

The Impact of Seed Effect's Ugandan Savings & Loan Program

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Prepared for

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Executive Summary

Seed Effect is a faith-based, non-governmental organization that operates village savings and loan (VSL) programs in refugee settlements in Northern Uganda, having established operations in 2017, after thousands of South Sudanese refugees fled the violence wrought by civil war.

Seed Effect's VSL program is consistent with the increasing emphasis on self-reliance set forth by the United Nations High Commissioner for Refugees (UNCHR) as part of their comprehensive approach to refugee aid and development.¹

Seed Effect's program is based on the well-known CARE VSL model. It consists of between 15-25 self-selected members, who form a collective whereby members agree to buy a minimum number of savings shares weekly over the course of 9-12 months. Members are also given the opportunity to periodically request loans from the group at an interest rate agreed upon by the members.

Because of the unique challenges facing refugees, Seed Effect's VSL program may offer participants their first real opportunity to safely save and borrow. Because refugees have been forced to leave their communities and livelihoods, they are likely to lack the social structure to support them economically. VSLs offer opportunities to accumulate savings and wealth to build livelihoods and insure against major expenses.

In 2018, Seed Effect asked us to conduct an independent impact assessment of their VSL program. Our analysis is based upon

data collected by Seed Effect from random samples of its current VSL participants and a control group of non-participants living in the same settlements between late 2018 to early 2020.

Without the ability to conduct a true randomized control trial, a number of statistical tests were required in order to account for non-random differences in the control and treatment groups, as well as non-random sample attrition.

Results of the analysis demonstrate that Seed Effect's VSL program has had positive, statistically and economically significant effects on a number of important outcomes for both host country and refugee participants.

These include the following positive impacts on VSL participants' household asset holdings relative to non-participants:

- Increased savings
- Increased value of livestock
- Increased likelihood of having electricity in the house
- Increased likelihood of having a hard roof
- Increased likelihood of owning a bicycle
- Increased likelihood of owning land

In addition, the study found that VSL participants were more likely to eat meat at least once a week.

By mobilizing and encouraging savings, VSL participants were in a better position to protect their assets when faced with unexpected costs. In particular, the analysis showed that participants were significantly:

- Less likely to sell assets to pay for doctor visits and treatment

¹ See UNCHR's "Global Compact on Refugees", 2018.

- Less likely to sell assets to pay for school expenses
- More likely to use accumulated savings to pay doctor and school fees

The analysis also reveals several instances in which the impact on refugee participants was significantly larger than the impact on host community participants. These include:

- Value of livestock
- Reduced likelihood of selling assets to pay for medical emergencies
- Increased likelihood of borrowing to pay for medical emergencies
- Increased likelihood of borrowing to pay for school fees

Overall, the relatively large impact on refugee participants underscores the value of Seed Effect’s program within the UNCHR’s refugee aid and development framework by demonstrating the viability of VSLs as an important mechanism to promote refugee self-reliance.

Background

Seed Effect operates VSL groups in a number of refugee settlements in Northern Uganda. Their model follows closely that of CARE International’s VSL model.

VSLs through Seed Effect operate for approximately one year. Seed Effect staff meets with a village or settlement leader and that leader helps set up a meeting with the community members. The community leader is responsible for generating interested parties. Seed Effect staff holds two meetings for those interested where they explain the goals and logistics of the program. Then, self-selected groups are

formed, ranging in size between 15 and 25 members.

Each group elects its leaders. The chairperson leads the meetings. The record keeper writes down all transactions for the social fund, savings and borrowing. The box keeper keeps the box with money safe. Three key holders keep one key each; all three keys are needed to open the box.

Each VSL group meets weekly. During the first meeting, either a village agent or village officer will lead the meeting as the chairperson is trained. The specific VSL group has time to write a constitution in which they will determine the value of the weekly social fund payment, the value of each share, penalties, and interest rates. Each VSL also determines loan priorities, which are then written into its constitution.



At the beginning of each weekly meeting, the record keeper reports on the total amount of money in the social fund and the current savings held in the box. Each member is expected to pay the agreed amount for the social fund. After this, the record keeper calls each name again, and members can pay from one to five shares into their savings.

After the third meeting, at a previously-agreed upon interval (e.g., monthly),

anyone in the group who has saved money is allowed to request a loan up to three times the amount they have saved.

If the total amount requested by group members exceeds the loan fund, the group will discuss adjustments so every member is satisfied; the loan priority list may be used. The group may decline a loan request if the consensus is that the purpose is not acceptable or if the person does not have a plan for paying back. Borrowers make monthly payments until loan plus interest is paid.

Savings (shares) can only be withdrawn at the end of the VSL cycle (e.g. one year). Annual share-outs include total savings and any interest accrued. Those who have not paid back the loan at the end of the cycle will use their savings to pay back the loan; therefore, their share-out will be their debt minus their saved amount and any interest accrued.

Sample Data

Data are collected at the beginning of each VSL cycle. Seed Effect began its initial surveys in 2017 and have continued since that time. They began sampling 40 percent of each group, but since decreased that to 25 percent for financial reasons. In late 2018, the first surveys were given to a convenience sample of 700 non-Seed Effect members as a control group.

To facilitate comparison, the analysis here is restricted to the control group and a random sample of Seed Effect VSL participants who began their first VSL cycle in the fall of 2018. As a result, the final sample consists of annual observations

between late 2018/early 2019 and late 2019/early 2020.

The final sample consists of 1,491 individuals who completed both surveys. This includes 939 refugees and 552 host-country (Ugandans) individuals living in the same communities. Of the refugees, 63 percent were VSL participants. Of the hosts, 65 percent were VSL participants. Sample attrition was less than 3 percent for participants, but 23 percent for those in the control group. Attrition is addressed in the Methodology section.



The survey (see Appendix) covers basic information such as household demographics, education, dwelling conditions, asset holdings, livestock, income steadiness, nutrition and some questions related to how they pay for medical and school-related expenditures.

Previous Research

To assess the impact of VSL participation, the present analysis will focus on areas most likely to be affected by increased

access to savings and credit. To date, the previous literature related to VSLs is relatively sparse. There is strong evidence that VSLs increase savings and borrowing.²

Studies have found positive impacts on food security, such as meals per day.³ While some studies also find evidence of increased spending on businesses, livestock and home improvements⁴, others find no significant changes in assets following participation in a VSL.⁵

The existing VSL literature does not speak directly to households' ability to pay for large expenditures such as health emergencies. However, there is reason to believe that increased savings will help participants to preserve existing assets.⁶ Without access to a secure way to save and borrow, impoverished families are often forced to sell assets such as livestock to pay for large and unexpected expenses. Liquidating assets decreases families' ability to accumulate wealth over time.

Finally, the analysis will look at the differences between the impact of VSLs on host and refugee participants. Recent research into the economic life of refugee settlements shows the extent to which refugees quickly begin to engage in market economies. The fact that many refugees operate small businesses underscore the importance of access to savings and credit.⁷

Methodology

The gold standard for assessing the impact of any program is to conduct a randomized control trial. This ensures that participants (treatment group) and non-participants (control group) are statistically similar prior to the introduction of the program.

Next, the change in outcomes for the participants are compared with that of the non-participants. The difference in these changes becomes the estimated measure of impact. This is illustrated in Figure 1.

Figure 1: Impact Measurement

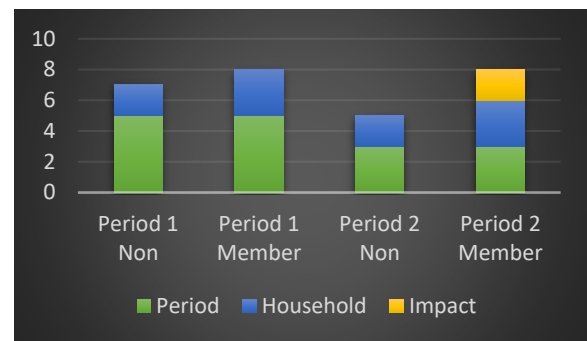


Figure 1 illustrates an example in which the conditions in the community in period one are better than in period two (period effect). Second, it shows a case in which the VSL members were generally wealthier across both periods (household effect). Thus, we would expect on average for participants to remain better off in period

² Beaman, L., Karlan, D., Thuysbaert, B., 2014; Ksoll, C., Lilleør, H. B., Lønborg, J. H., & Rasmussen, O. D. 2016.

³ Karlan, Savonitto, Thuysbaert and Udry, 2012; Beaman, L., Karlan, D., Thuysbaert, B., 2014; Ksoll, C., Lilleør, H. B., Lønborg, J. H., & Rasmussen, O. D. 2016.

⁴ Beaman, L., Karlan, D., Thuysbaert, B., 2014; Ksoll, C., Lilleør, H. B., Lønborg, J. H., & Rasmussen, O. D. 2016.

⁵ Karlan, Savonitto, Thuysbaert and Udry 2012.

⁶ Islam & Maitra, 2012; DeLoach, S. B., & Smith-Lin, M. 2018.

⁷ Alloush, M., Taylor, J. E., Gupta, A., Valdes, R. I. R., & Gonzalez-Estrada, E., 2017.

two relative to the non-participants. For there to be a measureable impact (impact effect), however, members would have to increase their wealth by relatively *more* (or decrease by relatively less) than non-members.

The example in Figure 1 illustrates the two primary challenges to assessing impact of program participation.



First, the control group may differ in important ways from the treatment group. This is the case for the Seed Effect data, as non-participants are generally less wealthy than are participants.

Second, it is important to control for the changes that take place within the community in each year that affect both participants and non-participants. In this sample, it appears that the economic conditions in these settlements worsened between period one and two.

By estimating the average difference in the year-to-year changes between the participants and non-participants, we can obtain an estimate of the true impact of the program. To do this, we estimate several different statistical models.

The first (Propensity Score Matching Model) attempts to find statistically similar ‘matches’ between the participants and the non-participants. In this way, we can compare ‘apples to apples.’

The second (First Difference Model) uses regression analysis to control for the differences in wealth and other ‘unobservable’ characteristics between participants and non-participants. This also allows us to control for changes in the community that can positively or negatively affect all those surveyed. This proved important because there appeared to be a worsening of economic conditions over the sample period, resulting in a loss of wealth for most locations on average.

Finally, this First Difference Model was modified to control for sample attrition. Attrition is a problem because VSL members who ‘drop out’ and control households who ‘disappear’ are likely to experience worse economic outcomes than those that remain in the survey. If uncorrected, this would over-estimate impact if the attrition was higher among participants, which was the case in this sample.

All methods revealed consistent estimates of the program’s impact. The numbers reported in the following sections are based on those obtained by the First-Difference Model with adjustments for sample attrition. Where appropriate, we report estimates using Propensity Score Matching to illustrate changes.

Asset Accumulation

In this section, the impact of VSL participation on asset accumulation is considered.

Table 1 shows that relative to non-participants, members of Seed Effect’s VSL groups on average experienced significant increases in most asset categories over the course of one year.

Table 1: Asset Growth

Value of Livestock	+ 628%
Value of savings	+ 1,303%
Owns Land	+ 43%
Owns Bike	+ 37%
Owns Vehicle	No change
House has hard roof	+ 138%
House has electricity	+ 24%
House has > 1 room	No change

Not surprisingly, the largest measureable effects are in the growth of household assets. Relative to non-participants, VSL members increased savings more than ten-fold during the cycle. Similarly, ownership of livestock increases significantly.

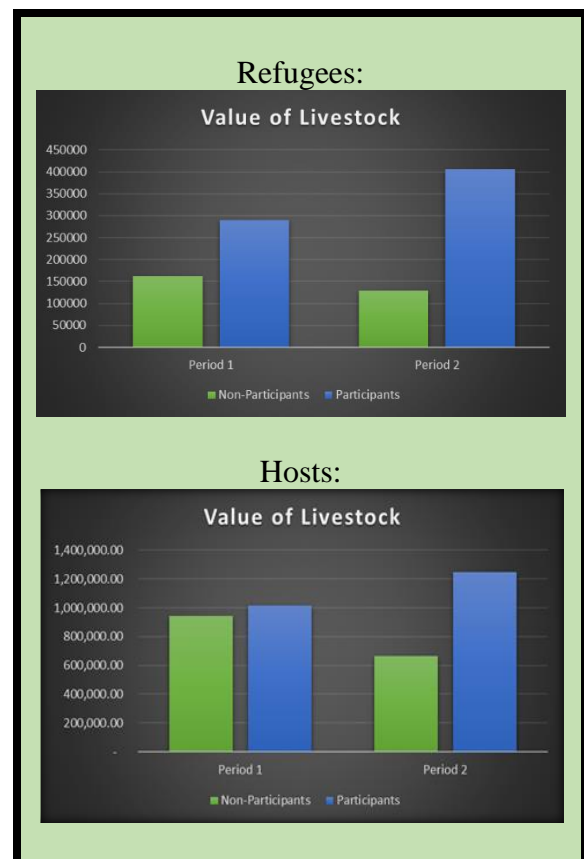


We also see evidence that participants are using their wealth to purchase land,

vehicles and make improvements to their dwellings.

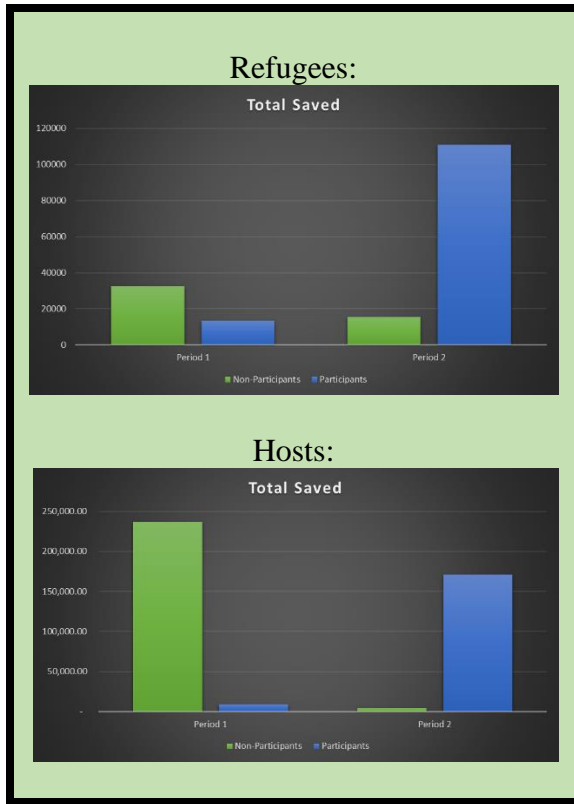
Interestingly, when looking at the changes in livestock and savings across host and refugee samples, there are significant differences (see Figure 2). While both increased livestock relative to non-participants, the impact on refugees was significantly larger.

Figure 2: Livestock



In contrast, Figure 3 shows that the impact of participation on savings was relatively larger for host participants. Here, non-participants experienced a sharp decrease in savings over the sample period, while participants significantly increased savings.

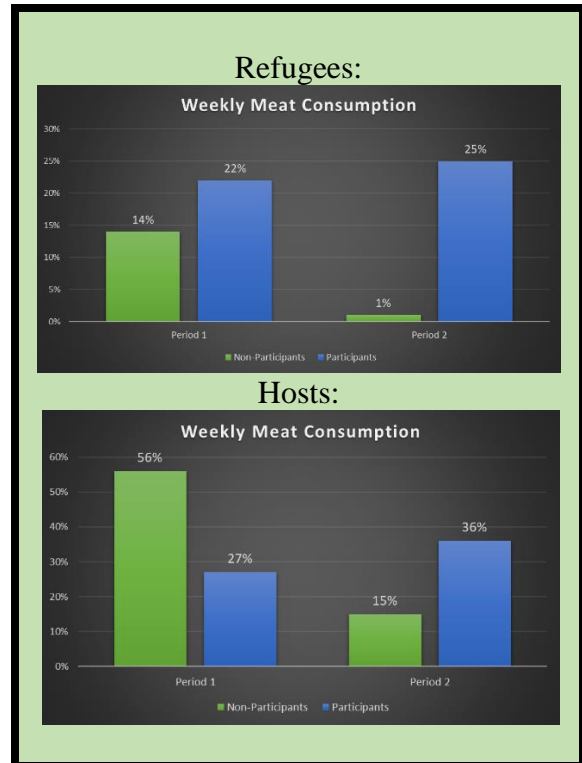
Figure 3: Savings



there is evidence of improvements in overall nutrition. The large increase in the percentage of participant families who were able to eat meat at least once a week is important as studies have linked increased protein consumption to a number of positive health outcomes, especially for children.

Interestingly, Figure 4 reveals no significant difference between refugees and hosts with respect to the impact of participation on weekly meat consumption. In both cases, we see that non-participants experienced sharp declines in their meat consumption, while Seed Effect participants showed small increases.

Figure 4: Weekly Meat



Nutrition

Next, we consider the impact of VSL participation on household nutrition.

Table 2 shows that relative to similar non-participants, members of Seed Effect’s VSL groups on average experienced increases in protein intake over the course of one year.

Table 2: Household Nutrition

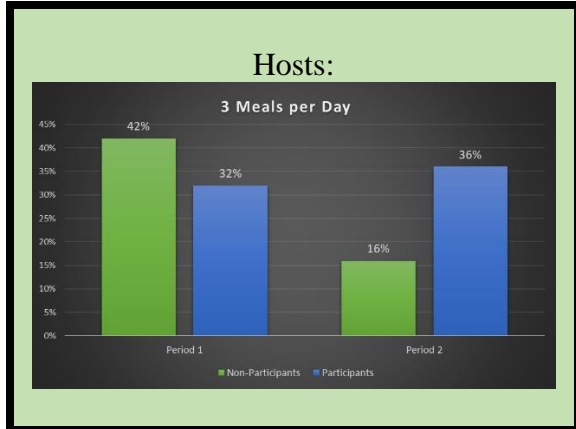
Eats meat once a week	+ 148%
Eats only one meal per day	No change
Eats three meals per day	No change

While there is limited evidence that participants were able to increase caloric intake by increasing the frequency of meals,

Figure 5 shows that participants from host communities experienced a significant increase in their likelihood of eating three

meals per day. There was no significant difference for refugees.

Figure 5: Three Meals per Day



Overall, it appear that conditions for non-participants worsened over the sample period, while those in the VSL program were able to improve their living conditions.

Medical Emergencies

In this section, we analyze the effect of Seed Effect’s VSL on the how participants deal with large unexpected expenditures.

Being able to use savings to pay for unexpected expenditures helps families to preserve their assets. For example, instead of selling livestock, which can generate income as well as being a source of protein, participants may be better able to use savings.

For these results, we separately report impact for refugee and host participants.⁸

⁸ To facilitate comparisons, we illustrate the relative impact based on results from the Propensity Score Matching difference-in-difference modelling.

Figure 6 summarizes the results for how participants report paying for unexpected medical expenditures. For each period, they report whether they are likely to (a) sell existing assets like livestock, etc. (b) use savings or (c) borrow money.

The results show that relative to similar non-participants, members of VSL groups experienced important changes in their ability to deal with unexpected expenditures, with noteworthy differences in refugee and host community members. The largest impact appears to be on refugee participants.

The contrast between how hosts and refugees deal with emergencies is likely due to the relative differences between the two groups. Not surprisingly, host community participants were wealthier on average than refugees. Prior to participation, host community participants were also more likely to have saved and borrowed in the past year. They were also twice as likely to report having steady income.

Most importantly, relative to non-participants, both refugee and host community participants were significantly less likely to report selling off assets in order to pay for unexpected medical expenditures. This suggests both groups benefit from VSL participation due to their enhanced ability to preserve wealth over time.

The results also reveal important differences is the way refugee and host participants respond to unexpected expenditures. Both participant groups were more likely to use savings than the control group because of participation in VSLs,

though the effect appears much larger for host participants.

In contrast, refugees were more likely than non-participants to use credit to pay for

unexpected medical expenditures. There was no difference in the likelihood of borrowing between host community participants and non-participants.

Figure 6: Responses to Emergency Medical Expenditures



Educational Expenditures

Finally, we analyze the effect of Seed Effect's VSL on the how participants deal with large, but expected expenditures.

The difference between expenditures on medical emergencies and other things like school fees are that school fees are regular and expected.

In theory, such expenditures are better suited for savings. Thus, VSL participation allows households to better plan for these regular events. However, the uncertainty in income that participants experience will also affect their ability to plan for such expenditures. As a result, many still find themselves having to borrow to pay for these expenditures.

These results are summarized in Figure 6. In this instance, there were not significant differences in the likelihood of selling assets to pay for school (not shown). There were, however, key differences in how participants paid for school.

Relative to similar non-participants, members of Seed Effect's VSL groups on average were able to change the way they paid for their children's school fees.

As with medical expenditures, refugee participants were significantly more likely than non-participant refugees to use savings in order to pay for school fees. While all refugee groups increased borrowing, there was no significant difference in the likelihood of borrowing between participants and non-participants.

In contrast, host participants significantly decreased their likelihood of using credit

after participation. They were much more likely to report using savings than their non-participant peers.



Conclusion

Seed Effect's VSL program is providing South Sudanese refugees living in Uganda important opportunities to improve their economic lives by providing critical access to savings and credit. By providing training and opportunities, refugees are able to become self-reliant by accumulating wealth that insures them against unexpected emergencies that otherwise would adversely affect the health and wellbeing of their families.

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Figure 6: Responses to Educational Expenditures



APPENDIX: SURVEY

Savings For Life - Social Evaluation Survey

Date: _____

Cycle _____

Number: _____

Group Member Information

Name:		Gender:	Male	Female	
Branch:					
Settlement/ SubCounty		Group Role:	Member	Box Keeper	
Group Name:			Chairperson	Money Counter	
Review Period:	Beginning or Graduation		Record Keeper	Key Holder	
Group Per Share Value:		Interest Rate:	5%	10%	15%
			20%	25%	30%

Family

Prior Savings and Loans ("Beginning" Survey ONLY)

How Many Dependents?:	Before SE, did you have a safe place to save money?: YES or NO In the last month, how much have you saved?: _____
How Many School Aged Dependents? (3-18 Yrs):	How much do you have saved total right now?: _____
How Many School Aged Dependents Are Regularly Going To School?:	Before SE, did you have a way to get a loan?: YES or NO In the last year, how much have you borrowed?: _____

Social

Approximate Level of Education Completed:	Full Secondary School (S1-S4)	Half Secondary School (S1-S3)	Full Primary School	Half Primary School	None
Housing Walls and Floors:	Cement Floors and Walls, Walls Painted	Cement Floors and Walls, Walls Not Painted	Cement Floors, Mud/Dirt Walls	Mud/Dirt Only	Tarp or Plastic Sheets
Roofing:	Concrete	Brick Tiles or Stone/Slate	Iron/Metal Sheets	Grass	Tarpaulin, Plastic Sheets or Branches and Twigs
Light Source in Home:	Electricity from Grid (Power Company)	Generator AND Solar	Solar Only, No Generator	Other Supply (specify): No Electricity	
Toilet Facility (In Home):	Flush Toilet (own or shared)	Shared, Ventilated, Improved Pit Latrine	Own Pit Toilet	Shared Pit Toilet	Bush, Field (no facility)
Total Number of Rooms:	1	2	3	More than 3	

APPENDIX: SURVEY

Assets					
Owns Home:	Yes	No			
Owns Land:	Yes	No			
Household Vehicle:	Car/Truck AND Motorbike	Car/Truck but NOT Motorbike	Motorbike, but NOT Car/Truck	Bicycle Only, no motorized transport	No Vehicle
Number Owned By Household:	()	Adult Sheep, Goats, or Pigs ()	Poultry or Rabbits ()	Horses or Donkeys ()	Other (Specify): ()
Livelihood and Wellness or Stability					
Income Steadiness:	Steady	Somewhat Steady	Somewhat Unsteady	Unsteady	Very Unsteady
Amount of Household Income Earned in a Typical Week?:	Less Than 1	1	2	3	
Meals Per Day:	Less Than 1	1	2	3	
Frequency of Meat:	More Than Once A Week	Once in a Week	At Least Once a Month	Less Than Once A Month	
When I Need to Pay a Doctor:	I use savings or business income	I borrow money		I sell a household asset/good to pay	
When I Need to Pay School Fees:	I use savings or business income	I borrow money		I sell a household asset/good to pay	
Spiritual					
Born Again Believer:	Yes	No			
Sunday church attendance per month:	0	1	2	3	4
4 Key Relationships: To be answered ONLY at Graduation					
Has your relationship with Self improved?				Yes	No
Has your relationship with Others (family, community) improved?				Yes	No
Has your relationship with God improved?				Yes	No
Has your relationship with Creation improved?				Yes	No
Loan/Share Out Use: ONLY AT GRADUATION					
Total Money Saved:					
Total Money Received at Share Out:					
How Do You Plan To Use Share Out Money?	School Fees	Business	Health Care	Home Improvement	
Circle All that Apply	Food	Asset	Livestock		
How Many Loans Taken?	Save It	Help Someone	Give To Church	Re-invest in SFL Group	
	0	1	2	3	4

Write The Amount and Circle The Use of Each Loan:

1st Loan		2nd Loan		3rd Loan		4th Loan	
	School Fees		School Fees		School Fees		School Fees
	Business		Business		Business		Business
	Health Care		Health Care		Health Care		Health Care
	Home Improv.		Home Improv.		Home Improv.		Home Improv.
	Food		Food		Food		Food
	Asset		Asset		Asset		Asset
	Livestock		Livestock		Livestock		Livestock
	Other		Other		Other		Other

Overall Impact: ONLY AT GRADUATION

Has Participation In This Group Had A Positive Impact On Your Life? Yes No

What has been the most significant change in your life since joining the Seed Effect savings group?



