



Seeds of Life

Fini ba Moris



Study Report

Distribution of Sweet Potato Cuttings to Vulnerable Households in Suco Maumeta, Liquiça

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

December 2014

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

This study was conducted by the MAF/Seeds of Life socio-economic research team i.e. Marcelino De Jesus Da Costa, Octaviana Ferreira Agostinho, Sabilio dos Santos, Anita Ximenes and Laurentino Ximenes, with the assistance of Luc Spyckerelle.

Suggested citation:

Seeds of Life. 2014. Distribution of Sweet Potato Cuttings to Vulnerable Households in Suco Maumeta, Liquiça. Seeds of Life program, Ministry of Agriculture and Fisheries, Dili, Timor-Leste

Table of contents

Abbreviations and acronyms	iii
Executive summary	iv
1. Sweet potato cuttings distribution in suco Maumeta	1
1.1 Background	1
1.2 Vulnerable households	2
1.3 Distribution in suco Maumeta	3
2. Research method	5
2.1 Questionnaire	5
2.2 E-survey	6
3. Results and findings	7
3.1 Recipients of cuttings	7
3.2 Crops grown by households	9
3.3 Land parcels	10
3.4 Maize planted and harvested	11
3.5 Sweet potato cuttings and their use	12
3.6 Familiarity with Improved varieties	16
3.7 Household food self-sufficiency	17
3.8 Household economic condition	19
4. Discussion	21
4.1 Where the recipients of the sweet potato cuttings vulnerable households?	21
4.2 Have the sweet potato cuttings been planted out?	25
4.3 What benefit have the recipients received from the sweet potato cultivation?	25
Annex: Questionnaire	26

List of Figures

Figure 1. Suco Maumeta in district Liquiça, and its four aldeias	1
Figure 2. Members of a CSPG prepare cuttings for distribution.....	3
Figure 3. Handover of sweet potato cuttings to a representative of an aldeia.....	3
Figure 4. Signatures and thumb prints sheet of cuttings recipients in one aldeia.....	4
Figure 5. Interviewing a respondent in aldeia Nartutu.....	6
Figure 6. A woman farmer in aldeia Caimegohou inspects her crop	8
Figure 7. Number of crops cultivated by the respondents (N=58)	10
Figure 8. Maize planted vs. harvested (N=46).....	12
Figure 9. Condition of the sweet potato cuttings at distribution (N=56).....	13
Figure 10. Incidence of watering cuttings and experiencing drought.....	14
Figure 11. Farmers experiencing crop failure (N=25).....	15
Figure 12. Number of hungry months experienced in the previous 12 months.....	18

List of Tables

Table 1. Receipt of sweet potato cuttings by persons mentioned on the lists	7
Table 2. Characteristics of the surveyed respondents	8
Table 3. Food crops planted by the survey respondents	9
Table 4. Foodcrop plot sizes.....	10
Table 5. Amounts of maize seed planted	11
Table 6. Amounts of maize harvested.....	11
Table 7. Cuttings received by the households	12
Table 8. Planting out of the sweet potato cuttings	13
Table 9. Location of planting out sweet potato cuttings	14
Table 10. Actions taken to help the sweet potato cuttings survive or grow better	14
Table 11. Problems with growing the sweet potato.....	14
Table 12. Sweet potato harvest.....	15
Table 13. Replanting of sweet potato	16
Table 14. Familiarity with improved varieties	17
Table 15. Food availability of self-grown crops	17
Table 16. Hungry months	18
Table 17. Purchase of rice and maize	18
Table 18. Estimated inside surface area of the house.....	19
Table 19. House construction materials.....	19
Table 20. Assets	20
Table 21. Ownership of drums	20
Table 22. Comparison of 2010 Census and survey data for house construction.....	22
Table 23. Comparison of 2010 Census and survey data for assets.....	22
Table 24. Overall ranking of the interviewed households.....	23
Table 25. Rank comparison of survey respondents for several characteristics.....	24
Table 26. Use of the harvested sweet potato.....	25

Abbreviations and acronyms

ACIAR	Australian Centre for International Agriculture Research
CSPG	Community Seed Production Group
DFAT	Department of Foreign Affairs and Trade
HH	Household
HoHH	Head of Household
MAF	Ministry of Agriculture and Fisheries
PGB	The Centre for Plant Genetics and Breeding at the University of Western Australia
SEO	Suco Extension Officer
SoL	Seeds of Life program
Sosek	Socio-economic research unit within Seeds of Life
UWA	University of Western Australia

Executive summary

In February 2013, sweet potato cuttings sourced from four Community Seed Production Groups in suco Maumeta, district Liquiça, were distributed to 120 vulnerable households in the same suco. This was the first time such farmer-to-farmer exchange targeted at vulnerable households was prepared, and a small study was organized to learn from this experience.

In November 2013, the Seeds of Life Socio-Economic Research Team visited the suco and tried to contact all listed recipients, to check if they had indeed received the sweet potato cuttings, if they had planted them out, if they had been able to harvest, and to try to assess if they were indeed vulnerable households.

Of the 120 names on the lists, which were from three of the four aldeias in the suco, only 92 persons could be contacted. From these, 57 (62 %) had received cuttings and 35 (38 %) had not received any. The lists of names had been prepared prior to the distribution, and even though there were thumbprints on the lists, these persons stated that they had not received cuttings, nor 'signed' for it.

The intention was that each of the targeted farmers would receive 200 cuttings. This was the case for 38 % of the farmers who remembered how many cuttings they had received; 34 % of the farmers had received fewer cuttings, and 28 % had received more. Most farmers (68 %) had received the sweet potato cuttings in fresh condition, but 30 % also reported that the cuttings were a little dry, 32 % that they were dry, and 20 % of farmers had received cuttings which were destroyed. Luckily, none of the farmers had received only cuttings in bad condition, so that all receiving farmers could plant sweet potato.

All recipients planted out sweet potato cuttings. This was mostly done the same day (64 %) or the next day (29 %), and most of the farmers (79 %) planted the cuttings on plots next to the house. More than half (61 %) of farmers took one or more measures to make the cuttings grow better, with the most frequent practices being watering the plants (45 % of farmers) and weeding the crop (39 %).

Drought was the most important problem encountered (by 67 % of the farmers), and 88 % of the farmers who had experienced crop failure had not watered their plants; of the 25 farmers who had watered the plants, only three experienced crop failure.

Sweet potato, both tubers and leaves, had been harvested by 54 % of the farmers who had planted the cuttings. The harvest results were used by all as food for the household, but there was also sharing with others, selling of tubers and leaves, and feeding it to animals.

A promising finding of the survey was that a large majority (91 %) of the farmers who had received cuttings had replanted, or intended to replant sweet potato – including 21 of the 25 farmers whose crop had failed were planning to do so. Replanting would mostly be for a same area (57 %), or a bigger area (29 %). Since most of the farmers had planted the sweet potato on a plot adjacent to the house, with some occasional watering during the dry season, they should be able to keep some plants alive so that they can produce their own cuttings for the next season.

A last question was: were the recipients of the cuttings indeed vulnerable households? Based on a combined assessment of housing condition, assets owned by the household, size of cultivated foodcrop plots, size of the maize harvest per member of the household, and the stated length of the ‘hungry season’, it would appear that perhaps up to one third of the recipients would probably not be considered particularly vulnerable. From the perspective of increasing the number of improved variety growers, this does not matter very much; from the perspective of providing vulnerable households with access to improved varieties, this is a slight disappointment.

More intensive briefing and orientation of the key decision-makers (such as: SEOs, Aldeia and Suco Chiefs) prior to the distribution of the cuttings on the purpose of the distribution (i.e. to give vulnerable households access to improved varieties; not simply to increase the number of growers of improved varieties) will probably be more effective and less costly than imposing stricter control mechanisms.

1. Sweet potato cuttings distribution in suco Maumeta

1.1 Background

In February 2013, The Seeds of Life program trialed a farmer-to-farmer planting material exchange for sweet potato cuttings in suco Maumeta, sub-district Bazartete, district Liquiça (see Figure 1).

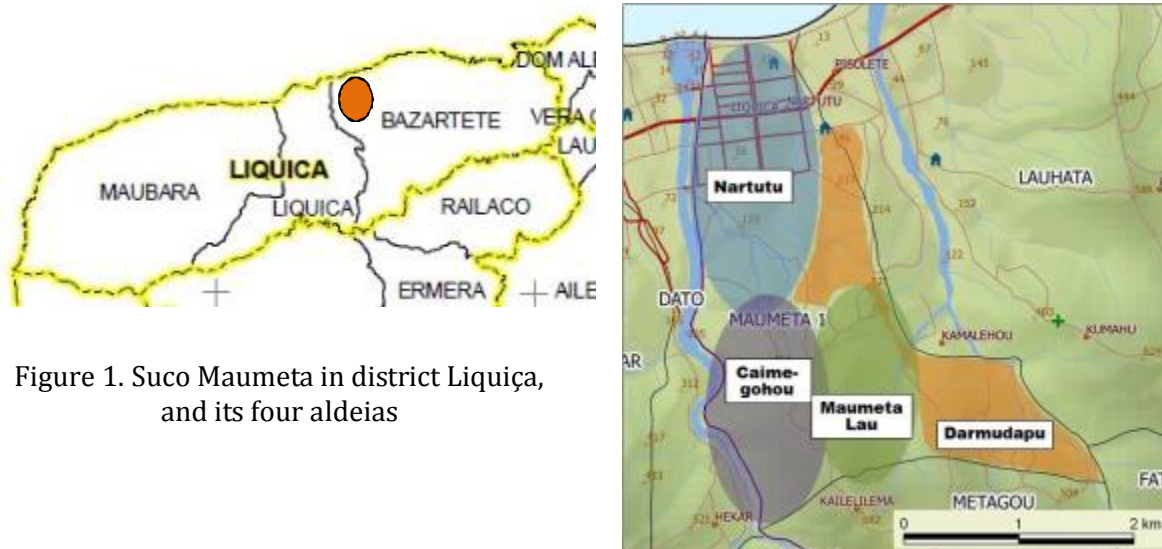


Figure 1. Suco Maumeta in district Liquiça, and its four aldeias

The Seeds of Life program (SoL) started working with four community seed production groups (CSPGs) in suco Maumeta in late 2011, and these four groups – one group based in aldeia Caimogohou, one group in Nartutu and two groups in Maumeta Lau – opted to grow sweet potato cuttings.

One observation made in several sucos was that, even though there are groups that produce improved seeds and planting materials in the sucos, the vulnerable households in the same sucos do often not grow the improved varieties. It was therefore decided to pilot a farmer-to-farmer planting material exchange program, in which vulnerable households in the suco would be given a number of sweet potato cuttings for free. These cuttings would be sourced from the local CSPGs. This would improve the vulnerable households' access to self-grown food, increase food diversity of these households, and give them – if they decide to sell part of their produce – an opportunity to earn some extra money. At the same time, it would also give an opportunity to the CSPGs to sell part of their produce.

1.2 Vulnerable households

Poverty and vulnerability takes many forms in Timor-Leste, and there is thus a need for a set of criteria to distinguish poor and vulnerable households from households which are somewhat better off. The Seeds of Life program uses the following criteria to identify vulnerable households as potential recipients for seeds and cuttings:

- 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 above criteria do not necessarily have to apply simultaneously; a household may be considered vulnerable, even if it is not headed by a woman, or when it is not in a remote location. The set of criteria serves as guidance for the Suco Extension Officer (SEO) and the aldeia chief when they determine which are the vulnerable households in the aldeia.

SoL recommended that 30 households¹ be selected as vulnerable households in each of the concerned aldeias. The logic behind the number is as follows.

1. According to the 2010 Census, there were 136,929 rural households in the country which, with 1,901 rural aldeias, means on average 72 households per aldeia.
2. There are an estimated 3,000 farmer groups in Timor-Leste. If one assumes an average membership of 12 members/group, and that they belong to different households, then in each rural aldeia about 19 households are members of farmer groups.
3. Not all households in rural areas are poor or vulnerable. If one assumes that about one third of the households are better off, then some 24 households in an aldeia should not be targeted for seed or cuttings distribution to vulnerable households.
4. This leaves the number of households to be targeted as: $72 - 19 - 24 = 29$, or rounded off **30 households**.

¹ During the design phase, there was some thought to target 30 % of the households in the aldeia. Percentage calculations would have been difficult and prone to miscalculation, so it was decided to opt for a given number of 30 households, irrespective of the actual number of households in the aldeia.

1.3 Distribution in suco Maumeta

In each aldeia of suco Maumeta 30 vulnerable households were identified, and each of these received 200 sweet potato cuttings (two bundles of 100 cuttings), to plant out on land around their houses, or on plots on which they cultivate foodcrops. For the four aldeias in suco Maumeta, this amounted to 24,000 cuttings being distributed to 120 households.

The process for the selection of the vulnerable households, and for the distribution of the sweet potato cuttings to these households, was planned as follows:

1. The Jefe de Aldeia identifies 30 vulnerable households.
2. The aldeia list of vulnerable households is discussed with the SEO.
3. The aldeia lists are forwarded to the Jefe de Suco, for verification and endorsement.
4. Arrangements are made with the CSPGs for the delivery of the cuttings.
5. The selected vulnerable households are informed that the cuttings are ready and can be picked up.
6. The recipients sign or thumb print a form on receipt of the cuttings.

The distribution of the sweet potato cuttings was done on 14 February 2013.



Figure 2. Members of a CSPG prepare cuttings for distribution



Figure 3. Handover of sweet potato cuttings to a representative of an aldeia

There were four sheets with the names and signatures, or thumb prints, of 120 people who had received sweet potato cuttings (see Figure 4). The recipients did however not come from the four aldeias, but were divided as follows:

- Aldeia Maumeta Lau: 30
- Aldeia Caimegohou: 30
- Aldeia Nartuto: 60
- Aldeia Darmudapu: 0

The explanation given for not distributing cuttings in aldeia Darmudapu was that the people there could easily obtain sweet potato cuttings. This seems rather odd considering that none of the four CSPGs is located there. Darmudapu is also the most isolated of the four aldeias in Maumeta.

Estado de São Paulo
 Prefeitura Municipal de São João do Rio Preto
 Município de São João do Rio Preto
 Livro de Assinaturas das Famílias Beneficiárias

Nº	NOME	Suco	Assinatura	Assinatura
1	Angela de Souza	Darmudapu	[Signature]	[Thumbprint]
2	Rita M. Souza	Darmudapu	[Signature]	[Thumbprint]
3	Luiza de Souza	Darmudapu	[Signature]	[Thumbprint]
4	Beatriz Souza	Darmudapu	[Signature]	[Thumbprint]
5	Zelma de Souza	Darmudapu	[Signature]	[Thumbprint]
6	Dona Zelma de Souza	Darmudapu	[Signature]	[Thumbprint]
7	Clara de Souza	Darmudapu	[Signature]	[Thumbprint]
8	Francisca de Souza	Darmudapu	[Signature]	[Thumbprint]
9	Marta de Souza	Darmudapu	[Signature]	[Thumbprint]
10	Maria de Souza	Darmudapu	[Signature]	[Thumbprint]
11	Paula de Souza	Darmudapu	[Signature]	[Thumbprint]
12	Gerarda de Souza	Darmudapu	[Signature]	[Thumbprint]
13	Leonor de Souza	Darmudapu	[Signature]	[Thumbprint]
14	Isabel de Souza	Darmudapu	[Signature]	[Thumbprint]
15	Clara de Souza	Darmudapu	[Signature]	[Thumbprint]
16	Paula de Souza	Darmudapu	[Signature]	[Thumbprint]
17	Marta de Souza	Darmudapu	[Signature]	[Thumbprint]
18	Margarida de Souza	Darmudapu	[Signature]	[Thumbprint]
19	Marta de Souza	Darmudapu	[Signature]	[Thumbprint]
20	Marta de Souza	Darmudapu	[Signature]	[Thumbprint]
21	Margarida de Souza	Darmudapu	[Signature]	[Thumbprint]
22	Margarida de Souza	Darmudapu	[Signature]	[Thumbprint]
23	Agulha de Souza	Darmudapu	[Signature]	[Thumbprint]
24	Luiza de Souza	Darmudapu	[Signature]	[Thumbprint]
25	Juliana de Souza	Darmudapu	[Signature]	[Thumbprint]
26	Beatriz de Souza	Darmudapu	[Signature]	[Thumbprint]
27	Marta de Souza	Darmudapu	[Signature]	[Thumbprint]
28	Paula de Souza	Darmudapu	[Signature]	[Thumbprint]
29	Marta de Souza	Darmudapu	[Signature]	[Thumbprint]
30	Beatriz de Souza	Darmudapu	[Signature]	[Thumbprint]

Este livro será assinado pelas famílias beneficiárias.
 da Aldeia de Souza
 Município de São João do Rio Preto

[Signature]
 [Signature]
 [Signature]

(Assinatura do Secretário)
 Heleno Wilson de Souza

Figure 4. Signatures and thumb prints sheet of cuttings recipients in one aldeia

The distribution of sweet potato cuttings was the first distribution of improved seeds and cuttings from CSPGs to vulnerable households in the same suco. SoL therefore wanted to conduct an assessment of this distribution to verify:

- If the recipients of the sweet potato cuttings were indeed vulnerable households;
- If the recipients of the cuttings had planted them out;
- What benefit, if any, the recipients had received from the sweet potato cultivation so far.

2. Research method

As there were lists available with the names of 120 persons who had received cuttings, the research team decided to try to contact and interview all of them.

2.1 Questionnaire

A questionnaire (given in Annex) was developed to obtain information on the following aspects.

- a) **Household identification and composition.** If the respondent was a woman, information was also sought on her marital status, particularly to identify women who were also heads of households, as they are more likely to be vulnerable.
- b) **Crops grown by the household.** Info on which crops the household cultivated, and if any of these had been sold or shared with others.
- c) **Land parcels and their use.** Info on the number of food crops plots cultivated by the household, the sizes of these plots and the types of crops on each of these.
- d) **Seed and planting material use in the last growing season, and amount harvested.** This data was only sought for five crops, i.e. maize, rice, peanuts, cassava and sweet potato.
- e) **Sweet potato cuttings and their use.** The respondents were asked if they had received sweet potato cuttings in February 2013, and if yes, in what condition these were received; if they had been planted out; if sweet potato had already been harvested; and if the respondent had shared or replanted sweet potato cuttings.
- f) **Familiarity with improved varieties.** To check to what extent the respondents already know the various improved varieties, and if they do, if they also grow them. Respondents who know the varieties but do not grow them are asked why not.
- g) **Household food self-sufficiency.** The respondents were asked in which months they could consume self-grown crops, if they experienced hungry months in the last year, and whether or not they bought rice and/or maize in the last 12 months.
- h) **Household economic condition.** Data on the condition of the house, possession of common household items, and whether or not someone in the household received a Veteran's pension.

2.2 E-survey

In 2013, SoL started to collect survey data electronically. Electronic data collection had been done a first time during the mid-term survey in July-August 2013 (when electronic data collection was limited to GPS readings and plot measurements), and with the full e-survey of the January-March cassava and sweet potato cuttings distribution, which was conducted in September 2013.

The questionnaire for this vulnerable households survey was first developed as a traditional paper questionnaire, but was subsequently programmed in a MS Excel spreadsheet using XLS form syntax and uploaded to Formhub (<https://formhub.org/>). Once the questionnaire had been uploaded to the server, it could be downloaded to tablets or smartphones to conduct the survey in the field. For this survey, the OpenDataKit application (<http://opendatakit.org/>) was used to down- and upload questionnaires to the internet, and to conduct the survey.

While the development of the e-questionnaire required extra effort, it simplified the interviewing (non-relevant parts of the questionnaire could be more easily skipped), and greatly simplified the data preparation before analysis as the data did not have to be entered into a spreadsheet anymore.



Figure 5. Interviewing a respondent in aldeia Nartutu

The interviews were conducted between 6 and 21 November 2013.

3. Results and findings

3.1 Recipients of cuttings

There were 120 names on the four lists of recipients from the aldeias Maumeta Lau, Caimegohou and Nartuto. The researchers tried to contact all names on the list to check whether or not they had received sweet potato cuttings (see Table 1).

Table 1. Receipt of sweet potato cuttings by persons mentioned on the lists

Status	Aldeia			Total	
	Maumeta Lau	Caimegohou	Nartuto		
Received cuttings	13	22	22	57	62 %
Did not receive cuttings	6	2	27	35	38 %
Sub-total	19	24	49	92	100 %
Could not be contacted	11	6	11	28	
Total	30	30	60	120	

Of the 92 persons who could be contacted (corresponding to 77 % of the people on the lists), 57 (62%) had received cuttings. There were however also six husbands-and-wives on the lists, and one other person who lived in the same household as another recipient. The survey team also contacted 35 persons whose names were on the list, but they said that they had not received cuttings nor signed for these. What is not clear is whether the lists had been prepared *prior* to the distribution of the cuttings and these persons had not been notified when the cuttings were ready to be picked up; or whether the lists had been prepared *at the time* of the distribution, and as perhaps not all the people who took cuttings wrote down their name, other names were added to the list to make up for the missing ones. The latter assumption is however not very likely since the names of the persons who did not receive cuttings are not concentrated at the bottom of the list. Fingerprints were probably added to give the appearance of completeness.

During the visit to aldeia Nartuto, it was reported that there had been two cuttings distributions in the aldeia, on different days. This may indicate that cuttings had been allocated for distribution to Darmudapu, but that they could not get delivered there, and that these were thus offered to people living in Nartuto.

There is also some doubt on how the distribution actually was handled in aldeia Nartuto. Some repondents mentioned that a message was spread by word of mouth that, if anyone wanted to get sweet potato cuttings, they were invited to come and pick some up at the house of the Jefe de Aldeia.

Of the 57 persons mentioned in Table 1 who received cuttings, 52 were interviewed. It could have been a larger number, but there was some misunderstanding as to who should be interviewed. At first the field team thought that, if a person on the list responded that s/he had not received cuttings, that there was then no need to interview her or him. This was corrected, and during later visits two recipients who had not received cuttings were also interviewed.



Figure 6. A woman farmer in aldeia Caimegohou inspects her crop

During the visits in the aldeias, the researchers also met six respondents who had received cuttings, but whose names were not on the lists. These were also interviewed. There is thus interview data from a total of 58 respondents (see Table 2).

Table 2. Characteristics of the surveyed respondents

Characteristic	Respondents	
	Number	Percentage
Gender		
• Male respondents	25	43 %
• Female respondents	33	57 %
○ Married	15	26 %
○ Widow	11	19 %
○ Unmarried	6	10 %
○ Other & unknown	1	2 %
Age of head of household (age categories)		
• < 30	3	5 %
• 30-39	13	22 %
• 40-49	14	24 %
• 50-59	12	21 %
• 60+	16	28 %
Number of household members		
• 1-4 members	17	29 %
• 5-7 members	22	38 %
• 8-10 members	14	24 %
• 11 or more members	5	9 %

3.2 Crops grown by households

Table 3 shows the food crops that were cultivated by the survey respondents, and if part of any of these harvests were sold.

Table 3. Food crops planted by the survey respondents

Crops planted	Respondents who grow this crop		Respondents who sold part of this crop	
	Number	Percentage	Number	Percentage
Cassava	55	95	18	31
Sweet potato	52	90	9	16
Maize	51	88	10	17
Pumpkin	43	74	3	5
Taro	31	53	1	2
Banana *	27	47		
String bean	23	40	5	9
Early maize	23	40	1	2
Arrowroot	22	38	1	2
Pigeon pea	20	34	1	2
Peanut	19	33	3	5
Papaya *	10	17		
Coconut *	8	14		
Cucumber	4	7		
Mung bean	4	7		
Jicama	3	5		
Yam	2	3		
Potato	1	2		
Red bean	1	2		
Bitter bean	1	2		
Other vegetables *	10	17		
Other fruits *	6	10		
Other crops *	4	7		

N=58

* For these crops, no data on selling is available. The crops were reported as 'other' during the survey, and counted separately as they were commonly grown.

Maize was the most common food crop: all interviewed households cultivated it. There were 35 farmers (60 %) who cultivated normal maize (*batar bo'ot*), seven farmers (12 %) who only grew quick maturing maize (*batar lais*), and 16 farmers (28 %) who grew both. Cassava was also grown by nearly all farmers (95 %), and it was the crop that had the highest percentage of part of the harvest being sold (by 31 % of the farmers).

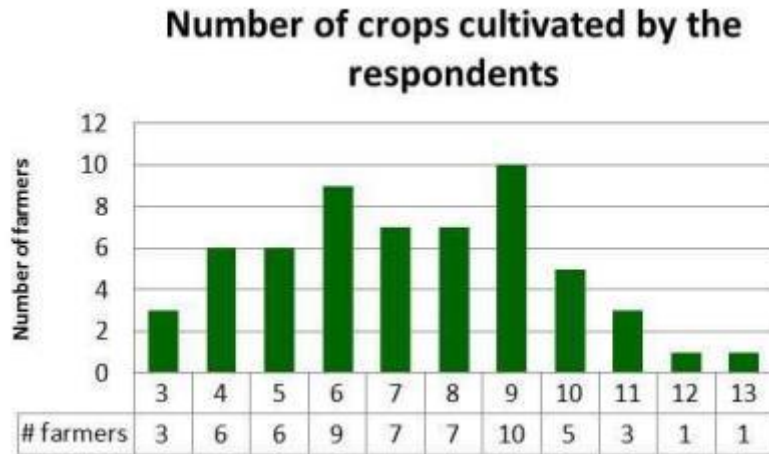


Figure 7. Number of crops cultivated by the respondents (N=58)

Figure 7 shows that each farmer cultivated at least three crops, and one even had 13 crops. On average, farmers cultivate seven crops.

3.3 Land parcels

Half of all households only had one plot on which they cultivated foodcrops, 47 % had two plots with foodcrops, and 3 % had three plots. Most households (53 of the 58, or 91 %) cultivated food crops on a plot immediately next to the house. For 54 plots, there is information available on size (Table 4).

Table 4. Foodcrop plot sizes

Plot size category	Number	Percentage
Less than 500 m ²	10	19 %
500 m ² to < 0.25 ha	16	30 %
0.25 – 0.50 ha	13	24 %
1 ha	13	24 %
More than 1 ha	2	4 %

N=54

Close to half of all cultivated plots are less than 0.25 ha, and nearly another quarter are less than half a hectare. Mixed cropping is the common practice; 84 % of all plots were cultivated with four or more crops.

3.4 Maize planted and harvested

The participants were asked how much maize seed they had planted in the previous growing season. The amounts were given in a range of units: tins of various sizes, 5 l jerrycans, woven baskets, etc. The amounts were converted to kg, and Table 5 shows the amounts of maize seed used by the 56 farmers who provided such data. Half of the farmers planted up to 10 kg of seed.

Table 5. Amounts of maize seed planted

Amount of seed	Number	Percentage
Less than 2 kg	4	7 %
2 to < 5 kg	7	13 %
5 to < 10 kg	17	30 %
10 to < 25 kg	15	27 %
25 to < 50 kg	10	18 %
More than 50 kg	3	5 %

N=56

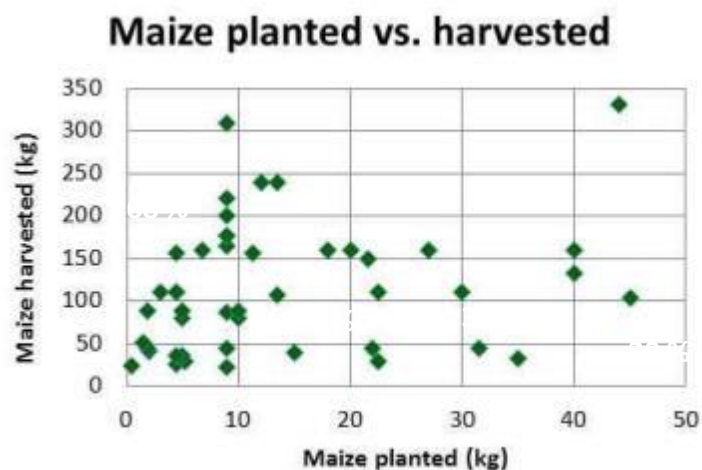
Obtaining data on harvests is notoriously difficult. Farmers may e.g. report that they have harvested so many sacks of maize, but the size of the sacks is not always known (25 kg? 35 kg? 50 kg?), and it may not be clear whether the maize in the sack is still on the cob, or if it has already been shelled. Also harvested amounts reported as bunches of tied together cobs, or amounts of woven baskets (*bote*) are open for interpretation. The 'best guess' on amounts of maize harvested are given in Table 6.

Table 6. Amounts of maize harvested

Maize harvested	Number	Percentage
Less than 25 kg	3	5 %
25 to < 50 kg	12	22 %
50 to < 100 kg	9	16 %
100 to < 150 kg	9	16 %
150 to < 200 kg	11	20 %
200 to < 400 kg	7	13 %
400 kg or more	4	7 %

N=55

It is also worthwhile to check how well the data on maize seed planted relates to the amount of maize harvested (see Figure 8). The figure shows that there is little correlation between these two.



Note: Outlier values (i.e. farmers using more than 50 kg of seed, or harvests of 400 kg or more) have not been plotted

Figure 8. Maize planted vs. harvested (N=46)

3.5 Sweet potato cuttings and their use

3.5.1 Receipt of sweet potato cuttings

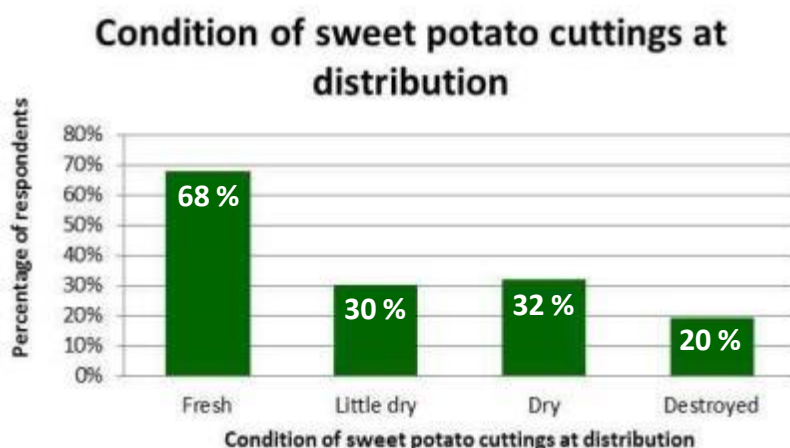
Of the 58 respondents who were interviewed, 56 said that they had received cuttings, and 45 remembered how many cuttings they had received.

Table 7. Cuttings received by the households

Amount of cuttings received	Number of respondents (N=56)	Percentage of total # of respondents	Percentage of recipients who remembered their # of cuttings
Less than 100	3	5 %	7 %
100	12	21 %	27 %
200	17	30 %	38 %
300			
400	4	7 %	9 %
500	1	2 %	2 %
600	4	7 %	9 %
700			
800	2	4 %	4 %
900			
1,000 or more	2	4 %	4 %
Do not remember	11	20 %	

If we discard the respondent who stated to have received 6,000 cuttings, the respondents received on average 269 cuttings (standard deviation 225).

The condition in which the cuttings were received is presented in Figure 9.



Note: The total of the percentages is more than 100 because many respondents mentioned more than one condition in which they received the cuttings.

Figure 9. Condition of the sweet potato cuttings at distribution (N=56)

None of the respondents who reported having received destroyed cuttings had received only destroyed ones; it only applied to part of the batch. Some of the destroyed cuttings were apparently those on the outside of the pack and were damaged because of having been tied too tightly.

Of the 56 respondents who had received sweet potato cuttings, only two remembered that the variety was called 'Hohrae'.

3.5.2 Planting of the sweet potato cuttings

Of the 56 respondents who received cuttings, 40 (71 %) mentioned that they had prior experience in growing sweet potato. All respondents reportedly planted out all the cuttings they had received (which, for some respondents, is a bit strange as this would mean they also planted out cuttings that they considered to be destroyed).

Table 8. Planting out of the sweet potato cuttings

	On the same day	The next day	After a few days
Number	36	16	6
Percent of farmers planting out cuttings	64 %	29 %	11 %

Note: The total of the percentages is more than 100 because some respondents planted out cuttings on more than one day.

As shown in Table 8 above, 64% of the farmers planted out the cuttings the day they received them, with another 29% doing so the next day. Planting the cuttings next to the house was the preferred choice (see Table 9).

Table 9. Location of planting out sweet potato cuttings

	Next to the house	On a plot close to the house	On a plot further away
Number	44	7	5
Percent of farmers planting out cuttings	79 %	13 %	9 %

The farmers were also asked what measures, if any, they had taken to help the cuttings survive or grow better. A total of 34 farmers (61 %) took one or more specific actions to make the cuttings grow better. The actions taken were as follows (Table 10):

Table 10. Actions taken to help the sweet potato cuttings survive or grow better

	Water the plants	Weeding the crop	Use compost	Use fertilizer	Line planting	Fencing
Number	25	22	4	3	2	1
Percent of farmers planting out cuttings	45 %	39 %	7 %	5 %	4 %	2 %

A large group of farmers (42 or 75%) stated that they had encountered problems during the growing of the sweet potato. The three main problems were lack of water, animals and disease/pest (see Table 11).

Table 11. Problems with growing the sweet potato

	Small or dying plants because lack of water	Problems with animals	Disease / pest
Number	28	23	9
Percent of farmers reporting problems	67 %	55 %	21 %

Figure 10 shows that 18 % of the farmers who had watered their plants had experienced problems of drought. It may however be that some of these farmers started to water their plants in reaction to seeing them wilt from drought.

Problem of drought	No	15 27 %	13 23 %
	Yes	10 18 %	18 32 %
		Yes	No
		Watering cuttings	

Figure 10. Incidence of watering cuttings and experiencing drought
Number and percentage of farmers (N=56)

3.5.3 Sweet potato harvesting

Of the 56 respondents who planted out the cuttings, only 30 (54 %) had been able to harvest, with one farmer still intending to do so. Of the farmers who were able to harvest, 70 % had harvested at different times (see Table 12).

Table 12. Sweet potato harvest

Characteristic	Farmers		
	Number	Percentage of farmers	Percentage of harvesters
Harvesting sweet potato			
• Harvested all at once	9	16 %	30 %
• Harvested at different times	21	38 %	70 %
• Not yet harvested	1	2 %	
• Crop failure	25	45 %	
Harvesting of <u>tubers</u>			
• Food for the household	29		97 %
• Shared with others	8		27 %
• Sold	6		20 %
• Fed to animals	6		20 %
• Keep as food reserve	2		7 %
Harvesting of <u>leaves</u>			
• Food for the household	29	52 %	100 %
• Shared with others	4		14 %
• Fed to animals	4		14 %
• Sold	3		10 %
• Keep as food reserve	2		7 %

All farmers who had harvested, had harvested the tubers, and all but one had harvested leaves. Both tubers and leaves were primarily used as food for the household, but some was also shared with other households, fed to animals, or sold.

It is also interesting to look at the 25 farmers who experienced crop failure. Figure 11 shows that it are overwhelmingly farmers who did not water their crops who failed to harvest.

Problem of drought	No	2	7
	Yes	1	15
		Yes	No
		Watering cuttings	

Figure 11. Farmers experiencing crop failure (N-25)

3.5.4 Sharing and replanting of sweet potato

The majority of the farmers who had received cuttings had not shared them with others, which is perhaps not that surprising considering that the number of cuttings they had received was not that large. Seven recipients (13 %) had shared cuttings, and the number of cuttings shared was quite small. Five farmers had apparently shared one, two or three cuttings (these may be misreported figures, because the farmers had received 100 or more cuttings), and another two farmers shared respectively 10 and 60 cuttings; six of those who shared cuttings shared them with family, and two shared cuttings with neighbours.

Of the 56 farmers, 51 (91 %) have replanted sweet potato, or intend to do so. The five farmers who will not replant sweet potato decided not to replant because the sweet potato did not grow well (3x), because of difficulties with animals (2x), and because it was not pest resistant (1x).

Table 13. Replanting of sweet potato

Characteristic	Farmers	
	Number	Percentage of replanters
Have replanted, or will replant sweet potato	51	
• A smaller area than this year	7	14 %
• The same area as this year	29	57 %
• A larger area than this year	15	29 %

3.6 Familiarity with Improved varieties

In the survey, if farmers grew maize, rice, peanuts and/or cassava, they were also asked if they knew the improved variety, and whether or not they were growing it. If the farmer knew the improved variety but was not growing it, the reasons for not doing so were asked.

As shown in Table 14, familiarity with the improved varieties was quite small. Only 10 (17 %) of the maize growers knew Sele, and eight of them were growing it. Three of the ten farmers growing Sele also knew Noi Mutin.

Table 14. Familiarity with improved varieties

	# of crop growers	Know % of growers	Grow	Reasons for not growing even though knowing
Sele [maize]	58	10 17 %	8	1 I don't have the seed. 1 Wait for free distribution; heard from friend and willing to plant if available.
Noi mutin [maize]	58	5 9 %	2	1 I don't have the seed. 1 Wait for free distribution. 1 Seed came too late.
Nakroma [rice]: None of the farmers cultivated rice. None was therefore asked if they knew the Nakroma variety.				
Utamua [peanut]	19	0		
Ai-luka [cassava]	55	2 4 %	2	

This survey again showed that, even though cassava is a widely grown crop (95 % of the respondents), only a very small number of farmers (two farmers, or 4 %) knew the improved variety, and were growing it.

3.7 Household food self-sufficiency

3.7.1 Sufficiency of grown foodcrops

The interviewed farmers were asked to what extent they were able to meet their own food demands from self-grown crops for the five major crops, i.e. maize, rice, peanut, cassava and sweet potato. Table 15 shows the number of farmers who grew the crop, and what percentage of these were able to consume such self-grown crops between November 2012 and October 2013. Self-sufficiency for sweet potato is not included in the table as, because of the uptake of the crop by new farmers, the number of growers changed from 40 farmers who had prior experience in growing the crop, to 56 farmers.

Table 15. Food availability of self-grown crops
(As percentage of crop growers)

Crop	# of crop growers	2012		2013									
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Maize *	58	10	9	5	22	64	55	29	24	22	19	19	16
Peanut	19					21	32	58	11	5			
Cassava	55	22	22	20	18	16	16	20	22	53	69	35	27

* Farmers who grew maize, early maize or both.

3.7.2 Food insufficiency

Of the 58 households, 49 (84 %) said that there had been one or more months in the past 12 months when they had not enough food to meet their family's needs.

Table 16. Hungry months

	2012		2013									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Number	44	47	47	37	8	2	4	10	12	16	24	30
% of respondents	76	81	81	64	14	3	7	17	21	28	41	52

Figure 12 shows the number of months the respondents considered as 'hungry months' in the period November 2012 to October 2013.



Figure 12. Number of hungry months experienced in the previous 12 months

As found in other surveys, purchase of rice is general; all respondents bought rice during the year, and 34 households (59 %) bought rice every month.

Purchase of maize is less common; 30 households (52 %) bought maize in the previous 12 months. Table 17 shows the number and percentages of households that bought rice and maize during the year. The amounts bought per month have not been calculated because the answers provided were too inconsistent.

Table 17. Purchase of rice and maize

Respondents buying rice and/or maize	2012		2013									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Rice - Number	53	53	54	53	44	40	41	39	41	43	47	48
Percentage	91	91	93	91	76	69	71	67	71	74	81	83
Maize - Number	16	16	12	7	2	3	1	4	5	13	14	20
Percentage	28	28	21	12	3	5	2	7	9	22	24	34

3.8 Household economic condition

3.8.1 Housing condition

To assess the economic condition of the household, information was collected on the size of the house, and the materials used for the floor, walls and roof. Table 18 shows the estimated inside surface areas of the houses, i.e. not counting verandahs and terraces.

Table 18. Estimated inside surface area of the house

Estimated inside surface area	Number	Percentage
20 m ² or less	12	21 %
21 – 40 m ²	9	16 %
41 – 60 m ²	12	21 %
61 – 80 m ²	15	26 %
81 – 100 m ²	7	12 %
More than 100 m ²	3	5 %

The construction materials of the walls, roof and floor are given in Table 19.

Table 19. House construction materials

Characteristic	Households	
	Number	Percentage
Walls		
• Full wall (one material)	52	90 %
○ Cement blocks	23	40 %
○ Bamboo	23	40 %
○ Metal sheet	2	3 %
○ Palm fronds (<i>bebak</i>)	2	3 %
○ Unknown	2	3 %
• Split wall (two materials)	6	10 %
○ Cement blocks + bamboo or <i>bebak</i>	5	9 %
○ Unknown	1	2 %
Roof		
• Metal sheet	55	95 %
• Palm leaves / grass	3	5 %
Floor		
• Cement floor / concrete	25	43 %
• Bamboo	1	2 %
• Dirt / clay	31	53 %
• Other	1	2 %

3.8.2 Assets and veteran pensions

Ownership of household assets is given in Table 20.

Table 20. Assets

Description	Households	
	Number	Percentage
Chairs (wood/plastic)	51	88 %
Radio	9	16 %
Television	13	22 %
Telephone / mobile	28	48 %
Refrigerator	1	2 %
Bicycle	5	9 %
Motorbike	8	14 %
Generator	1	2 %

Ownership of drums is also already quite common in Maumeta; 34 households (59 %) mentioned they had one or more drums. All households, except one, used their drums to store water. One household had three drums that were used to store grain.

Table 21. Ownership of drums

Number of drums	Number of households	Percentage of	
		Households	Drum owners
1	13	22 %	38 %
2	14	24 %	41 %
3	2	3 %	6 %
4	5	9 %	15 %

The respondents were also asked if someone in the household obtained a Veteran's Pension. This was the case for five households (9 %).

4. Discussion

The three main questions for this study, as listed in Section 1, were:

- Were the recipients of the sweet potato cuttings vulnerable households?
- Have the recipients of the cuttings planted these out?
- What benefit have the recipients received from the sweet potato cultivation?

4.1 Where the recipients of the sweet potato cuttings vulnerable households?

From the data which was obtained from the respondents, there are several that can be expected to have some relationship to poverty and/or vulnerability.

- **Housing.** It is expected that the poorer households will live in smaller houses, built from less durable or poorer quality materials.
- **Assets.** The poorer households are expected to have fewer assets than better off households.
- **Experience of hunger.** The poorer and vulnerable households are more likely less food secure, and may have more months in which they cannot consume self-grown crops.
- **Maize harvest.** Poorer farmers are less likely able to grow enough maize to meet their household's demand for a year.

For some data elements, a comparison can be made with 2010 Census data. This is the case for the construction of the house, and for the assets. The comparison with the census data for suco Maumeta makes it possible to formulate an opinion where the interviewed households fit into the picture of the overall condition of the suco.

Table 22 shows that the percentage of houses with external walls in palm trunk (*bebak*) and bamboo in the census and in the survey was roughly similar (45.2 % vs 46.6 %), and this was the same for concrete and brick walls (49.6 % vs 50 %).

For the quality of the roofing, there were percentage wise more houses in the survey with the more expensive metal roof than in the census (almost 95 % in the survey vs 86 % in the census).

For the quality of the floor, the opposite applied; the floors in the survey were qualitatively somewhat poorer than those from the census.

The general impression, on the basis of the quality of the houses, is that the mix of households that were visited during the survey was fairly similar to that of the suco overall; the houses were not noticeably poorer in construction.

Table 22. Comparison of 2010 Census and survey data for house construction

Description	External walls				Roof				Floor					
	Census		Survey		Census		Survey		Census		Survey			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Palm trunk / Bebak	113	22.9 %	4	6.9 %	Palm thatch	65	13.2 %	3	5.2 %	Bamboo		1	1.7 %	
Bamboo	110	22.3 %	23	39.7 %	Corrugated iron	426	86.2 %	55	94.8 %	Soil/clay	171	34.6 %	31	53.4 %
Wood	8	1.6 %			Tiles	1	0.2 %			Concrete	276	55.9 %	25	43.1 %
Clay	2	0.4 %			Concrete	1	0.2 %			Tiles	35	7.1 %		
Corrugated iron / zinc	13	2.6 %	2	3.4 %										
Rock	2	0.4 %												
Concrete & brick	245	49.6 %	29	50.0 %	Other	1	0.2 %			Others	12	2.4 %	1	1.7 %
Other	1	0.2 %												
Total	494		58			494		58			494		58	

Table 23. Comparison of 2010 Census and survey data for assets

	Census		Survey	
	No.	%	No.	%
Radio	202	40.9 %	9	15.5 %
TV	198	40.1 %	13	22.4 %
Telephone	378	76.5 %	28	48.3 %
Fridge	90	18.2 %	1	1.7 %
Bicycle	56	11.3 %	5	8.6 %
Motorcycle	101	20.4 %	8	13.8 %
Car/van	30	6.1 %		
Rice husker	3	0.6 %		
Rice milling	2	0.4 %		
Boat	8	1.6 %		
Total # of households	494		58	

For the assets, it would appear that the surveyed households were indeed poorer than average as they had percentage wise fewer assets than the suco in general (Table 23).

Another manner to assess whether the households that received cuttings were poor and/or vulnerable is by comparing their relative ranking for a range of indicators. Table 25 shows the rankings of the 58 households for the following set of characteristics:

- Inside house area in m². Bottom: < 30 m²; Middle: 30 to < 80 m²; Top: > 80 m²
- Wall. Bottom: Bamboo & palm fronds; Middle: Metal & two materials; Top: Bricks
- Roof. Bottom: Palm thatch; Middle/Top: Metal
- Floor. Bottom: Dirt/clay & bamboo; Middle/Top: Cement board
- Assets. Bottom: 1-2 common assets; Middle: 2-3 assets; Top: > 3 and/or valuable assets
- Number of hungry months. Bottom: > 6 months; Middle: 5-6 months; Top: < 5 months
- Foodcrop plot size. Bottom: < 600 m²; Middle: 600-5,000 m²; Top: > 0.5 ha
- Maize harvest per household member. Bottom: < 10 kg; Middle, Low: 10 to < 20 kg; Middle, High: 20 to < 40 kg; Top: 40 kg or more.

Based on an ‘across the board’ assessments of these ranks, each household was given an overall poverty assessment rank (i.e. bottom, middle, middle/top or top). These overall ranks are given in the right column of Table 25. It is interesting to note that the self-declared number of hungry months seems to show the least correspondence with the other indicators; households with relatively poor and simple houses and few assets reported far fewer hungry months than households living in better houses, or which had more assets.

The overall poverty rank gave 17 households with ‘bottom’ rank, 18 households with ‘middle’, 14 with ‘middle/top’ and 9 with ‘top’. It seems fair to conclude from this that between 15-40 % of the households – those with overall rankings of ‘top’ and ‘middle/top’ – were likely not really vulnerable.

One could assume that, because aldeia Nartutu received double the amount of cuttings than originally planned, that the second distribution might therefore have been somewhat more relaxed and less targeted to vulnerable households than the first distribution. Table 24 shows that there were 13 less poor households in Nartutu, compared to 7 in Caimegohou and 3 in Maumeta Lau. But if one takes into account that 30 households in Caimegohou received cuttings, and 60 in Nartuto, then the percentage of non-vulnerable households that received cuttings in these two aldeias is basically the same.

Table 24. Overall ranking of the interviewed households

Aldeia	Bottom	Middle	Middle/Top	Top	Total
Caimegohou	7	5	5	2	19
Maumeta Lau	7	6	3		16
Nartutu	3	7	6	7	23
Total	17	18	14	9	58

Table 25. Rank comparison of survey respondents for several characteristics

Inside house area in m2	Rank wall	Rank roof	Rank floor	Rank assets	Number of hungry months	Rank foodcrop plot size	Rank maize harvest per household member	Overall poverty assessment
Bottom	Bottom	Bottom	Bottom	Bottom	3	Top	Middle, High	Bottom
Bottom	Bottom	Middle/Top	Bottom	Bottom	3	Bottom	Bottom	Bottom
Bottom	Bottom	Middle/Top	Bottom	Bottom	3	Bottom	Middle, High	Bottom
Bottom	Bottom	Middle/Top	Bottom	Bottom	3	Bottom	Middle, High	Bottom
Bottom	Bottom	Middle/Top	Bottom	Bottom	3	Middle	Middle, High	Bottom
Bottom	Bottom	Middle/Top	Bottom	Bottom	4	Bottom	Bottom	Bottom
Bottom	Bottom	Middle/Top	Bottom	Bottom	4	Bottom	Middle, High	Bottom
Bottom	Bottom	Bottom	Bottom	Middle	4	Top	Top	Bottom
Bottom	Bottom	Bottom	Bottom	Middle	6	Bottom	Middle, Low	Bottom
Bottom	Bottom	Middle/Top	Bottom	Middle	5	Bottom	Bottom	Bottom
Bottom	Bottom	Middle/Top	Bottom	Middle	5	Bottom	Middle, Low	Bottom
Bottom	Bottom	Middle/Top	Bottom	Middle	6	Bottom	Middle, Low	Bottom
Middle	Bottom	Middle/Top	Bottom	Bottom	2	Top	Middle, High	Bottom
Middle	Bottom	Middle/Top	Bottom	Bottom	2	Top	Top	Bottom
Middle	Bottom	Middle/Top	Bottom	Bottom	3	Bottom	Bottom	Bottom
Middle	Bottom	Middle/Top	Bottom	Middle	6	Top	Middle, Low	Bottom
Bottom	Middle	Middle/Top	Bottom	Bottom	2	Middle	Bottom	Bottom
Bottom	Bottom	Middle/Top	Middle/Top	Middle	5	Bottom	Bottom	Middle
Bottom	Bottom	Middle/Top	Bottom	Top	4	Bottom	Middle, High	Middle
Middle	Bottom	Middle/Top	Bottom	Bottom	3	Top	Middle, Low	Middle
Middle	Bottom	Middle/Top	Bottom	Middle	4	Top	Bottom	Middle
Middle	Bottom	Middle/Top	Bottom	Middle	5	Top	Middle, Low	Middle
Middle	Bottom	Middle/Top	Bottom	Middle	5	Middle	Middle, High	Middle
Middle	Bottom	Middle/Top	Bottom	Middle	6	Middle	Top	Middle
Middle	Bottom	Middle/Top	Bottom	Middle	6	Top	Top	Middle
Middle	Bottom	Middle/Top	Bottom	Middle	7	Bottom	Bottom	Middle
Middle	Bottom	Middle/Top	Bottom	Top	5	Middle	Bottom	Middle
Top	Bottom	Middle/Top	Bottom	Bottom	3	Middle	Middle, High	Middle
Bottom	Middle	Middle/Top	Bottom	Top	5	Bottom	Middle, High	Middle
Middle	Middle	Middle/Top	Middle/Top	Middle	6	Top	Middle, High	Middle
Middle	Middle	Middle/Top	Middle/Top	Top	6	Middle	Bottom	Middle
Top	Middle	Middle/Top	Bottom	Middle	6	Middle	Middle, High	Middle
Top	Middle	Middle/Top	Middle/Top	Middle	6	Middle	Top	Middle
Bottom	Top	Middle/Top	Bottom	Middle	5	Bottom	Bottom	Middle
Bottom	Top	Middle/Top	Bottom	Middle	5	Bottom	Bottom	Middle
Middle	Middle	Middle/Top	Middle/Top	Top	6	Bottom	Top	Middle/Top
Top	Middle	Middle/Top	Middle/Top	Middle	4	Middle	Middle, Low	Middle/Top
Bottom	Top	Middle/Top	Middle/Top	Middle	4	Middle	Top	Middle/Top
Middle	Top	Middle/Top	Middle/Top	Bottom	4	Bottom	Middle, High	Middle/Top
Middle	Top	Middle/Top	Middle/Top	Top	5	Middle	Bottom	Middle/Top
Middle	Top	Middle/Top	Middle/Top	Top	6	Middle	Middle, Low	Middle/Top
Middle	Top	Middle/Top	Middle/Top	Top	6	Middle	Middle, High	Middle/Top
Middle	Top	Middle/Top	Middle/Top	Top	7	Top	Middle, Low	Middle/Top
Top	Top	Middle/Top	Middle/Top	Middle	4	Bottom	Middle, High	Middle/Top
Top	Top	Middle/Top	Middle/Top	Middle	5	Top	Bottom	Middle/Top
Top	Top	Middle/Top	Middle/Top	Middle	5	Middle	Middle, Low	Middle/Top
Top	Top	Middle/Top	Middle/Top	Middle	6	Middle	Bottom	Middle/Top
Top	Top	Middle/Top	Bottom	Top	9	Top	Middle, Low	Middle/Top
Top	Top	Middle/Top	Middle/Top	Top	8	Middle	Middle, High	Middle/Top
Bottom	Top	Middle/Top	Middle/Top	Top	8	Bottom	Middle, High	Top
Middle	Top	Middle/Top	Middle/Top	Top	4	Middle	Bottom	Top
Middle	Top	Middle/Top	Middle/Top	Top	10	Middle	Middle, Low	Top
Middle	Top	Middle/Top	Middle/Top	Top	10	Middle	Top	Top
Top	Top	Middle/Top	Middle/Top	Top	6	Bottom	Bottom	Top
Top	Top	Middle/Top	Middle/Top	Top	6	Middle	Middle, Low	Top
Top	Top	Middle/Top	Middle/Top	Top	7	Top	Middle, Low	Top
Top	Top	Middle/Top	Middle/Top	Top	7	Top	Top	Top
Top	Top	Middle/Top	Middle/Top	Top	7	Middle	Top	Top

4.2 Have the sweet potato cuttings been planted out?

The intention was that each of the vulnerable households on the aldeia lists would receive 200 cuttings. Of the 45 recipients who remembered how many cuttings they had received, 38 % stated to have received this amount; 33 % of the farmers had received fewer cuttings, and 29 % had received more (see Table 7). The average amount of cuttings received was 269.

All 56 respondents who had received cuttings reported to have planted them out, primarily the same day (64 %), or the next day (29 %). Planting the cuttings next to the house was the preferred location (79 %). Less than half of the farmers (45 %) had watered the cuttings at some stage to increase the chances of survival, and 39 % had done some weeding.

4.3 What benefit have the recipients received from the sweet potato cultivation?

A little more than half the farmers (54 %) had been able to harvest tubers and leaves from the sweet potato cuttings they had planted out. If more farmers had been able to water their plants, fewer would have experienced crop failure.

The most common method of harvesting, as practiced by 70 % of the harvesting farmers, is to harvest at different times and not all at once. Table 26 shows that both the tubers and the leave were primarily used for home consumption.

Table 26. Use of the harvested sweet potato

Use	Tubers	Leaves
Food for the household	97 %	100 %
Shared with others	27 %	14 %
Sold	20 %	10 %
Fed to animals	20 %	14 %
Keep as food reserve	7 %	7 %

It is also promising that 51 farmers stated that they have replanted or intended to replant sweet potato, and that they would plant a same area as in the last year (57 % of the replanters), or a larger area (29 %). Included in these 51 farmers are 21 of the 25 farmers who experienced crop failure, which seems to indicate that they expect to have better luck in the next season. It is however possible that the farmers' stated keenness to replant sweet potato came with an expectation that they would again be provided with cuttings.

Annex

Questionnaire

Sweet potato distribution to vulnerable households, suco Maumeta, Liquiça

November 2013

Background

In February 2013, sweet potato cutings were distributed to vulnerable households in suco Maumeta in Liquiça.

The purpose of this survey is to obtain feedback from the households that received such cuttings, and to assess if the households that received the cuttings were indeed vulnerable households.

Part 1. Interview Particulars	
	Interviewer
Name	
Date conducted	Day / Month / Year / / 2013

Part 2. Household Identification and household composition	
2.1	GPS coordinates (if available): S _____ E _____
2.2	Suco:Maumeta
2.3	Aldeia (mark): <input type="checkbox"/> Maumeta Lau <input type="checkbox"/> Darmudapu <input type="checkbox"/> Caimegohou <input type="checkbox"/> Nartutu
2.4	Name of respondent:
2.5	Age of Respondent <input type="text"/> years
2.6	Gender of Respondent <input type="checkbox"/> 1-Male 2-Female
If the respondent is a woman, please ask for her marital status	
<input type="checkbox"/> Married <input type="checkbox"/> Unmarried <input type="checkbox"/> Widow <input type="checkbox"/> Divorced / Separated <input type="checkbox"/> Other	
<i>If the respondent is not the Head of Household</i>	
2.7	Name of Head of Household:
2.8	Age of Head of Household <input type="text"/> years
2.9	Gender of HoHH <input type="checkbox"/> 1-Male 2-Female
2.10	Relationship of respondent to HoH
<input type="checkbox"/> Spouse (husband or wife)	
<input type="checkbox"/> Child (daughter or son)	
<input type="checkbox"/> Parent (mother or father)	
<input type="checkbox"/> Other: _____	
<i>Household composition</i>	
2.11	Number of HH members <input type="text"/>
2.12	# of adults <input type="text"/>
2.13	# of children <input type="text"/>

Please, take a picture of the respondent.

Part 3. Crops grown by the household

3.1 What foodcrops has the household grown in the last year?

- | | | |
|-------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|
| <input type="checkbox"/> Maize (<i>Batar bo'ot</i>) | <input type="checkbox"/> Yam (<i>Kumbili</i>) | <input type="checkbox"/> String bean (<i>Foretalin</i>) |
| <input type="checkbox"/> Early maize (<i>Batar lais</i>) | <input type="checkbox"/> Arrowroot (<i>Kontas</i>) | <input type="checkbox"/> Mung bean (<i>Fore mungo</i>) |
| <input type="checkbox"/> Sorghum (<i>Batar Hun a'as</i>) | <input type="checkbox"/> Potato (<i>Fehuk ropa</i>) | <input type="checkbox"/> Bitter bean (<i>Koto muruk</i>) |
| <input type="checkbox"/> Other maize | <input type="checkbox"/> Sweet potato (<i>Fehuk midar</i>) | <input type="checkbox"/> Jicama (<i>Singkumas</i>) |
| <input type="checkbox"/> Millet (<i>Botok</i>) | <input type="checkbox"/> Elephat foot yam (<i>Maek</i>) | <input type="checkbox"/> Pumpkin (<i>Lakeru</i>) |
| <input type="checkbox"/> Upland rice (<i>Hare rai maran</i>) | <input type="checkbox"/> Cassava (<i>Ai farina</i>) | <input type="checkbox"/> Cucumber (<i>Pipihno</i>) |
| <input type="checkbox"/> Irrigated rice (<i>Hare irigasaun</i>) | <input type="checkbox"/> Peanut (<i>Fore rai</i>) | <input type="checkbox"/> Other? 1 _____ |
| <input type="checkbox"/> Taro (<i>Talas</i>) | <input type="checkbox"/> Pigeon pea (<i>Tunis</i>) | 2 _____ |
| | <input type="checkbox"/> Red bean (<i>Koto mean</i>) | 3 _____ |

3.2 Has part of the harvest of any of these crops been SOLD (i.e. not only for household consumption, incl. sharing with others)?

No Yes If Yes, indicate which crop(s)

- | | | |
|-------------------------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|
| <input type="checkbox"/> Maize (<i>Batar bo'ot</i>) | <input type="checkbox"/> Yam (<i>Kumbili</i>) | <input type="checkbox"/> String bean (<i>Foretalin</i>) |
| <input type="checkbox"/> Early maize (<i>Batar lais</i>) | <input type="checkbox"/> Arrowroot (<i>Kontas</i>) | <input type="checkbox"/> Mung bean (<i>Fore mungo</i>) |
| <input type="checkbox"/> Sorghum (<i>Batar Hun a'as</i>) | <input type="checkbox"/> Potato (<i>Fehuk ropa</i>) | <input type="checkbox"/> Bitter bean (<i>Koto muruk</i>) |
| <input type="checkbox"/> Other maize | <input type="checkbox"/> Sweet potato (<i>Fehuk midar</i>) | <input type="checkbox"/> Jicama (<i>Singkumas</i>) |
| <input type="checkbox"/> Millet (<i>Botok</i>) | <input type="checkbox"/> Elephat foot yam (<i>Maek</i>) | <input type="checkbox"/> Pumpkin (<i>Lakeru</i>) |
| <input type="checkbox"/> Upland rice (<i>Hare rai maran</i>) | <input type="checkbox"/> Cassava (<i>Ai farina</i>) | <input type="checkbox"/> Cucumber (<i>Pipihno</i>) |
| <input type="checkbox"/> Irrigated rice (<i>Hare irigasaun</i>) | <input type="checkbox"/> Peanut (<i>Fore rai</i>) | <input type="checkbox"/> Other? 1 _____ |
| <input type="checkbox"/> Taro (<i>Talas</i>) | <input type="checkbox"/> Pigeon pea (<i>Tunis</i>) | 2 _____ |
| | <input type="checkbox"/> Red bean (<i>Koto mean</i>) | 3 _____ |

Part 4. Land parcels and their use

4.1 How many plots of land does your household cultivate with food crops?

Including land next to the house

Number of plots with foodcrops

4.2 Does the household grow foodcrops immediately next to the house?

If yes, enter data for this plot first, under number 1.

Yes No

Which crops does your household cultivate on these plots?		
Parcel No.	4.3 Size	4.4 Crops Grown
	What is the estimated area of the parcel?	What crops are you growing on that parcel?
	Record as mentioned by the respondent	Enter code [C1] or write the name for other crops that are not mentioned in the list
1		
2		
3		
4		

C1: Crops Grown			
Food crops		Tree crops	
1. Maize	4. Cassava	7. Beans	10. Coffee
2. Rice	5. Sweet potato	8. Pigeon peas	11. Coconut
3. Peanuts	6. Vegetables	9. Taro	12. Fruit trees

Part 5. Seed and planting material use in the last growing season, and amount harvested		
For the plots that you mentioned, how much seed or planting material did you use in the last growing season?		
<i>If the respondent does not remember, even after probing, fill in 999.</i>		
<i>Fill only in for the crops that the respondent mentioned before.</i>		
Crop	Amount of seed / planting material used	Amount of crop harvested
Maize		
Rice		
Peanuts		
		For Cassava and Sweet Potato, only put harvest amount if all was harvested at once, otherwise, leave blank.
Cassava		
Sweet potato		

Part 6. Sweet potato cuttings and their use

6.1 In February of this year, sweet potato cuttings were distributed to several families in this aldeia. Did you receive such sweet potato cuttings?

Yes No *If no, jump to **Part 7***

Receipt of cuttings

6.2 Do you remember how many cuttings you received?

*If the respondent does not know, probe.
If no clear answer, write DK (don't know)*

6.3 Do you remember in what condition you received the cuttings from the CSPG?

Fresh *More than one box can be ticked.*
A little dry
Dry
Destroyed

6.4 Do you remember the name of the sweet potato variety you received?

No Yes → Hohrae (no number mentioned)
 Hohrae 1
 Hohrae 2
 Hohrae 3
 Other: _____

Planting of cuttings, growing of sweet potato and harvest

6.5 Has your household grown sweet potato in earlier years, before receiving these cuttings?

Yes No

6.6 Did you plant out the sweet potato cuttings received in February?

Yes a) How many? *If no clear #, write down the answer given (e.g. "all", "half", etc.)*

b) When did you plant out the received cuttings of the sweet potato?
More than one answer possible as not all may have been planted the same day.

- On the same day
- The next day
- After a few days
- Not all cuttings planted out

c) Where did you plant the sweet potato cuttings?
More than one answer possible.

- Next to the house
- On a plot close to the house
- On a plot further away

d) Did you do something specific after planting the sweet potato to help it survive or grow better? .

No Yes → *More than one answer possible*

- Give them water
- Use fertilizer
- Use compost
- Weeding the crop
- Other: _____

e) Did you encounter problems when growing the sweet potato? .

No Yes → *More than one answer possible*

- Plants died because of drought
- Plants died because soil too wet
- Disease / pest
- Eaten by animals
- Other: _____

f) Did you harvest already? .

- | | |
|----------------------------------------------------------|----------------------------------------------------------------|
| <input type="checkbox"/> Crop failed; nothing to harvest | <input type="checkbox"/> Not yet |
| <input type="checkbox"/> Yes, harvested all at once | <input type="checkbox"/> Yes, but harvested at different times |

If **YES**, Did you harvest **tubers**? .

No Yes → What did you do with it?
More than one answer possible

- Food for my family
- Shared with others
- Sold it
- Fed to animals
- Keep as food reserve
- Other: _____

If **YES**, Did you harvest **leaves**? .

No Yes → What did you do with it?
More than one answer possible

- Food for my family
- Shared with others
- Sold it
- Fed to animals
- Keep as food reserve
- Other: _____

- No Why not? *[Mark all answers that apply]*
- Too moist to plant (rains, floods)
 - Too dry to plant
 - Land not ready at that time
 - Nobody to help with planting
 - Temporarily planted in one place, as a reserve.
Will plant out in the coming season.
 - Other: _____

Sharing and replanting

6.7 Did you share cuttings of sweet potato with other people?

- No
- Yes → With how many people did you share cuttings?

Please indicate who they were *[Mark all answers that apply]*

- Family / Relatives
- Neighbour(s)
- Other: _____

6.8 Did you replant, or do you intend to replant this sweet potato?

- Yes → How big an area did you replant, or do you intend to replant?
- A smaller area than this year
 - The same area as this year
 - A bigger area than this year
- No → Please indicate why not *[Mark all answers that apply]*
- Don't like the taste
 - Doesn't grow well on my land
 - Not resistant to pest / disease
 - Too difficult with the animals
 - Too difficult to sell
 - Other: _____

Part 7. Familiarity with MAF-SoL varieties

7.1 Do you know and grow the following MAF-SoL crop varieties?

Only ask for the crops that were mentioned in Part 3.

No	Crop	Variety	Know? 1 – Yes 2 - No	Grow? 1 – Yes 2 - No	If “Yes” for know, but “No” for grow, ask why not
1	Maize	Sele			<input type="checkbox"/> I don't have the seed / planting material. <input type="checkbox"/> No money to buy it. <input type="checkbox"/> Wait for free distribution. <input type="checkbox"/> Grew it before, but do not want to grow again <input type="checkbox"/> Other: _____
		Noi Mutin			<input type="checkbox"/> I don't have the seed / planting material. <input type="checkbox"/> No money to buy it. <input type="checkbox"/> Wait for free distribution. <input type="checkbox"/> Grew it before, but do not want to grow again <input type="checkbox"/> Other: _____
2	Rice	Nakroma			<input type="checkbox"/> I don't have the seed / planting material. <input type="checkbox"/> No money to buy it. <input type="checkbox"/> Wait for free distribution. <input type="checkbox"/> Grew it before, but do not want to grow again <input type="checkbox"/> Other: _____
3	Peanut	Utamua			<input type="checkbox"/> I don't have the seed / planting material. <input type="checkbox"/> No money to buy it. <input type="checkbox"/> Wait for free distribution. <input type="checkbox"/> Grew it before, but do not want to grow again <input type="checkbox"/> Other: _____
4	Cassava	Ai-luka			<input type="checkbox"/> I don't have the seed / planting material. <input type="checkbox"/> No money to buy it. <input type="checkbox"/> Wait for free distribution. <input type="checkbox"/> Grew it before, but do not want to grow again <input type="checkbox"/> Other: _____

Part 8: Household food self-sufficiency

8.1 Sufficiency of grown foodcrops

During the last year, in which months was **food available** from the crops that were grown by this household? *For the crops, see the answer in Part 3*

Start at the first harvest date for the crop and mark with X all the subsequent months of availability Mark with "X" all the months that apply to each crop.

No.	Type of food crop	2012		2013									
		11 Nov	12 Dec	1 Jan	2 Feb	3 Mar	4 Apr	5 May	6 Jun	7 Jul	8 Aug	9 Sep	10 Oct
01	Maize												
02	Rice												
03	Peanut												
04	Cassava												
05	Sweet potato												

8.2 Insufficiency of grown foodcrops

Were there months, in the past 12 months, in which you did **not have enough food** to meet your family's needs? Yes No

If Yes, which were the months in the past 12 months during which you did not have enough food to meet your family's needs?

Mark these months with "X"

2012		2013									
11 Nov	12 Dec	1 Jan	2 Feb	3 Mar	4 Apr	5 May	6 Jun	7 Jul	8 Aug	9 Sep	10 Oct

This included any kind of food from any source, such as own production, purchase or exchange, food aid or borrowing

Do not read the list of months out loud. Place an X in the box if the respondent identifies that month as one in which the household did not have enough food to meet their needs. If the respondent does not identify that month, draw a horizontal line — through that box.

Use the data on sufficiency of grown crops above as a guidance to check for the months. Make sure the respondent has thought about the entire past 12 months.

8.3 Purchase of **RICE** in the last year?

In the last year, did the household buy rice for food? Yes No

And if yes, in what months, and how much was bought?

Write down the measurement unit mentioned 1- milk can(0.7 kg), 2-small sack (5 kg), 3-medium sack (25 kg), 4-large sack (30 kg)

2012		2013									
11 Nov	12 Dec	1 Jan	2 Feb	3 Mar	4 Apr	5 May	6 Jun	7 Jul	8 Aug	9 Sep	10 Oct

8.3 Purchase of MAIZE in the last year?

In the last year, did the household buy maize for food? Yes No

And if yes, in what months, and how much was bought?

Write down the measurement unit mentioned 1- milk can(0.7 kg), 2-small sack (5 kg), 3-medium sack (25 kg),4-large sack (30 kg)

2012		2013									
11 Nov	12 Dec	1 Jan	2 Feb	3 Mar	4 Apr	5 May	6 Jun	7 Jul	8 Aug	9 Sep	10 Oct

Part 9. Household economic condition

Housing

9.1 Estimate the **inside** area of the house.

m²

For the size of the house, and the composition of walls, floor and roof, NO NEED TO ASK the respondent. Just observe.

9.2 What is the main material the walls are made out of?

- Full wall (one material)
- Split wall (two materials) →

- Cement blocks
- Wood
- Bamboo
- Metal sheet
- Clay / sods
- Palm fronds (*Bebak*)
- Rock
- Other (specify) ..

9.3 What is the main material the roof is made out of?

- Palm leaves / grass
- Metal
- Tiles / shingles
- Asbestos
- Concrete slab
- Bamboo
- Terpal / plastic
- Other (specify) _____

9.4 What is the main material the floor is made out of?

- Cement board
- Tiles
- Wood
- Dirt / clay
- Bamboo
- Other (specify) _____

Economic condition

Does the household possess any of the following?

9.5	Yes	No	9.6	Yes	No
Chairs (wood / plastic)	<input type="checkbox"/> ____	<input type="checkbox"/>	Motorbike	<input type="checkbox"/>	<input type="checkbox"/>
Radio	<input type="checkbox"/>	<input type="checkbox"/>	Car / Truck	<input type="checkbox"/>	<input type="checkbox"/>
Television	<input type="checkbox"/>	<input type="checkbox"/>	Rice tresher	<input type="checkbox"/>	<input type="checkbox"/>
Telephone / mobile	<input type="checkbox"/>	<input type="checkbox"/>	Rice mill	<input type="checkbox"/>	<input type="checkbox"/>
Refrigerator	<input type="checkbox"/>	<input type="checkbox"/>	Boat	<input type="checkbox"/>	<input type="checkbox"/>
Bicycle	<input type="checkbox"/>	<input type="checkbox"/>	Generator	<input type="checkbox"/>	<input type="checkbox"/>

9.7 Drum(s)	Yes	No	If yes, what is it used for?
	<input type="checkbox"/> ____	<input type="checkbox"/>	<input type="checkbox"/> Store seed
			<input type="checkbox"/> Store grain
			<input type="checkbox"/> Store water
			<input type="checkbox"/> Other _____

9.8 Does someone in the household receive a Veteran's pension?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
----------------------------------------------------------------	------------------------------	-----------------------------

Thank you for your time to answer these questions.