



Seeds of Life
Fini ba Moris



Study Report



Sustainability and Development of Farmer Groups in Bobonaro and Liquica

Ministry of Agriculture and Fisheries
Seeds of Life / Fini ba Moris

April 2014



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Seeds of Life (Fini ba Moris) is a program within the Timor-Leste (East Timor) Ministry of Agriculture and Fisheries (MAF). The Governments of Timor-Leste and Australia collaboratively fund the program. Australian funding is through Australian Aid, Department of Foreign Affairs and Trade, plus the Australian Centre for International Agricultural Research (ACIAR) and is managed by ACIAR. The Centre for Plant Genetics and Breeding (PGB) within the University of Western Australia (UWA) coordinates the Australian funded activities.

This study was conducted by Mrs. Léonie Venroij, under contract to Seeds of Life as the Case Study Facilitator¹.

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Abbreviations and Acronyms

ACIAR	Australian Centre for International Agriculture Research
AusAid	Australian Aid (formerly Australian Agency for International Development)
CSP	Community Seed Production
CSPG	Community Seed Production Group
HH	Household
HoH	Head of Household
INGO	International Non-Governmental Organization
LIFT	Local Initiatives for Food-security Transformation
MAF	Ministry of Agriculture and Fisheries
M&E	Monitoring and Evaluation
PGB	Centre for Plant Genetics and Breeding at the University of Western Australia
SEO	Suco Extension Officer
SoL	Seeds of Life
Sosek	Socio-economic research unit within Seeds of Life
UWA	University of Western Australia

Executive Summary

The study on the sustainability of farmer groups undertaken by SoL in 2013 shows that there are a number of factors, which determine whether or not a farmer group thrives. The case study focused on relatively long-established (three to five years) farmer groups, established by CARE under the LIFT² program (2007-2010) in 21 *sucos* in the sub-district Maubara, district Liquiça, and in the sub-district Bobonaro, district Bobonaro. Interviews were conducted with 43 out of the 203 LIFT farmer groups in these areas to gather information on their experiences over the three years they had worked together. The purpose of the study was to understand better what factors help groups to survive and thrive, and what factors causes other groups to cease operation.

During the LIFT program CARE supported integrated activities through direct implementation of field activities by CARE field officers and by local NGOs in Liquiça and Bobonaro. At *suco* level ten field officers supported all groups in 21 *sucos*, each of which was home to 20 groups. After the LIFT program finished, the *suco* extension officers (SEOs) from the Ministry of Agriculture and Fisheries (MAF) continued to support the farmer groups.

The study shows that the social cohesion between the group members, and the personal investment of group members in the group's activities are important factors for the success of a group. When a group is more cohesive by having shared goals between the members, the group tends to be better capable to overcome difficulties it encounters. The characteristics of the group's leader and the relationship and support provided by the program's field officers are also important.

Apart from the group's social capital, the support and attention of the SEO after the LIFT program finished was essential. Without the SEO's support some of the groups dissolved as they had difficulties to overcome challenges they faced. There were however also other groups that continued to manage and survive without the support from the SEO.

Groups close to local markets benefitted from this condition, and continued to grow, and even expanded their vegetable production to earn extra income to support their family needs, in particular to pay for the schooling of their children. In more isolated *sucos*, successful groups do not have the same market proximity advantage; an excess of vegetables quickly results in a saturated market, and the extra produce cannot be sold, or at very reduced prices. SEOs can play a crucial role in building the sense of community in the group and finding alternative economic activities which makes it important for the SEO to have a good relationship with the groups.

SEOs mention that working with farmer groups that have previously been supported by an international NGO is sometimes hampering their current interaction with the farmers or after taking over. The SEOs involvement with the groups is often seen as less valuable as MAF has less funding/budget for physical handouts and training, which are frequently provided by the NGOs. The strength of the SEOs is their commitment, small

² Local Initiatives for Food-security Transformation

seed availability and interaction they have with the groups throughout the agricultural cycle. The farmer group's lack of appreciation may in turn influence the SEO's motivation and his/her commitment to the group.

The integrated nature of the LIFT program made that interventions were supporting the social capital of the farmer groups, providing technical and mentoring support for the full agricultural cycle, from seed production with high quality seeds provided by the Seeds of Life program, support through the distribution of airtight containers for seeds storage, preparation of organic fertilizer and pesticides, home gardening and construction of water ponds up to nutrition training at family level. The increase of technical expertise was continuously used in the groups and the farmers used it also individually.

The improved varieties provided by SoL were important to set off the production of seeds which in the following years could be distributed to the wider community. However, during the study the respondents commented on the reduction of quality of the seeds as the groups faced cross-pollination of the seeds and lower yield.

1. Introduction

The 2010 Census found that 63% of all East-Timorese households – a population of nearly 1,2 million people in 2013 – were engaged in crop production, and 86% of all households had livestock (GoTL, 2011). Most of the farming households farm at subsistence level, and a majority of farming families suffer from food insecurity (WFP, 2005) as their harvests of rice, maize and other staple crops are insufficient to sustain them for the rest of the year.

Food insecurity in Timor-Leste usually occurs during the most labour intensive period between October and February when there is a shortage of staple foods and new crops are growing, but not yet ready for harvest. This period is also known as the 'hungry season' (Lopes and Nesbitt, 2012; Molyneux et. al., 2012; Barnett, Dessal and Jones, 2007). Common coping strategies are: sale of labour, sale and consumption of livestock and consumption of seed stock set aside for the following planting season, with the latter having severe consequences for the following season's food crop production (Lopes and Nesbitt, 2012; Borges et. al., 2009; FAO, 2003).

The Seeds of Life³ (SoL) program's primary objective is to encourage farmers to adopt improved, higher-yielding food crop varieties to address the problem of food insecurity (SoL, 2010:18). As described in the M&E specialist report, August 2012, SoL aims to achieve this by distributing improved varieties of superior genetic quality and by increasing seed production and distribution, both formally (at research stations and through contract farmers) and informally (through Community Seed Production Groups).

SoL works with the Ministry of Agriculture and Fisheries (MAF) and Community Seed Production Groups (CSPGs), formed of pre-existing farmer groups, to produce seed for group members and their local communities. SoL is working with MAF's existing staff of suco extension officers (SEOs) to assist the farmer groups in their seed production process.

The objective of the CSPGs is to produce enough seed to ensure involved farmers have access to sufficient good quality seed to re-plant the following season, meaning they no longer have to rely on seed from MAF or NGOs. The second objective is for the groups to produce enough seed to be able to share or sell excess produce to other households (HHs) in their communities. This will improve the food security of all families all year round.

By the end of 2013, SoL's community seed program supported 1,086 CSPGs nationwide, covering 349 *sucos*. From a gender perspective, the 1,086 groups counted 14,415 members with 10,038 (70%) men and 4,367 (30%) women. From the 681 CSPGs supported by the end of 2012, 85% started off as mixed groups, 12% as men-only

³ The Seeds of Life program is an ACIAR/AusAid supported program in the Ministry of Agriculture and Fisheries (MAF). To acknowledge this, the program is often referred to as MAF/SoL, but to increase the readability of the report, 'SoL' will be used as shorthand for 'MAF/SoL'.

groups and 3% as women-only groups. Some groups start off as women-only or men-only groups before becoming – for a variety of reasons – mixed groups.

SoL wants to build the capacity of the CSPGs so that they are sustainable and self-reliant by the time the SoL program ends in 2016. To help with this, SoL undertook this case study examining the ‘drivers and determinants of sustainability and development of relatively long-established farmer groups’. Through implementation of the Local Initiatives for Food-security Transformation (LIFT) program from 2007-2010, the international NGO CARE has supported farmer groups and strengthened members in joint planning, decision-making and implementing action plans. The program aimed to address food security in an integrated manner, combining agricultural productivity (including seed production for group and community purposes) and community health and nutrition. The project worked with a total of 203 farmer groups in 21 sucos in the districts Bobanaro (sub-district Bobonaro) and Liquiça (sub-district Maubara). These ‘relatively long-established farmer groups’ - from the establishment in the CARE project till date - were assessed for their levels of access to improved seeds, and current involvement in seed distribution.

SoL will take lessons learned from these CARE farmer groups into account to further strengthen the CSPGs in their aim to address food security in their communities.

2. Research Methodology

With the consent from the Country Director of CARE Timor-Leste, the former CARE Agriculture Program Manager (2007-2010) could provide documents listing the members and disaggregation of gender of the 81 and 122 farmer groups covered by the LIFT program in Liquiça and Bobonaro respectively (see Table 1).

Table 1: CARE's LIFT program's coverage with number and gender disaggregation of groups

Sub-District	LIFT program					
	suco	aldeia	groups	women	mixed	men
Maubara	7	41	81	15	65	1
Bobonaro	14	47	122	32	86	4
Total	21	88	203	47	151	5

For data gathering of this case study, SoL provided support through the program's socio-economic research (Sosek) team, who gathered most of the data from the Bobonaro farmer groups, and from part of the Liquiça farmer groups. All interviews followed the same questionnaire based on CARE's implemented integrated activities (see annex 1) during 2007-2010.

Taking into account that not all farmer groups would still be active, the planned research approach was to visit every suco and interview one active and one passive farmer group, to learn about the factors that kept some groups active, and what caused other groups to stop operating.

Unfortunately, at the time of the survey CARE field officers were occupied finalising activities for other programs and were therefore not able to provide support in accessing the farmer groups in question. Also, three years after the program finished in 2010, CARE field officers could not indicate which groups were still active or not as these groups have been operating independently since 2010. Therefore the Sosek team relied on, and collaborated with the suco extension officers in Liquiça and Bobonaro to find the relevant information. These SEOs had taken over the collaboration with the CARE farmer groups in 2010, after the CARE program had ended.

However, even with the assistance of the SEOs, the Sosek team had difficulties locating and accessing the farmer groups as it was difficult to contact group leaders and arrange meeting times. While the communication network in Timor-Leste is expanding, the mobile phone coverage in most sucos and aldeias is still very limited, and many farmers do not yet own a mobile phone, or if they do cannot always be contacted. Not being able to contact farmers ahead of time the Sosek team ran the risk that farmers were working in their field away from the village or attending other business and therefore could not be interviewed. In Liquiça the case study facilitator was luckier and was able, with the assistance of a former CARE field officer, to arrange interviews with the farmer groups.

The LIFT program covered a total of 21 sucos and 88 aldeias in Bobanaro and Liquiça. During the assessment the Sosek team and the case study facilitator were able to visit

17 sucos (81% of those involved in the LIFT program) and 33 aldeias (38%), and a total of 43 groups (21% of the total). Interviews were conducted with 25% of the CARE groups in Maubara (Liquiça) and with 19% of the groups in Bobonaro (see Table 2).

Table 2: LIFT program geographical areas and groups compared with assessment details

Sub-District	LIFT program			Assessment			
	suco	aldeia	groups	suco	aldeia	groups	%
Maubara	7	41	81	7	16	20	25
Bobonaro	14	47	122	10	17	23	19
Total	21	88	203	17	33	43	21

A total of 132 respondents were interviewed, of which 76 (58%) were women. Table 3 below shows the gender makeup of groups and the positions of the respondents by district. Also included are the positions of the respondents, leaders (25% of the persons interviewed), deputy leaders (1.5%), secretaries (9%), treasurers (1.5%) and members (63%).

Table 3: Interview details – respondents and position of respondents

Sub-District	Respondents		Position of respondents		
	women	men	Women	Men	
Maubara	52	27	Leader	6	9
			Deputy Leader	-	-
			Secretary	4	2
			Treasurer	2	-
			Member	40	16
Bobonaro	24	29	Leader	3	15
			Deputy Leader	-	2
			Secretary	4	2
			Treasurer	-	-
			Member	17	10
Total	76	56	76	56	
	132		132		

Table 4 provides information on the age of the respondents. The youngest respondent was a 16 year-old girl (who had recently become a member) from Maubara, the oldest respondent was a 69 year-old man (secretary) in Bobonaro.

Table 4: Age group of respondents

Sub-District	Age of respondents						Unknown	Total
	16-19	20-29	30-39	40-49	50-59	60-69		
Maubara	3	20	19	21	11	3	2	79
Bobonaro	-	5	9	18	15	6	-	53
Total	3	25	28	39	26	9	2	132

3. Assessment Findings

Table 5 below shows the interviewed groups by the year when the CARE support to the group started. In total, 19 of the 43 visited farmer groups (44%) were still active by August 2013.

Table 5: Interviewed CARE farmer groups established under the LIFT program, by year

Groups	2007	2008	2009	2010	Unknown	Total
Number of groups under LIFT program	6	20	14	2	1	43
Still active groups (as of August 2013)	4	7	6	2	-	19

During the visits, the groups were asked for what reasons farmers became member of a farmer group under the LIFT program. The top four group responses were:

1. Having (free) support from NGO and/or government (15 groups, 35%);
2. Working together in a farmer group makes work less heavy – contributes to the family (12 groups, 28%);
3. Provides access to free seeds (8 groups, 19%);
4. To learn about agriculture and access to new techniques (5 groups, 12%).

Additional answers related to, existing groups would take up other agricultural activities such as coffee growing to operate especially in the low season, as women’s group like to develop their community by establishing a group based on the suggestion from CARE field officers or SEOs.

3.1 Regarding Group Activities ‘With CARE’ and ‘Without CARE’

CARE implemented an integrated program providing planting technology (improved varieties such as Sele maize, Utamua peanuts, Hohrae sweet potato and Ai-Luka cassava), airtight drums for seed and food storage, establishing home gardens, digging water ponds, as well as providing training in nutrition and making organic fertilisers. During the LIFT program CARE supported the integrated activities through direct implementation. Ten field officers supported all groups in the 21 sucos, each staff member supporting 20 groups.

When the LIFT program finished in 2010, the farming groups continued their activities with the support of MAF’s SEOs. The farming groups continued to use the skills/technologies they had received from the LIFT program. Table 6 and Figure 1 show how many of the 43 interviewed groups implemented the integrated activities when the LIFT program finished, and how many of them continued to do so until the date of the interview.

The continuation rate per activity varied between 19 - 67%. For the seed and planting material activities, Sele production was still practiced by 46% of the interviewed

groups, peanuts production by 42%, and cassava production by 40%. For sweet potato planting, the continuation was somewhat lower, at 28%.

Table 6: CARE activities started under LIFT program and continued activities

Activities of 43 groups	Started	Continued	%
Vegetable gardens	39	26	67
Airtight drum	43	20	47
Sele seed production	39	18	46
Preparing fertiliser	37	18	46
Maize sheller	22	10	45
Peanuts seed production	24	10	42
Cassava planting	10	4	40
Sweet Potato planting	18	5	28
Water pond	30	8	27
Nutrition training	21	4	19

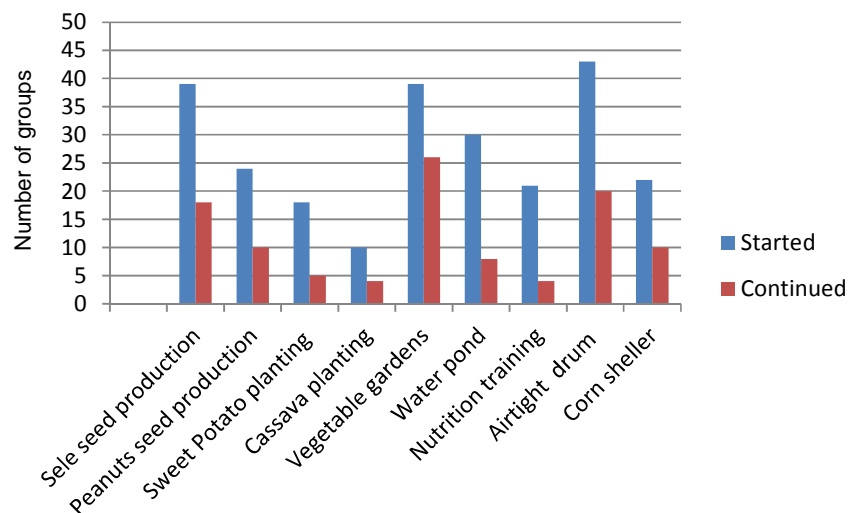


Figure 1: Prior involvement and current continuation of former CARE groups in LIFT activities

The respondents were also asked what the reasons were for the continuation and/or discontinuation of the LIFT program activities and the use of the learned skills/technology, either as a group or individually (Table 7). Over the years the groups ran out of seeds due to weather conditions, late planting and damage by animals, etc. Also the quality of seeds declined, due to cross-pollination or mixing with local seeds at the time of planting. Late distribution of seeds and therefore poor germination was mentioned as a reason for lack of seeds as the person who keeps/ stores the seeds has the power to decide when to distribute seeds to the other group members.

Table 7: Reasons for continuation and discontinuation of activities

Activities	Why continued? *	Why discontinued?
<i>Sele</i> seed production	<ul style="list-style-type: none"> To sustain family and support schooling for children, Good production as adapted well to dry, windy environment, Has big cobs with quality seeds, Weevil resistant 	<ul style="list-style-type: none"> Ran out of seeds Seeds/stems destroyed by rats, strong rain or wind, Cross pollination or mixed with local seeds Seeds distributed late so poor germination.
Peanuts seed production	<ul style="list-style-type: none"> Good production 	<ul style="list-style-type: none"> Destroyed by heavy wind and rain, Late planting
Sweet Potato planting	<ul style="list-style-type: none"> Good additional food when no rice 	<ul style="list-style-type: none"> No water - water supply dried up or too far away, Not receiving any stems, Close to the sea the soil is too salty
Cassava planting	<ul style="list-style-type: none"> Good additional food when no rice 	<ul style="list-style-type: none"> Location too close to the sea which makes the soil is too salty
Vegetable gardens	<ul style="list-style-type: none"> Quick income after selling at the market, Good to sustain health in family, Members continue on own plot only, Drums/<i>bidons</i> used for water storage at vegetable garden 	<ul style="list-style-type: none"> No water (water pond leaking), No unity as a group so plant on own plot, Chief of the group requests members to grow for his personal use
Water pond	<ul style="list-style-type: none"> Working well and water 'at hand' 	<ul style="list-style-type: none"> Plastic is leaking
Nutrition training	<ul style="list-style-type: none"> Including a variety of vegetable in a meal to improve health of children 	<ul style="list-style-type: none"> No water to wash hands, Nobody to provide us training (only two groups)
Airtight drum	<ul style="list-style-type: none"> Good for storing seeds and food 	<ul style="list-style-type: none"> Hole in the drum, Activities stopped when group dissolved
Maize sheller	<ul style="list-style-type: none"> No <i>Sele</i> but use for local maize 	<ul style="list-style-type: none"> Run out of <i>Sele</i> seeds so provided sheller to
Preparing fertiliser	<ul style="list-style-type: none"> Good to support vegetable production 	<ul style="list-style-type: none"> Not enough time No technical follow up, Stopped working together

* 17 groups did not specify why their activities were continued

An often mentioned reason to dissolve the group in relation to the vegetable garden intervention was the lack of water when water ponds started leaking and no repairs were undertaken by the farmers themselves as the plastic to cover the bottom and sides is hard to get hold of in Timor-Leste. Some groups waited for CARE to come up with a solution whereas other groups developed an alternative supply of water by using bidons (200 liter drums) or building a concrete water tank so the lack of water was not reason enough for the groups to end their collaboration (see Figure 2). From discussions within the group, the problem may have been exacerbated by a lack of group solidarity.



Figure 2: A concrete water tank built by a group in suco Maubaralissa

Respondents from the active groups mentioned that, even without support from the SEOs, they had gained a lot from the LIFT program. One notable input was the implementation of vegetable gardens, which is also the activity with the highest percentage of continuation, i.e. 67%. Group members benefitted collectively from the quick turnover of produce from these gardens, which could then be sold in the local market. Using this income, members could sustain their families and provide for the schooling of their children. The latter was a strong incentive as education is seen as an important part of a child's future.

After the LIFT program ended in December 2010 some of the groups added new agricultural activities to their initiatives. New activities included: planting trees (teak and mahogany), starting a saving and loans group or producing coffee. The groups expanded on their own initiative but requested support from other NGOs or from the SEO/MAF. The saving and loans groups were quite successful (with some additional support from CARE). One group even left the local credit organisation to continue on its own, to keep management expenses to be paid to the credit organisation as a benefit within the group.

Table 8: Groups taking up new agricultural activities after CARE's involvement

Activities	Planting Teak and Mahogany	Growing sweet potatoes	Saving and loans group	Starting a nursery and planting coffee	Purchasing coffee grinder	More varieties, vegetables
No of farmer groups	1 ^B	1 ^B	5 ^C	2 ^{A,C}	1 ^A	2 ^A

^A – With support from MAF/SEO

^B – With support from other NGO

^C – Group's self-initiative

3.2 Member Relations in the Groups

3.2.1 *Management structure*

All farmer groups indicated that they had a management structure consisting of a leader, sometimes a deputy leader, a secretary and treasurer. As indicated in Table 3 not all groups had a full management structure. The groups that continued working together felt comfortable with their management structure. They were satisfied with the leader of their group and had only changed a secretary or treasurer if that person had moved out of the aldeia or because of other practical reasons. In cases of dissolving groups due to internal conflict or disagreement, leadership positions did not exist anymore.

3.2.2 *Problems encountered*

When discussing the challenges in the groups and strategies to overcome them, farmers revealed that having different goals in mind when starting a group was hampering the survivability of the group. The different perspectives and ideas on economic gain and/or gaining technical expertise and leadership styles can cause difficulties over time. Of the 43 groups, 23 revealed a variety of problems with solutions that suited that group best (Table 9). The conversations also revealed that a problem that may be considered hard to solve by one group is easily addressed by another group, or considered a problem of lower priority. For example, many farmer groups sensed the lack of technical support to the groups as a problem after CARE finished their program. Three of the interviewed groups dissolved as a result of this, whereas other groups were more united and looked for alternative support, which they found through building a good relationship with the SEO or with another organisation that could support them with different activities, such as coffee growing.

Some problems such as crops destroyed by animals were resolved differently. In some cases the members constructed a fence whereas in other groups the members were not able to undertake that collaborative action and the problem remained unresolved. Problems such as lack of transparency or unity/solidarity among group members were the most difficult to overcome but were often solved by having discussions among members or with outsiders. However discussions and explanations were not always satisfying for all members, what caused some groups to dissolve or split up and members to work individually on their own plots.

Table 9: Problems and solutions

Problems	Number of times mentioned	Solutions
No work discipline in the group	7	Discuss and motivate each other, Make a work schedule to list participation
No assistance from SEO or CARE	3	Group dissolves
Run out of seeds or late distribution by the SEO	3	Group saves money and buys new (vegetable) seeds, SEO provides other vegetable seeds
No transparency	2	Discuss activities and recruit support from members and outsiders
No unity in the group	4	Split the group up and members continue individually
No water due to leaking water pond	4	Build a new concrete water tank, Use <i>bidon</i> for water storage at the vegetable garden
Animals destroy the crops	2	Build fence
Members want to split seeds and not share materials	1	Leader discusses purpose of group and sharing materials

3.2.3 Division of tasks between women and men

The respondents mentioned that most of the time tasks were shared equally between women and men. In mixed groups men usually prepared the land and built fences while women selected the seeds and shelled the maize kernels from the cobs, by hand or with the maize sheller. In one women-only group women did all the tasks and reported being very proud to do so. They had only received support from one man who built them a concrete water tank after the LIFT water pond started leaking. They bought all the materials from the money earned selling vegetables. In other women-only groups men were sometimes requested to assist with heavy work, after which the women continued again by themselves.

3.2.4 Decision making in LIFT farmer groups

The gender division in decision-making in the 43 LIFT farmer groups from both districts were similar. Table 10 shows the gender differentiation in decision-making for three tasks:

- 'Which variety to grow': 26 groups (61%) report that it was a joint decision, 12 (28%) that the decision was made by women and 5 (12%) that the decision was made by men.
- 'Seed selection': 11 (26%) that it was a joint decision, 30 (68%) report the decision made by women, 2 (5%) that the decision was made by men.
- 'Selling crops' 18 (42%) report a joint decision, 10 (23%) that the decision was made by women and 3 (7%) that the decision was made by men.

Table 10: Decision-making within the farmer groups

Type of farmer group	Decision-making which variety to grow	Decision-making for seed selection	Decision-making for crop sale *
Women	12	30	10
Joint	26	11	18
Men	5	2	3

* 31 groups sold what they produced. The other 11 groups (26%) did not sell the harvest because they wanted the produced seeds for their own use, or to share with others.

In only two cases for variety to be grown, and one case for seed selection, is the general decision-making pattern for decision-making different per crop.

3.3 Distribution of Seeds to Members and from Members to Non-Members

3.3.1 Sele distribution to group members, and production

Of the 43 groups, 38 provided data on how much Sele seed was shared with the members (including six groups that did not share any seed). Figure 3 shows that in about half the groups, the amount of seed shared was between 5 and 20 kg.

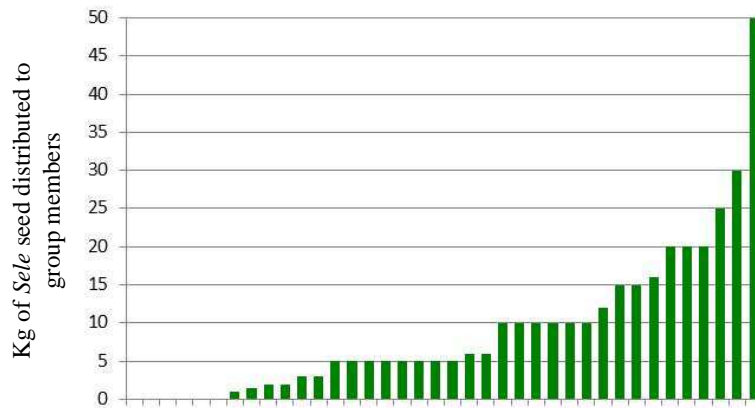


Figure 3: Amount of Sele seed distributed to group members

Some groups reported problems with the initial 10 kg of Sele the group had received for planting. In one group, members mentioned the seeds had weevils as it had not been stored properly in an airtight drum, and after cleaning the seed they only had around 7 kg left. Other groups were unsure how much they'd received in the initial stage as it was not recorded.

For 35 groups, there is data on the purpose of using the group seed in the first year. Fifteen groups mentioned that they used it for seed production, three only for food production, and 17 groups mentioned that they used it for both seed production and food production. It is however possible that some respondents answered the question from the perspective of the group (where seed production, to be shared among the members, was the main objective), and some answered it from the viewpoint of the individual group members, for whom food production may have taken priority over seed production.

The data on the amount of Sele seed used in year two of the group activities, and currently, has not been analysed. The formulation of the question was open for different interpretations and could be understood as meaning the group, as well as the individual farmer. What is worthwhile to point out is that, of the 26 groups which provided an answer to the question on the amount of Sele seed currently being grown, 11 (42%) mentioned that they didn't grow it anymore. This indicates that there is a need for mechanisms that allow groups which have lost access to improved seed, to obtain it again in one way or another⁴.

All groups received one airtight drum to store the seeds after the harvest. Most groups were able to store one drum or more, which could be used for the second planting. At least five groups mentioned that the members did not store the produced seeds collectively anymore, but did so in their own drum. This resulted in several households having half or only a quarter of the drum stored with seeds.

In terms of production figures, groups gave contrasting responses regarding the influence of wind and drought. Some groups mentioned they had lost crops due to strong winds and rain, while others mentioned their Sele had grown well in dry conditions. Also the level of Sele weevil resistance was perceived differently. Some responses were confusing when questions did not specifically relate to a group or individual farmer's results.

During the visits to the groups, they were also asked to show their 'group books'. No detailed information could be gained from this as data were not properly entered or not kept up-to-date especially after the project with CARE finished. This was a limitation to the study as the information gathered was depending on which group members' were available for the interview and which information was most important for them to share. One reason was that scales to weigh the production were not available so they did not register the amount produced. When requesting to have a look at the book, respondents did not bring the group book along; they mentioned it was with somebody of the group who lived at some distance, and so they were not able to get hold of it at that moment, or that members did not feel the need to keep recording data after the project finished. Therefore the retrieved data is mainly relying on the recollection of the respondents.

3.3.2 Maize seeds per hole

Although members were trained to plant only one or two seeds per hole, at least seven groups in Maubara planted three (and in one cases even four) seeds in one hole. In doing so, they hoped to maintain their rate of harvest by continuing the practices they had used over the years. Group members found it hard to believe they would still have good yield with fewer seeds. Furthermore, farmers experienced requiring more seeds when planting on a slope as they did not maintain a regular distance between each hole.

⁴ MAF has already acted on this finding. At the suggestion of the SoL program, new Sele seed was provided at the start of the 2013-2014 growing season to the 104 farmer groups of CARE's LIFT program in Liquiça and Bobonaro that have producing Sele seed for more than three seasons. Only the groups considered active by SEOs were provided with new Sele seed.

Groups also mentioned the size of their workforce determined how much land they could plant. The answers given on the amount of Sele seed used is given in Table 11.

Table 11: Reasons for increasing, decreasing or using the same amount of seed at planting

Increase	Same	Decrease
<ul style="list-style-type: none"> • More seeds in one hole to be sure one or two will produce [5x] • Increase of land size • Random planting due to slope – no specific spacing 	<ul style="list-style-type: none"> • Depending on labour force • Good seed will produce same amount • Not expanded land size • Not able to make a fence [2x] • Same result depending on weather • Planting distance still the same 	<ul style="list-style-type: none"> • Smaller farm • Depending on labour force • Less land available

The overall response after five or more years (starting in 2007) using Sele seeds was that the quality of the seeds was diminishing. By now many crops have been cross-pollinated, often due to local seeds being planted next to Sele to fill the entire planting area, or because not enough distance could be kept between plots planted with Sele and nearby plots with local seeds.

3.3.3 Sele seed sharing

For 39 groups, there is data available on whether or not they shared or sold Sele seed, and two-thirds of them reported not to have shared or sold any seed. Of the 13 farmer groups where members did share or sell seed, only nine provided data on the number of people involved in such activities:

- 3 occasions with 1-2 neighbours, with amounts between 1-4 kg;
- 4 occasions with 2-5 neighbours, with amounts between 2-15 kg;
- 2 occasions with more than 5 neighbours, one with 1,5 kg, the other 15 kg.

Sharing with family and neighbours seems to happen most when the harvest result was good and there was no market closeby. Families that helped each other out in difficult years return favours when their yield is high in other years. Some families reported sharing Sele with their child’s school. Whenever groups have a good production and live close to the market, they will take the opportunity to sell parts of their surplus in order to have cash so that they are able to purchase other items for the house or children’s schooling. Some groups even reported selling part of their produce to MAF.

In two cases groups reported establishing Sele seed banks for the community. The members of those farmer groups mentioned they stored the seeds mainly for group members but wanted to give an opportunity to non-members to have access to Sele seeds. Members could borrow from this bank but had to replace the seeds they had taken. Non-members were also allowed to borrow though seeds had to be replaced with 100% ‘interest’, borrowing 2 kg and returning 4 kg.

In other groups the distribution of Sele seeds was more spontaneous as seeds were often shared among community members – group member or not – to set up trial plots.

However the amount shared was not registered. The farmers were not sure about the number of households in their aldeia but they indicated that about half, or more than half of the other households, also benefited from planting Sele seeds.

3.4 Access to Training / Exposure Visits

Integrated interventions under the LIFT program included training and exposure visits (see Table 12). The groups were inspired by the exposure visits in particular, being able to visit groups in other sub-districts to see how they implemented home gardens using organic fertilisers, and developing an understanding of their problems and how these were overcome. Training sessions were followed by practical implementation in the field and support by CARE staff, a good foundation for future SEO assistance. Monitoring and mentoring visits gave groups a chance to discuss their successes and challenges. The latter were addressed within the groups themselves, preparing farmers and teaching them how to deal with further obstacles. The respondents mentioned that SEOs provided advice and sometimes seeds and accompanied farmers in activities, including measuring the planting distance for maize. Although exposure visits are no longer undertaken, groups and individual farmers mentioned they talked to neighbouring farmer groups, exchanged experiences and even seeds that provided high yield to sustain or improve their production.

Table 12: Training Skills Development and Activities during LIFT and Current Application

Activity / Skill	Number of groups	
	Training during LIFT program	Skills currently used by groups
Home garden	40	26
Preparation of organic fertilizers	39	17
Seed production and storage	38	29
Exposure visit	25	-
Nutrition education	21	7
Other [<u>During LIFT</u> : terracing, seed selection. <u>Currently</u> : seed selection, water pond, home garden techniques]	2	3*

* This number is higher than the number of groups that received training in the LIFT program. Farmer to farmer learning took place among the groups with support from the SEO

The discussions with the groups show that skills learned are currently still being practiced by farmers individually after the intervention was discontinued as a group.

3.5 Member Relations to Extension Service

CARE started off the program through 'direct implementation' with the farmer groups. Ten CARE field officers, with the support of the local NGOs CDEP in Bobonaro and TAHA in Liquiça, covered the 21 sucos that were included in the LIFT program. Having ten field officers meant that each of them would work in two sucos establishing 20 groups, providing integrated activities and accompanying these groups to become as self-reliant

as possible. Groups established in 2007 had more time to learn and benefit from CARE's involvement and support than groups established in 2010.

Towards the end of the program, CARE aimed having farmer groups linked up with the MAF extension support structure so they were eligible for further support of the SEOs. MAF was in the process of developing an extension support structure, which was finally written up in the MAF extension manual⁵ (2012). The structure entailed the establishment and expansion of farmer groups by each SEO, starting with four groups in the first year, and adding two new groups each year. Therefore, during the LIFT program, CARE began collaboration with SEOs to ensure CARE could hand over the support of the farmer groups. After this first program CARE went into a second phase, the HAN project, which was implemented in the same districts but in different sub-districts and sucos. By involving the SEOs, the LIFT farmer groups (especially the ones that were established in 2010) would be able to get longer technical assistance from MAF and therefore have more time to become long-lasting and self-reliant groups.

At the time of the interview, respondents were asked what type of support they received from SEOs after 2010 (Table 13) and how often they met to receive this support (Table 14 **Error! Reference source not found.**).

Table 13: Type of Interaction with and Support from the SEO

	Maubara	Bobonaro
Visits	16	18
Training/accompaniment	11	13
Agricultural tools	5	5
Seeds	4	2
Storage drum	1	2
Other: no support, visitor	3	1

*For the type of support from the SEO, multiple answers possible

Table 14: Frequency of Meeting with the SEO

	Maubara	Bobonaro
1-2 a week	6	11
1-2 a month	8	8
1-2 in 3 months	2	2
Not met at all	3	2
Unclear	1	

⁵ Manuál Estensaun Agríkula Nasionál, Ministériu Agríkultura no Peska

Table 15 shows if the groups knew the SEO, when this relationship started at the time of the LIFT program and if the groups were satisfied with the support of the SEO.

Table 15: Relation and Rating to Extension Services

	Know SEO?		Involved at time of CARE?			Rating		
	Yes	No	Yes	No	Unclear	Very satisfying	Satisfying	Not satisfied
Maubara	17	3*	13	7		2	11	7
Bobonaro	23		16	1	6	4	14	5
Total	40	3	29	8	6	6	25	12

*in one farmer group the group plot is far from their house. They reported not knowing the SEO for their *suco*, but knowing and receiving support from another SEO close to their group plot.

The support received varied depending on the group's capacity and the availability and enthusiasm of the SEO. Some SEOs were actively supporting the groups, even driving long distances to do so, while other SEOs only met the groups sporadically. A few groups mentioned they had never met the SEO and didn't even know his name. One group also explained that the support of the SEO of their *suco* was not satisfying. This did not matter much as their plots were located in a neighbouring *suco*. They had requested and been given support from the SEO in that adjacent *suco*.

4. Discussion and Recommendations

This case study on the drivers and determinants of farmer groups has shown that after being established between 2007 and 2009, 19 of the 43 interviewed groups are still considered active by their members. These groups still undertake activities together such as planting maize, sweet potato, cassava, vegetables and making fertiliser to support the growth of vegetables.

An important driver in successful **farmer groups** is for **members having common goals** to work together and put time and energy into increased results. In the majority of the groups vegetable growing was the main activity (66.5%) that groups have as a joint intervention. Those groups worked collectively, making it easier to produce different kinds of crops in higher quantities to sustain their families. With the money earned they were able to support their families, e.g. to pay for the education of their children.

Another driver in active groups is the **potential social capital** [defined here as group cohesion and personal investment] that members can rely on from each other. It is believed that in the case of the LIFT program CARE staff were able to build up social capital between group members.

Location is also an important factor. Groups situated close to a market benefitted from this situation. They combined their efforts to sell their vegetable production and had a stimulus to produce more, whereas groups – even with strong group cohesion – in remoter areas encountered more difficult situations to survive as a high production of vegetables or improved varieties in a smaller community will quickly face a saturated market.

Use of the **airtight drums** and the guidance how to use them in the most beneficial way is essential. This way seeds can be saved for the next planting season. The current practice of storing amounts smaller than one drum by group members individually comes with a higher risk of seed damage because of higher moisture levels in the stored seeds.

The **quality of Sele seeds** provided by the LIFT program from 2007-2010 has reduced over time because of cross-pollination with local varieties. The farmer groups could benefit from a new injection of pure high quality seed which would enable them to start producing and sharing good quality seeds again⁶.

Farmer groups benefit from being served by a **skilled and motivated SEO**. He/she builds the social capital of the group, which benefits the crop production in the groups. SEOs mentioned it is hard to support farmer groups that have previously been supported by an international NGO. They felt that NGOs provide substantial agricultural inputs to their farmer groups (such as tools, airtight drums, water ponds, improved seeds and training) whereas MAF has a smaller budget to work with. Groups tend to

⁶ This recommendation has already been implemented. Still active farmer groups previously supported by the LIFT program have received pure Sele seed again in late 2013.

focus on physical handouts (especially free ones) without acknowledging the commitment and knowledge support SEOs provide to farmer groups and the community in the different stages of the seed production process. Such feelings and perceptions within the farmer group influences the motivation of the SEO and his/her commitment to the group.

After meeting with the majority of the passive groups, it was reported that individual **farmers of no-longer active groups still met with the SEO individually** and regularly, when the SEO visited the aldeia. Easy access is also possible when the SEO is living in their community. Farmers reported it was easy to approach SEOs they had met in previous years to discuss matters related to the production of improved varieties or other crops. In cases of distribution of seeds or materials, the farmers would like to benefit from these opportunities. This explains the high number of on-going contacts.

Social interaction/solidarity among group members and their relationship with the SEO are important for group survival. SEO support can be crucial for farmer groups especially when groups are operating in remote areas and facing challenges that make it difficult for them to grow the crops (e.g. combating strong winds or rains that destroy their crops). A motivated group of farmers can rely on each other and is able to discuss and resolve problems such as weather conditions, animals destroying the crop etc. Furthermore an experienced group of farmers with access to other groups from which they can learn, can survive without an SEO. As long as there is a solid foundation of collaboration within the group, they can overcome many challenges.

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Annex 1. Questionnaire

CASE STUDY

Drivers and determinants of ‘sustainability and development of relatively long-established farmer groups’ in the districts Liquiça and Bobonaro

<i>Interview specifics</i>		
	Interviewer / Minutes taker	Data Entry
Name		
Date of interview	Day / Month / Year / / 2013	Day / Month / Year / / 2013

1. GROUP'S GENERAL INFORMATION

Tell me about your group:

- Group Name:
 Location: Sub-District:.....Suco:.....Aldeia.....
 Type of Group **NOW**: a) Mixed, b) women only, c) Men only
 Total number of members at present:.....Women:.....Men.....
 Year of Group Formation:
 Reasons for formation of the Group:

- Group Leader Name:
 Total number of members **at the time of group formation**:
 a) Mixed, b) women only, c) Men only
 Total: Women: Men
- If there is change in membership, please ask:
 Why there is change in size of membership in your group?

- What is the name of CARE Field Officer who supported your group in the past?
 Name:.....
 Sex:.....
- What is your personal opinion about your Group?
 a) Active Group
 b) Passive Group

2. REGARDING GROUP ACTIVITIES ‘WITH CARE’ AND ‘WITHOUT CARE’ SUPPORT

1. In what activities was your group involved in the past with CARE?
 - a) Maize seed production (Sele variety)
 - b) Peanuts seed production (Utamua variety)
 - c) Sweet potatoes (Hohrae varieties)
 - d) Cassava (Ailuka varieties)
 - e) Vegetables (Home Garden)
 - f) Water Ponds
 - g) Nutrition Training
 - h) Airtight metal container (Bidon) support for seed storage
 - I) Labour saving manual maize sheller for maize shelling
 - j) Support on how to prepare organic fertilizers and pesticides

2. What activities from CARE has your group still been continuing at present?
 - a) Maize seed production (Sele variety)
 - b) Peanuts seed production (Utamua variety)
 - c) Sweet potatoes (Hohrae varieties)
 - d) Cassava (Ailuka varieties)
 - e) Vegetables (Home Garden)
 - f) Water Ponds
 - g) Nutrition Training
 - h) Airtight metal container (Bidon) support for seed storage
 - I) Labour saving manual maize sheller for maize shelling
 - j) Support on preparing organic fertilizers locally

3. A. What crops/technologies from the above list has your group continued to present? And what are the reasons for continuation of crops?

	Crop/Technologies continued	Reasons for continuation
	e.g.maize seed production in a group	

B. Reasons for dis-continuation of crops/technologies (main **three** reasons)?

	Crop/Technologies dis-continued	Reasons for dis-continuation

4. Has your group added any new agriculture activities after CARE stopped working in your area? Yes/No

If Yes, What activities are they?

5. Who provided support for new activities?

- a) MAF SEO
- b) Other NGO
- c) Group's self-initiation
- d) Others

6. Has there been change in Group Leadership since the group formed? Yes/No

If yes, what are the main reasons for change?

3. REGARDING MEMBER RELATION TO GROUP

1. What was your position in the group then?

- a) As a member
- b) As a Chief
- c) As a Secretary
- d) As a Treasurer

2. What was your position in the group now?

- a) As a member
- b) As a Chief
- c) As a Secretary
- d) As a Treasurer

3. What activities have you learned from the group?
 - a) Seed production
 - b) Vegetable cultivation
 - c) Hygiene and nutrition
 - d) Preparing organic fertilizers
 - e) Producing vegetables in dry season

4. How much *Sele* maize seed your group produced when CARE provided support?
 - a) One drum
 - b) Half drum
 - c) Two drum

5. Was there any conflict in the group? Yes/No.
 If yes, what were those problems and how did the group solve them?

Problem faced by group	The ways group solved them

6. Are women and men involved in the same activities? Yes/No
 If No, WHAT were the differences and WHY?

WHAT different activities	WHY

7. SEE ANNEX

4. REGARDING DIFFUSION OF SEED GROUP TO MEMBERS AND FROM MEMBERS TO NON-MEMBERS

1. How much *Sele* seed the group distributed to members?
 - a) ...kg/member

2. What was the purpose of using group seeds by you in first year of production?
 - a) For seed production
 - b) For food production

3. How much Sele maize seeds you planted in second year?kg
4. How much Sele maize seed are you growing now?kg
5. How much maize seed you normally plant each year?kg

6. Please name the varieties and seed you use now and three years on your private land:

No.	Crop	Name of variety	Source of seeds	(kg) seeds planted last year	(kg) Seeds planted last 3 years
1	Mais	Batar Bot			
		Batar lais			
		Sele			
				
2.	Rice				
3.	Peanut				
4.	Cassava				
5.	Sweet potato				
		Total:			

7. If seed use has increased, what are the main reasons for increased use of seed compared to first cultivation of *Sele* maize?

8. If seed use has been the same, what are the main reasons for using the same quantity of seed compared to first cultivation of *Sele* maize?

9. If seed use has decreased, what are the main reasons for decreased use of seed compared to first cultivation of *Sele* maize?

10. What is your experience with *Sele* maize variety in your field in terms of yield?

- a) Better yield than local
- b) Same yield as local
- c) Less yield than local

11. What did you do with *Sele* maize seed?
- a) Stored in airtight drum for next season production
 - b) Sold the produce to neighbours/markets
 - c) Barter with other commodities

12. Have you ever shared / sold *Sele* maize seed with neighbours? Yes/No

If yes,

To whom	SHARED	SOLD
a) With 1-2 neighbors		
b) With 2-5 neighbors		
c) With > 5 neighbors		
d) Other		

13. How many farming households are there in your Aldeia?

----- Households

14. In your personal opinion, how many of them may be growing *Sele* maize variety by now?

----- households

15. Have you received airtight drum for food storage?

If yes, how many?

16. Are you still using those drums now? Yes/No

If yes, for what purposes are you using those drums?

- a) seed storage, b) food storage, c) water collection, d) for other purpose

6. REGARDING MEMBER ACCESS TO TRAINING/EXPOSURE VISITS

1. Have you received any training in the past? Yes/No. If yes, what training?

- a) Seed production and storage
- b) Home garden
- c) Nutrition education
- d) Preparing organic fertilizers
- e) Exposure visits to see works of other successful groups
- f) Others,

2. What new knowledge/skills from the training are you still using at present?

- a) Seed production using modern techniques
- b) Maize storage using airtight containers
- c) Home garden
- d) Nutrition education
- e) Preparing organic fertilizers
- f) Others,

7. REGARDING MEMBER RELATION TO EXTENSION SERVICES

1. Do you know who is SEO in your *suco*? Yes/No
Please can you tell the name, if you know him/her?
.....
2. How often you meet him/her?
 - a) 1-2 times a week,
 - b) 1-2 times a month
 - c) 1-2 times every 3 month
 - d) not meet at all
3. What support are you receiving from the SEO?
 - a) Training
 - b) Visits
 - c) Seeds
 - d) Agriculture Tools
 - e) Storage drums
 - f) Others,
4. Was the SEO in touch with you when CARE used to work in your area? Yes/No
5. What is your rating of support from SEO in your village at present?
 - a) Very satisfied
 - b) Satisfied
 - c) Not satisfied

8. REGARDING SUPPORT FROM LOCAL AUTHORITIES

1. Can you tell me who knows about your group and group's main activities in your village?
 - a) Suco Chief
 - b) Aldeia Chief
 - c) Local Leaders
 - d) Youth

ANNEX: Men and women roles in agriculture decision-making

a) For the different crops that your household grows, who decides **which varieties to grow?**

Man decides
 Woman decides
 Man and woman decide together

Is this the same for all crops? Yes No *If NO, indicate below for which crop(s) it differs*

No.	Crop	Man decides	Woman decides	Joint decision

b) For the different crops that your household grows, who **selects the seed?**

Man selects
 Woman selects
 Man and woman select together

Is this the same for all crops? Yes No *If NO, indicate below for which crop(s) it differs*

No.	Crop	Man selects	Woman selects	Joint selection

c) If some, or all, of the harvest is sold, who decides **when, where and at what price to sell?**

Man decides
 Woman decides
 Man and woman decide together

Is this the same for all crops? Yes No *If NO, indicate below for which crop(s) it differs*

No.	Crop	Man decides	Woman decides	Joint decision

Remarks or comments from respondent on gender questions: