadership and manage funds. Also, members at this period of the year in Gallapo and Gendi areas are not very busy with agricultural activities. The season is expected to start on January/February.

Foreseeable Challenge and recommendations:

Gallapo and Gendi AMCOS have similar challenges outlined above. They need to separate role of a Secretary and an Accountant who they have not employed. In addition, they need to establish specific desk for the accountant and ensure that they use him/her. Once accountant is employed, they need to provide him/her with a financial manual to ensure that financial matters of these cooperatives are properly handled and reported.

Training session at Gallapo Center (below):





8. THE MAIN TAKE-AWAYS FROM THE TRAINING SESSIONS.

As once mentioned above, lack of good leadership and transparency, and rampant financial mismanagement have contributed massively on the poor performance of cooperative across Tanzania and some of them have collapsed.

Each one who attended the third phase training sessions was eager to learn how he/she can improve the way they are running and/or managing their cooperatives. Knowing what they need, CSDI tailored the discussion to cover not only the professional content of the subject but also mentoring the participant to change their mind-set and attitude about cooperatives and see them as unique opportunity that may turn their agricultural activities profitable. We ensured that participants were accorded with hands-on knowledge on what they can do to create change. Specifically, they were exposed to the following aspects:

1. Understanding better the business that they are doing (be coffee or maize or any other potential one) and conduct participatory plans on how to improve it. We mentioned that they should approach agriculture in commercial way, just like any business that they are doing for them to make progress.
2. Participants were provided with tools/steps they may pursue to come up with properly functioning PLAN (short term, mid-term and even long-term) and asked to prepare one year plan within this month and start implementing by next year. The Board members agreed to implement the exercise. We argued them to hire advisors if need be.
3. Participants were exposed to the importance of setting up a proper system of operation that will require minimal supervision by the board or even the members. They need to have financial manuals, human resource manuals and need to employ right people to fill in key office positions like accountant, manager, extension service officer or even marketing officer;
4. Participants were exposed to basic financial management skills that include proper record keeping, bank reconciliation, preparing financial statements, audit issues and appreciating separation of roles in an organization.

9. CONCLUDING REMARKS

Training Phase III complimented the series of the modules which CSDI proposed to have great value in terms of building the capacity of the cooperatives to manage their cooperatives well and realize economic benefit out of it. These 6 modules coupled by regular mentoring and coaching at individual cooperative level can truly transform these cooperatives and enable strategic alliances a success story.

10. ANNEXES

Annex 1 – Training materials in Kiswahili

Annex 2 – Signed attendance list of members from each cooperative (in PDF File)

Annex 2 – The final Training Plan used in Phase III

Appendix C:

Rwanda Seed Alliance Program Social Network Study

**Primary authors
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Abstract

This research report describes the methodologies and results from the baseline of a quasi-experimental study of five maize cooperatives in Rwanda in the summer of 2015. The broad objective of the project, the Seed Cooperative Alliance Program, aim is to identify more effective ways to help align small holder farmers, who are members of farm cooperatives in Rwanda, into an integrated value chain. The specific goal of this phase of the project is to identify how social capital, in the form of trust and social networks, influences how farmers receive and convey information regarding new hybrid maize seeds, which have been introduced to the country. Hybrid maize seeds have a myriad of advantages over the traditional open-pollinated varieties, including higher and more reliable yields. Results show that interventions should be developed which focus attention on diffusing social networks as well as build trust between cooperative members

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Introduction

Adoption of hybrid seed is part of the Rwandan government’s effort to wean small holder farmers off of a highly subsidized and centrally controlled agriculture sector. Specifically, this project looks at the role of farmer social capital in the creating information ‘chains’ in

which information about farm inputs and implements, which start at private firms, reaches the farmer. This project utilized existing, but underutilized, methodologies to empirically map member's social capital and the more and less important links in information through the use of ego-centric social network analysis. The study's methodologies will be reviewed in depth, followed by the results of the study. Finally, recommendations about how to improve the level of member social capital vis-à-vis structured interventions, led by Land O' Lakes International Development, are provided.

Methodology

In order to accurately capture any existing network between farmers and the greater cooperative and value chain members, a survey was conducted using a known probability systematic sampling technique. The sample was drawn randomly from a sampling frame which included all cooperative members who have remained active in the last 5 years (check this for accuracy). Five cooperatives were chosen to participate in the survey based on their history of adopting new hybrid maize seeds. There were several innovative methodologies used in this study and subsequent analysis of the data. The next paragraphs will describe them in detail, along with sampling techniques enumeration efforts.

Data Collection

As previously mentioned, cooperatives were chosen to participate based on their more or less past adoption of hybrid maize seeds. Prior to conducting the survey, research team members travelled to Rwanda to conduct in depth focus group interview that provided the researchers with much needed direction for the quantitative survey. A more detailed report of each of the focus groups is presented in the appendix of this report. Readers may need to familiarize themselves with the general cooperative governance structures provided in the qualitative report, as a key aspect of the social network analysis was to test the more or less effectiveness of this rigid organizational structure.

Of the five cooperatives included in the study, four had adopted hybrid maize seeds and one had not yet adopted. Data was collected via in-person guided questionnaires. The questionnaire was written by the researchers in English and translated by Rwandan team members in country before the survey was administered. Enumerators were recruited based on their ability to speak the local dialect as well as their knowledge of agronomics and familiarity with the cooperatives. Fifty members from each cooperative (total of five) were preselected based on a systematic random sample. It is important to note that this sample is scientific, where the probability of inclusion is known and error rates can be properly calculated. In total, 250 respondents were identified and participated in the survey – enumerators interviewed individuals in the field as well as in their homes.

The Questionnaire

The questionnaire is compiled of many questions measuring members' income, social and human capital, farming practices, level of satisfaction and involvement with their cooperative, as well as other socioeconomic indicators. Questions were included in the survey that provided the opportunity to identify an individual cooperative member's social

networks. Network analysis such as this is not common in international development work. Egocentric network questions asked respondents to identify by name and position (where applicable) people from whom they receive information specifically about agriculture and agro-economics. Figure 1 provides an example a network question taken directly from the survey.

Figure 1: Example of egocentric network question

1) Please list five (5) people in your cooperative that you would go to for advice and information. From the list of names you have just chosen, please rank your selections by order of importance in terms of whom you would go to first to receive information, then second and so on.	
_____	First person Title _____
_____	Second person Title _____
_____	Third person Title _____
_____	Fourth person Title _____
_____	Fifth person Title _____

Once completed, each questionnaire was entered into an Excel data template and then imported into an SPSS statistical file for further analysis. In addition to analysing the data in SPSS, data were analysed using both the UCINET Social Network Program and the AMOS Structural Equation Modelling program. The following paragraphs describe the general descriptive findings.

Findings

Table 1 Use of seeds				
Cooperative Name		No	Yes	Total
COACMU	n	0	51	51
	Percent	0.00%	25.40%	20.30%
IABM	n	1	49	50
	Percent	2.00%	24.40%	19.90%
Impabaruta	n	49	1	50
	Percent	98.00%	0.50%	19.90%
KABOKU	n	0	50	50
	Percent	0.00%	24.90%	19.90%
KOREMU	n	0	50	50
	Percent	0.00%	24.90%	19.90%
Total	n	50	201	251
	Percent	100.00%	100.00%	100.00%

Table 1.a Use of seeds on quality of life					
Cooperative Name		Quality of life			Total
		Decreased	Stayed the same	Increased	
COACMU	n	2	5	44	51
	Percent	25.00%	29.40%	25.40%	25.80%
IABM	n	2	3	41	46
	Percent	25.00%	17.60%	23.70%	23.20%
Impabaruta	n	0	0	1	1
	Percent	0.00%	0.00%	0.60%	0.50%
KABOKU	n	4	8	38	50
	Percent	50.00%	47.10%	22.00%	25.30%
KOREMU	n	0	1	49	50
	Percent	0.00%	5.90%	28.30%	25.30%
Total	n	8	17	173	198
	Percent	100.00%	100.00%	100.00%	100.00%

Table 1 Summary

- Most (80 %) of the sample has used hybrid maize seed; this included almost all members of four cooperatives. Almost all of the non-adopters were found in one cooperative.
- Close to 90% of hybrid maize seed users reported an increase in their quality of life.

Table 2 | Importance of Reasons for Adopting Hybrid Seed

How important are each of the following reasons for using hybrid maize seeds?	NVI	SI	I	MI	VI	T
Q26a: Demonstration plots	14.9	7.9	9.9	21.3	46	100
Q26b: Increase my income	4.5	6.4	10.9	27.2	51	100
Q26c: Improves my yield	1	3.5	14.9	25.7	55	100
Q26d: Reduce bargaining time	4	4.5	12.9	37.3	41.3	100
Q26e: Reliable delivery of seeds	4.5	2.5	8.5	31.8	52.7	100
Q26f: Government subsidies	13.4	13.4	22.9	20.4	29.9	100
Q26g: My relatives are participating	8.5	6	12.5	27.5	45.5	100

Q26h:Others in my village are participating	16.5	11.5	24	19	29	100
Q26i:I trust my cooperative	2	5.5	9	24	59.5	100

Values represent percent

NVI = not very important, SI = somewhat important, I = important, MI = more important, VI = very important, T = total

Table 2 Summary

- Respondents who adopted maize seed, members of four cooperatives, reported that the most important reason for adoption is that they can trust their cooperative, which provided the encouragement and resources to facilitate this decision.
- Increased yield and higher income were important reasons for adoption as well.
- In later tables we will see that the social capital motivator – trust in the cooperative– is highly correlated with seeing the advantage of adopting hybrid maize in terms of higher yields and higher income.

Table 3 | Importance of Reasons for NOT Adopting Hybrid Seed

How important are each of the following reasons for NOT using hybrid maize seeds?	NVI	SI	I	MI	VI	T
Q27a:I do not have enough information	0	0	2	12.2	85.7	100
Q27b: I have never seen hybrid seeds	0	2	22.4	18.4	57.1	100
Q27c: No advantage for increased income	47.9	25	20.8	4.2	2.1	100
Q27d:I am waiting to see demo plot result	4.2	6.3	10.4	12.5	66.7	100
Q27e:I am satisfied with the way I obtain seeds	27.1	50	8.3	6.3	8.3	100
Q27f: My relatives are not participating	54.2	37.5	6.3	2.1	0	100
Q27g:Others in my village are not participating	59.2	38.8	0	2	0	100
Q27h:I do no trust my cooperative	30.6	34.7	26.5	6.1	2	100
Q27i:I grow my own seeds	43.8	33.3	14.6	2.1	6.3	100

Values represent percent

NVI = not very important, SI = somewhat important, I = important, MI = more important, VI = very important, T = total

Table 3 Summary

- The most important reasons for not participating are: a farmer’s belief that s/he does not have enough information and/or is waiting to see the outcome of a demo plot.
- Also, having never seen hybrid seeds was a large factor.
- This contrasts with the adopters who based their decision on their trust of their cooperative. It would appear that the cooperatives in which members’ adopted had higher levels of social capital than did the non-adopting cooperative.

Factor Analysis Results

Latent effects may be thought of as those factors or variables that are not directly measurable vis-à-vis a single variable and may require a series of variables to be accurately measured. Typically, latent effects are thought to be social constructs, such as: social capital, one’s view on the importance of gender in household decisions, or other factors that are better and more accurately measured through several questions. Exploratory factor analysis (EFA) is a method of data reduction that allows for latent effect factors to be quantified. EFA is usually presented in table format with each individual variable in the left-hand rows and each factor (identified via computer simulation) in columns on the right-hand side – this is the case for factored tables presented this report. The numbers beneath are known as eigenvector values– this is a very similar technique to that of the network analysis presented later in this report, though there are some key differences. One may interpret these numbers as follows: a particular variable fits into the factor (column) that has the highest eigenvector value. If two or more variables’ eigenvector values are highest in the same factor, they are said to *load together*. That is, these two or more factors are explaining the same phenomenon. If a variable’s highest factor loading is not over .6 it does not load with any factor. Factors are not ‘named’ or otherwise identified by EFA, thus assigning a meaningful designation to each factor is left to the researcher. Each factor is coded in a different color. The EFA for questions 26 and 27 are present in Tables 4 and 5, respectively.

Table 4 | Q26 A Factor Analysis Provides further Insight into the “Thinking Process” of Adopters Versus Non-Adopters the

Question 26: Factor Analysis	Component	
	1	2
Q26a: Demonstration plots	0.354	0.495
Q26b: Increase my income	0.706	0.298
Q26c: Improves my yield	0.803	0.164
Q26d: Reduce my time in bargaining with sellers	0.743	0.171

Table 4 | Q26 A Factor Analysis Provides further Insight into the “Thinking Process” of Adopters Versus Non-Adopters the

Question 26: Factor Analysis	Component	
	1	2
Q26e: Reliable delivery of seeds	0.583	0.356
Q26f: Opportunity to get government subsidies	0.685	-0.158
Q26g: My relatives are participating	0.076	0.736
Q26h: Others in my village are participating	0.053	0.875
Q26i: I trust my cooperative	0.627	0.138
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a Rotation converged in 3 iterations. Component 1 explains 39.38% of variance Component 2 explains 14.93% of variance		

Table 4 Summary

- According to the table there are two latent factors – clusters of responses – in the way that individual farmers described their reasons for adopting or not adopting hybrid maize.
- The first factor is a cluster of variables related to gains in income – “increases my income”; “improves my yield”; “opportunity to get government subsidies”- and trust of the cooperative – “reduce my time in bargaining with sellers”; and I trust my cooperative.”
- While the second factor has high loadings from variables measuring relatives and other’s participation as a prerequisite to adoption.
- Factor names may be the following: (1) rational economic incentives, and (2) social capital.

Table 5 | Q 27 factor analysis: Why Did a Farmer Not Adopt Hybrid Maize Seeds?

	Component			
	1	2	3	4
Q27a: I do not have enough information on hybrid seed	-0.413	0.193	0.635	-0.262

Table 5 | Q 27 factor analysis: Why Did a Farmer Not Adopt Hybrid Maize Seeds?

	Component			
	1	2	3	4
Q27b: I have never seen hybrid seeds	0.063	-0.187	0.851	0.092
Q27c: No advantage for increased income	0.824	-0.094	0.138	0.112
Q27d: I am waiting to see demo plot result	-0.779	-0.191	0.289	0.028
Q27e: I am satisfied with the way I obtain seeds	0.807	0.234	-0.054	-0.174
Q27f: My relatives are not participating	0.179	0.861	0.024	0.069
Q27g: Others in my village are not participating	0.128	0.879	0.059	0.084
Q27h: I do not trust my cooperative	-0.053	0.051	-0.018	0.963
Q27i: I grow my own seeds	0.053	-0.573	0.198	0.105
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a Rotation converged in 6 iterations. Component 1 explains 28.90% of variance Component 2 explains 18.87% of variance Component 3 explains 13.03% of variance Component 4 explains 11.75% of variance				

Table 5 Summary

- There are four latent factors derived from the question 27 series;
- The first factor - “no advantage for increased income” and “I am satisfied with the way I obtain seeds” – would seem to reflect a lack of desire or perhaps fear of change
- The second factor – “My relatives are not participating” and “Others in my village are not participating” would seem to reflect a dependence on informal support networks. Most of the respondents to this question belonged to the one cooperative with virtually no adopters. The interesting question here is if the informal social networks – family and neighbors – did not encourage adoption because the cooperative did not, or if the causal arrow goes the other way?
- The four factors may be interpreted, respectively, as: (1) information, (2) status quo, (3) social capital, & (4) trust.

Table 6 | New information

Means Comparison Have you ever used hybrid maize seeds? Non-Adopters Labelled as “No” and Adopters as “Yes.”			
	No	Yes	Total

How should someone contact you about new information?				N
*Q28a: Face to face	2.58	2.09	2.19	249
Q28b: Radio	4.96	4.99	4.98	244
28c:Newspaper	6.38	6.55	6.52	242
Q28d: Cell phone	3.22	3.32	3.30	248
Q28e: Village leader	4.00	3.96	3.97	249
28f:Zone leader	3.27	3.50	3.46	250
28g:Special Assembly	3.26	3.18	3.20	251

*p <.10

Table 6 Summary

- This table represents a means comparison of question 28 between hybrid seed adopters and non-adopters.
- Question 28 is a ranking question, so the higher numbers are more important. There is only one significant difference, that of face-to-face that appears to be slightly more important for the non-adopters than for the adopters.
- Overall, the findings do not show much difference between adopters and non-adopters in terms of information channels; however, the earlier finding suggest that adopters are much more trusting of their cooperatives as sources of information than are the non-adopters.

Table 7 | Cooperative functions

Means Comparison Have you ever used hybrid maize seeds? Non-Adopters Labelled as “No” and Adopters as “Yes.”				
How well cooperative functions	No	Yes	Total	N
Q29b: Enforcement of Cooperative Rules	3.98	4.06	4.044	251
Q29c: Cooperative Communication to Members	3.82	4	3.964	251
Q29d: Members Communication to the Cooperative	3.74	3.965	3.92	251
Q29e: Overall, the Cooperative Works for my Best Interests	3.52	3.565	3.556	250

*Measured using Likert scale with 1 being “not satisfied” to 5 being “very satisfied”

Table 7 Summary

- This is a mean comparison for question 29.

- There are no significant differences between adopters and non-adopters in how they evaluate the by-laws of their respective cooperatives.

Social Network Map

Who Would You Go to for Advice and Information *within* Your Cooperative?

An aggregated graph of the existing network for question 47, ‘Please list five (5) people in your cooperative that you would go to for advice and information?’ is shown in Figure 2. The data contained in Figure 2 is an aggregate of all cooperatives, but is a general descriptor of each cooperative’s characteristics. That is, while there were small differences in node eigenvalues, this was not enough to influence social capital levels, whether or not one would adopt hybrid maize seed, or any changes in one’s income. As seen in Figure 2, information travels between a relatively small number of individuals in certain specified roles. Each node is sized according to its Eigenvalue, or its relative influence within the graph, so direct comparisons of node circle-size are allowable. One might notice from initial glance that there is a great variation in size of each node and its placement within the graph. This finding goes against what the researchers had hypothesized and counter to the information obtained in each focus group.

The focus group participants indicated that there is a strict hierarchal chain-of-command afforded to each cooperative. The cooperative has some autonomy over the exact nature of its command structure, but each is structured such that it meets standards issued by the Rwandan Agriculture Board (RAB). The RAB issued chain-of-command structure is relatively simple and would likely be something found in a cooperative within the U.S. or more developed countries. There is a board of directors and executive council (president, vice president); following this, there is a series of middle management positions (i.e. cooperative manager, region leader, and zone leader); in addition to this there are members who are somewhat on the periphery: accountants, agronomist, etc. Each of these is represented in the graph, which is completely unexpected. Because we asked individual cooperative members where they received information and advice on agriculture, we should have seen a relatively tapered graph, with Zone Leaders being the most central point and tapering as the graphed moved up towards upper management. This was not the case.

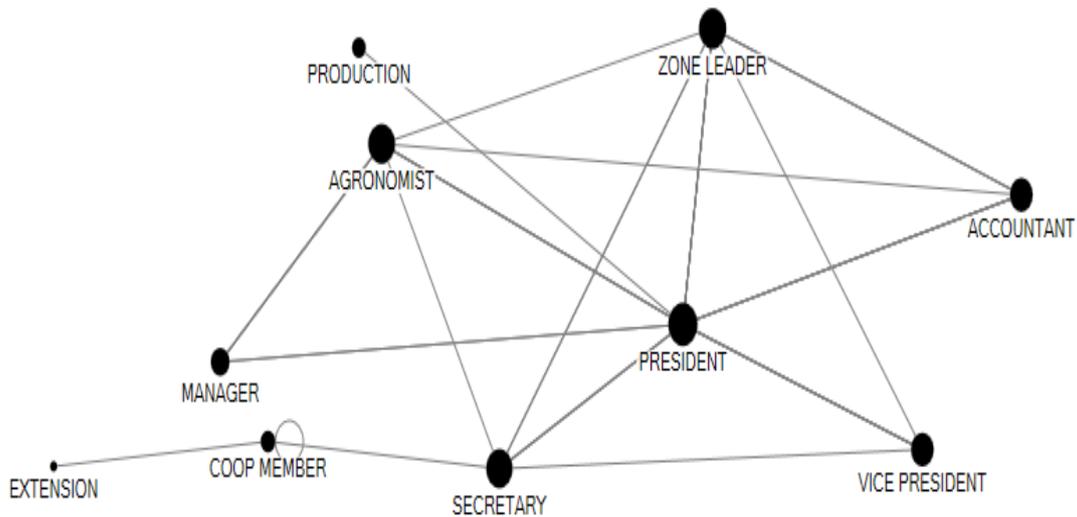
Figure 2: Social network map

Figure 2 shows that while Zone Leaders are of a high influence within the graph, they are not the highest. In other words, just as many people go to the cooperative President as they do Zone Leaders; in addition, Presidents are linked to the highest number of other actors in the graph (based on the idea of ranking the importance of who a member goes to for advice and information). Again, because the President is in a unique position – he/she is situated in close contact with other executive council members – information is spread reciprocated between a small number of people.

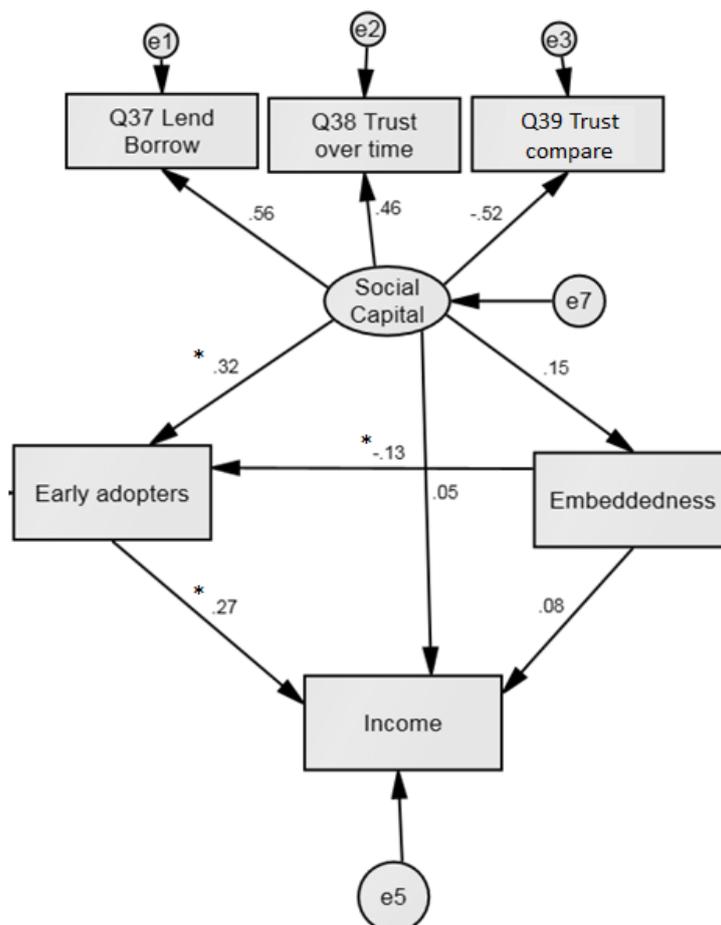
The question then becomes: Is the president the best person to administer advice to the rest of the cooperative. By bypassing the entire bureaucratic structure members are placing a heavy burden on the cooperative president and executive council. This puts a lot of power in to the president's hands; not only does the cooperative president control much of the decision making process, but the research indicates that presidents also control the flow of information. Although the latter is not by design it nonetheless has the same consequences; power is consolidated into the hands of a very small number of people.

This type of social network structure has the ability to polarize and proliferate the impact of a president's leadership style, whether that is of benevolence or a more controlling nature. This finding can be related back to a central finding of the focus groups. There is a great variance, or at least an observed variance, in the overall mood of the focus groups. Those cooperatives which are early adopters of maize seeds seemed to have a more democratic style meeting. Researchers observed and noted this, saying, 'INSERT APPROPRIATE NOTES', while the cooperative which had not yet adopted hybrid maize seeds was less democratic and had more of a top down approach to the meeting structure. In order to better understand this, a structural equation model is presented which allows for linkages to be made between all variables of interest.

SEM

A structural equation model (SEM) is used in order to get a better understanding of the intricate nature of the variables of interest. Structural models are somewhat better at capturing the influence that one variable has on one or more dependent variables. In addition, the dependent variable may also be used as predictor variable. This allows for a more insightful analysis of the data. Lastly, SEM allows for indirect effects to be measured using regression analysis. For instance, suppose that a particular variable of interest does not significantly influence our predictor variable (as is the case in Figure 3). Structural models can show us that there may be an indirect effect when our variable of interest influences another variable, which, in turn, influences the dependent variable of interest. Figure 3 illustrates the SEM used to evaluate the relationship between social capital, network analysis, early adopters of hybrid maize seed, and respondent income. The following paragraphs explain the findings from the SEM in Figure 3. It is important to note that SEMs created in AMOS (the SEM software used to develop this model) will not allow missing data. As such, any rows which had missing data included in the variables of interest are excluded from the model. The model has an n of 193.

Figure 3: Structural Equation Model



Within the SEM model represented in Figure 3, there are four variables of primary interest, they are: social capital (measured as a latent effect comprised of three variables measuring respondent trust), embeddedness (measured in eigenvalue) within the network, whether or not a respondent is an early adopter of hybrid maize seeds, and self-reported income. According to the model, the only predictor of a rise in income level is if a person was an early adopter of hybrid maize seeds. That is, those respondents who choose to use hybrid maize seeds reported higher incomes than their counterparts. Social capital and member embeddedness, while not directly influential on income, were found to be significant predictors on the variable measuring early adopters. This indicates that they have indirect effects on income. Interestingly, the variable measuring social capital has a positive influence on the likelihood that a person is an early adopter of hybrid maize seeds, while embeddedness has a negative influence. Both of these indirect effects are significant at the $p < .05$ alpha level. To sum up:

Early adopters (+) → Income, .27
 Social capital (+) → Early adopters, .32
 Embeddedness (-) → Early adopters, .13
 Social capital (+) → Income, .09
 Embeddedness (-) → Income, -.04

This finding support the hypotheses developed from the descriptive social networking map: while social capital is usually a good thing, have networks that are too centralized decreases the likelihood that a member is an early adopter and ultimately has negative impacts on how much they earn.

A simple frequency distribution between those respondents who were early adopters or non-adopters will allow us to better judge how the impact of a cooperative member's title (if they have an official role and title within the organization) and their more or less embeddedness within the social network. These results are presented in Table 8. As one can see in Table 8, non-adopters of hybrid maize identified their cooperative president as the central node within their network of information. Zone leader is listed as the sixth most influential person in terms of their network. This stands in sharp contrast to those respondents who are early adopters of hybrid maize seed: their most influential person is the zone leader.

The cooperative president is listed as second, but that position has 33% less influence than does the zone leader. This is quite telling: Non-adopters have a more centralized network of influence and, perhaps more important, the non-adopter's president is positioned as the most powerful decision maker within the cooperative. One may also notice that adopters mentioned members of their supervisory committee in addition to all other positions described by non-adopters.

Table 8 | Embeddedness of contact person: Adopters vs. Non-adopters

Non-adopter Embedded			Adopter Embedded		
Contact	score	Freq.	Contact	score	Freq.
PRESIDENT	17.46	24.00	ZONE LEADER	20.06	42.00
AGRONOMIST	14.76	8.00	PRESIDENT	15.80	84.00
SECRETARY	14.21	1.00	ACCOUNTANT	12.20	15.00
ACCOUNTANT	10.79		VICE PRESIDENT	12.12	8.00
VICE PRESIDENT	10.66	3.00	SECRETARY	10.62	4.00
ZONE LEADER	10.66	3.00	AGRONOMIST	9.85	22.00
MANAGER	7.30	2.00	MANAGER	8.64	2.00
COOP MEMBER	4.46	4.00	SUPERVISORY COMMITTEE	8.42	4.00
			COOP MEMBER	7.35	2.00
Total	14.16	50.00	Total	15.03	187.00

Intervention strategy

The central finding of this study is that a cooperative's social network structure has implications on whether or not the cooperative is likely to adopt new farming inputs and member income. Specifically, our findings show that the more diffused a cooperative's network structure is the better off its members are in terms of total income. In addition, non-adopters have a more streamlined network, with their president sitting in the most influential position within the network.

Findings presented within this study stand in contrast to the rigid bureaucratic structure that is mandated by the Rwanda Agriculture Board (RAB). The RAB suggests that each cooperative is set up in a way that assures a steady and streamlined chain-of-command. The problem is that cooperatives are not adhering to this. It is not within this study's realm of scope to identify the full reasons for this; perhaps it is just too easy to contact cooperative presidents with cell phones and bypass all other members in the command chain. It is possible that cooperative presidents are quite popular (they are voted into office) and are looked to as the most trustful position. These possibilities are less important, and an intervention should be developed which takes into account the best possible way to alleviate this shift to centralized cooperative governance within non-adopting cooperatives. The interventions which will be best suited to meet the goals of the Seed Alliance Program are as follows:

1. Network diffusion – Interventions should be structured in a way to focus on the diffusion of the social network structure. That is, attention should be focused on educating zone leaders how to effectively communicate information to cooperative members and transmit information from members to the higher positions within the

cooperative. Likewise, attention should be placed on educating cooperative presidents on methods of delegation. Other members of cooperative leadership should be included in these exercises. Furthermore, each cooperative member should be aware of the need for following the chain-of-command. This poses a more difficult task due to the large number of members in each cooperative. One possible solution to this is the use of cooperative-based PSA's (public service announcement).

- a. Interventions, in the form of workshops, may choose to create hypothetical situations aimed at illustrating how communication should be handled given a certain situation.
 - b. Cooperative leaders must have a predefined role in the communication structure. They must know exactly who to transmit information to and from. This should be developed in accordance to who has knowledge about a given category of cooperative business.
 - i. For instance, information about finances should be routed to those leaders who are best suited to speak on the subject: accountant, secretary, etc; while information about planting and other agriculture processes should be routed to agronomists, etc.
 - c. Due to the use of a scientific sample, this study's findings can be used to make generalizations to other, similarly structured cooperatives; following the chain-of-command would be a useful suggestion for other cooperatives. Knowing that, the use of PSA vis-à-vis radio commercials may serve as a cost efficient way to reach cooperative members – reminding members whom they should speak to about information (i.e., *see your cooperative's zone leader*). The RAB may be interested to know these results and could be potential partners in developing and financing cooperative PSA's.
2. Trust building – This study also found that those members with higher levels of trust and social capital were more likely to adopt hybrid maize seeds. Focus should be given to creating trust building exercises within cooperatives.
- a. For instance, demonstration plots could be conducted at different villages, with the inclusion of those cooperative members who live in the same vicinity of one another.
 - i. By spreading the knowledge exchange over a wider geography, cooperative members will be more likely to participate in them with their neighbors, helping to build trust between them. This will also help create more networks between cooperative members – something that is lacking in all cooperatives.

Conclusion

This study investigates the influence that social networks within 5 maize seed cooperatives in Rwanda has on member adoption of hybrid maize seed and overall income. Results show that early adoption is associated with higher levels of member and community social capital. Social networks within cooperatives, which adopted hybrid maize seeds, are more diffused

than their counterparts, who have a structure with the president as the most important member for information. President-centered networks can be mitigated through the use of innovative intervention strategies, specifically: workshops that demonstrate the proper channels of communication and trust building exercises within cooperatives. The two key areas that need to be targeted through interventions are (1) diffusion of information networks, and (2) building of trust between cooperative members. More focus should be put on the diffusion of networks as less-diffused networks actually has a negative influence on early adoption of maize seeds and income.

Appendix

Land o Lakes
Rwanda Seed Alliance Program
Focus Group Results
April 26, 2015 – May 2, 2015

This report is a summary of 3 in-depth interviews and 4 focus groups that took place in different regions of Rwanda from April 26 until May 12, 2015. The project leaders on ground are:

- David O'Brien, PhD;
- Daniel Diang'a; and,
- Elliot Meador, PhD

The following paragraphs describe accounts with three supply-chain stakeholders: Yara International Fertilizer Company, Seed Co., and Opportunity Bank. In addition, there are four cooperative focus group meetings described at the end of this document.

Yara International Fertilizer

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Yara is a fertilizer company that participates in the Seed Alliance project. Last year (2014), they started working with seed cooperatives, partnered then with Seed Alliance;

Their main goal is to increase productivity and quality; they utilize distributors in Rwanda to reach farmers. There is a bit of a disconnect between the value and price between the company and Rwandan farmers. Yara would prefer to deal with cooperatives – it cuts out middlemen.

Considering:

1. Creating options for farmers

Working with cooperatives:

1. Yara can supply to one place (cooperative)
2. Yara is now linking with the banks, so that cooperatives can get a small loan
3. There are several value added chains

Currently:

1. Yara sells to distributors, who sell to agro dealers, who sell to cooperatives, who, in turn, sell to farmers.
 - a. There is a complicated subsidy system on fertilizer.
 - b. Yara does demonstrations as education
2. What parameters to decide which fertilizer to use . . . price, value, etc. Potato growers in the North are good at diversifying fertilizer. The lack of fertilizer diversity used by the farmer is a problem.

Add a question about what reasons farmers use diversity of fertilizer.

1. Who are the people they trust most
 - a. Method they trust more (reading, radio, billboard, friends, family, brochure?)
 - b. Networks of children – children go into cities and send money back.
Knowledge is not there and it is not available. There is no adoption by farmers
2. Extension efforts by the government did not achieve much. Try to capture this in questionnaire, “where do farmer’s get their information?”

Seed Company (Seed co.)

Meeting April 28, 2015

Te Deum Building, Airport Road, Remera

PO Box 525, Kigali

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www.seedco.co.rw

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Seed Co. is based in Botswana, but a large section of Africa

A young business in Rwanda.

- Seed was bought by government and given to people
- Seed co. hasn't gotten a feel for the "real" market. There was some since of market understanding last year: government pays .75. There are some issues with the process that can only be dealt with, as Seed Co. understands what the market is.
- Seed Co. is interested in the long-run market in the country
- Other Players- Panar, Kenyan Seed, Win-win (a local startup, but not a major player), Fertilizer companies (about 5), some companies are trying to sell mechanized ag equipment (John Deer, Kubota)
- Now they want to build relations with farmers
- Seed Alliance (Land o' Lakes) wants to work with cooperatives to set up markets with players like Seed co. – Develop demand at the farmer level.

What does Seed Co. want to know from survey?

1. Will they be able to bring in ideas from new cultures and outside of Rwanda borders? The adoption rate of new technology is low.
 - a. Perhaps seed education efforts? Seed Co. is only doing demonstration plots as education process.
2. What drives the adoption of new ideas and can Seed Co. take advantage of these networks (or other factors).
 - a. How to get the farmer to adopt new methods? Seed education?
3. There aren't very strong or apparent signals from the market on what is driving them to produce maize in the first place.
 - a. Up until recently, the government told farmers what to.
 - b. So, now, what is the driver behind motivating local farmers to adopt seed/tech to sell maize at the market?
4. If there are weak links, how can we make these links stronger? Provide guaranteed prices? Help store seeds? Seed Co. is interested in creating mutually beneficial networks.
 - a. Clinton Development Project and Gates Foundation are working within the country.

Opportunity Bank

Contact Jackson

Opportunity Bank is an international bank – headquartered in the U.S.

The bank employs eight agronomist – they assists in financial aspect of farming.

Process

Then the coop applies for a loan, the bank must first get an input supplier, then the input supplies gives the seeds to cooperative, then the bank pays the cooperative

Normally, the coop identifies the input supplier, the bank can push back and say choose the supplier – these suppliers are one that have been accepted by the minister of agriculture.

What are the problems?

1. It goes back to an education.
 - a. The bank provides some training and money – the input suppliers train too.
2. The bank trains the cooperative management and membership on how to use inputs and other aspects of the financial process.
3. Those involved in maize production there is some lavation, the bank cannot provide more loans to members who default on their loans.
 - a. Maize farmers are affected by climate change.
 - i. The climate also affects yields, especially in the Eastern Province.
4. The bank's target is to aid 40,000 farmers a year, they are at 36,000 – also the bank's goal is to provide 5 million Francs in financing to Rwandan farmers

Coacmu Cooperative

Focus Group

Attendance: 3 members, Manager, sight manager, and president – 10 total

What they grow and why they grow?

Maize and soybeans, the bananas are there but the main purpose it to promote maize and beans.



How much produce for sell vs. consume for household?

1. Before in 2007, mainly they do sorghum, since then they moved to commodities and started doing cooperation farming.
2. When they started first they 2 metric tons of maize to 4 metric tons. They are selling more and have more to consume.

Gaspa had yield of three metric tons: he's going to sell 2.7 and consume .3 – this was produced on less than 1 hectare.

When you buy maize seed what's the most important factor that influences seed?

1. Before, they used to multiply seeds and they used to get a good price. Price is important.
2. Quantity of yield is important as well quality. Basically, it is based on how much they will get paid.

The cooperative has 23 sites and each site has a representative. They have a meeting of site reps, then they form a committee of 10, who decides how much to buy and of what to buy.

Each site (primary) has about 32 members and they vote in each site representative. A lot of times, villages make up sites – members are from different villages

Inputs

1. Seeds, fertilizer and manure (normally from cooperative member's cows), pesticides.
2. Seeds – no one can keep their own seeds – everyone has to grow the same seeds.

3. Input Process – where do you get your crop inputs and how do you go about deciding where to buy them? Seeds come from the government for maize production, bean seed comes from CS, and commercial maize comes from Seed Co., for chemicals they go to agro-tech, Enas for chemicals. Seeds are delivered to sites where farmers pick them up.

Financing/loans – they work with Opportunity Bank, and another Kenya Commercial Bank (KCB)

Seed Alliance – if they do maize, everyone does maize with hybrid seeds

What's the biggest barrier to being successful?

- Climate Change
- Seed quality
- Price fluctuations
- Post harvest handling, the rains come at the end of season A and increase the moisture content in their yield.

The market in Kigali that sets the market price normally changes.

E-Soko, it is an electronic program that helps people determine market price.

Sources of information?

Where do you get your information?

1. They get the information from the cooperative – in meetings and in trainings. The cooperative has an agronomist.
2. The radio also serves an important source of information. The cooperative supplies people with information.

Why are people not meeting their production quota (they couldn't pay their loans back, about 150 of the 750)

1. They are normally judged about how the season went (good? bad?) Is the farmer keeping their money for themselves (they make money, but don't want to pay it back)
2. They've been given the inputs from the cooperative on loan; multiple people have to sign off on this. Cooperative leaders go to the person's home to try to figure it out. For whatever reason, if it can't be hashed out, they turn the case over to the government. The government can seize a farmer's property.

Right now, the crop was affected right before harvest. The buyer refuses to buy the crop, because it has a disease.

** All decisions and information are made and diffused by management.

Koremu Cooperative

Focus Group

April 29, 2015

Attendance: 14, 6 females one of which is the leader (is the accountant) Vice president is female and present, secretary.

958 Members – 528 female members, 430 male members

600 hectares, Maize, beans, potatoes



They are audited by RDC: they look at books and see how the money is used.

Members seem open to outsider help, stated, “it helps them improve their and their children’s lives”. They can take children to school, pay medical insurance, and buy goods.

What do you grow and why?

1. (VP) their main crops are maize and beans, they grow them because maize is better (more reliable) to eat and sale.
2. The yield per hectare 4 metric tons, they sell 3.7 and keep .3.
3. After harvest, they sort the yield, best yield goes to market and home consumption and the rest goes to livestock.

How do you get inputs?

1. The cooperative buys it and the farmers get it from the cooperative. Before ordering the fertilizer, they make a list of all coop members and which type of crop will be planted, that list determines how and what the cooperative buys.
2. The members then buy it from the cooperative. They all go for one seed for all the 600 hectares.
 - a. The short season goes to beans, and the long season goes to maize.
 - b. If something new comes to the board first, if the board approves they do test plots, then the decision-making members (who have been trained) and the board come to a decision.

Finance

1. Opportunity Bank finances the cooperative. There is a committee that is in charge of getting prices. They go to town and find out.
2. In general, the books are balanced and they are paying all the lenders. There are cases of farmers who don't pay on time. There is about a 10% of members who are late. But, all members end up paying.

Obstacles

1. If they grow and the seed has to re-germinate. The transportation of inputs, particularly, the manure
2. Climate change – low rain
3. Rodents and bugs (this is also due to the delay of the rain)
4. Transportation of yield to the drying house
5. Price fluctuation

If you change anything about the process, what would it be?

1. A way to get a way to transport their yield to market. Now, they don't have a truck or other way. After shelling and packaging they don't have a place to store their yield.
2. They would want to get the best quality of seed. If they can get a microfinance loan they can get access to more goods. Their rate now is 1.8%.

Network

1. The input suppliers deal with the bank. The bank lends the money and pays the inputs. They think that they are fairly treated. If there is a problem, members contact the board that contacts the inputs. Seed Co. has a person that deals with the cooperative board. They often report it to government agronomist, who helps notify everyone else.
2. Before the seasons the districts have meetings, all cooperatives send board members, and that is where they are getting their information about new inputs.
3. They get some prices from radio. There are cooperative agriculture advisers (trained).
 - a. They are voted in and then trained.
 - b. They are partnered with USAID.

Iterambere Ry'Ambahinzi Borozi Ba Makera (IABM)

Cooperative Meeting

April 30, 2015

- The cooperative meetings started in April 2007 | officially started in June of 2009
- 250 hectares
- They have small meetings in different zones and have two general meetings a year, which is made up of 80 members who have been selected from the cooperative. They have a board meeting (5 members | 3 female).
- The focus group members seem to speak freely amongst themselves. There is a lot of smiling and laughing together. At least 8 members are taking notes.
- The government system is complex and members are elected at all levels.
- Kenya Commercial Bank, Equity Bank, Popular Bank (Swiss)
- Three committees:



Generally Assembly – Comprised of cooperative member representatives (80 total) who have been selected from the general population.

- a. There are 8 zones and each zone has 10 members. The general assembly selects the board committee and they also vote 3 members into the supervising committee.
- b. They also have commissioners who are in charge of extension (education). The extension has 40 members – about five per zone and is based on zone size. There is also a commission which is in charge of marketing; it has 3 members; the procurement committee has 3 members; the agenda committee has 3 members; there is a money recover committee, which has 3 members; there is a cooperative staff 3 (paid), manager, accountant, 2 agronomist, store keeper, 4 security guards, a driver, a tanboy (accompanies the driver).
- c. There are 45 part time employees, which are: these employees are seasonal. They also have a van.

- d. Each zone has its own government structure; it is based on the same system that governs the entire cooperative. Within each zone there is also subgroups. The RCA who makes requirements of each cooperative.
 - i. The point is to decentralize control of the government.
Cooperative -> Zone -> Subgroup

It resembles a classic federal system. Reports start at the subgroup and moves up through the bureaucracy. Groups are based on farm location (neighboring farms chose groups). This system has been in place since the official start of cooperative in June 2009.

There is a president of the board and president of the advising – both of who are female.

760 members total | 499 members

Attendance 9 | 4 female (president, secretary, president of the board are female)

What do you grow and why?

1. Mostly maize and soybeans, they have been growing these since start of the cooperative. They started the cooperative to start growing maize. They grew maize before, but the cooperative helps them have been access to the market.
2. In 2007, they would take the produce to the market, but the market was local (in town, a more modern market). The buyers at the market were holding up operations; the cooperative helped them overcome these hold ups.

What portion do you consume and sale?

1. 4-5 metric tons per hector. 3 metric tons goes to store and 1 ton goes into their homes. Sixty percent is sold to the market. Seed multiplication is used on maize only.

Inputs & Finance

1. The GA has a strategy a plan. The agronomist will calculate the number of seed needed; the GA must confirm this plan.
2. They use their own money from accounts to buy inputs, mostly. There are times when they need to take out loans. Each farmer has it owns bank account. The cooperative supplies the seeds and fertilizer to a member who already paid for what he needs.
 - a. The farmer puts money into the cooperative bank account, and then it is taken a slip to the cooperative that gives them inputs. If members cannot buy inputs, they must write a statement asking for seeds and inputs and the cooperative

will give them inputs. The cooperative will then take the owed balance from the yield.

- i. The money recovery committee analyzes why members cannot pay their loans and reports that to the president. The committee and farmer development a strategy plan to overcome the problem. It is very rare that a person cannot pay. The cooperative can also take on social issues (children's school, etc.). The cooperative can help with other social services. There is oversight on growing and
3. The bank loans are paid on time, partly, because no loan money is directly given to farmers.
4. If problems arise within the cooperative, they are taken up at the top level. Issues are raised, but the banks do not like to take risks to give the cooperative's money to address new issues.

Information passes from the bottom to the top. Outside information (from government and other sources) is passed by radio message to everyone.

Challenge and Obstacles

1. The most challenging part is finding a place to dry their maize. Every season they must buy nails, etc. to dry their crop. It is difficult to collect produce from the members. It is difficult to convince banks to loan money on new problems that arise.
2. For instance, if there is a businessman he can go to the bank and get the money. The farmer has a much harder problem with getting loans.
3. There are two varieties of hybrid seed used, supplied by Kenya Seeds and Seed Co. Next season (2016A) the cooperative will work with private insurance companies. They have their own processing plant on site. They have some outside support (Canadian NGO/government, Rwandan Ministry of Agriculture) and there is some support supplied by the cooperative. They also have a partnership with other cooperatives in the area.

Impabaruta Cooperative Meeting

Attendance | 7 (2 females) President, Vice-President, Manager, and Cooperative Advisor are present and all are male. President is taking notes. We are all seated in an office. President and Vice President are the only ones to speak.



The name of the cooperative in full is Koperative Impabaruta/Imparanira Musaruro Y'Abahinzi Ba Runda Na Taba

The cooperative sells the top quality as seeds, middle grade are sold as maize, lowest grade is consumed. These are open pollinated seeds. Hybrid seeds cannot be multiplied. This is a more traditional style.

1. Cooperative is a registered seed multiplier with the government
2. Started in 2007 and registered as a cooperative in 2010
3. 60 hectares total, which is in 4 different sectors
4. They have 784 members
5. Female is 524
6. Male is 260
7. Before they were cultivating in disorganized ways, now they are very efficient, professional farmers.
8. They sell to the Ministry of Agriculture
9. They are seed multipliers for the government
10. Their cooperative is recognized at the country and African-wide level
11. In 2013 there was an African wide competition, which they participated in and won.
 - a. It was based on several indicators (youth in cooperative & number of females, etc.) of cooperative success.
 - b. The competition took place in Ghana.
 - c. A youth farmer is considered 35 years old or below.
 - d. Cooperative acknowledges NGO's and Extension
12. They are close to the town; so, there are many men that work in Kigali.
13. Money that women make is given directly to them . . . not to their husbands.

Do you have any interest in getting into hybrid seeds? They acknowledge that soon OPS seeds will not be available in Rwanda – it will all be hybrid seeds.

1. Price difference plays a part. Growing OPV for the government gives them two times as much money than hybrid seed plants. They can sell directly to the government.
2. They did use hybrid seeds at one time, but had a difficult experience – they use 700 level seeds (ones developed for the Northern Region).

Where do you get your information?

1. They get most of their information from the government, but all other partners (Yara, Seed Co.) will come to speak with them. Cooperative members participate in planting the demonstration plots.
2. The GA of the cooperative makes the decision on what to plant. There is a committee that meets to discuss the options (based on production and profit) they submit this to the GA, who decides on a plan of action. This committee is comprised of learned members.

Governance Structure

1. The GA is for all, the board has five members, the supervisor committee has three members, and there are 3 commissions: produce, procurement and marketing. They have 4 zones, each zone has groups, and the number of groups depends on how large the zone is. One has 4, 13, 11, and 20. In total, there are 48 groups. Each group collects money for its members, based on its needs. Each subgroup in the zone has a representative that handles the money, which is different from other.

Finance

Same system as others but each subgroup has a representative that handles the money. Each farmer deals with a microfinance directly. In other words, they are on their own.