Seeds of Life
Fini ba Moris

Seeds of Life 3

Distribution Monitoring Report

Sweet Potato Cuttings and other Foodcrop Seeds/Cuttings Distributions

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

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Abbreviations and Acronyms

AS	Adoption survey (2014)
CSPG	Community Seed Production Group
CCT	Cooperativa Café Timor
DD	District DIrector
HH	Household
MAF	Ministry of Agriculture and Fisheries
NGO	Non-governmental organization
SP	Sweet potato
SEO	Suco Extension Officer
SoL	Seeds of Life
VHH	Vulnerable households

Executive summary

Sweet potato cutting distribution

Overall, the uptake after distribution of cuttings was satisfying: 99% of the farmers who received cuttings planted them and 77% had harvested already or were going to. Even though most cuttings suffered from drought during transportation, only very few cases of complete damage were observed: 89% of the cuttings received by farmers were good enough to be transplanted. Pre-selection of cuttings by Suco Extension Officers (SEOs) in some sucos was also done but no data on the proportion of loss at this level was collected. In general, measures to keep sweet potato (SP) cuttings fresh during transportation (white sacks, banana stems, etc.) can only improve the quality of cuttings on arrival.

The main issues revealed through this survey are linked to the lack of information and socialization to farmers, which sometimes affect more specifically the poorer farmers:

- half of the beneficiaries got the information about the distribution very late (the day before or the same day as the distribution, or even no information at all),
- only 15% of the beneficiaries knew the name of the variety they had received,
- only 31% of the farmers watered the cuttings after planting them resulting in some dying from desiccation. Animals ate other farmers' cuttings (no fencing). These aspects could be improved by follow-up from SEOs.

In this regard, simple measures are to be taken and monitored: labelling cuttings, distributing leaflets together with the cuttings as well as socializing the varieties to SEOs and farmers prior to distribution.

Also, MAF stakeholders highighted the fact that the distribution was late in the season in some districts. According to them, better coordination between national and district level as well as sourcing cuttings locally (Community Seed Production Groups, CSPGs, for example) would help improve the situation.

Other foodcrops seeds/cuttings distributions

This section highlighted some differences between distribution of seeds and cassava cuttings: beneficiaries are often informed earlier about a seeds distribution and receive seeds earlier than for cassava cuttings. Therefore, if distribution of cassava cuttings is to be continued, better planning of these is recommended. Similar recommendations as for sweet potato apply to the distribution of cassava cuttings.

However, uptake of the varieties is still very satisfying: about 90% of the beneficiaries planted all the seeds/cuttings they received and 82% of cassava cuttings recipients could harvest their crops (or were going to).

Similar to the sweet potato distribution, a very low proportion of cassava cuttings recipients remembered the name of the varieties they received (22%). The same measures as proposed for SP cuttings could be applied here.

Distribution to vulnerable households

The 55 respondents who said they were selected to receive seeds/cuttings because they were vulnerable households (VHH) were indeed, poorer than other respondents. They also experienced longer food shortage periods than beneficiaries of other distributions.

However, when looking at some of the selection criteria as set by MAF for VHH (smaller land size, female headed households) , no correlation was found, at least among this sample.

Non-beneficiaries

22 respondents among this sample hadn't received any seeds/cuttings even though their names were on lists of beneficiaries. Compared to other respondents, they were found to suffer from longer periods of food shortage and ownend smaller areas of land which might suggest they are slightly more vulnerable. Again, these findings apply to the sample interviewed in this survey only.

Familiarity with MAF varieties

This section revealed the importance of socializing the names of the varieties to beneficiaries of distributions. Indeed, 83% of the farmers who said they haven't heard of "Hohrae" (107 in total) actually had received SP cuttings during the last planting season. Similarly, 24% of the farmers who said they haven't heard of "Ai-luka" actually had received cassava cuttings. The same case was observed for seven beneficiaries of peanut distribution.

Also, 63 respondents first said they didn't remember the name of the SP variety they were given but then said they were familiar with the name "Hohrae". The same case was enoutered for 23 farmers who received Ai-luka cuttings.

Figure 1. Respondent in Ainaro having received Hohrae from the SEO

1. Methodology

1.1 Background

From October-November 2013 to March 2014, MAF and NGOs have distributed about half a million cuttings nationally (494,150 cuttings according to collected data) of the MAF released Sweet potato varieties Hohrae 1, 2 and 3. The following table presents the detailed data per district.

Table 1. Sweet potato cuttings distribution for the 2013-14 planting season

Districts	# of cuttings requested and distributed			Remarks
	to MAF	to NGOs	Total	
Aileu	77,400	44,000	121,400	NGO - RAEBIA, 37,400 from CSPG
Ainaro	51,000	-	51,000	For VHH, 36,000 cuts sourced from CSPG
Baucau	7,750	70,000	77,750	NGO - CRS
Bobonaro	25,600	-	25,600	
Covalima	15,000	-	15,000	
Dili	12,600	-	12,600	
Ermera	24,000	-	24,000	
Manatuto	20,000	9,000	29,000	NGO - RAEBIA
Manufahi	15,000	-	15,000	
Lautem	7,600	1,600	9,200	NGO - GCS
Liquiça	47,600	6,000	53,600	CARE purchased 6,000 from CSPG, 41,000 additional sourced from CSPG
Oecussi	8,800	20,200	29,000	NGO - BIFANO 8,000 cuts, CECEO-5,000 cuts, AHCAE-7,200 cuts
Viqueque	31,000	-	31,000	
Total	343,350	150,800	494,150	

About 120,000 cuttings were sourced from CSPGs and the rest was sourced from research stations or contract growers. From these, 343,350 cuttings were given to MAF agencies and 150,800 to NGOs (Raebia, CRS, Care). Cuttings were distributed by the MAF and NGOs to groups or individual farms.

It was decided that monitoring the success of this distribution was necessary to provide recommendations for future distributions. This monitoring was also the opportunity to observe other types of distributions. As a result, the purpose of this survey is three-fold:

1. To assess how the distribution of sweet potato cuttings during the cropping season 2013-2014 was done in order to make recommendations for improving future distributions of perishable planting material;
2. To assess how the distributions of other seeds/cuttings by MAF or NGOs is organized and how efficient they are;
3. To obtain feedback of the distribution of seeds and planting materials to vulnerable households, and to formulate recommendations how this can be handled more effectively in future.

Data was collected from July to October 2014 and analyzed in October.

1.2 Sampling

Survey interviews were conducted in districts where most of the SP cuttings were distributed. Seven districts were selected, including Aileu, Ainaro, Baucau, Bobonaro, Liquica and Manatuto where about 73 % of the total number of cuttings were distributed.

Respondents were selected among who received cuttings from the NGOs and from MAF in the selected districts. For this, it was necessary to obtain data from where the MAF district offices and the NGOs distributed cuttings. As predicted, it was very difficult to obtain such information but in the end, only six sucos were not supported with lists of beneficiaries (most were in Ermera). In those cases, enumerators asked the local leaders/SEO to show them where the beneficiaries were.

In a few cases, NGO staff also indicated where other farmers were living who weren't on beneficiaries' lists (three sucos in Liquica). SEOs also did so in Baucau (three sucos), Manatuto (two sucos) and Ainaro (one suco).

The following table presents the number of interviews conducted.

Table 2. Sample repartition per districts

	Number of respondents	Proportion	Number of sucos sampled
Aileu	112	33%	5
Ainaro	38	11%	4
Baucau	46	14%	8
Bobonaro	35	10%	2
Ermera	11	3%	4
Liquica	59	17%	10
Manatuto	38	11%	5
Total	339	100%	38 sucos

Given the limited availability of data on the number of farmers who actually received seeds or cuttings, no specific target number of respondents was calculated. Therefore, the data presented in this report can only reflect the situation among this sample and not be extrapolated to the total number of distribution beneficiaries. However, for the specific case of Sweet potato cuttings distribution, an estimation of the percentage of error among the sample interviewed was calculated (see section 3.1).

1.3 Survey instruments

The assessment is a combination of (1) meetings with key informants such as MAF District Directors (DDs), District Chiefs of Extension, District Community Seed Coordinators and SEOs and (2) interviews with recipients that represent the different ways/channels of delivery, i.e.:

- MAF distribution to groups
- Distribution by the NGOs Raebia and CARE
- Distribution from CSPGs to vulnerable households
- Other delivery approaches.

Therefore three survey instruments were designed: a semi-structured questionnaire for MAF DDs and Chief of Extension, a semi-structured questionnaire for SEOs and NGO staffs and finally an e-questionnaire, which was based on other existing questionnaires:

- the 'fast-track' monitoring questionnaire used in September 2013;
- the questionnaire of the survey of vulnerable HHs in suco Maumeta;
- the questionnaire of the survey of CSPG members in eight CSPGs;
- other sweet potato surveys in other countries.

Note that a number of assumptions were made in order to clean the data collected by enumerators. They are presented in appendix I.

Figure 2. Respondent in Ainaro having received 1 kg of Sele seeds from the SEO

2. Households basic information

2.1 Household identification and composition

As shown in the following table, the proportion of female headed households is quite lower than the proportion of female headed households nationally (16 according to the 2011 census). In this report, gender disagregated data will be discussed only if correlations are found.

Table 3. Characteristics of the surveyed population

Characteristic	Data from sample
Number of visited households	339
• Male-headed households	94%
• Female-headed households	6%
• Male respondents	46%
• Female respondents	54%
• **Age of head of household**	
Average:	49 years
Min:	19 years
Max:	86 years
• **Household composition**	
Average number of household members:	7.6
Average number of adults per household:	4
Average number of children per household:	3.6

2.2 Foodcrops grown and sold by the household

The following table summarizes data about which crops are grown and sold by the household.

Table 4. Crops grown and sold by farmers

Crop	Growing the crop	Selling the crop	Crop	Growing the crop	Selling the crop
Cassava	97%	17%	Red Bean	17%	4%
Sweet Potato	97%	11%	Velvet bean	12%	5%
Maize	95%	15%	Other Maize	9%	1%
Banana	82%	18%	Irrigated rice	7%	2%
Taro	73%	7%	Mung Bean	7%	1%
Pumpkin	69%	8%	Bitter bean	6%	0%
Papaya	66%	7%	Jicama	5%	0%
Arrowroot	56%	2%	Yam	4%	0%
Pigeon pea	43%	1%	Potato	2%	0%
String Bean	39%	4%	Elephant Foot Yam	2%	0%
Cucumber	35%	6%	Upland rice	2%	1%
Early Maize	29%	1%	Sorghum	1%	0%
Peanut	26%	2%	Other	31%	20%
Coconut	26%	2%			

Percentages are calculated among the total sample (339 cases)

Overall, the most commonly grown foodcrops are maize, cassava and sweet potato. Other crops very commonly grown are: banana, taro, pumpkin, arrowroot, papaya, pigeon pea. Velvet bean is only grown by 12% of respondents.

Overall, 50% of the respondents met said they sold at least some of the harvests of the crops they grow. The most commonly sold crops are banana, cassava, maize and sweet potato.

2.3 Land parcels and their use

In average, a household owns 1.8 parcels. As shown in the following graph, most farmers own two plots. Only one farmer said his household owns up to seven plots. Besides, 73% of the households said they also grow foodcrops right next to their house.

In average, respondents own in total 0.93ha of land (minimum being 0.002ha and maximum 7.13 ha).

Figure 3. Number of plots owned and total land owned

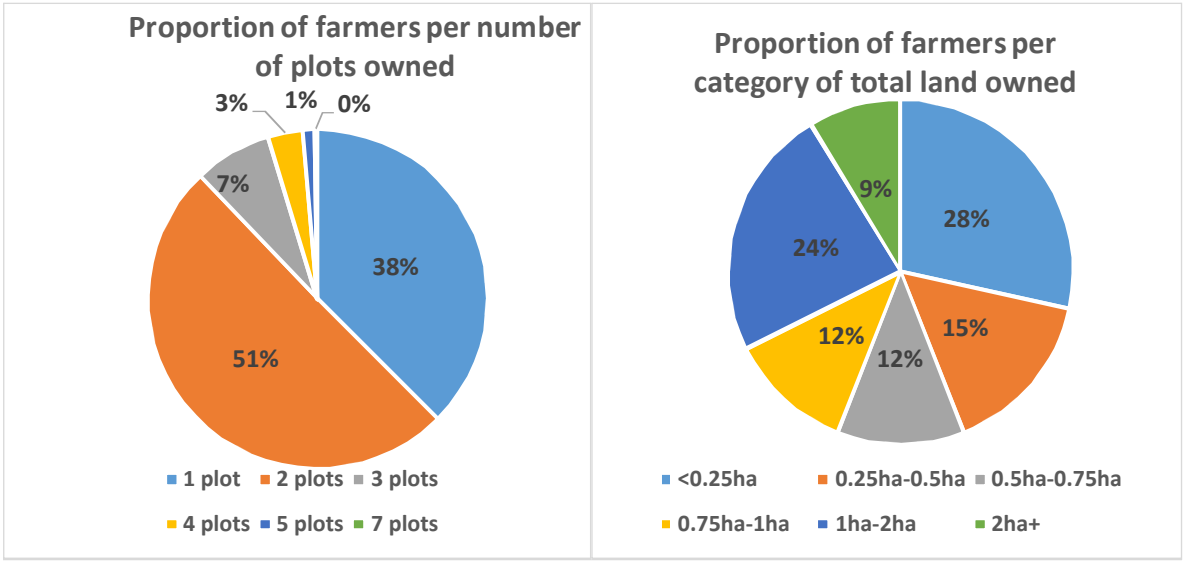
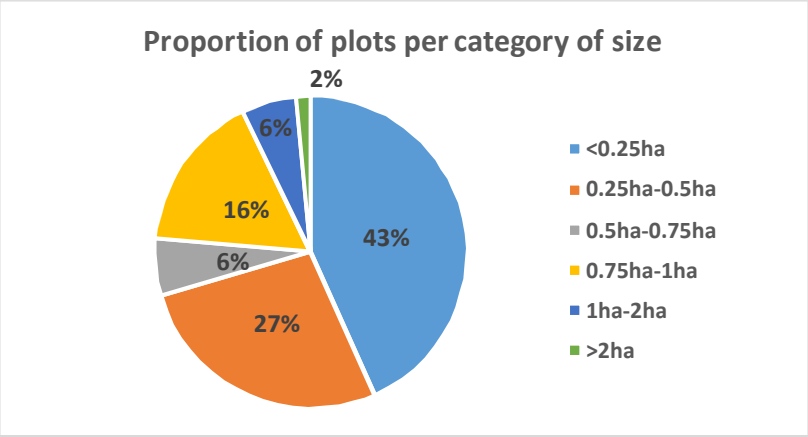


Figure 4. Respondent in Liquica having received cassava and SP cuttings from Care

The average size of a plot is 0.52ha. Only very few farmers own plots that are bigger than one hectare. The following chart presents the proportion of plots within each category of size.

Figure 5. Size of farmer's plots



Respondents were then asked if they grew maize, rice, peanut, cassava or Sweet potato on each of the plots they listed. The area potentially grown under each of these five crops was then calculated for each respondent (assuming the whole plot is grown with the foodcrop the respondent said he grew on it). The following table summarizes these calculations.

Table 5. Area potentially grown under the five foodcrops (per respondent)

	Average area	Minimum area	Maximum area
Maize	0.71ha	0.002ha	5.06ha
Rice	0.97ha	0.006ha	4ha
Peanut	0.65ha	0.0025ha	5ha
Cassava	0.71ha	0.002ha	5ha
Sweet potato	0.66ha	0.0012ha	5ha

For peanut and sweet potato, clearly the above data is over-estimated as farmers usually grow those crops on a portion of the plot only.

2.4 Source of seeds and cuttings

If farmers were growing maize, rice, peanut, cassava or sweet potato, they were asked from where they sourced the seeds/cuttings. The following table summarizes the results from those questions.

Table 6. Proportion of crop growers per type of source of seeds/cuttings

	Saved from previous harvest	Free from relative / neighbour	Free from MAF	Free from NGO or church	Bought from market	Other source
Maize	91%	4%	39%	33%	13%	11%
Rice	93%	10%	48%	3%	7%	32%
Peanut	61%	3%	14%	5%	41%	37%
Cassava	94%	12%	14%	18%	1%	45%
Sweet potato	88%	3%	59%	29%	1%	8%

Note: Farmers can source seeds or cuttings from several places. Therefore the sum of the percentages may be more than 100.

As expected, the main source of seeds or cuttings is from the farmer's own stock (saved from previous harvests).

Only a small proportion of farmers also source planting material from other farmers (12% maximum for cassava). Those farmers were asked to estimate how much seeds or cuttings they had received from other farmers. Only limited information was collected. In average, farmers who answered these questions said they received: 4kgs of maize seeds (12 cases), 34kgs of rice seeds (3 cases), 10kgs of peanut seeds (1 case), 220 cassava cuttings (26 cases) and 200 Sweet potato cuttings (5 cases).

Also, as reflected in other surveys, peanuts are often sourced from the market (41%) followed by maize seeds (13%). Those farmers in average bought from the market 6kgs of maize seeds for 6USD and 4kgs of peanut seeds for 5USD.

Finally, note that non respondents mentioned receiving planting material from a CSPG (some maybe have but aren't aware of it).

More importantly, among the interviewed sample, 59% of the farmers sourced sweet potato cuttings from MAF and 29% from NGOs. And among the 272 farmers who received sweet potato cuttings from MAF or NGOs, 200 farmers also received seeds/cuttings of other crops from MAF or NGOs. This reveals that the same households often benefits from more than one distribution.

Respondents were also asked to prioritize the different source of seeds or cuttings for each crop in order of importance (main source, second, third, etc.). The results of this rating is shown below.

Table 7. Ranking of planting material sources

		First source	Second source	Third source
Maize	Own stock (257)	**81%**	18%	1%
	NGO (97)	43%	**53%**	3%
	MAF (89)	28%	**65%**	7%
	Market (40)	30%	35%	30%
	Relative / neighbour (12)	17%	42%	33%
Rice	Own stock (23)	**100%**		
	MAF (11)	9%	**91%**	
Peanut	Own stock (32)	**97%**	3%	
	Market (23)	70%	**30%**	
Cassava	Own stock (281)	**96%**	4%	
	NGO (54)	24%	**70%**	4%
	Relative / neighbour (38)	37%	58%	3%
	MAF (29)	17%	**79%**	3%
Sweet potato	Own stock (245)	**88%**	11%	1%
	MAF (154)	23%	**76%**	1%
	NGO (90)	32%	**66%**	1%

Note: Percentages are calculated only for those cases where the rating of the different sources was done correctly, and for which there were at least 10 cases (number of cases specified in brackets for each crop and source). Only data on the 1st, 2nd and 3rd positions are presented here. For certain rows, this does not add up to 100%, because the listed source was also mentioned as the 4th, 5th or 6th source, but these less important sources have been omitted from the table.

For more than 80% of the respondents, the farmer's own stock of seeds or cuttings was the first source of plantig material. Free distributions from MAF or NGOs are the second main source of seeds/cuttings, except for peanut seeds recipients; for them the second's most frequent source of seeds is the market. However, in the case of peanuts as well as rice, the sample is too small to make any conclusion.

In general, NGO beneficiaries more often declared the free seeds/cuttings was their main source of planting material in comparison to MAF beneficiaries, which might indicate that they received bigger amounts of seeds/cuttings than MAF beneficiaries. This is true only for cassava cuttings where the average amount received among NGO beneficiaries is 114 cuttings and only 20 cuttings among MAF beneficiaries.

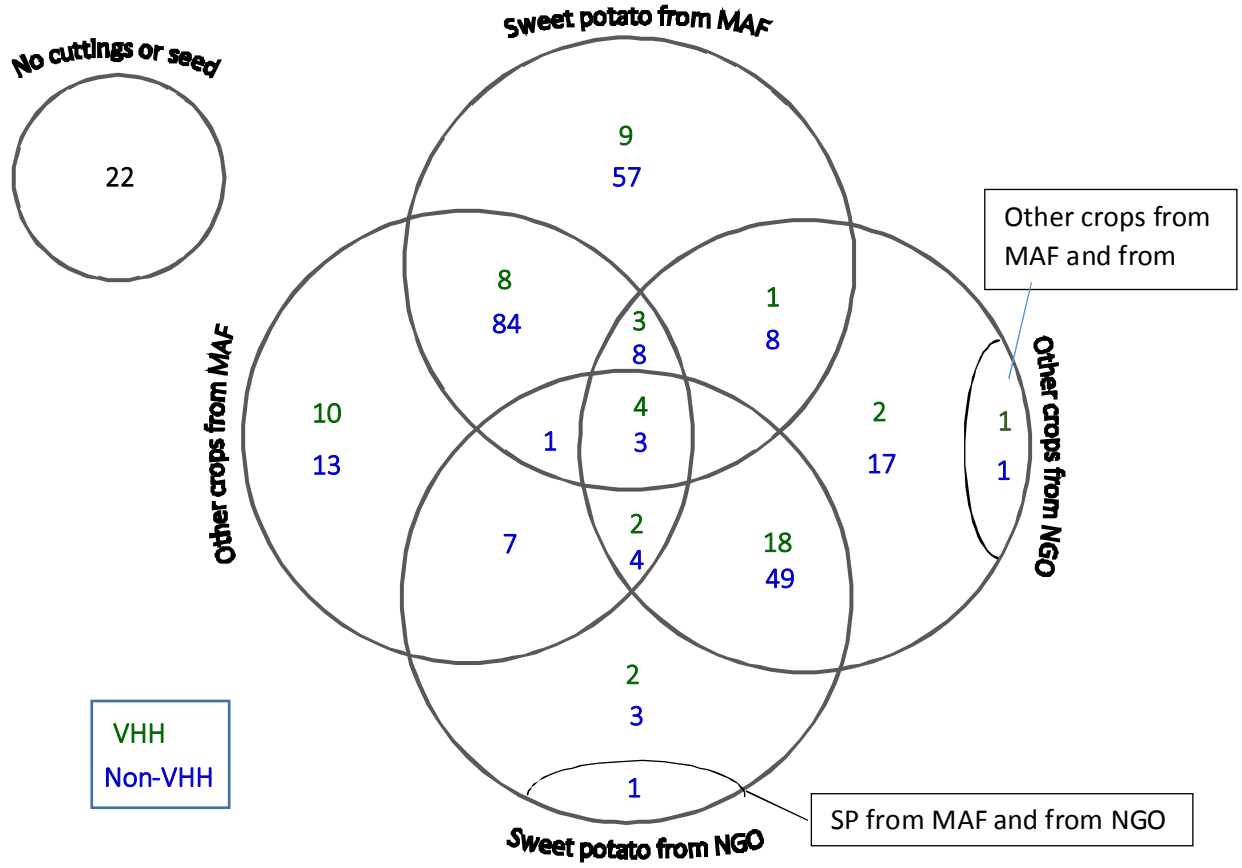
2.5 Different types of distributions

Among the sample interviewed, several delivery channels are represented for several crops. Also, many respondents are part of different delivery channels. The following chart is an attempt to visualize the composition of the sample.

The following chart is divided according to three characteristics (two of them are combined):

1. Crop type and channel of distribution of the cuttings/seeds [the four circles], i.e. sweet potato receiving cuttings from MAF or from NGOs, those receiving planting material from other crops from either MAF or NGOs. The overlapping sections represent multiple source of seeds/cuttings or multiple type of crops received.
   22 farmers interviewed did not receive seeds or cuttings and are represented by a separate circle.
2. Vulnerable households [color of the number in the graph]. Those who state that they were specifically targeted as vulnerable households are indicated in green and others in blue.

Figure 6. Distribution of respondents according to the type of distribution they benefited from



As reflected here, there are many overlaps between the different distribution channels. This indicates that, at least among this sample, seeds/cuttings distribution often end up targeting the same group of farmers. As a result, 62% of all 339 respondents have received

seeds/cuttings from more than one type of crop (but that could be from the same delivery channel).

Lastly, given the sample composition, the different delivery channels will be analyzed seperatly but some of the respondents within these sub-groups will therefore be analyzed twice (sometimes three times): for example once as a SP cuttings recipients and once as a maize distribution beneficiary from MAF.

2.6 Household economic conditions

The last section of the questionnaire was specifically designed to collect information about the household's economic condition in order to be able to compare subgroups of respondents according to their level of poverty/wealth. The data collected is presented here as well as the methodology used to design a "poverty ranking".

Table 8. Household eonomic data

Question	Possible answers	Answers (339 cases)	Weight	Rank /answer
Estimate the size of the INSIDE AREA of the house (m^2):	Average Maximum Minimum	67 m^2 9 m^2 180 m^2	3	
Category of house size:	< 48 m^2 49 m^2-78 m^2 >79 m^2	34% 34% 33%		1 2 3
Are the WALLS made of one material or multiple materials?	1 material 2 materials	87% 13%		
What is the main material the WALLS are made out of?	Palm fronds/bebak Bamboo Wood Clay/sod Metal Rock Cement blocks	16% 41% 5% 1% 3% 35%	2	1 2 3 4 5 6 7
What are the TOPS of the walls made out of?	Palm fronds/bebak Bamboo Wood Clay/sod Metal Rock Cement blocks	39% 36% 5% 14% 7%	1	1 2 3 4 5 6 7
What are the BOTTOM of the walls made out of?	Palm fronds/bebak Bamboo Wood Clay/sod Metal Rock Cement blocks	7% 11% 2% 16% 2% 61%	1	1 2 3 4 5 6 7
What is the main material the ROOF is made out of?	Palm leaves/grass Metal Tiles/shingles	11% 89% 0.3%	2	1 2 3

Question	Possible answers	Answers (339 cases)	Weight	Rank /answer
What is the main material the FLOOR is made out of?	Dirt/clay	66%	2	1
	Bamboo	1%		2
	Cement board	32%		3
	Tiles	3%		4
Mark which possessions the household has.	Chair	98%	4	1
	Phone	70%		2
	Radio	23%		3
	Bicycle	3%		4
	TV	26%		5
	Refrigerator	4%		6
	Rice thresher	0.3%		7
	Rice mill	1%		8
	Motorbike	17%		9
	Boat	1%		10
	Generator	1%		11
	Car/truck	1%		12
How many drums does the household have?	No drum	46%	1	0
	1drum	31%		1
	2 drums	16%		2
	3 drums	3%		3
	4 drums	2%		4
	5 drums or more	2%		5
Does someone in the household receive a Veteran's pension?	No	82%	2	0
	Yes	18%		1

For each respondent, the above data was computed into one single data ("povertyindex") using a rank for each answer and a weight for each question (see above table)[1]. The results of this compilation ("poverty indices") were then sorted from smallest to largest and divided into two to three categories composed of similar number of respondents each. Those categories represent the different scales of the poverty ranking that were used to compare different categories of respondents (e.g. beneficiaries of VHH distribution versus beneficiaries of other type of distributions). The "three-scales' poverty ranking" was used to see if even stronger correlations existed.
Note that these "poverty rankings" weren't designed to reflect the situation of this sample within the country or even within sampled sucos. Their use should be limited to comparing groups of respondents among them and within this sample only.

[1] The poverty index of a respondent was calculated by (1) calculating the score for each question [e.g if the floor is made of cement, the score for the floor will be 2*3=6], (2) adding up all the scores for eah answer [e.g the highest score of 181 was for a farmer whose house is 124 m^2, has cement walls and floor as well as metal roof, ownes chairs, TV, phone, motorbike, a rice mill, a generator and 4 drums, Therefore his poverty index is: 3*3 + 2*7 + 2*2 + 2*3 + 4*(1+5+2+9+8+11) + 1*4 = 181].

Table 9. Two-scales and three-scales poverty ranking

Category	Composition	Poverty index
Two scales ranking:		
"Poorest"	51% (168 respondents)	13-38
"Wealthiest"	49% (163 respondents)	39-181
Three scales ranking:		
"Poorest"	32% (110 respondents)	13-28
"Average"	33% (111 respondents)	29-49
"Wealthiest"	32% (110 respondents)	50-181

Some extra information was also collected regarding the use of drums by respondents. The following table shows the results of these questions.

Table 10. Use of drums

Use	Proportion of farmers (182 owners of at least 1 drum)
Storing grain	51%
Storing seeds	73%
Storing water	15%

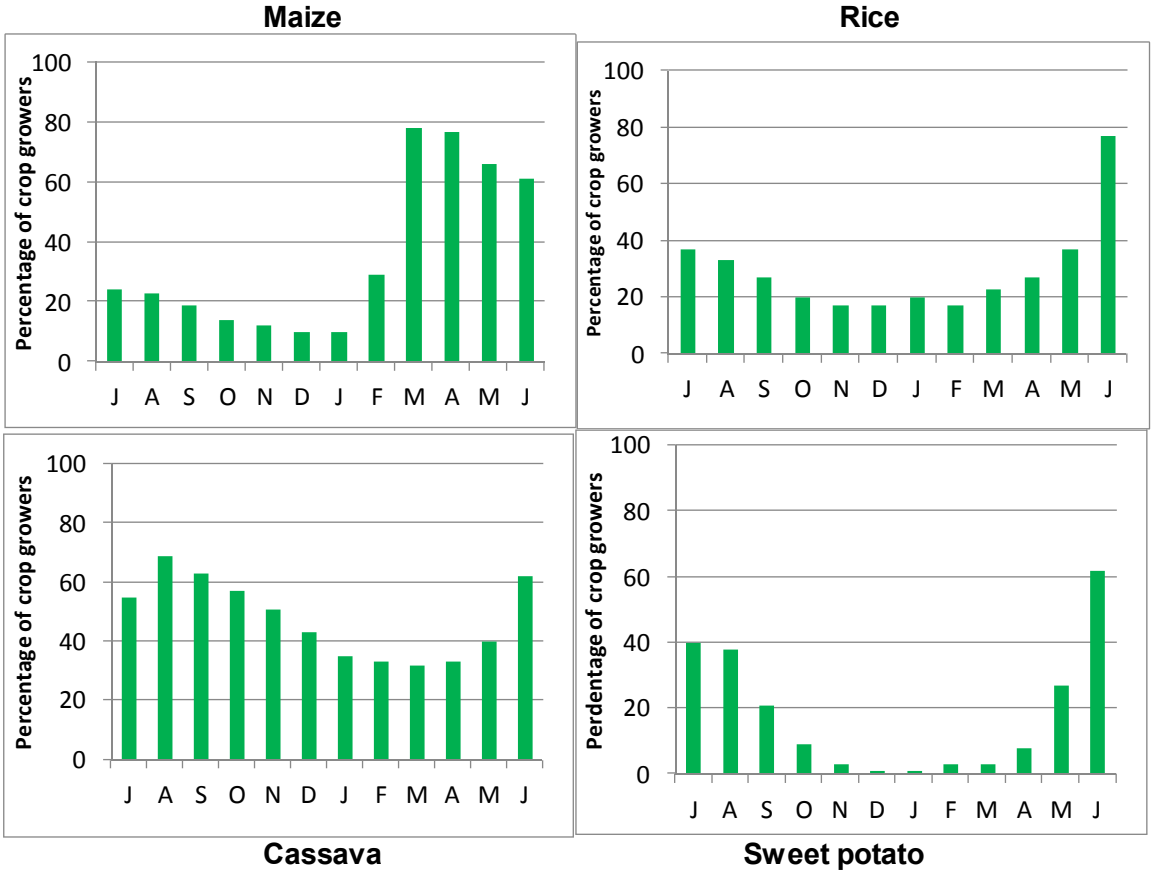
2.7 Food-security data

Food security data was also collected with the same objective as the household's econominc condition data: being able to correlate diffrent types of respondents to different levels of food shortage.

2.7.1 Consumption of self-grown foodcrops

First, all respondents were asked: "For the crops that you grow, in which months could you eat from your harvest?". The following graphs present the results of this question for maize, rice, cassava and sweet potato.

Figure 7.Consumption of self-grown crops by farmers (July 2013 - June 2014)



The overall parterns of these graphs seem coherent to what was found in other surveys. More interestingly, from this data was computed a new variable specifying during which months respondents had none of the four self-grown foodcrops to consume. Such periods are called here "periods of food shortage". The month by month results of this analysis are presented in the next graph (figure 3).

Among all 339 respondents, 76% experienced at least one month of food shortage which is quite similar to what was found in the 2014 Adoption Survey (AS) of the SoL program (81% then). Also, the average duration of food shortage is 4.8 months which is slightly longer than what was found in this other survey (4.2 months).

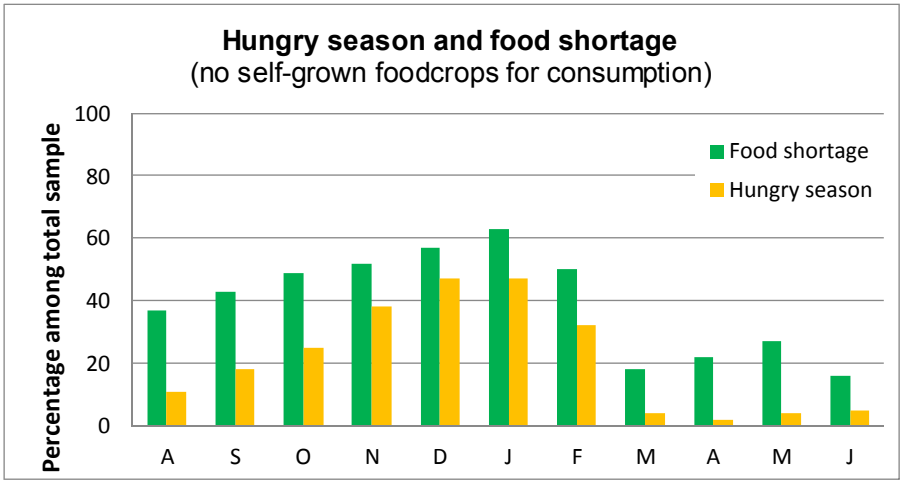
2.7.2 Respondents perception of "hungry season"

Following this, respondents were asked: "Were there months, in the past 12 months, in which there was not enough food to meet the household's needs?" Surprisingly, 63% of the farmers said "yes", which is much smaller than data collected during the 2014 AS (82%). This might indicate that beneficiaries of seeds/cuttings distributions are more hopeful about their households' food-security condition than other farmers.

Among the 63% of respondents saying they have experienced a hungry season, the average duration of this hungry season is 3.8 months (similar to 2014 AS data). This duration goes down to 2.4 months if calculated among all 399 respondents i.e. including cases of farmers experiencing 0 months of food shortage.

The following graph compares "food shortage" to "hungry season"[2].

Figure 8.Food shortage vs. "perceived hungry season"



As observed with the 2014 AS, proportion of people mentioning they have experienced hunger is always lower than the proportion of farmers who experience "food shortage".

2.7.3 Purchasing rice and maize

97% of the respondents said they bought rice and 25% said they bought maize for the household consumption. In average, respondents bought maize during 3.4 months of the year and rice during 11 months of the year. However, due to an error in the e-questionnaire, for 70 cases among the 83 respondents who said they bought maize, data on which months they bought maize wasn't available.

The available data was however combined to "food shortage" data in order to obtain a new "derived food shortage variable": months during which farmers have either their own foodcrops to consume, or they buy rice or maize. Consequently, the proportion of respondents who experience "food shortage" goes down from 76% to 12% and the average

[2] Proportions of farmers saying they have experienced hungry season in each of the 12 months were calculated among the total sample in order for the data to be comparable to the food shortage data which is also calculated among the total sample.

duration of the food shortage becomes 0.42 months instead of 4.8 months. Of course, these calculations are based on assumptions that quantities purchased are sufficient to cover the household' needs.

2.7.4 Food security ranking

As for data on household's economic condition, a food-security ranking will be applied to sub-groups of respondents and results will be presented in this report if differences are found to be significant enough. Mainly two variables will be used for these analyses. They are presented in the table below:

Table 11. Food security ranking

Variable	Composition
Categories of food shortage:	
1-2 months of food shortage	36% (122 cases)
3-7 months of food shortage	31% (104 cases)
8-12 months of food shortage	33% (113 cases)
Categories of "hungry season"	
0 months	38% (127 respondents)
1-3 months	36% (123 respondents)
4-12 months	26% (89 respondents)

3. Sweet potato cuttings distributions

In this section, data from the 272 recipients of SP cuttings will be analyzed and presented. Among these, 65% (178 households) received cuttings from MAF only, 32% (85 households) received cuttings from NGOs and 3% (nine households) received cuttings both MAF and NGOs. Whenever relevant, comparison between those three sub-groups will be made.

Note that a first correlation analysis with food security data revealed that farmers who haven't received SP cuttings experience longer food shortage periods than SP cuttings beneficiaries (61% experience 8-12 months food shortage vs. 26%).

3.1 Representativeness of the sample

An estimation of the percentage of error among the sample of SP recipients interviewed (272 cases) was calculated using the following methodology:

1. Number of cuttings that were planned to be distributed by MAF and NGOs: 494,150 cuttings
2. The average number of cuttings received per farmer according to the data collected in this survey is 189.
3. Therefore, it is estimated that the total number of beneficiaries of the SP cuttings distribution (by MAF and NGOs) is 2615 farmers (494,150 / 189).
4. Given the total number of SP beneficiaries interviewed is 272 and if the above assumptions are correct (number of cuttings distributed in total and per farmer), then the sample interviewed in this survey has a percentage of error of 5.6%[3]. This is a fairly good result given the difficulties to track location of SP cuttings recipients.

However, given the sampling couldn't be done randomly (incomplete lists of beneficiaries), it is possible that the data isn't representative of the total number of SP beneficiaries

Figure 9. Hohrae grown by a farmer in Ernera

[3] This was calculated using the online software Raosoft (http://www.raosoft.com/samplesize.html)

3.2 The sweet potato cuttings distribution process

The following table summarizes the results obtained from the questions related to the SP cuttings distribution process.

Table 12. Summary – SP cuttings distribution process

Question	Possible answers	MAF distribution (178 cases)[4]	NGO distribution (85 cases)	Both (9 cases)
Who informed you first about the free distribution?	SEO	**73%**	14%	100%
	Chefe suco/aldeia	16%	27%	
	Other	8%	**59%**	
	Nobody	2%		
	Don't know	1%		
When did you first get the information about the distribution?	1 week before	**48%**	**51%**	56%
	A day before	25%	20%	22%
	Samen day	16%	22%	22%
	No information	11%	7%	
Reason given for "Do you know why you have benefited from this distribution?"	No reason	**61%**	**44%**	33%
	Other	19%	22%	22%
	Vulnerable HH distribution	11%	21%	22%
	Don't remember	9%	13%	22%
When did you receive the cuttings?	After planting own cuttings	**55%**	31%	22%
	Before planting own cuttings	24%	**39%**	67%
	When planting own cuttings	13%	22%	11%
	Too late	7%	8%	
Do you remember the name of the varieties you received?	No	**87%**	**81%**	78%
	Yes	13%	19%	22%

Here are the main findings and conclusions than can be drawn from the above data:

- SEOs are the farmer's main source of information about SP distributions by MAF. For distributions by NGOs, the NGO staff are the main people providing information to beneficiaries ("other"). Interestingly, it is among farmers who experience longer food shortage periods (8-12 months) that the highest proportion of beneficiaries being informed by local leaders is found (30% versus 12% among farmers who experience only one to two months hunger).
- Apparently most farmers got the information about the distribution in advance which is good (during the previous SP cuttings distribution, some cases of cuttings left on the road side with no notice to farmers were reported).

[4] Note that for all tables presenting summaries of collected data as this table, results are calculated among valid **cases only** – i.e. cases for which (1) the question was asked, (2) when the question was asked, an answer was given and that answer is coherent. The maximum number of valid cases possible is the number in brackets in the top row (here 178 farmers for example).

- About half of the beneficiaries got the information about the distribution a week before. The other half received the information very late (the day before, the same day or no information at all) which is problematic as it means that farmers might not have had enough time to prepare their land. There is no major difference between MAF and NGO beneficiaries regarding the timing of when they were informed about the distribution. However, correlations were found with the poverty raking scale: wealthier farmers are informed slightly earlier than others (44% of the wealthier farmers receive the information one week earlier vs 36% of the poorest). Poorer farmers also more often do not get the information at all compared to wealthier ones. This could suggest that poorer farmers have less access to information than others.
- Overall, farmers do not know why they benefit from a distribution. For the SP distribution, this isn't really a problem as no specific criteria regarding the beneficiaries' economic condition was defined. Still, 11% of MAF beneficiaries said it was because they were one of the VHHs identified in the suco;
- Overall, efforts are still needed to improve the timing of the distribution: more than half of the MAF beneficiaries received cuttings after they had planted their own cuttings. This can be a problem if farmers have no more free land to plant the newly received cuttings. Also, if it is really too late (which was the case for only few of them) there might be less rain so more problem for the cuttings to recover from the transport and grow properly.
- According to this sample, the timing of the distribution was slightly better for distributions by NGOs.
- 15% of the total MAF + NGO SP beneficiaries said they remembered the name of the varieties they were given. It was 12% after the previous SP distribution (early 2013) which means there has been some improvement but still very limited. This low proportion might be because the person who gave the cuttings didn't actually tell the farmer the name of the variety or because the farmer forgot the name of the variety.
- Among farmers interviewed in this sample, it seems that NGO beneficiaries are better informed than MAF beneficiaries about the varieties' names. Indeed, often NGO beneficiaries receive better follow up than MAF beneficiaries.
- Farmers who said they remembered the name of the variety were asked what it was. All of them mentioned Hohrae: nine farmers didn't know which Hohrae it was, 30 farmers said Hohrae 1, 22 said Hohrae 2 and 19 said Hohrae 3[5]. No farmers gave another name than Hohrae.
- Finally, analysis with the poverty ranking scale revealed that a higher proportion of wealthier farmers remember the name of the variety they received if compared to poorer farmers which might indicate the need for more socialization to the poorests.

[5] Note that enumerators didn't verify if the answer was correct or not by checking the crop.

3.3 Details on sweet potato cuttings received

Table 13. Summary – detail on sweet potato cuttings received

Question	Possible answers / Data	All SP beneficiaries combined	MAF distribution (178 cases)	NGO distribution (85 cases)	Both (9 cases)
Quantity of cuttings received	Average Minimum Maximum	**189** 2[6] 1600	**200**	176	85
Condition of cuttings when received	Little dry Fresh Dry Destroyed Don't know		**58%** 51% 25% 3% 1%	**58%** 57% 7% 6%	11% 100% 11%
Did you plant the cuttings?	Yes No		**100%**	**99%** 1%	**100%**
When did you plant the cuttings?	Same day Next day Few days later		**48%** 44% 23%	**49%** 40% 16%	67% 33%
Quantity of cuttings planted	Average Minimum Maximum	**168** 2 1600	**186**	142	73

From the above data, a number of findings and recommendations were summarized:

- On average, the number of cuttings received per beneficiary is reasonable (200 cuttings is about two bundles). According to some secondary data (lists of beneficiaries mainly), it seems that it was planned to distribute sometimes 50, 100 or 200 cuttings per farmer.
- The quality of the cuttings when received is about the same whether it was part of a MAF or an NGO distribution but there are slightly more cases of dry cuttings within the MAF distribution;
- The proportion of "completely spoiled/destroyed" cuttings is very reasonable.
- Keeping cuttings fresh until they arrive at the farm is clearly the main issue regarding the quality of the cuttings on arrival at the farm;
- A high proportion of the cuttings received were planted: 89% (similar to the 2013's cuttings distribution). This shows that the very large majority of cuttings were in a good enough condition to be planted. The only case of not planting cuttings at all was because all cuttings had died when received. However, in several sucos, SEOs had pre-selected all the "good cuttings" to be distributed which might explain the high proportion of cuttings received by farmers being planted.
- Only about half of the farmers planted the cuttings the same day as they received it. Surprisingly, it is among the people that got the latest notice of the distribution (the same day as it was distributed) that there is the highest proportion of farmers who planted it as soon as they got it. Indeed, 77% of farmers who were informed about the distribution the same day as it was distributed planted their cuttings on that very day. While only 47% and 38% of farmers who got the information one week before or one day before (respectively) planted their cuttings on that very day. In conclusion, farmers being informed in advance doesn't really affect how prepared they are to plant the cuttings.

[6] Two might be the number of bundles rather than cuttings (unclear data entry from the enumerator).

3.4 Growing and harvesting the sweet potato cuttings distributed

The following table presents data on the production cycle following the distribution. Overall, no significant differences was seen between MAF and NGO beneficiaries which is why only overall percentages are presented (among the 272 SP cuttings beneficiaries).

Table 14. Summary – growing and harvesting the SP cuttings distributed

Question	Possible answers / Data	All SP beneficiaries combined
Did you do something to help cuttings survive?	Yes	**76%**
	No	24%
Which specific care did you take?	Weeding	**93%**
	Planted in line	49%
	Water	31%
	Other	8%
	Fertilized crop	7%
	Used compost	1%
Did you have problems during growth of the cuttings?	No	51%
	Yes	**49%**
Did you encounter any problem during growth?	Plants died because of drought	**58%**
	Eaten by animals	33%
	Disease / pest	17%
	Other	16%
	Plants died because soil too wet	14%
Did you harvest the crop?	Not yet harvested	28%
	Harvested over time	**26%**
	Harvested all at once	23%
	Harvest failed	**23%**
Which part of the crop have you harvested?	Tubers	97%
	Leaves	81%
How did you use the harvest?	Food for my family	**Tubers: 99%** **Leaves: 100%**
	Shared with others	Tubers: 16% Leaves: 16%
	Fed to animals	Tubers: 12% Leaves: 12%
	Sold it	Tubers: 5% Leaves: 3%
	Other	Tubers: 2% Leaves: 0%
	Keep as food reserve	Tubers: 1% Leaves: 5%

Again, the main highlights of the above data are listed below:

- About a quarter of the respondents said they do not take any specific care for the newly received cuttings. Interestingly, a higher proportion of wealthier farmers said they take specific actions: 85% against 71% among the categories “poorest” and “average”.
- The main practice of carrying of the SP crops is weeding. About half of the farmers planted in line which was advised to SEOs during the SEO training before the distribution. This might then have been advised by SEOs to farmers
- Only 31% of the farmers watered cuttings which was one of the most important message given to SEOs during the training prior distribution. In the monitoring survey of the early 2013 cuttings distribution, 35% of SP beneficiaries watered cuttings. Therefore, there isn’t much improvement here.

- In most cases, the problem encountered was that some plants died because of drought, which confirms that only 31% of farmers watering their crops isn't enough. According to the survey conducted after the early 2013 cuttings distribution, 21% of beneficiaries said cuttings "died due to the lack of water" but the question was slightly different then.
- The second problem was that animals ate the crops (also highlighted during the training to SEOs prior to distribution).
- Overall, this shows that the person who distributes cuttings still needs to make more effort to explain the basic practices needed to ensure cuttings will grow properly. Also, follow up after planting is also needed. The training to SEOs conducted end of 2013 needs to be followed-up (refresher course).
- About a quarter of the farmers who planted their cuttings lost their crops, a quarter hadn't harvested yet and half had harvested it (some were still harvesting during the survey). All together, 77% of the farmers who received SP cuttings had harvested the crop or were going to (was 83% after the early-2013 SP cuttings distribution[7]). With better care of the cuttings after planting (watering and fencing), it is likely that the proportion of failed crops would decrease.
- There is no difference between the use of the leaves and tubers: the main use is for family consumption.

3.5 Sharing and replanting distributed sweet potato cuttings

3.5.1 Sharing cuttings

7% of the farmers who received cuttings shared some cuttings with other farmers (18 cases). However, there was no specification in the question that it was the newly received cuttings or any other SP varieties.

In average, those farmers shared cuttings with 3.3 other persons (one min - twelve max). The persons with whom they shared cuttings was usually family (14 cases) and neighbours (six cases).

During the early-2013 SP cuttings distribution, 15% of the farmers who had received cuttings shared some with others (in average to 12 other persons). This more recent data seems more conservative.

3.5.2 Replanting of cuttings

Most farmers plan to replant the SP cuttings they received: 82% among MAF beneficiaries, 92% among NGO beneficiaries and 67% among beneficiaries of both MAF and NGOs. From this sample, it seems that NGO beneficiaries are slightly more eager to replant the cuttings than MAF beneficiaries. Most of them plan to grow a similar area as now (79%) while only 20% plan to grow a larger area than now

The main reason for not wanting to replant the Hohrae cuttings was that farmers didn't finish harvesting the crop. This might indicate that those farmers misunderstood the question or meant that they will wait to see the results of this cycle before deciding to replant or not. Ten other farmers said their crops died so they can't replant, and seven said they will have no more cuttings to replant by the time the new season starts.

[7] Given sampling methodologies were different, it is difficult to accurately compare data from both surveys.

3.6 Qualitative interviews with key respondents

In parallel of the main survey with farmers, 30 qualitative interviews were conducted with key informants such as SEOs, MAF District Directors (DD), District Community Seed Production Coordinators (DCSPC), etc. The following table presents the location of these respondents.

Table 15. Number of respondents per category of key informants[8]

District	SEOs / sub-district Coordinator	NGO representative	DD	Chief of Extension	Chief of Technical Department	DCSPC
Aileu		1				
Ainaro	5		1			
Baucau	6		1	1		
Bobonaro	1				1	
Ermera	4					
Liquica						1
Manatuto	4		1	1		
TOTAL	20	1	3	2	1	1

The complete analyses of these surveys are presented in annex II. The following are summaries of the data collected among (1) District Directors, District Chief of Extension or Coordinators and (2) field staff such as SEOs, sub-district coordinators or NGO field staff.

3.6.1 Interviews with MAF District Directors, District Extension Chiefs (8 persons)

a) Sweet potato cuttings distribution

Cuttings were distributed to farmers having land and to farmers requesting cuttings from SEOs. Distribution was to either individuals or farmer groups or both depending on the district. SEOs distributed the cuttings to farmers with possible assistance from the Community Seed Production Coordinator or local authorities. According to respondents, the difficulty of compiling name lists at national level mainly comes from the lack of coordination at the national and local level. The main issues they highlighted regarding the SP distribution was the fact that it happened too late, transportation was limited and cuttings were wilted on arrival. It was therefore advised that cuttings be produced at district level. This would also help increasing the number of cuttings distributed which was sometimes seen as limited. Increasing budget and staffing would also help. Need of more socialization to farmers was also mentioned in order to increase adoption as well as farmer's care taking of the crop.
The main issue when the SoL program will end is the limited human resource and budget for transportation and maintenance of seed centres.

b) Continuation of the seed distribution to vulnerable households

Four among the seven persons interviewed advised to continue such distributions while two said they would rather focus on motivated farmers who have land to produce SP.

[8] Two respondents weren't included in the table as no indication on their location was given.

c) Recommendations regarding seed distributions in general:

Distributions shouldn't be late and better coordination is needed between national, district and local level. Finally, improvements on data collection are needed.

3.6.2 Interviews with SEOs, Sub-distrit coordinators, NGO district staff (22 persons)

a) Preparation process:

There was no specific criteria for the selection of beneficiaries. The distribution was open to most farmers as long as they were interested in planting SP and had land for it. As a result, no specific form was used for the identification of beneficiaries. Beneficiaries could be part of a farmer group, CSPG or individuals.

b) Distribution process:

In most cases, SEOs distributed cuttings directly at the farmer's houses. In six sucos, farmers went to take their cuttings in a place where cuttings were all gathered ("local distribution point"). It seems there was no common direction regarding the number of cuttings to be received by each beneficiary or the number of beneficiaries to select per suco. In average, one suco received 2675 cuttings.
20 among the 24 respondents said they had list of names of the beneficiaries.

c) Challenges after Seeds of Life has ended:

Most respondents were concerned about the possible lack of cuttings to distribute and highlighted the importance of reinforcing or increasing production of cuttings at local level (suco or district). Some mentioned MAF's bureaucratic procedures might slow down the distributions. Finally concerns about limited budget were raised.

d) Recommendations:

The most frequently mentioned point was the need to distribute on time, according to the planting season. Then, need for a better coordination and socialization to farmers was highlighted. More cuttings also seem to be required so that more farmers can benefit and all group members can receive cuttings equally. Cuttings need to arrive "fresher" at the suco level so that SEOs do not have to reselect them before distributing to farmers. Finally, transportation was often raised as a constraint: cuttings should be systematically delivered at suco level, and all SEOs should have access to transportation means or they might not be able to reach farmers living far away.

3.7 Conclusion and recommendations

Overall, the distribution was successful. The quality of cuttings during transport and on arrival at the farm was fine (only very few cases of complete damage). As a result, about 99% of farmers were able to plant cuttings (same proportion as for the previous SP distribution). But in a few sucos, SEOs said they had already preselected the “good cuttings” to be distributed to farmers prior giving them the cuttings, which may explain the high proportion of transplanting here.

Improvements can be made regarding the "freshness" of the cuttings (quite dry overall) as well as the care after transplanted. As a result, 77% of the farmers who have received cuttings saw their crops survive and will be able to harvest (or have harvested already). This is also quite similar to what happened during the previous SP distribution.

MAF stakeholders mainly complained about the fact that dustributions are often late. They also believe that when SoL will end, distributions will be very limited due to the limited budget and staff within the Ministry.

Note that no data was collected on how many of the people who were supposed to receive cuttings (i.e. were on lists of beneficiaries) actually received cuttings.

A number of recommendations can be drawn from this data:

- **Inform beneficiaries before distribution.** Informing farmers about the distribution seems still to be quite late (only half of the beneficiaries know about it one week earlier) which could mean that the preparation of the list of beneficiaries itself happens very late. Earlier information to selected beneficiaries is recommended, and more specifically to poorer farmers who have less access to information.
- **More information should be given with the cuttings.** More information should be given to farmers when they receive the cuttings, especially to the poorer ones: name of the variety, why they are given the cuttings, how to take care of the cuttings (watering, fencing). As recommended by the SP training consultant in 2013, cuttings should be labelled and a leaflet provided together with the cuttings about best practices of SP production.
- **Produce cuttings locally.** Clearly, producing seeds/cuttings at suco level through CSPGs is required according to MAF stakeholders. Seeds and cuttings purchased by MAF to distribute to farmers could then be sourced locally which would shorten the process, ensure planting material can be distributed on time, decrease the transporttion needs, and therefore ensure that distributions can be sustained by MAF after the SoL program has ended.

4. Distributions of maize, rice, peanut and cassava planting material

Among the whole survey sample (339 farmers), it appears that 244 farmers received seeds/cuttings from at least one of the following crops: maize (223 cases), rice (14), peanut (11), and cassava (98). In this section, data on distribution of these crops will be presented in order to provide feedback on how to improve distributions. Note that for maize, some of the reported data might be about non-MAF released varieties (for example Bisma).

Among the 244 farmers having received these seeds/cuttings, 123 farmers got these from MAF only, 95 farmers got these from NGOs only and 26 from both MAF/NGO. Whenever the difference is significant, comparisons between respondents who received maize seeds or cassava cuttings from MAF or from NGOs will be made. For rice and peanuts, the number of beneficiaries is too small to be able to make accurate analysis.

A first analysis was conducted to assess if there is a correlation between the “poverty ranking scale” of seeds or cuttings beneficiaries and others. Surprisingly, this analysis revealed that, among this sample at least, there is a higher proportion of “wealthier” and “average” farmers than of “poorer” farmers among respondents who received maize seeds: 73% and 72% vs. 57% respectively. Similarly, analysis of the food security data revealed that maize seeds beneficiaries are less likely to have experienced a hungry season than respondents who haven’t received maize seeds (59% experienced a hungry season vs. 71%).

This might indicate that there is perhaps no real process of selection of beneficiaries, and that whoever is interested can obtain such distributed seed and cuttings. This results in some “elite capture” where the wealthier farmers are quicker to take advantage of the handouts on a “first come, first served” basis than the poorer farmers. In the worst case, the selection of beneficiaries could purposely be benefiting the more well-off farmers.

4.1 Distribution process

The following table summarizes the results obtained from the questions related to the distribution process of these planting materials.

Table 16. Maize, rice, peanut and cassava planting material distribution process

Question	Possible answers	Maize (223 cases)	Rice (14 cases)	Peanut (11 cases)	Cassava (98 cases)
Who informed you first about the free distribution?	SEO	**46% (72%/12%)**[9]	**93%**	**56%**	**40%** (69%/14%)
	Chefe suco/aldeia	27%	7%		30%
	Other	27% (5%/53%)		36%	29% (6%/49%)
	Nobody	1%			
	Don't know			9%	1%
When did you first get the information about the distribution?	1 week before	**60%**	**79%**	**64%**	**56%**
	A day before	20%	21%	18%	26%
	Same day	16%		9%	17%
	No information	4%		9%	1%
Reason given for "Do you know why you have benefited from this distribution?"	No reason	**48%**	**57%**	**64%**	**38%**
	Other	21%	14%	18%	22%
	Vulnerable HH	**19%**	29%	9%	**26%**
	Don't remember	13%		9%	14%
When did you receive the seeds/cuttings?	Before planting	55%	**64%**	55%	**39%**
	After planting own seed/cuttings	23%	7%		20%
	When planting	15%	29%	36%	29%
	Too late	6%		9%	12%
Do you remember the name of the varieties you received?	No	Not asked	Not asked	Not asked	78%
	Yes				22%

Here are the main findings and conclusions than can be drawn from the above data:

- As for SP cuttings distributions, SEOs are the main source of information for farmers about when a distribution will happen. However, beneficiaries of maize and cassava distributions by NGOs are often informed by the NGO staff directly. Local leaders are the second main source of information for maize and cassava.
- When correlated to the "poverty ranking scale", a higher proportion of wealthier farmers are informed by the SEO about upcoming cassava distributions than poorer farmers (54% among the wealthier vs. 26% among the poorer). Poorer farmers themselves are more often informed by the local leaders (Chefe Suco/Aldeia).
- And when correlated to food shortage data, it appears that farmers who experience longer food-shortage periods are more often informed by local leaders than others: 41% among farmers who experience 8-12 months food shortage versus 20% among farmers who experience one to two months food shortage.
- Beneficiaries of the above distributions are informed slightly earlier about the distribution than beneficiaries of SP cuttings distributions. This is probably linked to the fact that management of seeds distribution is easier and therefore can be better organized than distributions of perishable planting materials such as SP cuttings.

[9] In brackets are the proportion of answers when looking only at beneficiaries of MAF distribution / followed by beneficiaries of NGO distributions.

- When correlated to the “poverty ranking scale” it appears that wealthier farmers are informed slightly earlier about the maize seed distribution than poorer farmers (same for SP). This could also be linked to what was mentioned earlier that a slightly higher proportion of wealthier farmers benefit from maize seed distribution. Again this highlights the limited access to information of poorer farmers.
- Also most farmers aren’t aware of any specific reason why they were selected to receive seeds/cuttings. From this sample, it is among maize and cassava recipients that the largest number of farmers mentioning they were selected as part of the vulnerable HH distribution program is the highest (41 and 24 farmers respectively versus four and one for rice and peanut seeds recipients).
- From this sample, it is for rice that seeds are distributed the earliest (64% received seeds before planting their own seeds) and cassava cuttings the latest (61% received cuttings while they had started planting their own or later). Also, timing of the distribution was earlier for the above distributions than for SP cuttings recipients. This highlights the difficulty to properly plan the distribution of perishable planting material.
- The same proportion SP and cassava cuttings recipients remembered the name of the variety they received. Note that all of the respondents who remembered the name of the variety said it was Ai-luka (about half didn’t remember which Ai-luka specifically that was while others could say if it was Ai-luka 2 or 4 or both). This shows an important gap in the socialization of the varieties distributed.

Figure 10. Coloured bamboo-walls of a respondent’s house in Manatuto

4.2 Details on planting material received

Table 17. Detail on planting material received for maize, rice, peanut and cassava

Question	Possible answers / Data	Maize (223 cases)	Rice (14 cases)	Peanut (11 cases)	Cassava (98 cases)
Quantity of seeds/cuttings received	Average Minimum Maximum	3.5kg 0.25 25	8.4kg 0.5 40	4.5kg 0.5 10	73 cuttings 1 cutting 2000 cuttings
Condition of cuttings when received	Fresh Little dry Dry Destroyed Don't know	Not asked	Not asked	Not asked	**77%** 31% 5% 1% 1%
Did you plant the seeds/ cuttings?	Yes, planted all Yes, planted some No	**88%** 9%[10] 3% (7 cases)	**100%**	**91%** 9% (1 case)	**100%**[11]
Why didn't you plant any seeds/ cuttings at all	Received too late Bad condition No more spare land	**6 cases** 1 case 1 case		1 case	
When did you plant the cuttings?	Same day Next day Few days later	Not asked	Not asked	Not asked	50% 36% 16%
Quantity of cuttings planted	Average Minimum Maximum	Not asked	Not asked	Not asked	**61 cuttings** 2 2000

The main findings from the above data are:

- If the data on quantities received recorded by enumerators is correct, the quantity of seeds/cuttings received can vary a lot from one farmer to another. This might be because of different delivery channels (MAF/NGOs) use different standards for the distribution or because within the same distribution scheme, the different persons involved in giving seeds/cuttings to farmers do not do it the same way (SEOs mainly).
- Cassava cuttings seem to arrive at the farmer's house in better shape than SP cuttings which are more sensitive planting materials.
- Overall, distributions of planting materials are successful as a very large majority of farmers actually plant all of the seeds/cuttings they receive. This is conflicting with the feedback that is often given from stakeholders which is that distributions often happen too late and therefore might cause farmers not planting the seeds/cuttings.

[10] Among the 19 farmers who planted only some of the maize seeds they had received, five said they shared some of it with other farmers, four said they saved some seeds and four used some of the seeds for food. For others, no information was reported.

[11] For cuttings, the questionnaire didn't specifically ask if all or some cuttings were planted but it rather asked how many cuttings were planted. Therefore, 100% here also includes farmers who have planted only some of the cuttings they received.

4.3 Growing and harvesting the cassava cuttings distributed

In the e-survey, questions about harvests of maize, rice and peanut were asked in general for any varieties grown by the farmers (not only the distributed ones). Therefore, in this section, we will first present data about production and harvest of the cassava cuttings. Later, a summary of the data collected about harvests for other crops will be done (regardless of whether it was the distributed seeds or not).

Table 18. Growing and harvesting the cassava cuttings distributed

Question	Possible answers / Data	Cassava (98 cases)
Did you do something to help cuttings survive?	Yes	**64%**
	No	36%
Which specific care did you take?	Weeding	**92%**
	Planted in line	**70%**
	Used compost	18%
	Water	**15%**
	Fertilized crop	8%
Did you have problems during growth of the cuttings?	No	57%
	Yes	**43%**
Did you encounter any problem during growth?	Plants died/ drought	**58%**
	Eaten by animals	23%
	Other	23%
	Disease / pest	18%
	Plants died/ soil too wet	15%
Did you harvest the crop?	Not yet harvested	56%
	Harvested over time	26%
	Harvest failed	**15%**
	Harvested all at once	3%
Which part of the crop have you harvested?	Tubers	100%
	Leaves	100%
How did you use the harvest?	Food for my family	**Tubers: 93%** **Leaves: 100%**
	Shared with others	Tubers: 19% Leaves: 15%
	Sold it	Tubers: 11% Leaves: 15%
	Fed to animals	Tubers: 37% Leaves: 4%
	Keep as food reserve	Tubers: 15% Leaves: 0%
	Other	Tubers: 4% Leaves: 0%

Overall, the above data is quite similar to the data collected for SP cuttings. Note that no significant differences was observed between MAF and NGO beneficiaries.

However, it appears that slightly less cassava crops failed but more farmers still haven't harvested yet. Indeed, cassava has a slightly longer production cycle than SP and its cuttings are more resistant to transportation which increases chances of survival after they are planted. As a result 82% of respondents who received cassava cuttings were able to harvest it (or are going to). It was 77% for SP cuttings recipients.

Also a larger proportion of cassava cuttings recipients plant their crop in line compared to SP cuttings recipients, which reflects Timorese farmer's common cropping systems. And the other way around, more SP cuttings recipients watered their cuttings after planting than cassava cuttings recipients. This might be the impact of the training provided to SEOs prior the SP distribution which emphasized the importance to inform farmers about the basic practices required to reduce loss after planting.

4.4 Conclusions and recommendations

Clearly, this data highlights the challenges of organizing the distribution of cuttings in comparison to seeds: they are often distributed later than seeds, farmers are informed about the distribution slightly later and the quality of the cuttings can be affected during transport while much less so for seeds (and the risk of damage is even more for SP cuttings). However, this doesn't seem to affect significantly the results of the distribution as the very large majority of farmers are still able to plant cuttings and most could harvest the end products, at least among this sample. As a result, 82% of respondents who received cassava cuttings were able to harvest it (or are going to).

What is surprising is that this is conflicting with the common assumption among MAF and NGO stakeholders that distributions often happen too late which affects the success of the distribution. But of course, the closer is the timing of the distribution with the actual planting season, the better.

Some recommendations:

- **Collect data on harvest results for seeds as well.** For seed distributions, most farmers were also able to plant the distributed seeds which suggests that timing of the distribution and quality of the seeds were appropriate. However, no data was collected about the crop itself (failed or not, harvested or not) which limits the understanding of the situation.
- **Provide more information with the cassava cuttings.** As for SP cuttings, most recipients of cassava cuttings do not know which varieties they are given. Clearly, more socialization is required here through SEOs or CSPGs.
- **Prioritize free maize seed distributions to poorer farmers.** As for the selection of beneficiaries, in this sample and for maize only, a higher proportion of well-off farmers (i.e. wealthier and less likely to suffer from hunger) were found among maize seeds beneficiaries than among farmers who haven't received maize seeds.
- **Improve monitoring of intended and actual beneficiaries.** Finally, an aspect that could affect the potential uptake after a seeds/cuttings distribution is how many of the initial planned beneficiaries actually received planting materials and if the quantity they received corresponds to the plan. Such data couldn't be collected in this survey but it is likely that there are some leaks in the distribution system: planting material that is finally not distributed by the SEO because it is damaged, unfair/unequal distribution among farmers of the same group, priority given to certain group of people receiving more than others, etc.

4.5 Extra information collected about maize, rice, peanut and cassava

In this section is presented some extra information that was collected regarding those four crops that do not relate specifically to distribution of planting material by MAF or NGOs. Therefore the data in this section is calculated among the total number of crop growers and not only among beneficiaries of free distributions.

4.5.1 Harvest of maize, rice and peanut crops

Table 19. Harvesting of maize, rice and peanut crops

Question	Possible answers / Data	Maize (337 cases)	Rice (29 cases)	Peanut (59 cases)
Have you already harvested the crop?	Yes	99%	97%	95%
	No	1%	3%	5%
How much of the harvest, if any, did you lose?	No harvest loss	11%	11%	9%
	Very small harvest loss (< 5%)	**34%**	**25%**	**25%**
	Small harvest loss (5-15 %)	**29%**	**25%**	**34%**
	Some harvest loss (15-25 %)	11%	14%	7%
	Big harvest loss (25-50 %)	9%	14%	20%
	Very big harvest loss (50-90 %)	6%	11%	5%
	Total harvest loss or near (90-100 %)	1%		
What were the reasons for the harvest loss?	Eaten by domestic livestock/dog	25%	16%	22%
	Eaten by rats and mice	**69%**	**48%**	**49%**
	Eaten by wild animals	13%	8%	14%
	Locusts	1%	16%	4%
	Pests and diseases	14%	44%	24%
	Too much rain	12%		10%
	Too little rain	16%	40%	35%
	Other	24%	12%	10%
How long will the reserve of harvested maize/rice/peanut last?	Average	7 months	8 months	Not asked
	Minimum	0 month	1 month	
	Maximum	12 month	12 months	

Given the timing of data collection (July to October), nearly all respondents had harvested their crops. More than 50% of respondents said they experienced only small or very small loss. Those losses are mainly caused by rodents. In average, respondents said they could eat their harvests up to seven to eight months for rice and maize.

4.5.2 Sharing and replanting of cassava cuttings

Only 6% of the farmers growing cassava (i.e. 20 farmers) said they shared some cuttings with other farmers. In average they shared cuttings with 3.7 farmers. All of these farmers shared cuttings with their family and about half shared cuttings with neighbours as well.

At the time of data collection, 80% of the farmers had replanted cassava cuttings. Most of the farmers who hadn't replanted cuttings yet said they didn't do so because they had no cuttings to plant, they were still harvesting the previous crop or it wasn't time to replant yet.

90% of the farmers who have replanted cuttings kept the same area under cassava while 9% replanted a larger area this year.

4.5.3 Growing maize with velvet bean

As part of some experiments by MAF/SoL on ways to improve productivity of maize crops, some questions were added in the e-questionnaire to assess the use of velvet beans grown together with maize.

Among this sample, 51 farmers said they grew maize and velvet bean together.

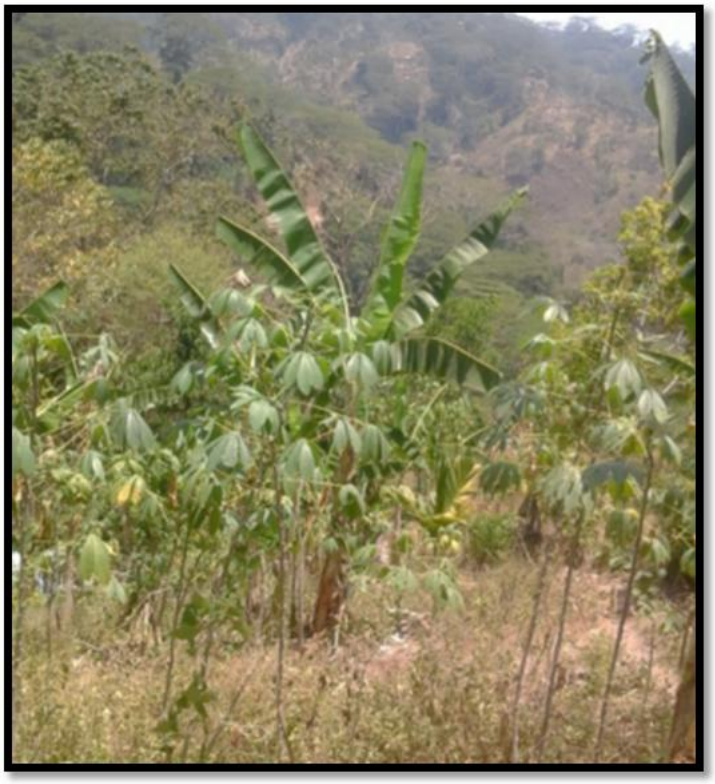
Most of these farmers planted the velvet bean in the first two weeks after having planted maize: ten farmers planted velvet beans at the same time as maize, 12 farmers planted velvet bean one week after planting maize and 17 farmers planted it two weeks after. Others planted it even later: one planted it three weeks later, five planted it four weeks later and six planted it more than four weeks later.

In average, farmers are used to plant maize and velvet beans together since five years. The farmer who has practiced this technique the longest has done it for 20 years (Aileu, suco Tohumeta).

Among the farmers who have planted this combination of crops 49 had already harvested the maize. Their experience was that the harvest of maize with velvet bean is bigger than without (49% of the case). In 45% of the cases, farmers thought harvests of maize with or without velvet bean are similar. Only 6% (i.e. three farmers) thought it was smaller with velvet beans.

Among those who estimated the harvest was higher with velvet bean, most (50%) only think there is a small increase, while 21% thought it helped increase maize production by more than half. The rest said it helped increasing maize production up to 50%.

Figure 11. Respondent's plot in Liquica having received cassava cuttings from both NGO and MAF



5. Distributions of planting material to vulnerable households

MAF/SoL has a program to reach vulnerable households (VHH) by distributing free seeds or cuttings produced by selected CSPGs. Vulnerable households are identified with the assistance of aldeia chiefs and the SEO based on pre-agreed criteria (although not all criteria have to apply simultaneously):

- The household is not a member of a farmers group,
- The household only has small agriculture land,
- The household lives in a remote location,
- The household is headed by a woman,
- The household is interested to grow new crop varieties.

The standard quantity of seeds to be distributed to VHH is two kilos (mainly Sele and Noi Mutin) or 200 cuttings for Hohrae and Ai-luka.

Unfortunately, among the sample interviewed in this survey, there is no clear way to identify which of the respondents were part of this program or not. Indeed, locations of different types of distributions were often overlapping making it difficult to understand which respondent was part of which type of distribution.

However, all respondents were asked if they were told the reason for which they received free seeds/cuttings. As a result, 60 among the 314 beneficiaries of distributions interviewed in this survey said at least one of the types of seeds/cuttings they were given was because they were part of the VHH distribution scheme. Five among them are farmers that weren't living in sucos where any VHH distribution was conducted and were therefore removed from the group of VHH.

Therefore, in this section, we will compare data from these 55 households to the data of the other 259 distribution beneficiaries. Note that it is very likely that some farmers who were part of the vulnerable HH distribution scheme weren't aware of it and therefore, some of them might be included in the group of 259 farmers.

The objective of the different analysis in this section will mainly focus on trying to evaluate if selection criteria were followed or not for the 55 households who said they were part of the vulnerable HH distribution scheme.

5.1 Overview of the "55 vulnerable households"

Among the 55 vulnerable households, 41 were in Aileu and 11 in Baucau. According to data from enumerators, two of the sampled sucos in Ermera and two others in Manatuto also had distributions to vulnerable HH but none of these farmers mentioned so during the interviews.

Table 20. Overview of "vulnerable HH beneficiaries"

		Vulnerable HH (55 cases)	**Other distribution beneficiaries (259 cases)**
Also mentioned that they benefited from seeds/cuttings beneficiaries that weren't part of VHH distributions		6 farmers	
Seeds/cuttings distributed[12]*:*	*Maize*	95% (36 cases)	71%
	Rice	7% (4 cases)	4%
	Peanut	2% (1 case)	4%
	Cassava	**42%** (23 cases)	28%
	Sweet potato	71% (39 cases)	**89%**
Number of crops' varieties farmers received[13]*:*	*1 crop*	38% (21 cases)	33%
	2 crops	22% (12 cases)	41%
	3 crops	36% (20 cases)	23%
	4 crops	4% (2 cases)	3%
Average quantity of planting material received[14]*:*	*Maize*	2kg	4.2kg
	Rice	5kg	4.6kg
	Peanut	0.5kg	4.3kg
	Cassava	**24 cuttings**	94 cuttings
	Sweet potato	**107 cuttings**	205 cuttings
Average number of household members		7.5 members	7.7 members
Proportion of female headed households		**7%**	**6%**
Average land owned		1.11ha	0.92ha

Here are the main points to be highlighted from the above data:

- According to farmers' answers, about two third of beneficiaries of the VHH distribution scheme received more than one crop variety which is probably more than what was planned initially as part of this distribution scheme;
- Among this sample, a higher proportion of VHH received cassava cuttings and a higher proportion of other distributions beneficiaries received free SP cuttings (mainlybecause this survey primarily focused on SP cuttings distributions);
- According to data reported by VHH beneficiaries, the average quantity of maize seeds distributed corresponds to the standard quantity planned. For rice and peanut, the sample is too small to draw any conclusions. For cuttings, if data is correct, the quantities received are much smaller than what was originally planned.

[12] For the six farmers who also said they benefited from other types of distributions, only the data about the seeds that were reported as part of the vulnerable HH distribution was considered.
[13] Same comment as above.
[14] Same comment as above.

- Finally, there isn't a significant difference between the proportion of female households among VHH and others to actually verify if the selection criteria to reach more women headed households was followed or not (at least, among this sample). Also, among this sample, VHH own slightly bigger lands than others.

5.2 Economic profile of "vulnerable households" beneficiaries

When correlated to the "poverty ranking", it appears that indeed, beneficiaries of VHH distribution are among the poorest respondents interviewed.

Table 21. Poverty ranking applied to VHH distribution beneficiaries

	Vulnerable HH (54 cases)	**Other distribution beneficiaries (254 cases)**
"Poorest"	48%	30%
"Average"	30%	34%
"Wealthiest"	22%	36%

Among other criteria used to calculate this "poverty ranking", two are more significantly relevant of this correlation: among VHH, a higher proportion of respondents have houses with clay floors (86% vs. 62% among other distribution beneficiaries) and walls made of bamboo (76% vs. 34% among other distribution beneficiaries).

This is very encouraging as it shows that local leaders and SEOs involved in the selection process do try to specifically target the more vulnerable households (at least among this sample).

5.3 Food security

There is a significant difference between the repartition of VHHs among the different categories of food shortage compared to beneficiaries of other types of distributions.

Table 22. Categories of food shortage applied to VHH distribution beneficiaries

Categories of food shortage	**Vulnerable HH (55 cases)**	**Other distribution beneficiaries (259 cases)**
1-2 months (116 cases)	31%	38%
3-7 months (101 cases)	20%	35%
8-12 months (97 cases)	49%	27%

As shown in the above table, VHH experience longer periods of food shortage than others. This verifies again the fact that VHHs were selected appropriately by local leaders and SEOs.

5.4 Conclusions

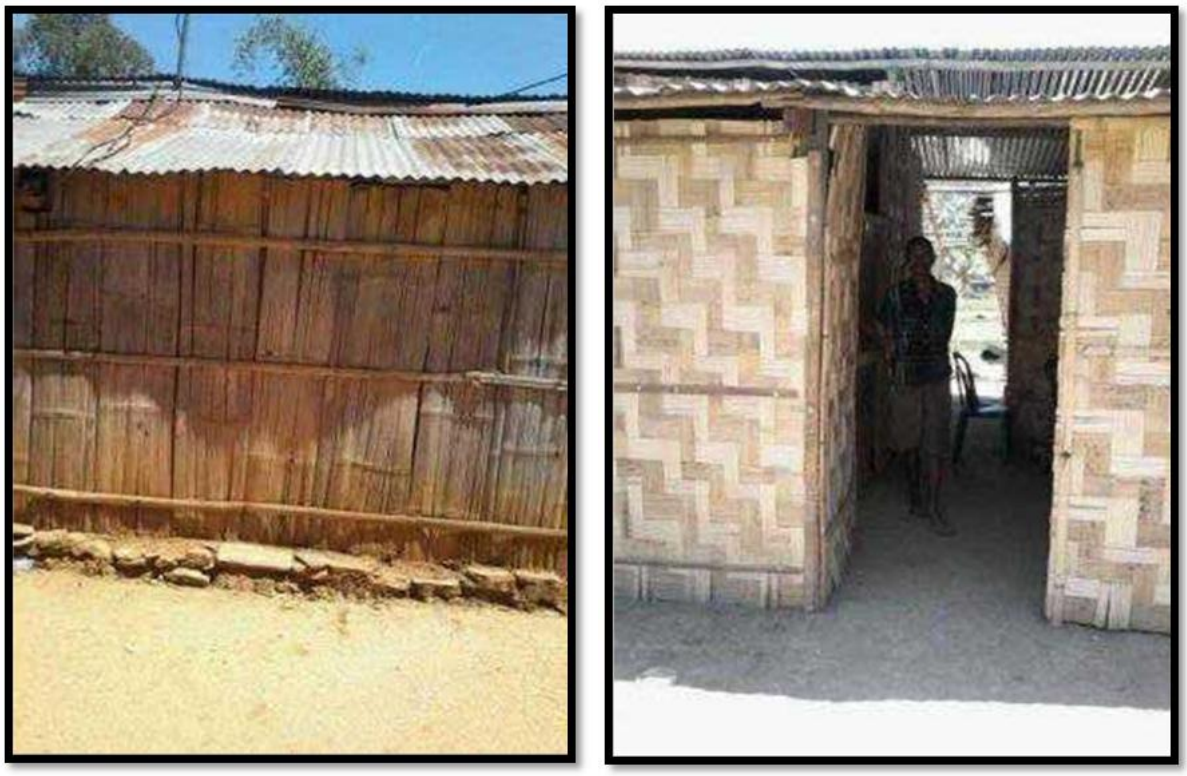
Among this sample at least, the selection criteria as set by MAF for VHH weren't strictly verified:

- VHH beneficiaries own bigger land than others (1.11ha vs. 0.92ha),
- The proportion of female headed households among VHH and among other households is quite similar,
- Whether the suco or aldeia was remote or not can not be verified given this survey was purposely targeting locations where several distributions happened and which were, therefore, probably less remote.
- Also, whether the household was member of a farmers group or not wasn't asked in this survey.

However, when looking from other angles, it appears that VHH were indeed more vulnerable than other respondents of this sample:

- They experience longer food shortage periods,
- They are in general "poorer" than others according to the "poverty ranking" designed for this survey.

Figure 12. Bamboo-wall houses of "poorer respondents" in Ermera



6. Beneficiaries versus non-beneficiaries

Most of the "non-beneficiaries" are farmers that were on lists of SP cuttings distribution but didn't receive cuttings. No extrapolation of the proportion of such cases to the total number of planned beneficiaries can be made here is as non-random sampling was applied due to the lack of availability of data (beneficiaries lists).

6.1 Overview of the 22 "non-beneficiaries"

As shown in the following table, respondents who haven't benefited from any distribution have slightly smaller households and smaller land than distribution beneficiaries. However, given the small size of the "non-beneficiaries sample", these differences aren't significant enough to conclude there is an actual difference between beneficiaries and non-beneficiaries. Regarding the crops grown by both groups, it appears that non-beneficiaries are farmers who grow less Sweet potato which might be the reason why they finally didn't receive any SP cuttings (not interested in growing SP?).

Table 23. Overview of non beneficiaries

		Non-beneficiaries (22 cases)	**Distribution beneficiaries (314 cases)**
Average number of HH members		6.8 members	7.7 member
Average land owned		0.68ha	0.96ha
Crops grown:	*Maize*	100%	99%
	Rice	9%	10%
	Peanut	14%	22%
	Cassava	96%	98%
	Sweet Potato	77%	98%

6.2 Household economic profile of non-beneficiaries

When correlated to the "poverty ranking" tool as defined earlier, it appears there is no link between the different poverty scales and the fact that a respondent is a beneficiary or not. In average, the 22 respondents who haven't benefited from any distribution have a "poverty indice" of 44 while others have a "poverty indice" of 49 in average (very slighty wealthier).

6.3 Food security

As for VHH, a correlation was found to be significant between categories of food-shortage and the fact that a respondent had benefited or not from a distribution. From the following table, it seems that, at least among this sample, non-beneficiaries are more often suffering from longer periods of food shortage than beneficiaries of distributions.

Table 24. Categories of food shortage applied to non-beneficiaries

Categories of food shortage	Non-beneficiaries (22 cases)	Distribution beneficiaries (314 cases)
1-2 months	23%	37%
3-7 months	14%	32%
8-12 months	64%	31%

7. Familiarity with MAF varieties

A number of questions were asked to all 339 respondents regarding their familiarity with MAF released varieties. This section summarizes the main findings.

7.1 Knowledge about MAF releasing improved varieties

22% of the respondents said they were aware that MAF had released improved varieties for several crops. Among respondents who answered "yes", 96% said MAF has released improved maize varieties, followed by 86% who said sweet potato, 72% who said cassava and finally 32% and 33% who said rice and peanuts respectively. Another 8% said MAF has released improved varieties of other crops such as vegetables.

Most of these results are similar to data collected as part of the 2014 AS which sampled crop farmers randomly across the country. Still, among this sample, a much higher proportion of respondents said MAF had released cassava and sweet potato varieties: 72% and 86% respectively here versus 42% and 36% in the 2014 AS. This is probably because this survey specifically targeted SP cuttings recipients and these farmers probably relate having received SP or cassava cuttings from an SEO to the fact that those cuttings "belong to MAF" / "are from varieties that are released by MAF".

7.2 Familiarity with each MAF variety

Then, each respondent was asked if they had heard about each of the MAF varieties. If they answered "yes", they were also asked if they knew which crop it was and if they were growing it. The results of these questions are summarized in the following table.

Table 25. Familiarity with MAF varieties

	Have you heard of the variety …? *(% said yes)*	**What crop is ...?**	**Do you grow ...?** *(% said yes)*
Sele	57%	194/194 said maize	77%
Noi Mutin	45%	154/154 said maize	52%
Nakroma	18%	60/61 said rice 1/61 said "other"	75%
Utamua	18%	58/62 said peanut 3/62 said "other"	54%
Ai-luka	27%	89/92 said cassava 3/92 said "other"	52%
Hohrae	32%	103/110 said sweet potato 3/110 said peanut 2/110 said cassava 1/110 said maize 1/110 said "other"	92%

When compared to data collected nationally, a much higher proportion of respondents here say that they have heard about the MAF varieties names. The very large majority of these farmers were able to correctly identify which crop these varieties are. But for Hohrae, seven farmers gave other crops names. More surprisingly, three among them received SP cuttings from NGOs, two received SP cuttings from MAF and one from both MAF and NGOs! As highlighted earlier, this shows clearly shows the lack of socialization around the MAF varieties (besides for Sele probably which is the most well-known MAF variety). Note that among these seven farmers who thought "Hohrae" was another crop than SP, six said they were growing it, which shows their willingness to grow new varieties, even though they are confused for what crop the new variety is.

Other comparisons were made between the above data and data about seeds/cuttings distributions. Here are some interesting findings which mainly highlight the need to improve socialization of the products that are given during or prior the distribution (especially the varieties' names):

- 83% of the farmers who said they haven't heard of "Hohrae" (107 in total) actually had received SP cuttings during the last planting season. Similarly, 24% of the farmers who said they haven't heard of "Ai-luka" actually had received cassava cuttings. The same case was observed for seven beneficiaries of peanut distribution.
- 29% of the farmers who said they aren't growing Hohrae actually received SP cuttings in the last planting season;
- 63 respondents first said they didn't remember the name of the SP variety they were given but then said they were familiar with the name "Hohrae". Similarly, 23 respondents said they didn't remember the name of the cassava variety they were given and then said they are familiar with "Ai-luka".

7.3 Reason for not growing the MAF varieties

Farmers who said they knew about a MAF variety but didn't grow it were asked why they weren't growing it. Note that the answers summarized below also include many cases of farmers who are growing it already but aren't aware of it because they do not know these are the varieties they received from MAF or NGOs.

Table 26. Reason for not growing the MAF varieties

	No seeds	No money	Wait for free	Other
Sele (44 cases)	86%	7%	7%	9%
Noi Mutin (74 cases)	93%	3%	7%	5%
Nakroma (4 cases)	100%			
Utamua (6 cases)	100%			
Ai-luka (42 cases)	95%		10%	2%
Hohrae (9 cases)	67%		22%	33%

As revealed in other surveys as well, when asked why they aren't growing the MAF varieties, farmers usually say that is because they do not have access to those seeds/cuttings. Which shows the importance to improve access to improved varieties in the districts.

Appendix I: Data cleaning

Incomplete data:

- Number of cases where farmer is growing a crop but there is no info about it because enumerator forgot to click:
  Rice: one case
  Peanut: 14 cases
  SP: eight cases
- Number of cases where farmer received seeds/cuttings for free but there is no info about it because enumerator forgot to click:
  SP: one case
  Cassava: six cases
  Maize: three cases

Assumptions used for data cleaning:

Question	Issue	Action taken
Age of respondent or head of household	Age was incoherent (ex: more than 100)	Data replaced by 999 [15]
Number of household members	Total number of members different from number of adults + number of children	Data replaced by 999 (total household members, total adults and total children)
Types of crops grown by the farmer and types of crops grown on a specific farmer's plot	Some crops that were mentioned to be grown on a plot weren't mentioned to be grown at all by the farmer	Assumed that farmers remember better which crops they grown when asked on a plot to plot basis. Therefore, whenever a crop was mentioned to be grown on a plot but not in general by the farmer, this crop was added to the general list of crops grown by the farmer.

[15] ***"999" is the code to express there is no answer because the question was not asked, or the respondent didn't know what to answer***

Question	Issue	Action taken
Types of crops grown by the farmer and types of crops sold by the farmer	Some crops that were mentioned to be sold by a farmer (from his farm) weren't mentioned to be grown at all by the farmer	Assumed that farmers remember better which crops they sell than which crops they grow in general. Therefore, whenever a crop was mentioned to be sold but not grown, this crop was added to the list of crops grown by the farmer.
Area grown	No unit (square meters or hectare) after the plot size	Assumed that if the number for the plot size was under ten, the unit was "ha" and if above ten, the unit was "m^2"
	Area incoherent (ex: 50ha of maize)	Data replaced by 999
Sources of maize, rice, peanut, cassava and sweet potato seeds or cuttings	Improper rating among the different sources of seeds/cuttings mentioned by the farmer, of which source was the main source, which was second third, etc.	In analysis, two results were presented: - in general just mentioning the proportion of farmers sourcing their seeds/cuttings from this or that source (all cases considered), - Considering only cases where the rating of the different sources of seeds/cuttings was done properly: mentioning the proportion of farmers saying each type of source of seed is the main source, second source, etc.
	Only one source of seed mentioned but noted as being the second or third source or...	The only source of seed was mentioned was considered as the main source of seeds/cuttings
Source of seeds/cuttings and question on did the farmer buy seeds and if yes, how much + cost	"Purchased seeds/cuttings wasn't mentioned as one of the source of seeds/cuttings but when asked if the farmer bought some, enumerator clicked "yes" and gave the quantity bought and cost	Add "purchased seeds/cuttings" as one of the source of seeds/cuttings

Question	Issue	Action taken
	"Purchased seeds/cuttings was mentioned as one of the source of seeds/cuttings but when asked if the farmer bought some, enumerator clicked "no"	Data on purchased seeds/cuttings in the source question replaced by 999.
	Quantity purchased with no unit	Whenever seemed coherent, assumed the unit was KG. Also all quantities were converted into KG using the conversion table used for the MTS.
	Cost of seeds incoherent (too high)	Data replaced by 999
	Clicked "yes" to the question "farmer buys seed" but no information on quantity bought and cost	Wrote 999
Receiving seeds from neighbour and quantity received	No unit for the quantity received	Whenever seemed coherent, assumed the unit was KG. Also all quantities were converted into KG using the conversion table used for the MTS.
	No data on quantity received	Wrote 999
Source of seeds/cuttings and question on did the farmer receive seeds/cuttings	Included "distribution from MAF or NGO" as one of the source of seeds/cuttings but clicked "No" to the question " did you receive free seeds"	Data replaced by 999
	Did NOT include "distribution from MAF or NGO" as one of the source of seeds/cuttings but clicked "Yes to the question " did you receive free seeds"	All these cases were in Aileu and Baucau where the enumerators confirmed there were distributions of Hohrae by MAF/SoL, as well as distribution to vulnerable HH by MAF SoL but no distribution from NGOs. Therefore, "distribution by MAF" was included as one of the source of seeds/cuttings

Question	Issue	Action taken
Quantity of cassava or sweet potato cuttings	Enumerators say the number of bundles but do not mention how many cuttings includes one bundle.	1 “futun” of cassava or sweet potato is 100 cuttings. one “lolon” of cassava is equivalent to five cuttings
	For quantity planted, enumerator wrote “some”/”balun”	“some” changed to 999
	No Unit written	Assume that if the number written in “planted” is higher than 50 and the number written in “received” is smaller than ten, then the number written in “received” is the number of bundles.
		If unit written for quantity of cuttings planted and not written for quantity of cuttings received but both numbers are equal or the number planted is slightly lower than the number received => it is assumed that the unit for the quantity planted is the same as for the quantity received
	Quantity planted bigger than quantity received Quantity received or planted are too far from each other which may mean than one of the data is wrong (written as number of cuttings but is number of bundles, etc.)	Data analyzed in two ways: (1) all data together (2) only among valid data
During which months does the farmer buys maize	Technical problem: this question didn’t always appear on the tabs after enumerators clicked “yes the farmer buys maize”. Therefore, data of this section isn’t complete.	Calculate proportions among existing answers.

Appendix II: Analysis of qualitative interviews with key informants

Note that there were no guiding steps in the phrasing of most questions so each respondent could answer in very different directions making it difficult to give a global picture for each question. The summaries made for each question reflects more the perception of respondents about what was the important aspects in the distribution process, problems encountered, etc.

Interviews with MAF District Directors and Chief of Extension

I. Sweet potato distribution:

1. How did you identify the beneficiaries

Four persons mentioned beneficiaries had to have land, three said it depended on who asked the SEO for cuttings. Two also said the local leaders (chefe suco/aldeia) were involved in writing the name lists.

Some respondents specified wether SP cuttings were distributed to groups (four cases) or individuals (two cases).

Only one said cuttings were given to farmers taking good care of their crops and who are ready to share cuttings with others.

2. How did you do the distribution

Most answers related to who was involved in the steps of the distribution. In three cases, SEOs are mentioned as the main actor of the distribution to farmers. Depending on the districts, SEOs could be assisted by other persons such as the Chefe suco/aldeia or the CSPG district coordinator. In one case, it was mentioned that cuttings could be distributed directly to farmers without going through SEOs.

Only one person in Baucau mentioned “farmer’s lists” as part of the distribution process: lists were collected from sub-district coordinators.

3. Problems and solutions

The most common issue is the fact that the distribution was too late (five cases) which was related to the distance between the source of the cuttings and their districts. Lack of transport (one among the two case mentioned more specifically access to isolated sucos) or poor transport as well as road conditions making cuttings wilted was also mentioned.

There was a consensus to say that the most important solution would be to create district-based production and distribution centres. Also, increasing transportation/operational budget was mentioned (especially to access remote sucos). Finally, some solutions were proposed related to human resources: better coordination among staff, increasing the number of staff, or even working with a local NGO to support the distribution.

Two persons mentioned the lack of care of farmers themselves for the cuttings. It was advised to conduct more socialization to farmers regarding this distribution, the varieties distributed and their potential price in the market.

Two persons (Baucau and Manatuto) complained about the limited amount of cuttings distributed in their districts. Producing quality cuttings at district level was seen as a way to increase quantities distributed.

4. Lack of documentation along the distribution process: recommendations?

Improving the coordination between national and district level (especially SEO) was mentioned twice as well as the coordination with local authorities (once).
Making distribution lists was mentioned twice. It was also suggested to make a detailed list of farmer groups and their needs as well as create a database.
Finally, the district of Bobonaro would require a photocopy machine which is necessary to copy distribution lists.

5. What will be the main problems after the SoL program has ended?

The limited human resource and budget were the two main issues mentioned. Linked to that, the limited transportation facilities was mentioned. Also, the "money system" as well as "working system" was mentioned as being complicated within MAF.
Maintenance of facilities such as the seed centres and in general any facility was mentioned three times.
Only one case was related to SEOs who might not control groups as well as before and not motivate farmers to continue the group activities.

6. Differences between last year's and this year's distribution

Answers weren't very clear, probably because actors themselves didn't see clearly the differences between last years' and this year's distributions. However, two persons said this time, coordination between national and district level was improved (last year, some distributions was done directly to farmers without involving district level staff). One among them said there were no distribution lists last year. Another person mentioned that the distribution was done late last year compared to this year.

7. How to increase adoption of Ai-luka and Hohrae?

Most answers referred to the need of "socializing" those varieties at suco level: nutritive value, commercial value, motivating farmers. Others said distribution should focus on locations/farmers that aren't growing yet those crops/varieties and are interested to do so. Another person said we should collaborate with CCT which is already distributing Ai-luka one.
Other answers didn't directly relate to this issue: distributions need to be on time, need better coordination, people prefer to grow maize, need to prepare cuttings, etc.

II. Vulnerable HH distributions: Do we need to continue focusing on vulnerable HH? Is there a need to change the criteria of vulnerable HH?

Four persons said the distributions to venerable HH should continue (one among them said we should increase the number of vulnerable HHs reached). One among them said SEOs should provide technical support to those beneficiaries. Another one among these said distributions should also be for farmer groups and other individual HHs.
Two persons would prefer to focus on other criteria such as farmers who are motivated and have land with potential. They also mentioned those farmers should be identified through local authorities.

III. Recommendations to improve seed distributions in general:

The first recommendation mentioned by four persons was to distribute on time, according to planting seasons in each location.
Then better coordination at different levels was also mentioned: between SoL and MAF-districts, or with local authorities. Someone also mentioned that reports on implementation of activities should be given to districts.
Two persons talked about distribution data: data on farmers need to be clear and monitoring after distribution needs to be done. Another one also said district MAF staff related to seed distribution should be trained in the use of database.
Finally, among others: distributions should be only for new beneficiaries and only for people growing the crop, information about SP market should be provided, seeds should be prepared where they will be distributed, need of quality seeds, need spare parts for photocopy machine.

Interviews with MAF or NGO representatives

I. Sweet potato distribution characteristics:

1. How to estimate quantities to be distributed

Most answers related to the quantity distributed (question IV2) or to the criteria of selection of farmers (question I2) and not to how the quantity to be distributed was estimated.
The answers that more or less relate to the question are:

- Distribute cuttings according to size of farmers' plots (seven cases)
- Depends on how many cuttings we are given (two cases)
- One group has 40 people (one case)
- Choose about 20 persons in one suco to receive cuttings (one case)
- One group gets about 350 cuttings (one case)
- One group gets about 700 cuttings (one case)
- Quantity based on number of members in a group (one case)
- Each group member receives 20 cuttings

⇨ In conclusion it seems quite clear that there wasn't a common message provided during the distribution about how many cuttings should be received per person or group. Or if there was any message, it wasn't received/understood/followed.

2. How do you identify people who have potential to receive cuttings?

Answers presented here are combined with answers provided to question one. In order of importance (most frequently answered to less frequently answered), here are the criteria used by SEOs and NGO representatives to selected SP distribution beneficiaries:

- Farmer is interested (20 cases)
- Farmer has land (12 cases)
- Farmer who is a member of a group (four cases)
- Farmer has prepared his land (four cases)
- Farmer taking good care of his crops/leader farmer (four cases)
- Farmer who needs cuttings/has no cuttings (three cases)

Among other answers not commonly given: farmers wanting cuttings just inform the SEO, farmers who are working with SEO or local authorities, farmers that are advised by local authorities.

⇨ In conclusion, the criteria that were the most commonly followed by SEOs seem quite coherent and open to a large number of farmers (SP can indeed be grown easily by any type of farmer). No specific criteria regarding the welfare/vulnerability of the household was followed. Also, no condition on beneficiaries having to agree sharing cuttings with others seem to have been used.

3. Did you conduct any pre-identification of the people you had identified to become beneficiaries before conducting the distribution? How?

As the question itself is confusing, answers are often similar to question two.
Six respondents said "no", they do not conduct any pre-identification.
Among respondents who gave an answer, here are the most common answers:

- Farmer has land (six cases)
- Farmer who is interested to plant SP, has no cuttings (six cases)
- Farmer taking good care of his cuttings/crops (four cases)
- Farmer prepared his land (three cases)

Among least commonly answered points: according to criteria of government, observations of farmer's habits, I inform farmers about the varieties first.

4. Then, how did you conduct the distribution of cuttings?

In most cases (15), cuttings are distributed at the farmer's houses by the SEO. Some respondents said they also bring cuttings to the group leader (three cases). In three cases the SEO said he was assisted by other persons (group leader, CSPG coordinator, "apoio suco").
In six cases, the respondent said farmers or group leaders came to take their cuttings somewhere else: at the SEO's house, at the Sede Suco, at the sub-district office.
Two respondents mentioned they went to take the cuttings from the subdistrict coordinator.

5. Were there different target of beneficiaries during the distribution? If yes, what were you supposed to do (give free to vulnerable HH or farmers who need seed and sell to others)?

11 respondents said there weren't different types of target beneficiaries.
Respondents who said there were different targets mainly related to groups (eight cases, including CSPGs) versus individual farmers (five cases). Three respondents also mentioned they gave cuttings to vulnerable HH.
Two respondents mentioned farmers or groups need to share cuttings with other farmers after having multiplied them.
Lastly, one person said that whoever was close to the multiplication centre could take some cuttings and another said whoever was interested could come take cuttings at the SEO's place.

⇨ All cuttings were given for free. The main differentiation of beneficiaries is if there are part of a group or not. Distribution was open and free for both cases.

6. **What documents do you have in relation to distribution of cuttings?**
   - Name list (20 cases)
   - Address of beneficiaries (four cases)
   - Photo of beneficiaries/distribution (two cases)
   - Photocopy of the electoral card (one case)
   - Document with the number of groups, farmers, cuttings distributed, size of land (one case)

In 4 cases, respondents said they had no documents or lost it.

7. **Was there any form used during identification/distribution process?**

19 respondents said "no".
Four referred to the name lists, with more or less information about the distribution (number of cuttings distributed, date distributed, date planted, HP number of farmer, etc.).

8. **Is there a better way to conduct distributions compared to what you have done until now?**

Five respondents said they should just continue as they did until now.
Answers in general vary a lot from a respondent to another:
- Distribution need to be done according to planting season (two cases)
- Instead of having to distribute at the farmer's house, farmers should come take cuttings somewhere in the suco: sede suco, a distribution "barak", the chief of the group (three cases)
- Cuttings should be distributed from the production centres directly to the sucos (two cases)
- Better coordination is needed (two cases)
- Cuttings should be distributed only in locations that can be reached (one case)
- Need to involve local authorities (one case)

Among others (one case each): need to make a schedule for SEO to distribute cuttings to farmers, distribute according to land size, need to monitor every month after planting, need to provide fertilizer, need to inform farmer about how to plant.

II. Problems encountered during the SP distribution and solutions taken/implemented:

The main problem mentioned was that **distribution was done late** (13 cases). As a result, three respondents said they decided to distribute cuttings only to aldeias that were close, two said cuttings should arrive on time next time, one said he distributed quickly the cuttings.
Linked to that, the **lack of water/climate change** (two cases): built a water system with bamboo or planted only close to water sources.
Cuttings were dry (seven cases). Three respondents said they selected only good cuttings to distribute to farmers. One said he distributed cuttings only to groups that were close to be able to distribute cuttings quickly. Another one said he told farmers to plant cuttings even if they were dry.
Another issue was the **lack of transport** of respondents (four cases) or no fuel (one case). In such cases, farmers were asked to come and take cuttings at the SEO's place (two cases), the SEO rented a motorbike, SEO went with his motorbike (instead of a car). The SEO who said he had no fuel bought some with his money.
Linked to that, the fact that cuttings are delivered far (three cases): one respondent said farmers got only few cuttings.

Not enough cuttings (four cases). Two said they distributed to whoever wanted cuttings. One said he had to multiply first cuttings using the good cuttings at suco level then distribute those to farmers. Another one distributed less cuttings per person.
Among other issues: no pulsa for SEOs, farmers asked for other agricultural inputs but didn't get any, the subdistrict coordinator doesn't deliver cuttings to SEOs fairly (gives to his family, etc.), SEO rarely meets farmers.

III. Comparing last year's distribution and this year's:

1. When did you first distributed SP cuttings:

2013 (14 cases) - but it could be early or late 2013 which are two different distribution periods.
2014 (six cases) – for those respondents, this was the first time to distribute SP cuttings. They therefore didn't answer the following questions
2012 or 2011 (four cases)

2. Differences between the last distribution you conducted and this one:

Three said there was no difference.
Answers vary a lot from a respondent to another. Here is a summary of it (one case only per point):

- before the chefe aldeia was distributing seeds, now it is the SEO
- before SEO was not involved in the distribution (he is now)
- before SEO had to take cuttings at the district level, now only at sub-district level
- last year the quality of cuttings was better
- last year, coordination was better

3. Other methods you used:

This questions was a bit confusing and therefore not much answers were collected. Most said "no" and two persons said they distributed cuttings to whoever wanted some (individual or groups).

IV. End of the Seeds of Life Program:

1. Who gave you cuttings:

In the 14 cases were there was an answer, MAF/SoL was the source of cuttings

2. How many cuttings were you given

Among the 16 cases for which the respondent gave the number of cuttings or "futun" and for which the answer seemed coherent, the average is: **2675 cuttings per suco** (min 200 – max 8500).
Three respondents said they received two, four or six "sacks" of cuttings and one said they received 1250 futun which represents 125,000 cuttings (incoherent).

Note that another step of the questions was asking in how many times were those cuttings delivered but most respondents misunderstood this question (the answers are therefore not presented here).

3. **Problems for the SP distribution after SoL has ended and solutions:**
   - There will be **no more cuttings distributions** (six cases) or there will be **less cuttings** to distribute (four cases).
     The main solution to this was the reinforcement of the existing associations or CSPGs as well as distribution centres through: training of farmers on how to multiply cuttings (three), simply continue with existing CSPGs so they can grow more quantity and better quality (five) or the creation of new distribution centres (two), new CSPGs or associations (three cases),
   - **MAF's bureaucratic system** will make the distribution process very complicated and long (five cases)
   - Points related to **budget**: MAF won't support like SoL (one), transport (one), money (one)
     To both issues, respondents proposed that "seed centres" close to the beneficiaries would be needed (suco or district level). Better management within MAF as well as shorter administrative procedures would help distribution schemes.

Among least commonly mentioned problems: bad distributions (two), groups won't continue and would need support from NGOs to continue (one), farmers/staff don't know much about MAF varieties so there is a need to train people (one), there won't be any problem (one).

Other answers do not relate to the question.

8. Overlapping of MAF and NGO SP distributions:

18 respondents said there is no overlapping, one said yes and another one said no. The SEO where an NGO is also distributing cuttings (where?) said that CARE works and coordinates with MAF so there is no problem.

9. Recommendations for improving SP cutting distributions:

- Distribute cuttings on time (seven)
- MAF needs to deliver cuttings the closest as possible to farmers (two), especially to aldeias that are far (one)
- SEOs can't distribute cuttings far (one), SEO needs transportation means (two)
- Need better coordination with SEOs (five cases)
- Informing farmers: need to socialize the variety before distribution (one), to train farmers on how to grow it after distribution (two), need to find a market for farmers (one).
- Increase quantity: Need more cuttings (one), need to give to all group members directly (some group leaders keep cuttings for themselves) (one), give to whoever wants to plant Hohrae (two).
- Most farmers prefer Hohrae 1 to Hohrae 2/3 (one)