East Timor Agribusiness FY 13 Food for Progress Project

Baseline Survey

July 2015

Prepared For:

U.S. Department of Agriculture
Foreign Agricultural Service
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Executive Summary

Background: In 2013, the National Cooperative Business Association (NCBA) received a grant[1] from the U.S. Department of Agriculture (USDA), Foreign Agricultural Service (FAS) to implement an agribusiness development project in East Timor. The grant was originally funded through the monetization of rice in East Timor with sales revenues directed to the project. The original sale, together with approximately $1.9 million of Commodity Credit Corporation (CCC) proceeds, was projected to generate $7.2 million in revenue. Subsequent revisions by the funder initially lowered the rice tonnage by a value of $2 million due to the U.S. Congressional sequester. A final revision to the project was made in March 2014 (which changed the monetized commodity to soybean meal and the destination country to the Philippines). Due to the Congressional sequester, structural revisions of the monetization and existing market conditions at the time of the sale, revenues increased by $2 million over the original budget, making available approximately $9.23 million in total sales revenue to NCBA.

USDA and NCBA signed the East Timor Agribusiness project grant agreement in October 2013 and initial planning for field activities began. At that time, a monitoring and evaluation plan was submitted and approved by USDA as required. A brief baseline survey was executed in May 2014. After discussions between USDA and NCBA in November 2014, it was decided that a more detailed baseline survey would need to be carried out in order to more thoroughly document conditions within the project geography at the time of project start-up. Field activities for the portion of the USDA project that related to post-harvest handling and marketing were put on hold until the baseline survey could be completed.

The baseline survey team arrived to East Timor in April 2015 and worked with the NCBA and Café Cooperative Timor (CCT) monitoring and evaluation staff to develop the survey language, create the database and train enumerators. Training and survey document preparation were completed by approximately 1 May 2015, and field execution of the survey ran through the following 30 days.

Survey Methodology: The survey was split into two parts. The first part consisted of 60 questions designed to answer production, income, technology transfer, and socio-economic questions at the farm level. The team completed 478 surveys, allowing for a 95.8% level of confidence with a 4.2% margin of error. These questions and their answers provided the basis on which the project's Result Indicators (RI's) would be measured at its midterm and final evaluations.

Survey Limitations:

[1] Project Agreement Number: FCC-472-2013/028-00

Control Group: A control group was not included in the survey for the following reasons:

- The use of a control group would double the size of the survey and significantly increase the cost.
- The control group by definition would never benefit from the program; this would be ethically problematic.
- If a control group were required, this would elevate the survey to research and would come under GoET regulations controlling research, ethics, publication, and data ownership, requiring much more cost and planning to implement.
- As a research activity, the GoET would be involved in the survey oversight with additional committees and vetting processes.
- CCT staff had concerns that as this is an internal program evaluation process and is not publishable research.

Recall bias: The baseline survey was conducted approximately 18 months after project funding occurred. This delay may affect recall of individuals taking the survey. This possibility was considered when designing the survey but given the need to establish baseline data at the official project start time, project managers and USDA agreed that they would move forward with the above methodology in light of potential recall bias.

Questions in the survey that were answered with "I don't know" may be the result of recall issues, but more likely are the result of the individual being surveyed not wanting to provide personal information about farm income or other data to a stranger. Compounding this problem is the fact that most farmers do not have accurate measurements of their yields or other numerically based measurables such as number of square meters farmed for specific crops in specific years.

Survey Findings: In summary, the farmer survey found that no significant activities involving key crops (Robusta coffee, cocoa, vanilla, cloves, black pepper, fruit – with improved genetics, shade trees and Moringa) had occurred in all three of the project's originally targeted geographies (government districts), including Lautem, Viqueque, and Baucau[2].

There were, however, indications that Robusta coffee, cloves, black pepper and shade trees were already being produced in significant numbers by some farmers surveyed in Aileu District. This district (Aileu) was not part of the original project proposal but is being proposed for addition to the project implementation plan by NCBA after it was realized that the monetization sale would yield $2 million in additional revenue. Adding Aileu District will allow the project to

[2] Approximately 67% of households surveyed indicated that they grew fruit trees. These trees were not provided by the project, and can be assumed to be originated from local genetic material.

expand its beneficiary base from 8,000 to 10,000 farmers. No project activities have taken place in the Aileu district to date (as of end July 2015) pending approval from USDA.

Cassava stands out as the one crop commonly produced by all farmers in all districts within the project area. Approximately 93% of all farmers interviewed reported that during or before October 2013, they produced cassava. It is important to note that the genotypes of cassava produced in East Timor are derived from local (unimproved) genetics. The USDA project will introduce improved genetic material for cassava that is higher yielding and more resistant to pests and pathogens. Improved cassava varieties were not produced in any of the project areas prior to October 2013. CCT will also provide a market for the new genotype, purchasing dried cassava chips from farmers and processing this into cassava flour, which will be sold to either the local or regional food and associated industries.

The second part of the survey examined CCT technology transfer, export and market development activities for selected commodities prior to October 2013. The survey findings show that CCT had not engaged in any project activities involving key commodities prior to the start date. Essentially, all Result Indicators measuring CCT performance under the USDA grant agreement were at a level of zero.

Recommendations: The USDA project was originally proposed to be implemented over a four year period. At the time this report was being prepared (July 2015), the project's activities related to post harvest procurement, processing and marketing had been postponed approximately 6 months due to the delay in completing the baseline survey[3].

As a result of the delays in project implementation and the mix of crops being promoted by the project, it is recommended that USDA and NCBA agree to adjust the timeline of the project so that it runs for at least an additional 18 months beyond its original end date. The justification for the 18 month no-cost extension includes:

- The late addition of Aileu District to the project's implementation plan did not provide for adequate planning lead time.
- Most of the crops being introduced under the USDA activity are perennials and require three to four years to come into production. Accurate metrics on initial crop production will not be available until approximately four years after planting (or five years after project start-up).
- Evaluating results of post-harvest processing, storage and market development activities by the project cannot be completed until the local supply chain is established. A

[3] Seedling production by farmers and extension/training activities were being executed as per the original project timeline and had not experienced the same delays that were realized by the post-harvest and market activities.

minimum supply chain will begin to be established approximately five years after project start-up (four years after planting the first perennial crop). At that point, USDA will be able to measure the actual volume and value of products moving into the market as a result of their investment.

Selecting perennial crops such as Robusta coffee, cocoa, black pepper, vanilla, cloves and shade trees for the East Timor Agribusiness project lengthens the time required for USDA to accurately measure the outcome of their investment. Nevertheless, these crops are the best option to ensure sustainable development in East Timor and will deliver a higher return on investment with a lower risk over time, compared to many other crop choices. The proposed mix of perennial crops, project geographies and markets provide a comparative advantage both economically and agronomically.

In an effort to improve the quality of data available for the midterm and final project evaluation, USDA should consider requesting CCT to create a series of monitoring plots for measurement of changes in yield for key crops. One of the key Result Indicators used to measure project success is yield (measured as kg/ha). Farmers cannot provide this information accurately, as they do not know the exact areas of their farms, nor do they track the kilos harvested per unit area. To assist the process of establishing changes in yield, it is recommended that the project randomly select a number of farmers in each sub-district to be monitored. This will require a monitoring plot sample size large enough to provide statistically significant findings. The sample size required will be approximately 26 farms spread across the 14 sub-districts and distributed proportionally to the number of project clients in each sub-district.

Monitoring changes in yield on tree crops will not provide significant yield data until year 3 and beyond. This will allow the project to make side-by-side comparisons on differences in yield, assuming USDA grants an extension to the CCT project so that it can run a full five years. Annual crops such as cassava will provide more immediate results and allow evaluators to monitor the difference in yield for project farmers versus non-project farmers beginning in the first year of the monitoring plot program.

The monitoring plot program was not included in the original project budget. Resources for this activity will need to be added to the budget, or taken from other (existing) line items. CCT has a significant number of extension agents in the field under the USDA project. These extension agents can be used for implementing the plot monitoring activity.

This report makes no additional recommendations to change the Performance Indicators or Result Indicators in Attachment E. It is noted that many of the Performance Indicators measure process such as number of persons trained. Achievement of the Process/Performance

Indicators does not necessarily result in successful project outcomes (as measured by the Result Indicators).

Key Result Indicator Findings from the Baseline Survey: Pages 7-15, below, provide a summary review of the farmer/client survey findings. The full (60 question) farmer survey results are included in Annex I of this document. The following summary includes only the survey's 30 questions that relate directly to the project's Result Indicators. The summary questions below do not include the 30 socio-economic questions that were part of the full survey.

Timor Leste Agribusiness Development Project

Key Result Indicator Questions Included in the Baseline Survey

July 2015

Question #	RI # and Answer	Question	All Districts
9	105	**In October 2013, were you a member of any of the following groups, associations an organization?**	**% of Frequency**
9	a	No	99.4%
9	b	Water Users Associations	0.0%
9	c	Farmer/ Producer Organization	0.0%
9	d	Trade and Business Association	0.0%
9	e	Community Based Organization (CBO)	0.0%
9	f	Private Enterprise (firms)	0.0%
9	g	Other	0.0%
9	h	Don't Know	0.6%
10	401	**Before October 2013, had your farmer group or farmer association received training in new agricultura technology or management practices from the project?**	**% of Frequency**
10	a	Yes	0.0%
10	b	No	92.1%
10	c	Don't Know	0.4%
10	d	NA	7.5%
11	105	**In October 2013, if you were a member of any organization noted in question #9 did your group apply new technology or management practices as a result of project assistance?**	**% of Frequency**
11	c	Yes	0.0%
11	d	No	90.6%
11	c	Don't Know	1.3%
11	d	NA	8.2%
12	401	**In October 2013, if you were a farmer group member did you apply new technology or management practices as a result of project assistance?**	**% of Frequency**
12	a	Yes	0.0%
12	b	No	91.2%
12	c	Don't Know	0.0%
12	d	NA	8.8%
13	1001	**In October 2013, if you were a member of a trade association or processing organization (an agricultural processor) did you apply new technology or management practices as a result of project assistance?**	**% of Frequency**
13	a	Yes	0.0%
13	b	No	91.2%
13	c	Don't Know	0.4%
13	d	NA	8.4%

14	103	**Before October 2013, had you received training in new agricultural technology or management practices from the project?**	**% of Frequency**
14	a	Yes	0.0%
14	b	No	99.6%
14	c	Don't Know	0.4%

15	103	**If trained by the project (before October 2013), had you applied the new technology or management practices you learned?**	**% of Frequency**
15	a	Yes	0.0%
15	b	No	99.4%
15	c	Don't Know	0.6%

19	101	**In October 2013, how many of the following plants, not provided by the project, did you grow**	**Mean (μ) Frequency per Farmer**
			μ # of Plants
19	a	Robusta Coffee plants	12.66
19	b	Cocoa plants	0.21
19	c	Moringa plants	-
19	d	Cassava	667.13
19	e	Black Pepper - plants	7.18
19	f	Clove plants	7.98
19	g	Vanilla plants	0.43
19	h	Fruit Trees	36.72
19	i	Shade Trees	4.06
19	j	None	0.02
19	k	Don't Know	0.02

20	302	**Before October 2013 had you received any seedlings from the project?**	**% of Frequency**
20	a	Yes	0.0%
20	b	No	99.4%
20	c	Don't Know	0.6%

21	302	**Before October 2013, which improved plant materials (seedlings) did you receive, as a result of the project?**	**% of Frequency**
21	a	Robusta Coffee	0.0%
21	b	Cocoa	0.0%
21	c	Moringa	0.0%
21	d	Cassava	0.0%
21	e	Pepper	0.0%
21	f	Clove	0.0%
21	g	Vanilla	0.0%
21	h	Fruit Trees	0.0%
21	i	Shade Trees	0.2%
21	j	None	96.4%
21	k	I don't know	3.3%

22	101	**In October 2013, how many of the following plants provided by the project did you grow?**	**% of Frequency**
22	a	Robusta Coffee plants	0.0%
22	b	Cocoa plants	0.0%
22	c	Moringa plants	0.0%
22	d	Cassava Ailuka-1	0.0%
22	e	Pepper plants	0.0%
22	f	Clove plants	0.0%
22	g	Vanilla plants	0.0%
22	h	Fruit Trees	0.0%
22	i	Shade Trees	0.0%
22	j	None	97.1%
22	k	Don't Know	2.9%

23	201	**Before October 2013, what was your annual average income from Robusta coffee, cherry ?**	**% of Frequency**
23	a	Did not grow this crop	94.1%
23	b	0 USD	1.5%
23	c	1-100	1.0%
23	d	101-200	0.0%
23	e	201-300	0.0%
23	f	301-400	0.0%
23	g	401-500	0.0%
23	h	501-600	0.0%
23	i	601-700	0.0%
23	j	701-800	0.0%
23	k	801-900	0.0%
23	l	>900 USD	0.0%
23	m	Don't Know	3.3%

24	201	**Before October 2013, what was your annual average income from Cocoa (dry)?**	**% of Frequency**
24	a	Did not grow this crop	97.5%
24	b	0 USD	0.4%
24	c	1-100	0.0%
24	d	101-200	0.0%
24	e	201-300	0.0%
24	f	301-400	0.0%
24	g	401-500	0.0%
24	h	501-600	0.0%
24	i	601-700	0.0%
24	j	701-800	0.0%
24	k	801-900	0.0%
24	l	>900 USD	0.0%
24	m	Don't Know	2.1%

25	201	**Before October 2013, what was your annaul average income from Black Pepper (dry)?**	**% of Frequency**
25	a	Did not grow this crop	96.0%
25	b	0 USD	0.8%
25	c	1-100	0.6%
25	d	101-200	0.0%
25	e	201-300	0.0%
25	f	301-400	0.0%
25	g	401-500	0.2%
25	h	501-600	0.2%
25	i	601-700	0.0%
25	j	701-800	0.2%
25	k	801-900	0.0%
25	l	901-1000	0.0%
25	m	1001-1100	0.0%
25	n	1101-1200	0.0%
25	o	1201-1300	0.0%
25	p	>1300 USD	0.0%
25	q	Don't Know	1.9%

26	201	**Before October 2013, what was your annual average income from Cloves (dry)?**	**% of Frequency**
26	a	Did not grow this crop	93.5%
26	b	0 USD	1.9%
26	c	1-100	0.8%
26	d	101-200	0.8%
26	e	201-300	0.6%
26	f	301-400	0.0%
26	g	401-500	0.2%
26	h	501-600	0.2%
26	i	601-700	0.0%
26	j	701-800	0.0%
26	k	801-900	0.0%
26	l	901-1000	0.0%
26	m	1001-1100	0.0%
26	n	1101-1200	0.0%
26	o	1201-1300	0.0%
26	p	1301-1400	0.0%
26	q	1401-1500	0.0%
26	r	>1500 USD	0.0%
26	s	Don't Know	1.9%

27	201	Before October 2013, what was your annual average income from Moringa (fresh leaf)?	% of Frequency
27	a	None	98.1%
27	b	0 USD	0.0%
27	c	1-100	0.0%
27	d	101-200	0.0%
27	e	201-300	0.0%
27	f	301-400	0.0%
27	g	401-500	0.0%
27	h	501-600	0.0%
27	i	601-700	0.0%
27	j	701-800	0.0%
27	k	801-900	0.0%
27	l	>900 USD	0.0%
27	m	Don't Know	1.9%

28	201	Before October 2013, what was the annual average income for Vanilla (fresh pods)?	% of Frequency
28	a	Did not grow this crop	97.5%
28	b	0 USD	0.2%
28	c	1-100	0.2%
28	d	101-200	0.0%
28	e	201-300	0.0%
28	f	301-400	0.0%
28	g	401-500	0.2%
28	h	501-600	0.0%
28	i	601-700	0.0%
28	j	701-800	0.0%
28	k	801-900	0.0%
28	l	>900 USD	0.0%
28	m	Don't Know	1.9%

29	202	Before October 2013, what was your average annual income from cassava ? (Number of Farmers in this range)	% of Frequency
29	a	Did not grow this crop	6.7%
29	b	0 USD	34.3%
29	c	1-100	50.0%
29	d	101-200	2.3%
29	e	201-300	0.4%
29	f	301-400	0.8%
29	g	401-500	0.2%
29	h	501-600	0.2%
29	i	601-700	0.0%
29	j	701-800	0.0%
29	k	801-900	0.0%
29	l	901-1000	0.0%
29	m	1001-1100	0.0%
29	n	1101-1200	0.0%
29	o	1201-1300	0.0%
29	p	1301-1400	0.0%
29	q	1401-1500	0.0%
29	r	>1500, USD	0.0%
29	s	Don't Know	5.0%

30	201	Before October 2013, what was your average annual yield (kg/ha) for robusta coffee, cherry?	% of Frequency
30	a	Does not grow this crop	85.4%
30	b	0 kg/ha	1.0%
30	c	1-100	1.5%
30	d	101-200	0.0%
30	e	201-300	0.0%
30	f	301-400	0.0%
30	g	401-500	0.0%
30	h	501-600	0.2%
30	i	601-700	0.0%
30	j	701-800	0.0%
30	k	801-900	0.0%
30	l	900-1000	0.0%
30	m	1001 1200	0.0%
30	n	1201-1300	0.0%
30	o	1301-1400	0.0%
30	p	1401-1500	0.0%
30	q	>1500	0.0%
30	r	Don't Know	11.9%

31	201	Before October 2013, what was your average annual yield (kg/ha) for Cocoa (dry)?	% of Frequency
31	a	Does not grow this crop	86.6%
31	b	0 kg/ha	0.8%
31	c	1-200	0.0%
31	d	201-400	0.0%
31	e	401-600	0.0%
31	f	601-800	0.0%
31	g	801-1000	0.0%
31	h	1001-1200	0.0%
31	i	1201-1400	0.0%
31	j	1401-1600	0.0%
31	k	1601-1800	0.0%
31	l	1801-2000	0.0%
31	m	>2000 kg/ha	0.0%
31	n	Don't Know	12.6%

32	201	Before October 2013, what was your average annual yield (kg/ha) for Black Pepper (dry)?	% of Frequency
32	a	Did not grow this crop	84.9%
32	b	0	1.3%
32	c	1-1000 kg/ha	1.5%
32	d	1001-2000	0.0%
32	e	2001-3000	0.0%
32	f	3001-4000	0.0%
32	g	4001-5000	0.0%
32	h	5001-6000	0.0%
32	i	6001-7000	0.0%
32	j	7001-8000	0.0%
32	k	8001-9000	0.0%
32	l	9001-10,000	0.0%
32	m	>10,000 kg/ha	0.0%
32	n	Don't Know	12.3%

33	201	**Before October 2013, what was your average annual yield (kg/ha) for Cloves (dry)?**	**% of Frequency**
33	a	Did not grow this crop in 2013	82.4%
33	b	0	2.3%
33	c	1-1000 kg/ ha	2.9%
33	d	1001-2000	0.2%
33	e	2001-3000	0.0%
33	f	3001-4000	0.0%
33	g	4001-5000	0.0%
33	h	5001-6000	0.0%
33	i	6001-7000	0.0%
33	j	7001-8000	0.0%
33	k	8001-9000	0.0%
33	l	9001-10,000	0.0%
33	m	>10,000 kg/ha	0.0%
33	n	Don't Know	12.1%

34	201	**Before October 2013, what was your average annual yield (kg/ha) for Vanilla (fresh pods)?**	**% of Frequency**
34	a	Did not grow this crop in 2013	86.6%
34	b	0	0.8%
34	c	1-1000 kg/ha	0.4%
34	d	1001-2000	0.0%
34	e	2001-3000	0.0%
34	f	3001-4000	0.0%
34	g	4001-5000	0.0%
34	h	5001-6000	0.0%
34	i	6001-7000	0.0%
34	j	7001-8000	0.0%
34	k	8001-9000	0.0%
34	l	9001-10,000	0.0%
34	m	>10,000 kg/ha	0.0%
34	n	Don't Know	12.1%

35	202	**Before October 2013, what was your average annual yield (kg/ha) for Cassava (dry)?**	**% of Frequency**
35	a	Did not grow this crop in 2013	6.3%
35	b	0	23.8%
35	c	1-1000 kg/ha	41.4%
35	d	1001-2000	0.6%
35	e	2001-3000	0.2%
35	f	3001-4000	0.0%
35	g	4001-5000	0.0%
35	h	5001-6000	0.0%
35	i	6001-7000	0.0%
35	j	7001-8000	0.0%
35	k	8001-9000	0.0%
35	l	9001-10,000	0.0%
35	m	>10,000 kg/ha	0.0%
35	n	Don't Know	27.6%

36	201	**Before October 2013, what was your average annual yield (kg/ha) for Moringa (fresh leaf)?**	**% of Frequency**
36	a	Does not grow this crop	86.2%
36	b	0 kg/ha	0.6%
36	c	1-100	0.0%
36	d	101-200	0.0%
36	e	201-300	0.0%
36	f	301-400	0.0%
36	g	401-500	0.0%
36	h	501-600	0.0%
36	i	601-700	0.0%
36	j	701-800	0.0%
36	k	801-900	0.0%
36	l	900-1000	0.0%
36	m	1001 1200	0.0%
36	n	1201-1300	0.0%
36	o	1301-1400	0.0%
36	p	1401-1500	0.0%
36	r	>1500 kg/ ha	0.0%
36	s	Don't Know	13.2%

37	301	**In October 2013 how many hectares did you activity farm?**	**% of Frequency**
37	a	0 ha	1.3%
37	b	>0 - 1 ha	75.7%
37	c	>1 - 2 ha	18.2%
37	d	>2 - 3 ha	2.5%
37	e	>3 - 4 ha	0.6%
37	f	>4 - 5 ha	0.6%
37	g	>5 ha	0.2%
37	h	Don't Know	0.8%

38	301	**Before October 2013, on how many hectares of your farm did you use new agricultural technology or management practices which came from the project?**	**% of Frequency**
38	a	0	19.5%
38	b	0-0.5	0.0%
38	c	0.6-1.0	0.0%
38	d	1.1-1.5	0.0%
38	e	1.6-2.0	0.0%
38	f	2.1-2.50	0.0%
38	g	2.6-3.0 ha	0.0%
38	h	Don't Know	80.5%

39	701	**Before October 2013, had you adopted any new crops or plant varieties as a result of the project?**	**% of Frequency**
39	a	Yes	0.0%
39	b	No	98.1%
39	c	Don't Know	1.9%

40	106	**Before October 2013, did you sign a business operating agreement with the ET government (enter into a PPP), as a result of project assistance?**	**% of Frequency**
40	a	Yes	0.0%
40	b	No	99.0%
40	c	Don't Know	1.0%

41	107	**Before October 2013, had you installed cold or dry storage capacity as a result of project assistance?**	**% of Frequency**
41	a	No	99.2%
41	b	Dry Storage	0.0%
41	c	Cold Storage	0.0%
41	d	Don't Know	0.8%

42	107	**In October 2013, how many cubic meters of storage had you installed with support from the project?**	**% of Frequency**
42	a	None	99.0%
42	b	Cold Storage (cubic meters)	0.0%
42	c	Dry Storage (cubic meters)	0.0%
42	d	Don't Know "	1.0%

43	203	**Before October 2013, had you personally benefited from the project?**	**% of Frequency**
43	a	Yes	0.0%
43	b	No	98.7%
43	c	Don't Know	1.3%

44	204	**Before October 2013, how many members of your household benefited from the project? (indirect beneficiaries)**	**% of Frequency**
44	a	None	91.6%
44	b	1	0.0%
44	c	2	0.0%
44	d	3	0.0%
44	e	4	0.0%
44	f	5	0.0%
44	g	6	0.0%
44	h	7	0.0%
44	i	8	0.0%
44	j	9	0.0%
44	k	10+	0.0%
44	l	Don't Know	8.4%

59	701	**In October 2013, did you operate a seedling nursery for the project?**	**% of Frequency**
59	a	Yes	0.0%
59	b	No	91.8%
59	c	Don't Know	0.6%
59	d	NA	7.5%

60	701	**Before October 2013, did your nursey business sell <u>new</u> plant/crop varieties as a result of the project?**	**% of Frequency**
60	a	None - no new varieties sold before October-2013	49.0%
60	b	Robusta Coffee	0.0%
60	c	Cocoa	0.0%
60	d	Moringa	0.0%
60	e	Cassava, Ailuka-1	0.0%
60	f	Pepper	0.0%
60	g	Clove	0.0%
60	h	Vanilla	0.0%
60	i	Fruit Trees	0.0%
60	j	Shade Trees	0.0%
60	k	Don't' Know	16.3%
60	l	NA	34.7%

East Timor Agribusiness Project
Baseline Survey

1.0 Objectives of the Baseline Survey

The following East Timor Agribusiness Project Baseline Survey examines and documents the agri-production and socio-economic environment that existed within the project area (Lautem, Baucau, Viqueque and Aileu districts) at the time the USDA first made funding available to NCBA and the project implementer- CCT, in October 2013.

The East Timor Agribusiness Project has two key objectives, including:

- Increased agricultural productivity of tree and horticultural crops through the use of improved agricultural techniques and technologies, increased knowledge of farmers, more availability of appropriate inputs and further use of financial services.
- Expanded trade of agricultural products by increasing the value of post-harvest products and access to markets through improved quality, increased efficiency, farmer procurement systems set-up, enabling processing methods and processing facility infrastructure development and improved marketing and market linkages.

To measure outcomes relative to project objectives, the funder (USDA) and the implementer (NCBA) agreed on 30 Result Indicators (RIs) that would be tracked over the course of the project. The baseline survey establishes the foundation or starting point for measuring the RIs.

To establish the baseline information, two surveys were developed. One survey, consisting of 60 questions, was targeted towards farmers registered with the Project and Cooperative Café Timor (CCT), the implementing partner at the field level. This survey focused on Project Objective 1 – increased productivity (as noted above). The productivity survey also included questions for farmer groups involved in seedling production.

A second survey, consisting of 30 questions, was targeted toward CCT. This survey focused on Project Objective 2 – expanding trade of agricultural products. CCT will be providing financial services, access to technology and know-how, as well as marketing services to project farmers. The CCT survey will establish the baseline/starting point from which project performance can be gauged over time. This survey has a sample size (n) of one as the only participant in the survey will be CCT.

2.0 Survey Protocol and Methodology

The survey methodology was based on the best available data in a situation with very little existing base data. The program operational districts are by design the most neglected in East Timor so there is very little existing good data.

CCT started with the East Timor National 2010 census data as the best, most appropriate base population numbers existing for the USDA program's 14 sub-districts. The limitations with the census data is that this survey was taken in 2009 but it is the most recent and most accurate population measure available. There is a 2015 national census occurring that should be available for future evaluations. The survey then took a subset of that census general population data, by identifying the named "rural households" within the 14 sub-districts. This excluded the "urban households" unlikely to be farmers and made the assumption that "rural households" were very likely to be farmer households.

The next step was to use the total rural households in all 14 sub-districts to calculate the total number of questionnaires needed to achieve the required 95% confidence with 5% error. The limitation with this approach is that the survey confidence levels can only be applied to the overall survey population data (all 14 sub-districts combined) but cannot be applied to individual sub-district data. This is a very practical response as if CCT were required to have 95% confidence 5% error for each sub-district then we would need about 400 questionnaires for each district, i.e., a total of 5,600 questionnaires (this was not practical within the available survey time and budget).

To reduce bias between sub-districts, we then stratified the questionnaire numbers required in each sub-district to match the percentage of total rural households found in each sub-district.

The next issue was to identify the best available farmer lists within the sub-districts so that these farmers could be randomly identified to be included in the survey. After full investigation, there was no available "all of population" list of farmers with names and contacts at the national or local level. The electoral roles did not identify occupation, so were not usable as farmer lists. At the time of the survey, in the target sub-districts, the best available lists of farmers were already available via the USDA program/ registered list of farmers. There are bias issues, but the number of total registered farmer at 4,457 is a healthy 14,5% of the expected total farmer households in the 14 sub-districts of the survey. A significant advantage with using registered farmers in the survey is that they could respond to questions about the program; that they were more easily found within the limited time frame and budget of the survey and were more readily agreeable to being involved in the survey. This ensured a very high completed questionnaire return rate. The survey farmers can also be easily followed in future evaluations.

The randomization of farmers within each sub-district was done accurately and was easily replicated. The survey questionnaire completion and returns were universally very high and repeatable. Data entry accuracy was very high with multiple checks.

Cooperative Café Timor (CCT) has registered approximately 4,475 farmers (households) as project participants in fourteen sub-districts that are included in the districts of Viqueque, Lautem, Baucau and Aileu. The 4,475 CCT member households represent approximately 14.5% of the 30,820 householdsthat were identified in theGovernment of East Timor census of 2010 (see Figure 1).

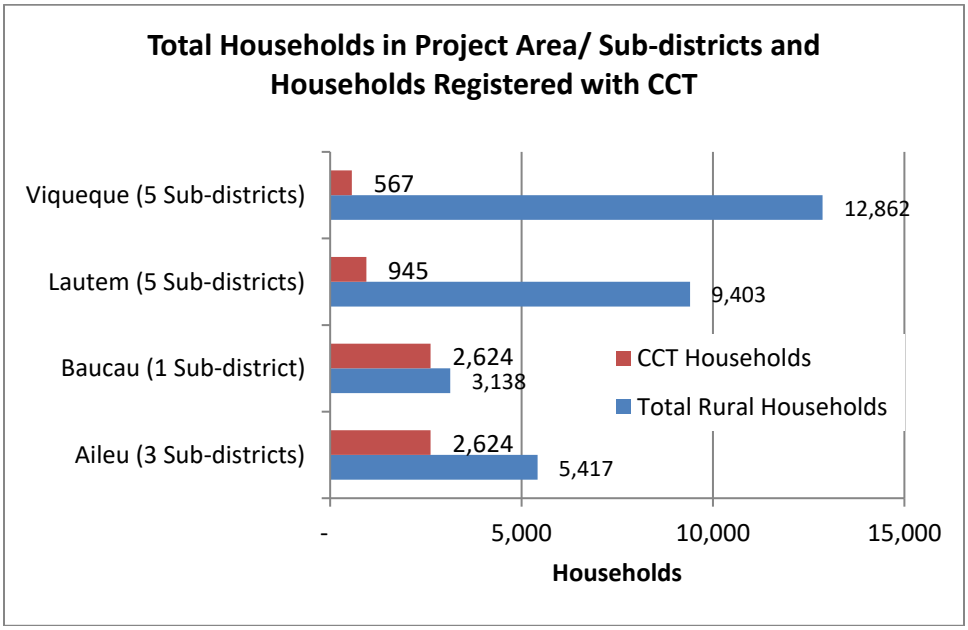


Figure 1

The baseline survey methodology randomly selected its interview candidates from the pool of 4,475 CCT member households within the 14 sub-districts. The baseline survey was originally designed to have a minimum confidence level of 95%. To achieve this level of accuracy, the survey would require a minimum sample size (n) of 378 completed surveys with farmer/project clients.

The actual number of surveys completed over the four districts totaled 478; this provided 99 more surveys than required to achieve the target confidence level of 95% (see Figure 2). By increasing the number of surveys completed, the survey's margin of error decreased from 5% to 4.2%, and the confidence level increased to 95.8%[4].

[4] Confidence level was calculated using the survey tool at the following website: http://www.custominsight.com/articles/random-sample-calculator.asp

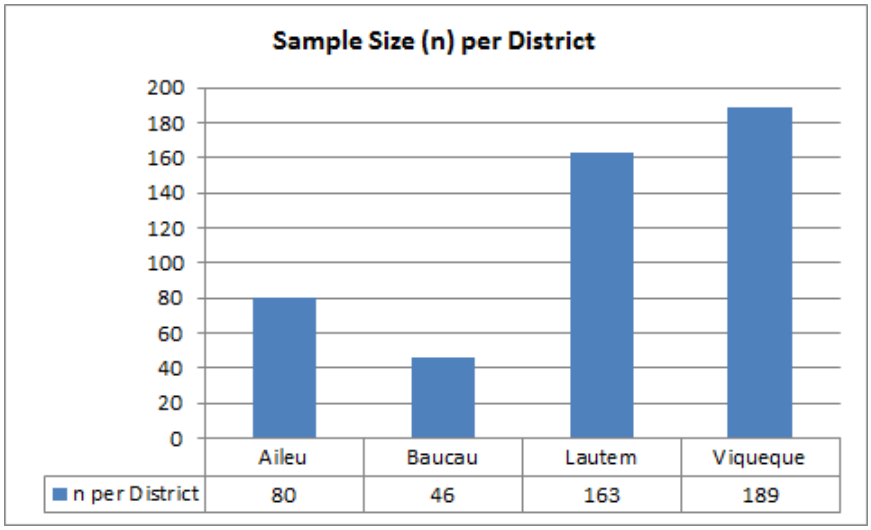


Figure 2

Survey Team Productivity

The survey team required 28 total work days in the field to complete the survey of 478 farmers selected at random from the CCT registry. This included five days to train the enumerators and field test the survey form. The team required five total days of in-country travel and 14 days to collect the survey data and enter the findings (raw data) into the database.

An additional 4 days were required to finalize the database. The above does not include the time required to develop the survey, analyze the data, and prepare the final report or admin the project.

Figure 3 illustrates the number of surveys that were conducted in each sub-district. The survey numbers (n) for each sub-district corresponded approximately to the relative populations within the sub-districts. Sub-districts with larger populations had a larger sample size.

Interview candidates for the survey were selected at random from the list of project participants (clients) provided by CCT in 14 sub-districts (see Figure 3). Farmers on the client list were assigned a number, and these numbers were randomized using the random number generator at the Research Randomizer website (https://www.randomizer.org/).

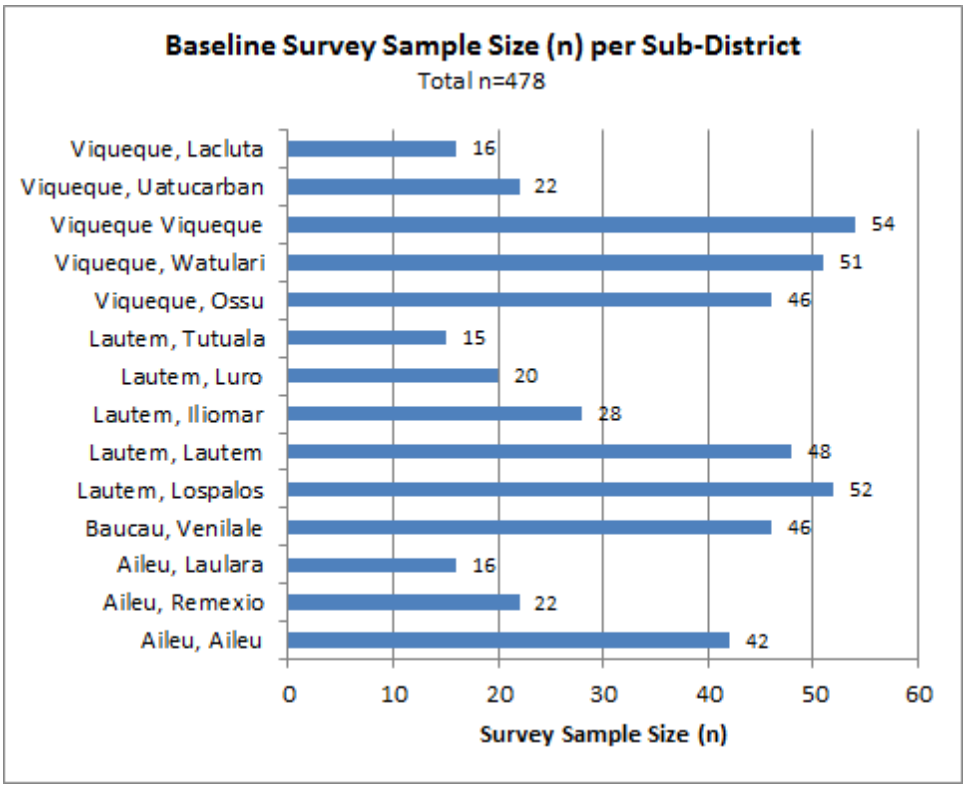


Figure 3

As can be noted in Figure 4, sub-districts within the Viqueque and Lautem districts provided 73% of all surveys, as these sub-districts, in aggregate, had larger populations than the sub-districts located in Baucau and Aileu, which made up 27% of the survey's targeted sample size (n).

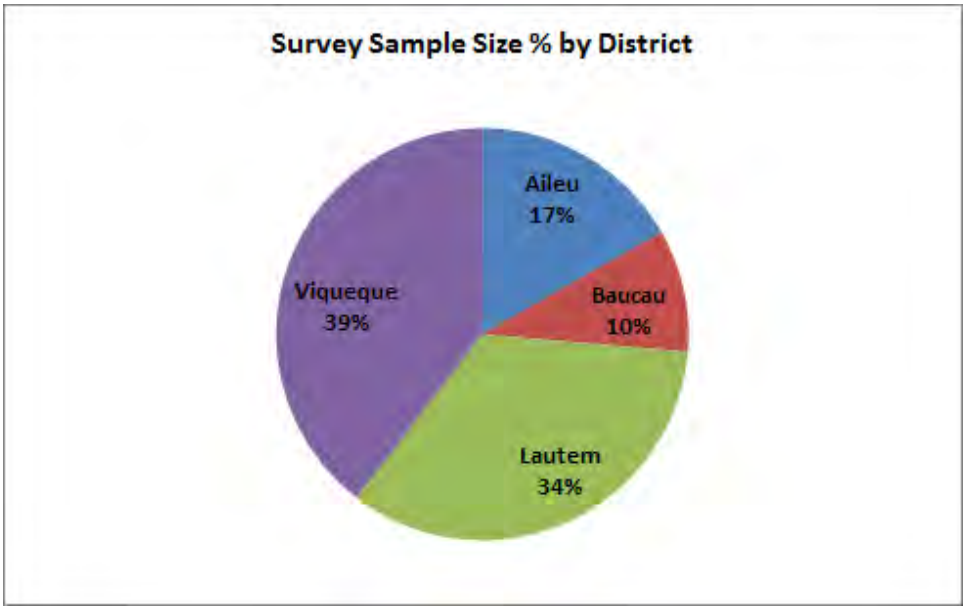


Figure 4

Most farmers/clients registered with CCT in the four target districts are male. This fact is reflected in the gender balance of the survey. As can be noted in Figure 5, the randomly selected farmers who took part in the survey tended to be predominantly male.

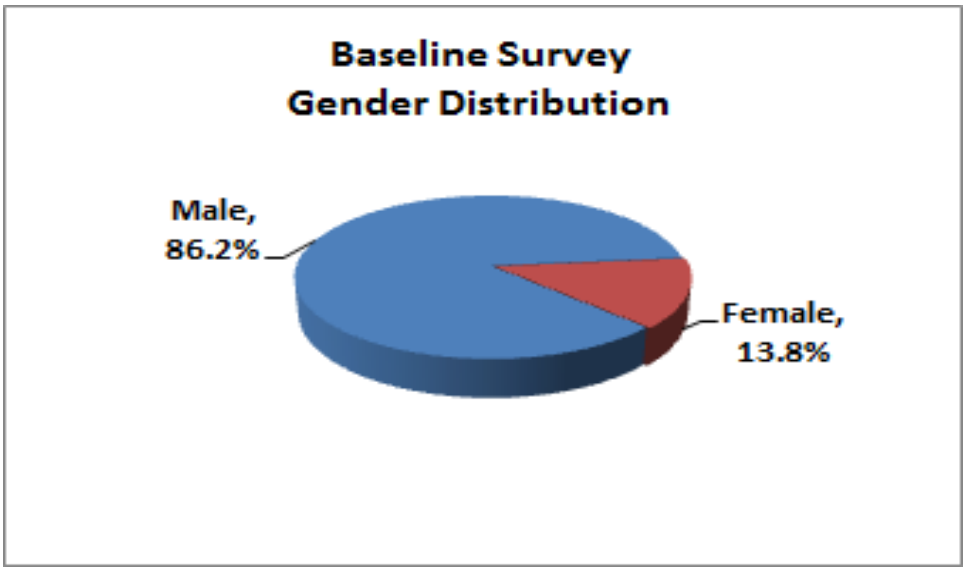


Figure 5

Overall, 13.8% of individuals surveyed were female[5]. This varied within the districts, with a range of 7%. The highest number of female representation occurred within Lautem with 17% of survey participants being female. The lowest representation of women in the survey occurred in Aileu, with 10% female participation (see Figure 6).

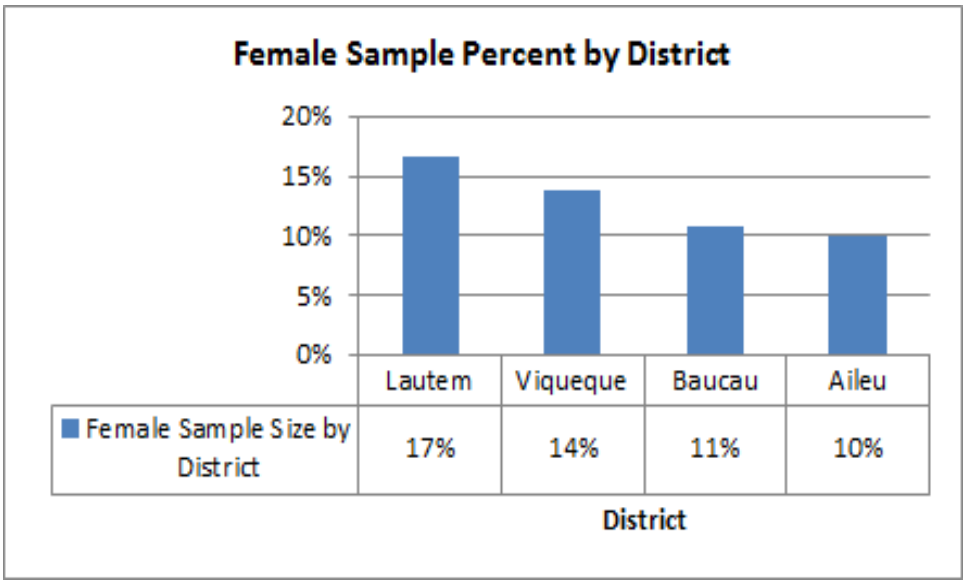


Figure 6

[5] Unweighted mean

Although the farmers who were interviewed were selected at random, the age class of the interviewees tended to be skewed toward the older age groups of 40 – 49, 50 – 59 and 60+ (see Figure 7). This tendency, for the selection of older farmers, was probably due to the fact that CCT client farmers tend to be older (head of household). Additionally, it may reflect demographic changes in rural communities as a result of younger people moving to the city (Dili).

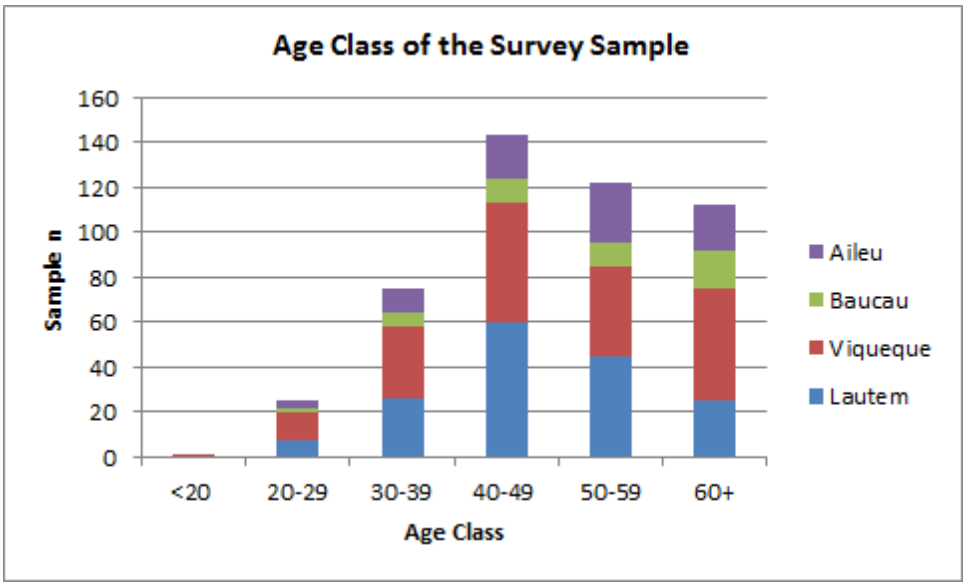


Figure 7

The trend of older individuals being randomly selected for interviews is evident in all of the districts where the survey took place (see Figure 7).

Training of Enumerators

After the baseline survey text was completed in late April 2015 by the project consultant and CCT staff, a concerted effort was made to train the enumerators and other CCT staff in survey field protocol and data entry techniques. To ensure effective training, the entire team including enumerators, extension agents and project support staff and consultants spent five days at the Railaco (Ermera District) training center operated by CCT. At that time, team members honed their interview skills, data entry skills, and were briefed on security issues and other factors that would affect field operations. The staff also worked with the entire survey team to verbally translate and describe questions in Bahasa Indonesian and Tetum languages.

The pie chart in Figure 8 demonstrates the fact that target populations in the project area tend to be skewed to the 40 and above age groups. Fully 78.7% of the population surveyed fit into the 40 and above age class.

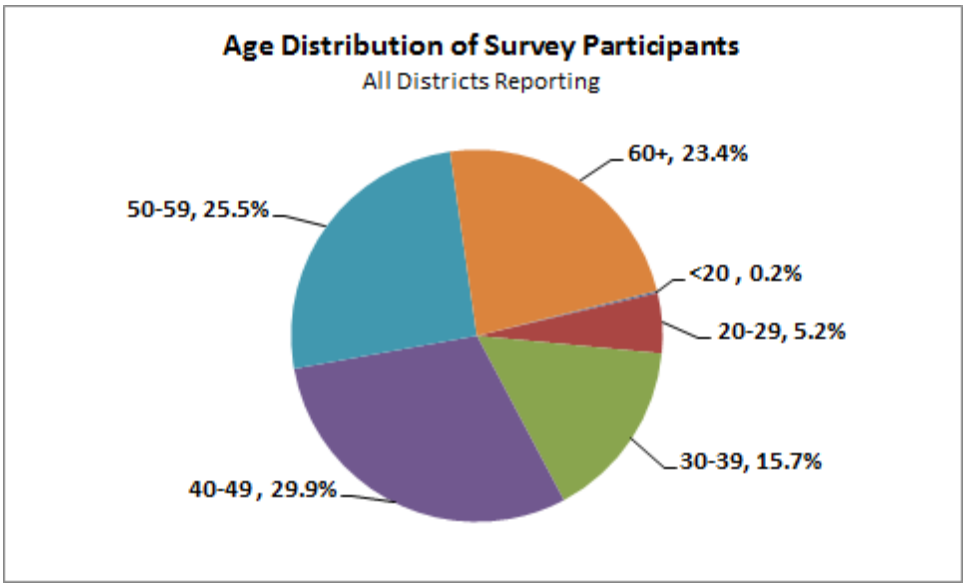


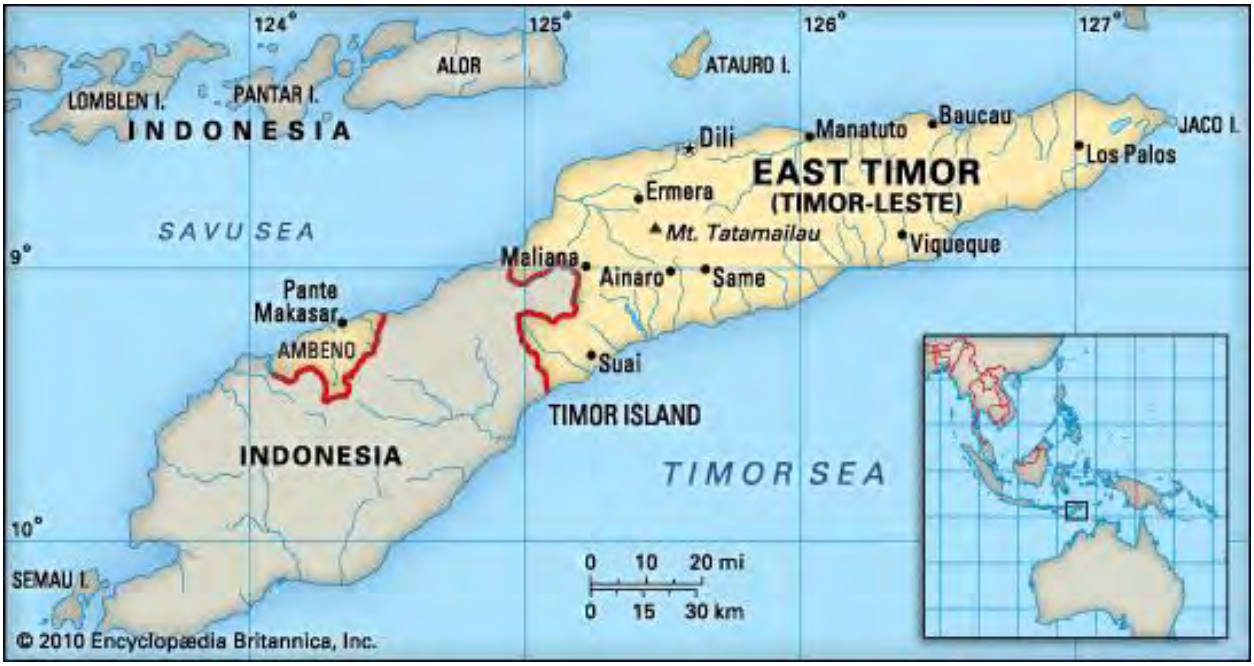
Figure 8

The creation of the survey and database was a collaborative effort between the project consultant, the CCT Information Technology Specialist, and the CCT Monitoring and Evaluation Manager. The consultant worked in concert with CCT staff to ensure that questions developed in the survey, as well as the survey structure, directly addressed the project Result Indicators (RIs), as well as providing background information on the socio-economics of the target population within the project area.

3.0 The Project Environment

The following section provides background on the geographic, language, agricultural and socio-economic setting in which the USDA project will be implemented.

3.1 Project Geography and Administrative Districts



East Timor sits at the east end of the Indonesian archipelago on the east side of the Wallace Line. The Government of East Timor (GoET) 2010 census showed that country has a total population of approximately 1.17 million. In general, the south side of the island tends to receive higher rainfall amounts than the north. This affects the types of crops that can be planted using dryland farming techniques. For the most part, irrigation is not commonly used in East Timor, with the exception of the irrigated rice crop.

The USDA project will take place in the following four districts, described below.

Baucau District:

Baucau is located on the eastern part of the country, around 122 km of Dili (2.5 hours by road). It is the second largest city in the country with a mostly urban population of 111,694 inhabitants (Census 2010) and an area of 1.494 km². The capital of the district is also named Baucau. Baucau District comprises the sub-districts of Baguia, Baucau, Fatu Maca, Laga, Quelicai, Vemasse and Venilale. Due limited potential, the USDA project will only work in the Venilale sub-district, located on the border with Lautem in the southern part of the Baucau District. The main economic activity of Baucau is agriculture (corn, lowland irrigated rice,

peanut, cassava, coconut and horticultural crops). In October 2013, CCT had approximately 339 farmers registered with the cooperative in Venilale sub-district for agroforestry activities.

Lautem District:

Lautem District lies at the eastern end of Timor Island. It has a population of 59.787 inhabitants (Census 2010) and an area of 1.702 km². The capital of Lautem is Lospalos, 248 km east of Dili, the national capital. Lautem comprises the sub-districts of Iliomar, Lautem Moro, Lospalos, Luro and Tutuala. The USDA project will work in five of the six sub-districts (excluding Moro). In the highlands around Lospalos, cattle and water buffalo husbandry makes up an important part of the agricultural economy. Slash and burn maize and traditional variety cassava in the highlands, followed by irrigated rice, are the primary crops grown in the district. In the lower-lying areas on the south coast, coconut production is common. In October 2013, CCT had approximately 945 agroforestry farmers registered with the cooperative in the five sub-districts where the USDA project will be implemented.

Viqueque District:

Viqueque is located on the south coast of the island. It borders the district of Lautem to the east, Baucau to the north, Manatuto to the west and the Timor Sea to the south. It has a population of 70,036 inhabitants (Census 2010) and an area of 1,781 km². The capital of the district is also named Viqueque. The Viqueque district comprises the sub-districts of Lacluta, Ossu, Watulari, Uatucarban and Viqueque. The USDA project will be implemented in all five sub-districts of Viqueque. Primary agricultural crops grown in the district include maize, rice, cassava and coconut.

- **Aileu District (Proposed for Project Expansion):**

Aileu District lies in the highlands to the south of Dili, the national capital. It has a population of 44,325 (Census 2010) and an area of 729 km², with a demographic density of 50.6 h/km². The capital of the district is also named Aileu. Aileu district comprises the sub-districts of Aileu, Laulara, Liquidoe and Remexio. As part of the proposed expansion, the USDA project plans to work in three of the sub-districts, (including Aileu, Laulara, and Remexio). With its close proximity to Dili, this region has benefitted from improved roads, market access and an active NGO community (including CCT, which has worked in the region on other, non-USDA program crops for more than 15 years). The soils and climate in the highlands of Aileu support a variety of high-value crops, including Arabica coffee, cloves, pepper and a limited amount of vanilla. Farmers in the district also produce rice, cassava and maize in selected areas. In October 2013, CCT had approximately 2,620 Arabica coffee farmers registered with the cooperative in the three sub-districts where the USDA project will operate.

3.2 Language Groups and Survey Implementation

The linguistic environment of East Timor is complex. There are fifteen unique local languages spoken throughout the country. The official languages of the government are Tetum and Portuguese. Bahasa Indonesian is commonly spoken by the commercial sector in Dili and in border areas. Bahasa is also used as the primary language for education at the university level (Bahasa textbooks are a standard in higher education for East Timor's educational institutions). Figure 9 shows survey results indicating the language group spoken within the household among project clients (within the four district target area).

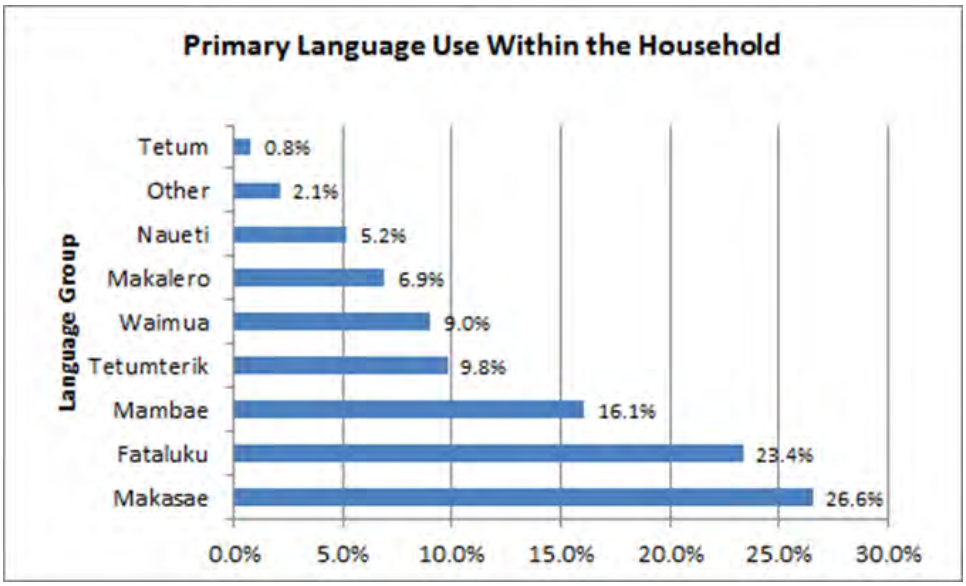


Figure 9

In order to manage the survey process, project staff took steps to ensure that the baseline survey could be translated into local languages verbally and that accurate responses from survey participants could be recorded. The survey was originally written in English and translated into Bahasa Indonesian. Bahasa is a more technical language than Tetum, and project management felt that training the enumerators in Bahasa would provide the clearest definitions and answer options for the survey.

To execute the survey, enumerators who received training in survey implementation were paired with CCT extension agents who had local knowledge of the farmers, communities and agriculture within each of the sub-districts included in the survey. Care was given to match enumerator language skills with extension agents' language skills so that they could speak directly to the farmer in the language used within the household. In some cases, only the extension agent could speak the local language. In these cases, the written Bahasa survey questions would be verbally translated into Tetum for the extension agent by the enumerator. The extension agent would then translate the question into the local language for the farmer. Answers were translated in reverse and recorded (in Bahasa).

After five days of survey training in Bahasa, the enumerators, along with project management, verbally explained each question and answer in detail to the extension agents in Tetum (during a formal training session). This was done to provide a level of familiarity with the questions to the extension agents and give them an opportunity to ask for clarification on questions as needed before they went into the field.

Each afternoon, after the survey information was taken from the farmer, the enumerators would return to the regional base to enter the raw data into their laptop databases. This

process was directed and overseen by senior project management daily while in the field. The raw data was inserted into a dual language database that provides information in both Bahasa and English.

Figure 10 illustrates the diversity of language by district. As can be noted, in Viqueque, the dominant language is Makasae, followed by Tetumterik and Naueti. In Lautem, Fataluku (a Papuan language spoken in the islands of New Guinea) is predominant; however, some villages also speak Makalero and other less common languages.

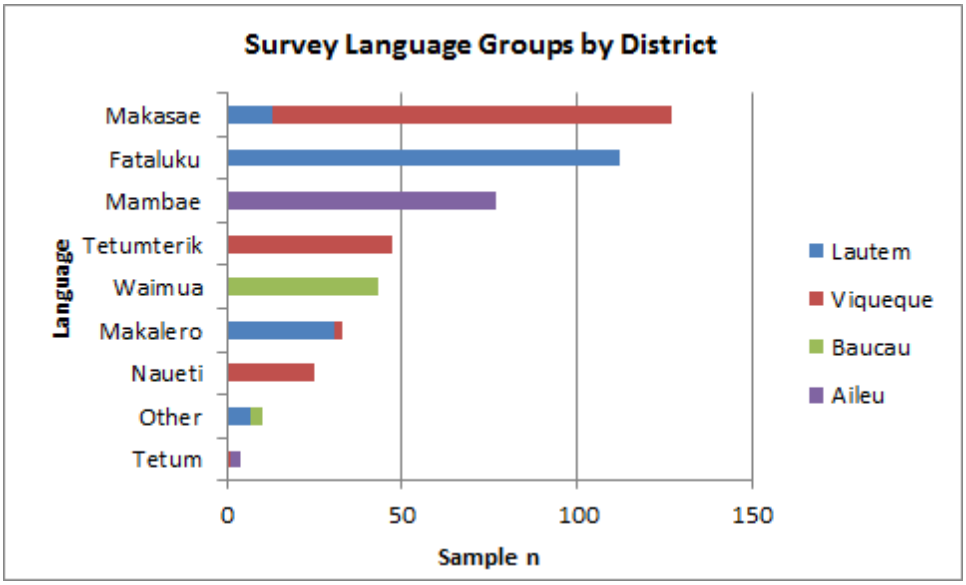


Figure 10

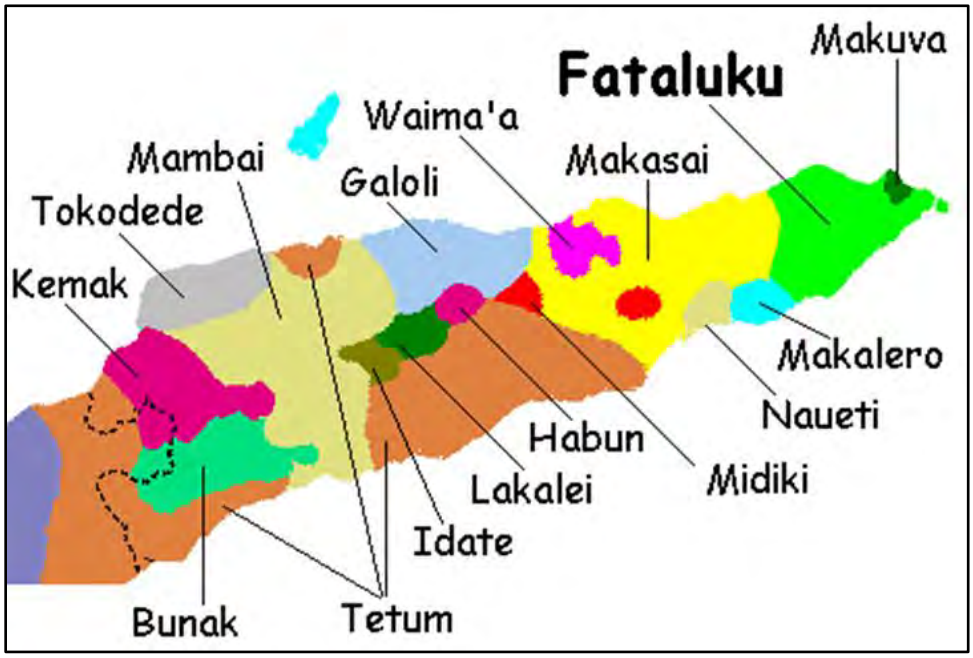


Figure 11

Figure 11 shows the geographic complexity of languages in East Timor and the project area. To ensure quality of future mid-term and final surveys carried out by the USDA project, CCT management will need to recruit enumerators with language skills specific to the project area.

The baseline survey staff was fortunate in that many of the enumerators who were hired to work on the project were originally from Lautem and Viqueque districts (before going to Dili for university studies). This connection was an important asset the team brought in both terms of language and connection to the local village elders and village chiefs in geographies where personal security for the survey field staff was a very real concern.

Extension agents' local knowledge was also a valuable asset when reaching out to local government administrators and village leaders. The extension agents contacted village and district leadership before field work began and informed them that they would be working in the district on the survey. The day before entering a village, the extension agents would contact the suco chief (ward chief) and let them know approximately when they would be arriving on a specific days and which farmers they would be asking to interview. The extension agents would then call the interview candidate and request an interview time and location. If the farmer did not have a cell phone or could not be reached, the ward chief would notify the farmer as to the extension agent's interest in meeting with them. This system proved to be very effective in both reassuring administration and village leaders that the survey was being done in a transparent manner and proved to be time-efficient for the enumerators and extension agents working in the field.

3.3 The Agricultural Sector within the Project Area

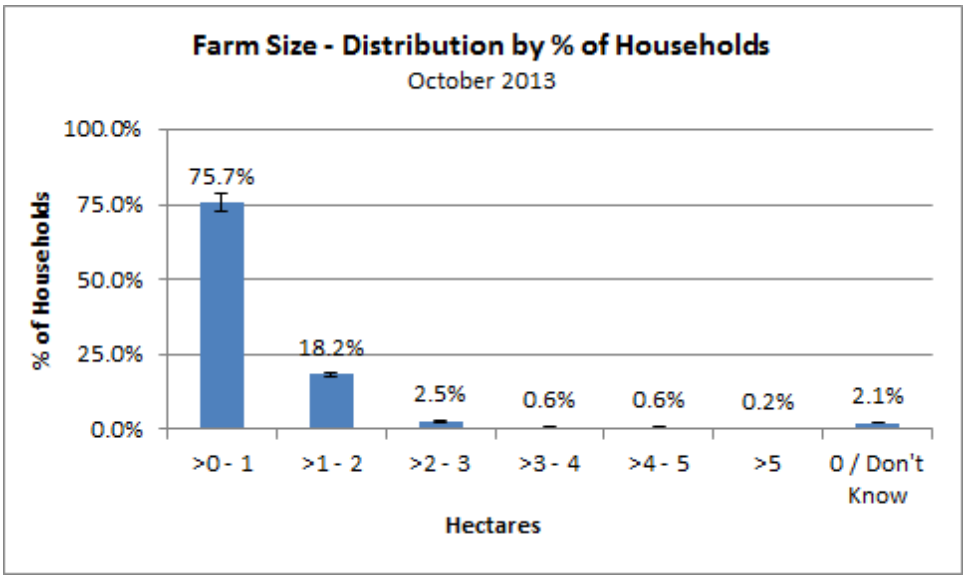


Figure 12

Subsistence agriculture is the primary economic activity in the project areas. Nearly 94% of all farms surveyed had a total cultivated area of two hectares (4.94 acres) or less, see Figure 12.

The baseline survey examined the number and percent of households that produced crops that were being included under the USDA project. This list of crops is included in Figure 13. The vast majority, 92.7% of all households surveyed, historically produced local genotype cassava.

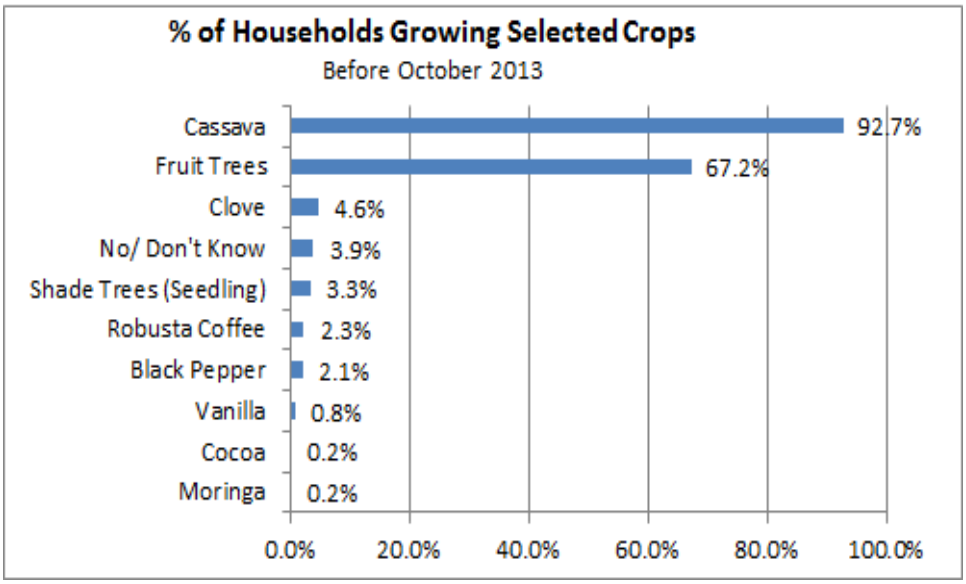
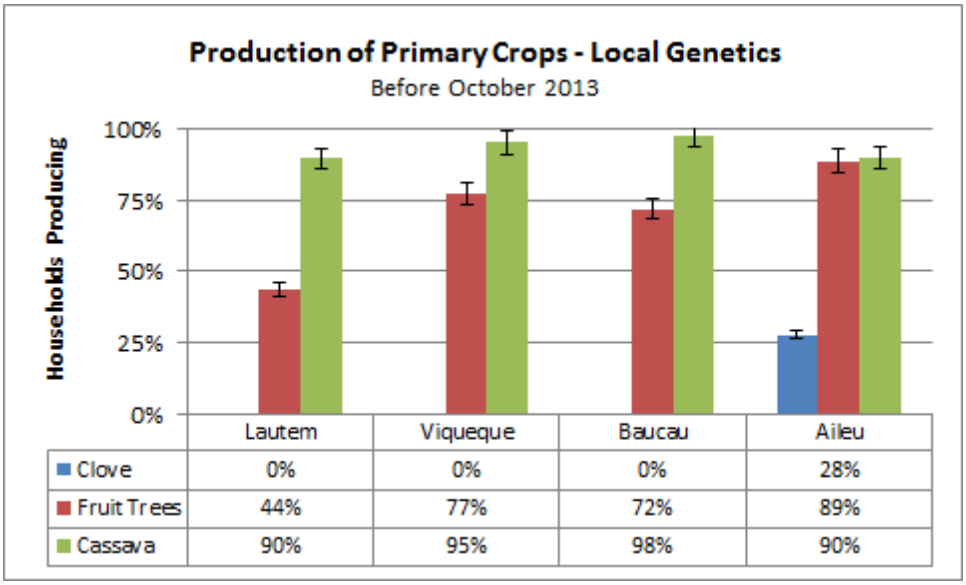


Figure 13

The majority of households surveyed (67.2%) also produced local genotype fruit trees. This category could include a wide variety of products, including but not limited to, mango, jackfruit, papaya, starfruit, guava, coconut and banana.



	Lautem	Viqueque	Baucau	Aileu
Clove	0%	0%	0%	28%
Fruit Trees	44%	77%	72%	89%
Cassava	90%	95%	98%	90%

Figure 14

Cassava is a staple food crop in East Timor. The survey asked households if they produced any of the crops that will be included in the USDA project. The primary crops are considered in Figure 14, and the secondary or lesser-grown crops that will be promoted by the project are examined in Figure 15.

Survey results found that 97.8% of the farmers interviewed in the Venilale sub-district of Baucau produced cassava on their farms. This cassava consisted of local varieties. The USDA project will introduce improved varieties that are more resistant to disease, produce higher yields and have better post-harvest handling properties. Figure 13 also shows that fruit tree production had a range of 45%, with 89% of the farmers in Aileu growing fruit trees and 44% of farmers in Lautem. Cloves were produced only in the proposed district of Aileu, with 28% (Figure 14) of farmers reporting production of this crop. No cloves were produced by farmers interviewed in Lautem, Viqueque or Baucau.

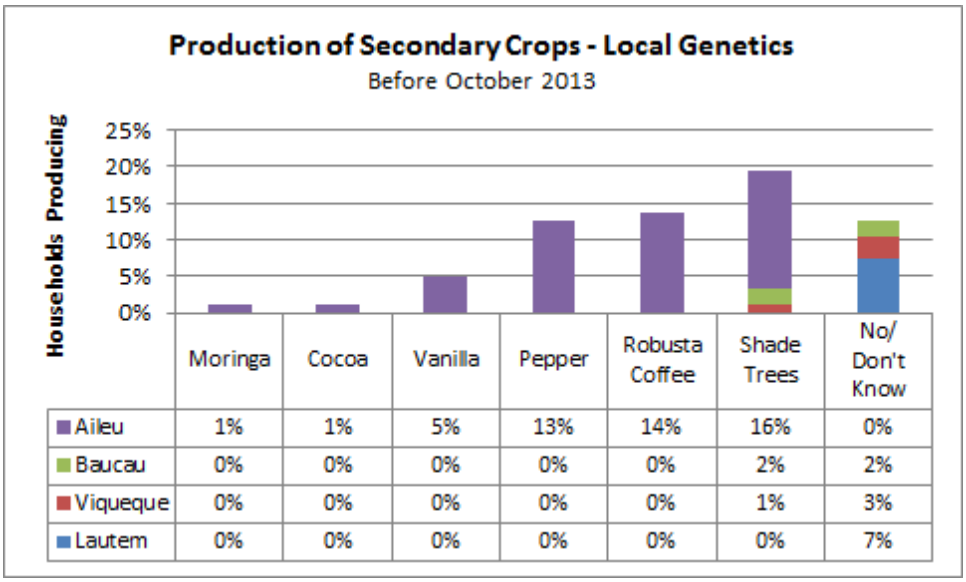


Figure 15

Moringa

Moringa, native to parts of Africa and Asia, contains 13 species which are found in tropical and subtropical climates. The leaves and high-protein seeds are a highly nutritious food for both people and livestock. The trees can be used as windbreaks and to reduce soil erosion.

With 28% of the farmers already producing coffee in Aileu, the USDA project will not be promoting coffee in this district, but will promote black pepper, vanilla, cloves and fruit trees.

Moringa, cocoa, vanilla, black pepper and Robusta coffee were absent in farms located in Baucau, Viqueque and Lautem (Figure 15). Aileu farmers produced these crops in varying amounts, some of which have been introduced by NGOs operating in the district over the past fifteen years (since independence).

Cassava planting density is recommended at 1 meter squared, using 25 cm. shoots. This equals a plant population of 10,000/hectare. Figure 16 shows that the typical farmer in Lautem plants about 837 square meters, or about .08 hectares of cassava. The survey found that fruit trees are most common on Viqueque farms (Figure 15) with an average of 44 trees/household and least common in Lautem, with 30 trees/household.

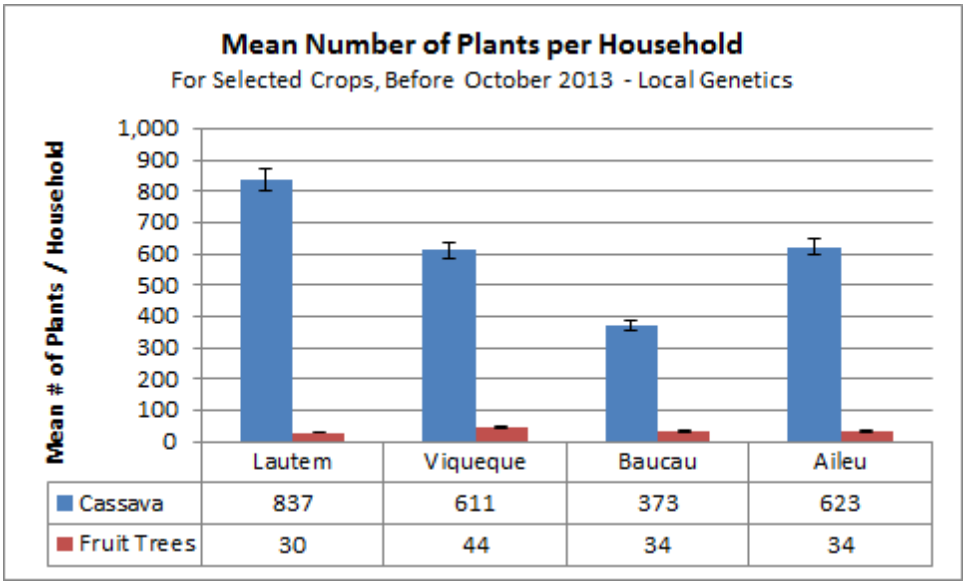


Figure 16

Figure 17 examines the proposed Aileu District only. The Aileu data shows that on average, farmers interviewed produced 47.7 clove trees, 42.9 black pepper vines, 33.6 fruit trees and 2.6 vanilla plants on their farms. If the proposed expansion into Aileu is approved, the USDA project will build on these numbers to improve household incomes in the district.

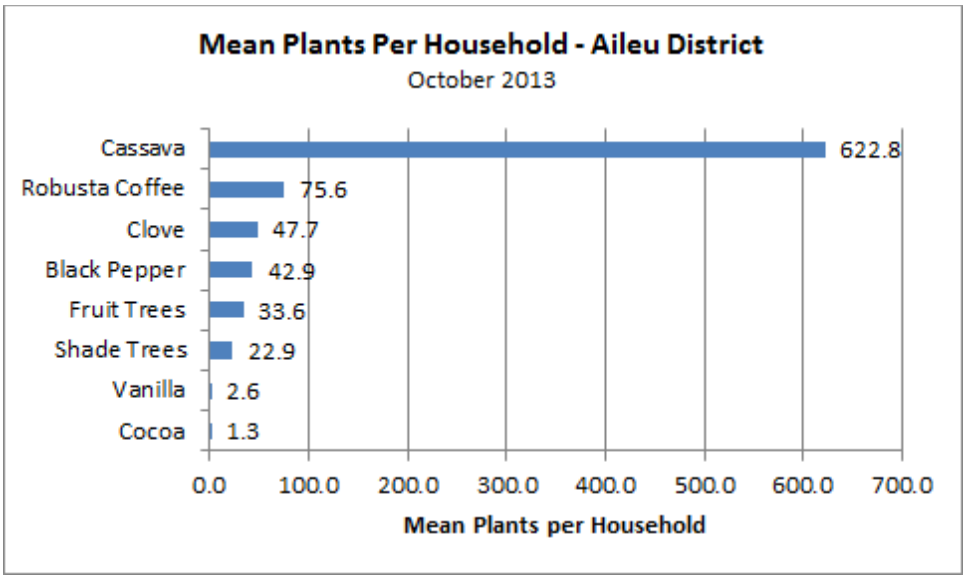


Figure 17

Figure 18 examines how farmers transport their crops to market. As can be noted, 60% of the farmers interviewed reported that they walk their crops to market. This is feasible for high-value crops such as spices (vanilla, cloves and black pepper), and coffee. Cassava is a high water content, high volume product. Yields for improved genotypes can potentially reach approximately 20,000 kg/ha.

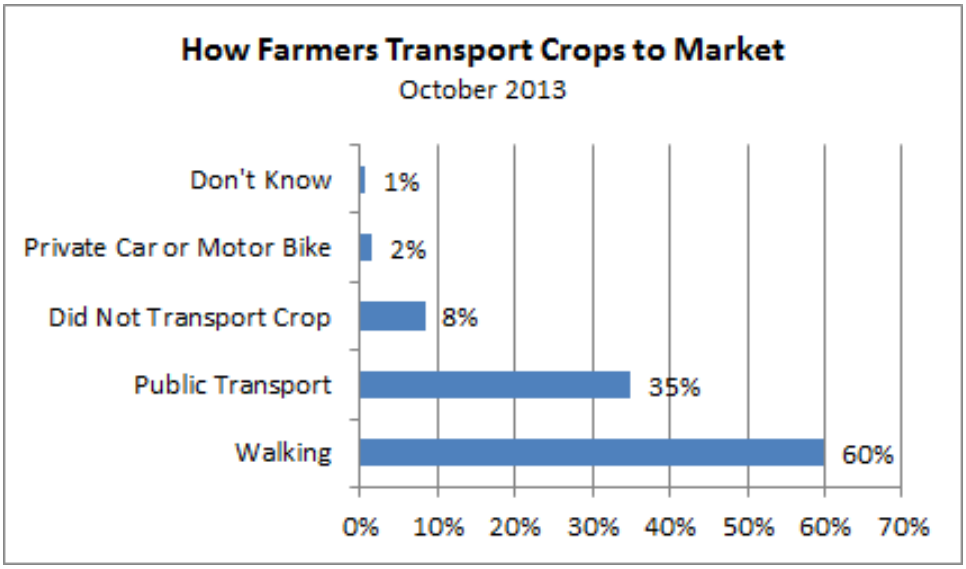


Figure 18

To improve the transport ability of the product, farmers will clean, chop and dry the cassava on farm. This process will reduce the weight of a 20,000 kg crop (1 hectare of production) to 2,400 kg at 12% moisture.

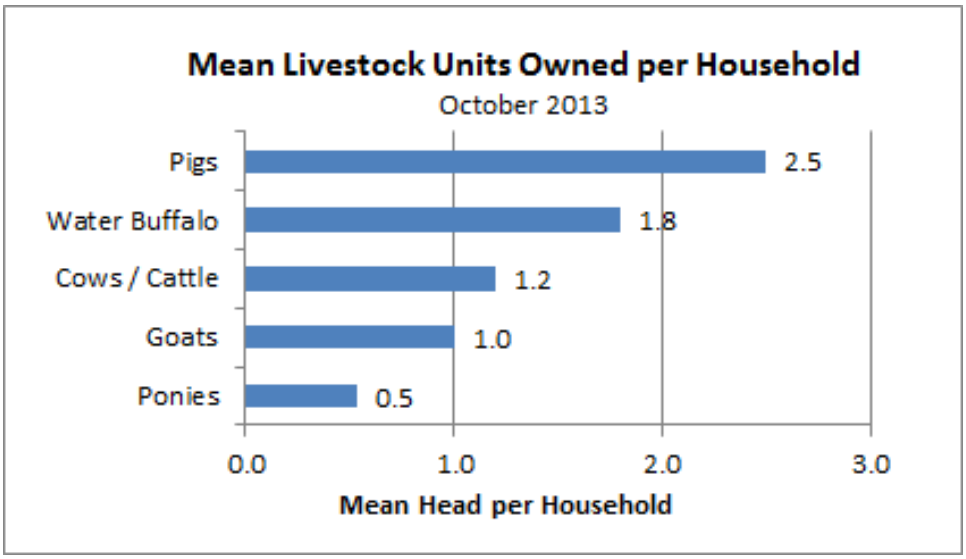


Figure 19

Most farmers in East Timor have livestock. Figure 19 shows the mean number of livestock (head) per household. Pigs are the most common, with an average of 2.5 animals/ household. Pigs are an important household asset used for various celebrations and ceremonies throughout the year. Water buffalo are the second most common livestock kept by farmers.

Water buffalo are used as draft animals and provide milk and meat, and are an important protein source in the diet.

3.4 Socio-economics of Project Farmers

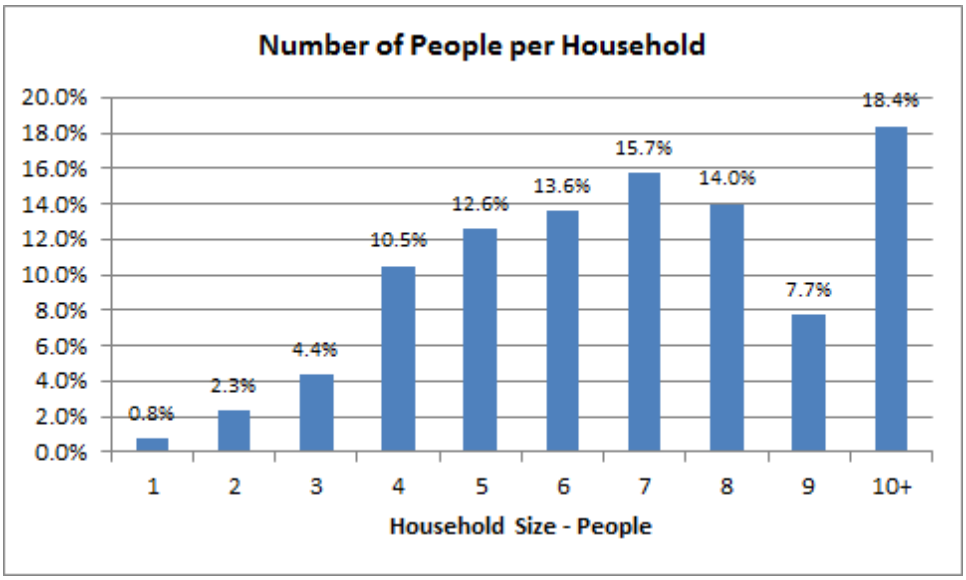


Figure 20

East Timor Key Demographic Data

East Timor has a population growth rate of about 2.44%. About 32% of the population lives in urban areas and 68% live in rural communities. The age structure of East Timor shows 62% of the population 24 years of age or less. About 34% of the population is in the 25 – 64 year age group, and 3.7% are 65 or over. The labor force is 64% agricultural, 10% industrial, and 26% services.

The baseline survey included a number of socio-economic questions. These were included to provide implementers with a better contextual understanding of the operating environment within the target population.

The most common response to the question of how many people live in each household was 10+ people with 18.4% reporting (see Figure 20). For households with less than 10 people, the most common size was 7 individuals with 15.7% reporting.

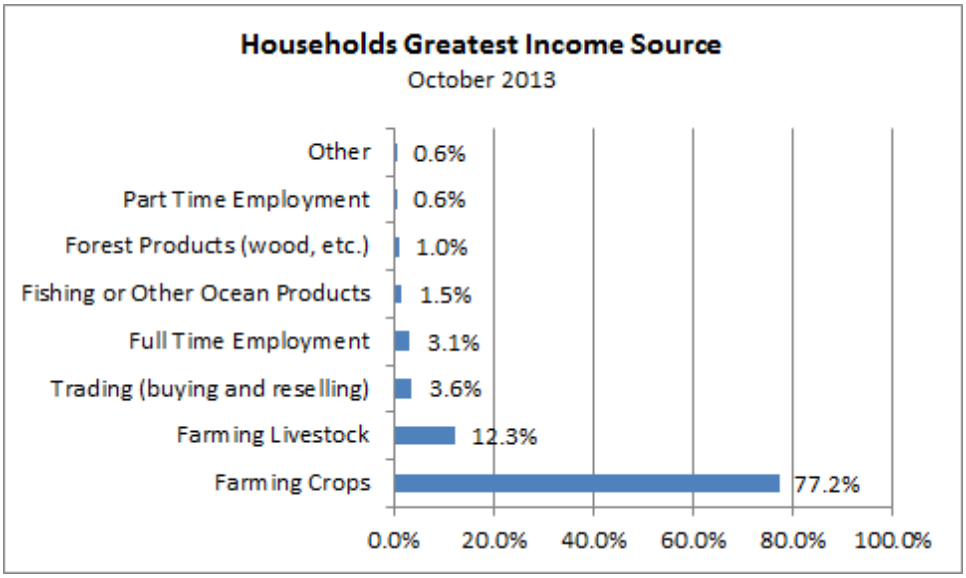


Figure 21

Crop farming is by far the most common source of income for households interviewed for the baseline survey (see Figure 21) with 77.2% reporting.

The number of years of schooling received by survey respondents is illustrated in Figure 22. The single largest response to this question was “Don’t know” at 43.7%. It is suspected that many of the interviewees did not want to mention that they had very little or no schooling, and as a result, opted for the “Don’t know” answer. The finding that this question provides is that education within the target population is very limited and future training programs developed by CCT need to take this into consideration.

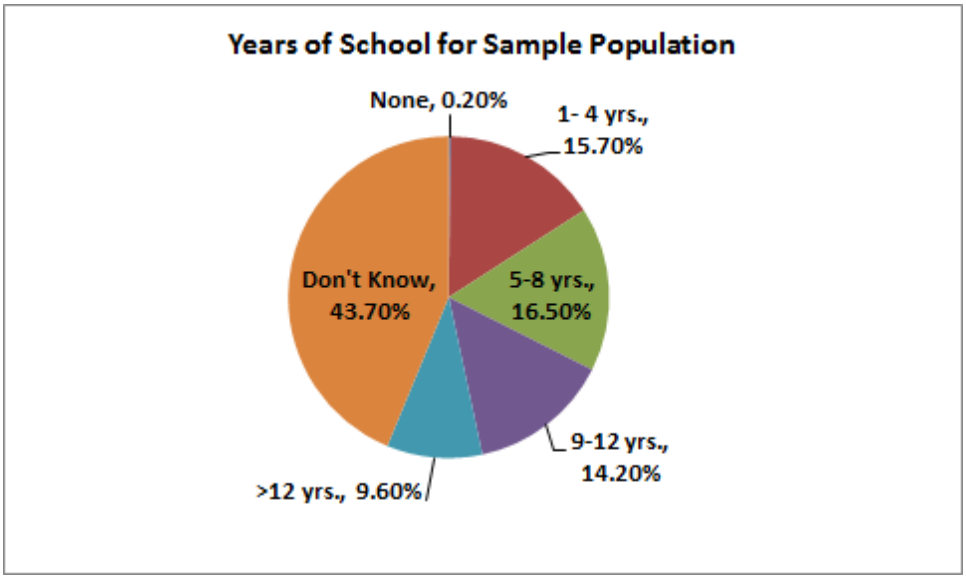


Figure 22

East Timor's Education System

After independence and the departure of Indonesia from East Timor, 95% of the schools had been burned. In the following ten years, schools were replaced and the education system expanded. Today, the public education system includes six years of primary education and six years of secondary education. Nevertheless, one in two adults in East Timor is literate. Schools in the country face many challenges – one is the complex language environment where children speak one language at home and a different language at school.

The distribution of school age children in client households is not a perfect bell curve (see Figure 23). The relatively high number of households with no children in school may be due in part to the fact that the sample population in the survey tended to be skewed toward the 40 and above age groups. At this point, many of the children have finished school and/or left home, and this is reflected in the 13.4% of the sample that reports no children in school.

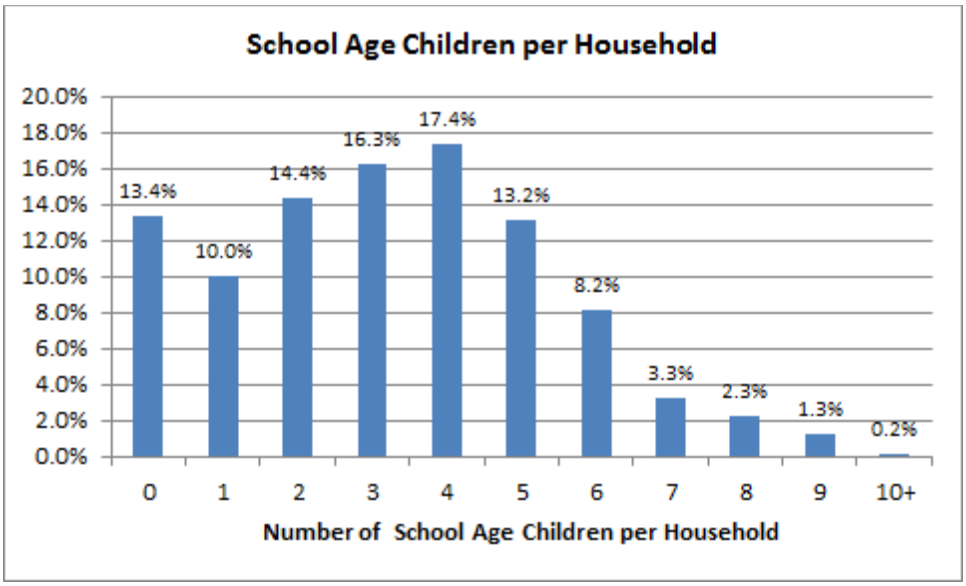


Figure 23

CCT has operated health clinics through its coffee projects for approximately the past 15 years. To date, they have realized 2.1 million office visits in their field clinics. The clinics are open to anyone in the community (not just CCT members). Public health problems in rural East Timor are similar to many other areas of the developing world. Most of the 2.1 million office visits involved treatment of respiratory infections, gastrointestinal (GI) pathogens and parasites. Improving access to clean running water and toilets is key to breaking the cycle of infection for many of the diseases seen in the CCT clinics.

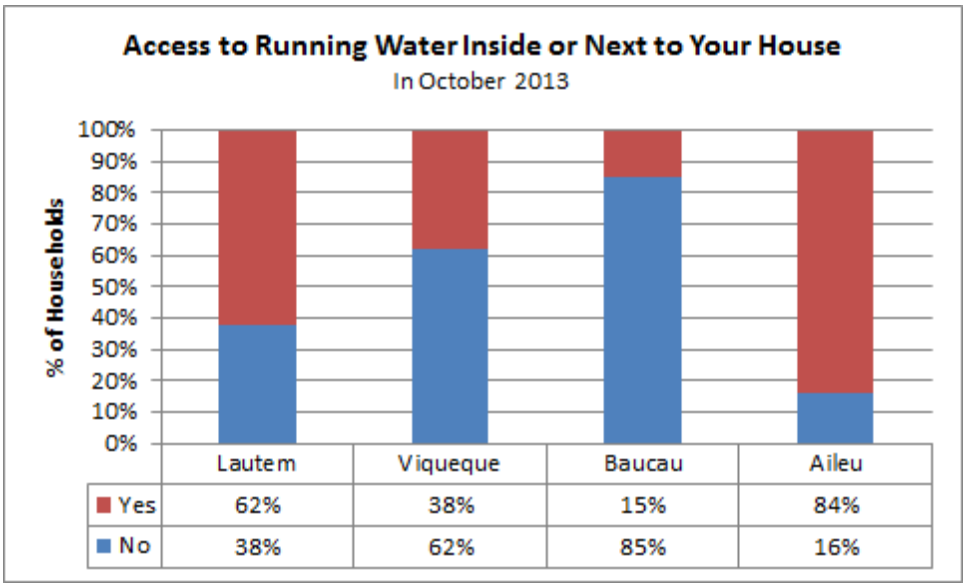


Figure 24

In an effort to better understand factors that affect public health within the target population, the baseline survey included two questions about water and sanitation (Figures 24 and 25).

Although these are not project targets (RIs), access to clean water and sanitation are two important metrics that can be used to determine the impact of the project on the household.

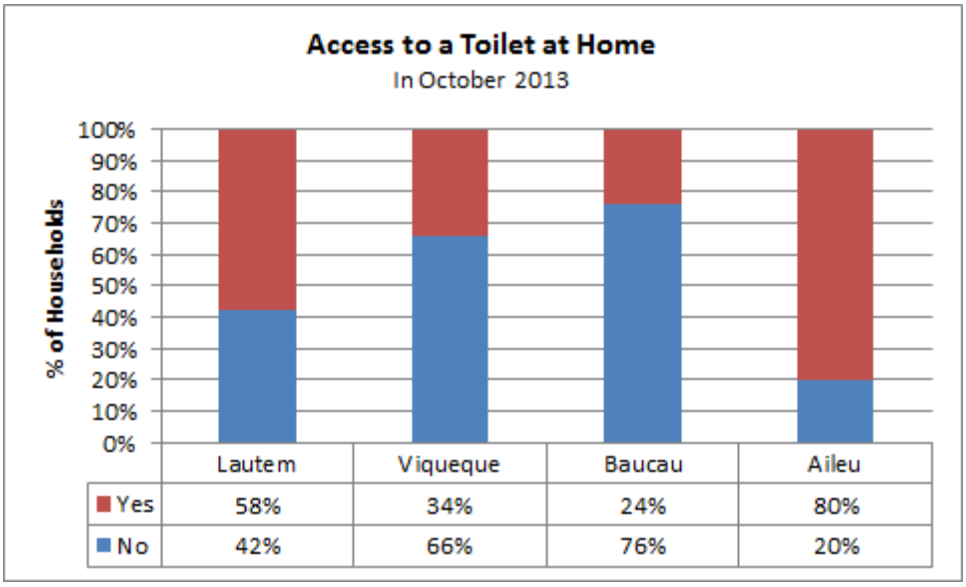


Figure 25

Only 15% of the households in the Baucau target population had access to running water inside or next to their houses. Only 24 of the households in Baucau had access to a toilet. In an agricultural economy, where food is transported from farms to market directly without intermediate steps to improve hygiene, it is important to reduce the opportunity for pathogens to enter the food chain through contamination on the farm. Future training programs by the USDA project should include elements on sanitation in an effort to reduce the risk of introducing pathogens into the agricultural/food supply chain.

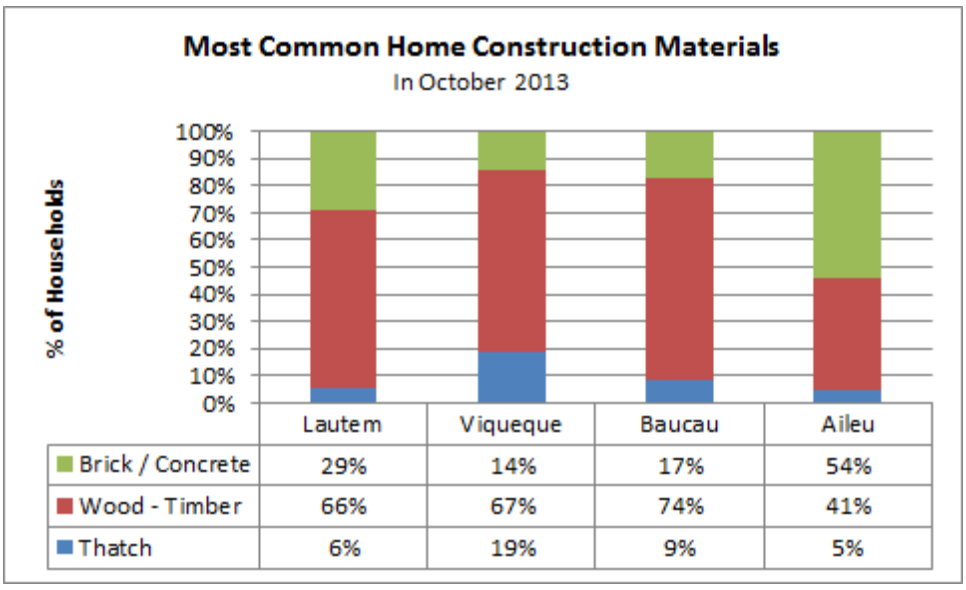
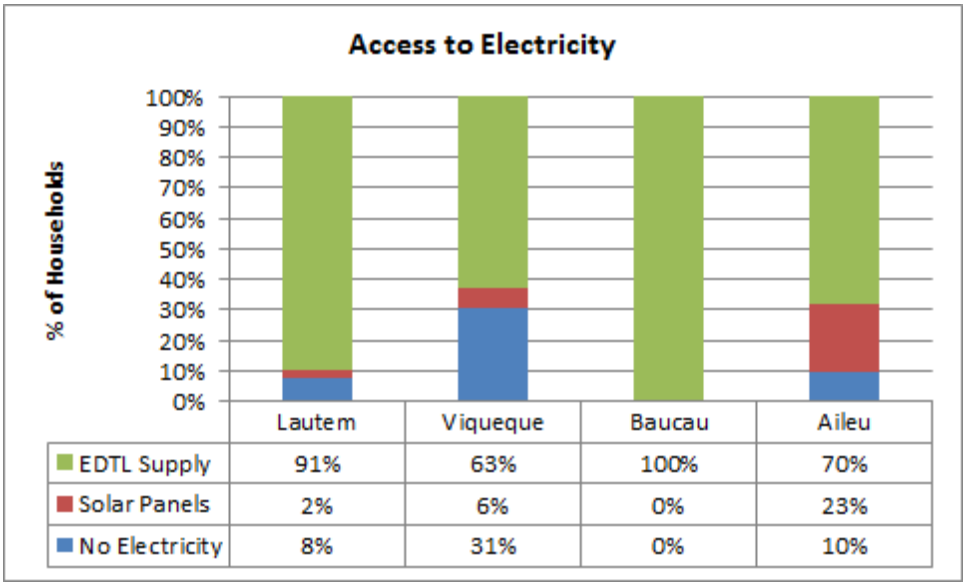


Figure 26

As economic conditions within the household improve, there is a tendency to move from lower-cost, shorter life building materials such as thatch, to higher-cost, longer lasting materials such as wood and brick. Figure 26 examines the use of on-farm housing materials by survey participants. Over time, these materials may shift from lower-cost/lower quality options to higher cost/higher quality materials as incomes improve (as a result of project participation).



	Lautem	Viqueque	Baucau	Aileu
EDTL Supply	91%	63%	100%	70%
Solar Panels	2%	6%	0%	23%
No Electricity	8%	31%	0%	10%

Figure 27

The government of East Timor has recently made major investments in rural electrification (see Figure 27). The availability of power in rural areas influences the type of post-harvest crop processing and storage options available to the project. If the government continues to expand the electrical grid, the project may be able to capitalize on the trend by supporting investments in cold storage and post-harvest crop processing in areas that historically did not have electrical service but now do.

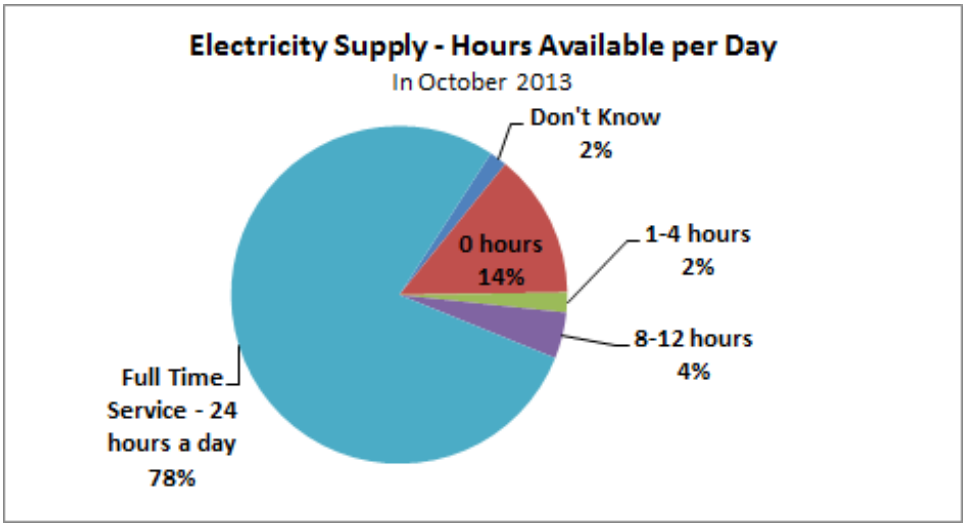


Figure 28

Reliability of the electrical supply is critical to investments in post-harvest processing and cold storage. Figure 28 examines the availability of electrical service within the project area. There are significant differences in power reliability by geography; however, it is encouraging that 78% of the households surveyed responded that they have electricity 24 hours/day. This increased electricity coverage has mostly occurred over the past two years.

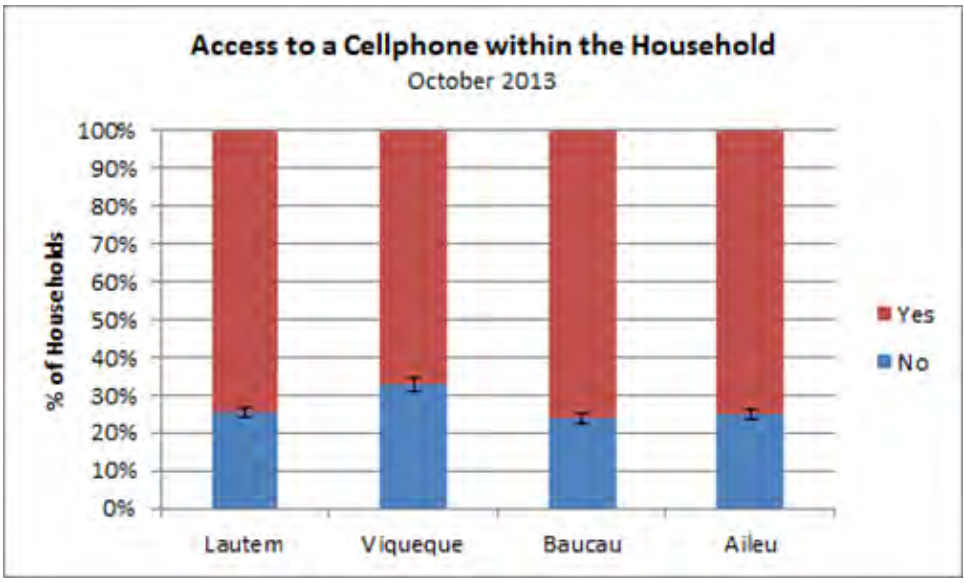


Figure 29

Cellphone coverage within East Timor is provided by the private sector. With multiple companies operating within the sector, many rural families have found cellphones to be an affordable option (see Figure 29). Households in Lautem, Baucau and Aileu have the highest access levels to cellphones at 74% – 75%. In Viqueque, 67% of households have access to cellphones.

This has very important implications for the USDA project. One of the activities proposed by the project is to provide SMS text messaging of commodity prices to better inform farmers of market conditions. With these levels of access to cellphones, there is a high probability that farmers within the project area will be able to access market information services if they are provided.

The baseline survey found that, on average, 72% of households across all districts had a way of charging a cellphone at their home and had a cellphone signal at their village (see Figure 30).

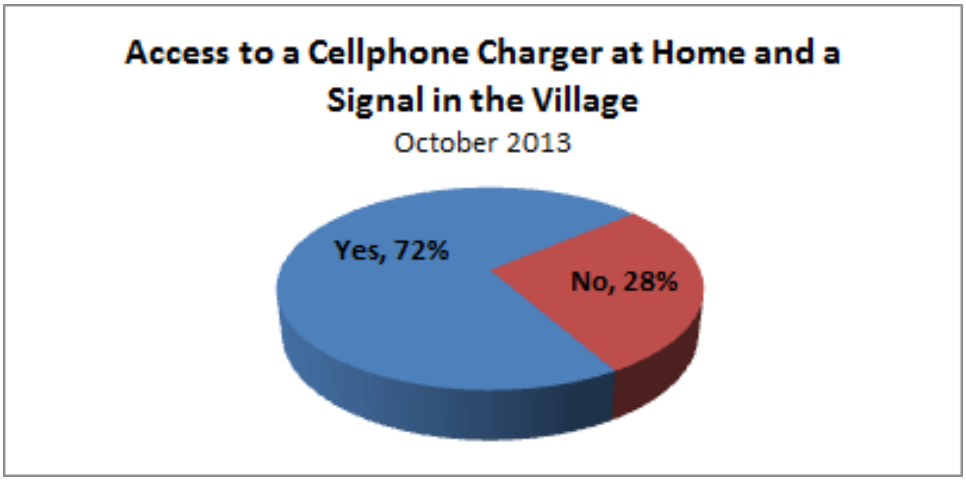


Figure 30

Network Coverage

East Timor has approximately 103,000 cellphones and 3000 operating landlines. Timor Telecom (the country's largest network) provides GSM mobile phone access to approximately 69.5% of the population, with 100% of the main residential districts covered.

Most households, the survey found, have individuals in them who already know how to use SMS text messaging (see Figure 31). With these skills and access to cellphones already in place, the USDA project can develop a "push or pull" information system for providing market information to CCT members and project clients.

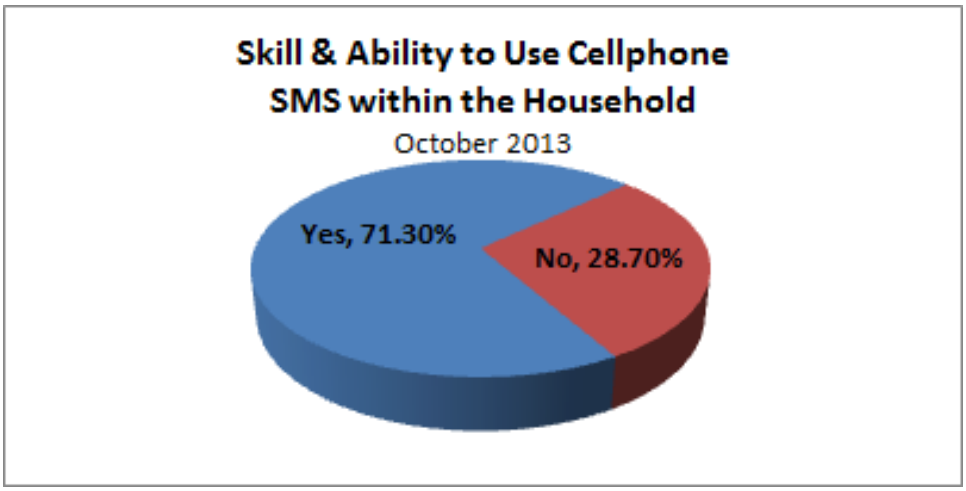


Figure 31

The "push" system would work by loading cellphone numbers into a cellphone company's computer system and "pushing out" unrequested mass messaging. This process would ensure that market information is distributed evenly across the districts and membership. In most countries, recipients of voice and text on cellphone systems are not charged – only the sender is charged. This type of billing structure would provide market information to the farmer at no additional cost at the household level. It would, however, create a cost center (budget line item) for CCT to manage this system.

Alternatively, CCT could opt for a "pull" system whereby farmers dial into a specific number to request market information in text form. This system puts more of the cost burden on the household.

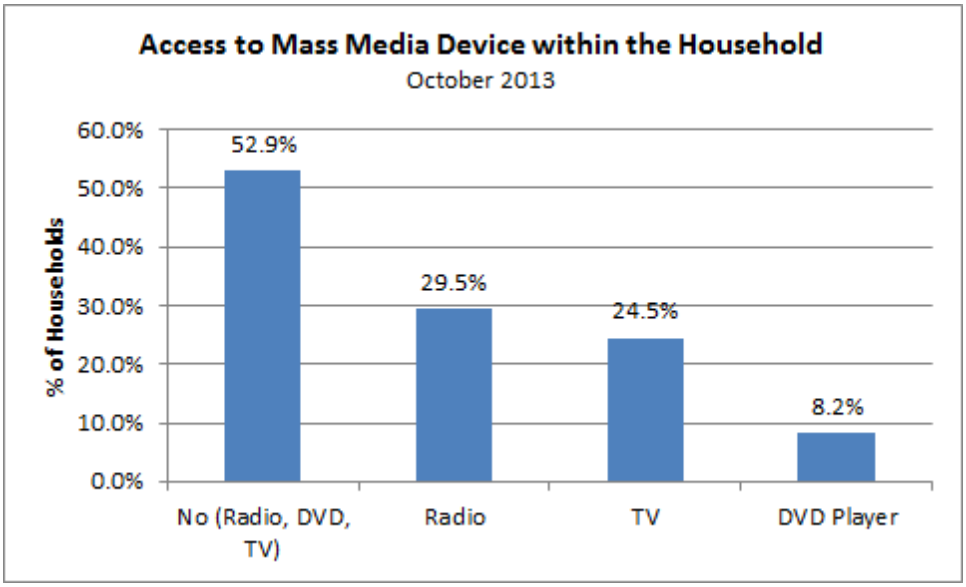


Figure 32

Creating DVDs for training purposes of project participants would most likely have limited impact as only 8.2% of households have access to DVD players.

Radio and TV are available to about 25% - 30 % of project participants within the household; however, with a margin of error of 4.2%, this figure could be as low as 20.3% for access to TV or as high as 33.7% for access to a radio within the household. The USDA project will need to consider the cost to access these media and their coverage within specific geographies before integrating radio and TV as part of their market information activity.

4.0 Baseline Survey Findings

The baseline survey was divided into two parts. The first part included a survey targeting 478 farmers registered with CCT in the target geographies. This survey examined farmer and group project activities in or before October 2013. All survey questions and results for the farmer survey can be found in Annex I of this document.

In summary, the survey found that there were no project activities in or before October 2013 in the four districts/project geographies (three existing and one proposed district) that involved farmers or farmer groups. The survey found that a significant number of farmers, approximately 93%, throughout the project area, planted cassava (using local genetic material) and generated a limited amount of income from this crop. Additionally, the survey identified that about 28% of the farmers in the proposed Aileu District produced cloves and generated income from their sale prior to October 2013.

Other than cassava and cloves (in the proposed area of Aileu District), which were identified by the survey as having been produced by selected farmers prior to October 2013, the questionnaire revealed that only a handful of farmers (less than the survey's margin of error of 4.2%) in the project geographies produced crops that will be introduced under the USDA project. Since only cloves and cassava production were occurring at levels greater than the margin of error in the baseline survey, this report will only examine these two crops in the narrative section but will provide detailed information on each crop's production history, yield and revenue in Annex I.

The second part of the survey included a questionnaire for the agro-product buyer (CCT). All questions and results for this survey can be found in Annex II of this document. The survey found that no market development, sales, export or other activities occurred in or before October 2013 under the USDA Agribusiness Project activity.

4.1 Farmers Survey

The survey found that approximately 95.4% of the survey participants did not generate income from cloves or did not know their income from this crop. Approximately 4.5% of farmers (all located in the proposed Aileu District) reported income from cloves (see Figure 33).

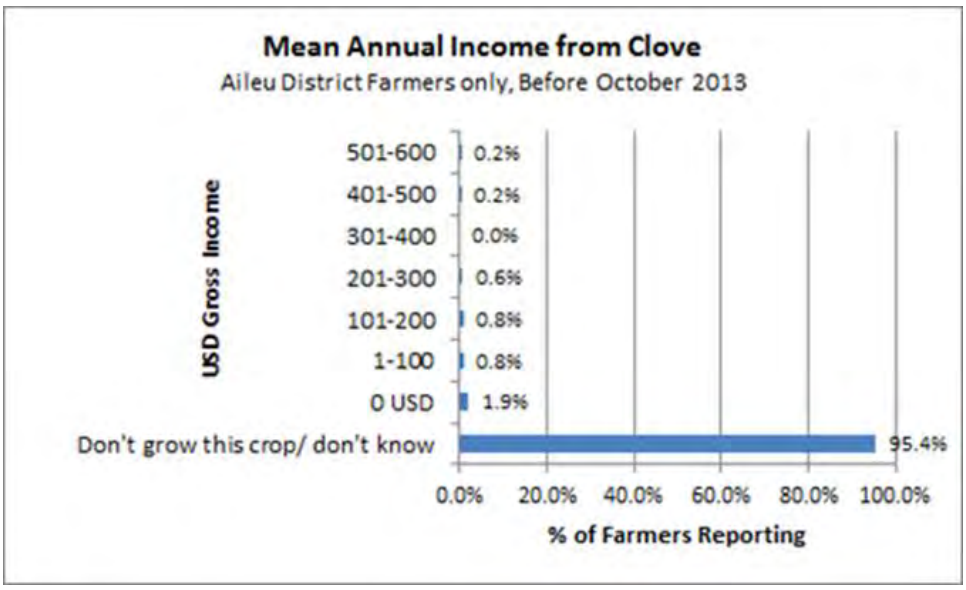


Figure 33

There were no reported clove producers within the existing project areas of Lautem, Baucau, or Viqueque districts (see Figure 13).

Table I: Survey Question #26, Annual Average Income from Cloves

26	201	**Before October 2013, what was your annual average income from Cloves (dry)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
26	a	Did not grow this crop	155	188	46	58	447	**93.5%**	93.5%
26	b	0 USD	0	0	0	9	9	**1.9%**	95.4%
26	c	1-100	0	0	0	4	4	**0.8%**	96.2%
26	d	101-200	0	0	0	4	4	**0.8%**	97.1%
26	e	201-300	0	0	0	3	3	**0.6%**	97.7%
26	f	301-400	0	0	0	0	0	**0.0%**	97.7%
26	g	401-500	0	0	0	1	1	**0.2%**	97.9%
26	h	501-600	0	0	0	1	1	**0.2%**	98.1%
26	i	601-700	0	0	0	0	0	**0.0%**	98.1%
26	j	701-800	0	0	0	0	0	**0.0%**	98.1%
26	k	801-900	0	0	0	0	0	**0.0%**	98.1%
26	l	901-1000	0	0	0	0	0	**0.0%**	98.1%
26	m	1001-1100	0	0	0	0	0	**0.0%**	98.1%
26	n	1101-1200	0	0	0	0	0	**0.0%**	98.1%
26	o	1201-1300	0	0	0	0	0	**0.0%**	98.1%
26	p	1301-1400	0	0	0	0	0	**0.0%**	98.1%
26	q	1401-1500	0	0	0	0	0	**0.0%**	98.1%
26	r	>1500 USD	0	0	0	0	0	**0.0%**	98.1%
26	s	Don't Know	8	1	0	0	9	**1.9%**	100.0%

Table I shows that 93.5% of farmers surveyed indicated that they did not grow cloves. Cloves are currently only produced in the proposed Aileu District. The East Timor Ministry of Agriculture and Fisheries (MAF), CCT and other NGOs have worked with Aileu farmers over the past decade to promote clove production in this district.

Aileu was not originally included in the USDA project proposal, but was proposed to be added in after it was realized that the monetization of soybeans used to fund the project would generate a greater amount[6] of revenue than originally expected. To use this new revenue efficiently, CCT proposed expanding project activities to involve three sub-districts in Aileu (in addition to the original three districts of Lautem, Viqueque and Baucau). Adding Aileu to the project would add an additional 2,000 farmers/households to the original target of 8,000 beneficiaries. The new household beneficiaries target after adding Aileu was recalculated to include 10,000 households.

When Aileu was added to the project, it was agreed that CCT would promote pepper, cloves, vanilla and fruit trees in the district. Robusta coffee, cocoa, cassava, Moringa and shade trees included in the other districts, will not be a part of the USDA project in Aileu. The reasons behind this decision are based on agro-climatic suitability of crops in Aileu. Additionally, by not promoting coffee under the USDA project in Aileu, there will be no opportunity for CCT to double-dip project outcomes (performance indicators) generated with old project (USAID money) and new project (USDA money).

Crop Diversification

Over the last six years (since 2009), the cooperative has seen Arabica coffee export volumes vary from a high of over 17 million kilos in 2010, followed by a low of 2.5 million kilos in 2011. This pattern of alternative bearing is common for many perennial crops worldwide. Nevertheless, the nearly seven-fold variation in yields is high and points to the need for farmers to diversify into other crops in order to help stabilize income.

Focusing project activities on spice production in Aileu is a logical choice in that it builds economies of scale for the CCT spice business, while at the same time aids farmers in income diversification, using climatically suited crops for the upland (mountainous) environment. Spice crops are environmentally sound in that they provide permanent over/understory cover for highly erodible soils in the district, thereby enhancing soil conservation and reducing the risk of soil erosion that would likely occur on many farms if crops such as maize, cassava or other slash and burn agricultural products common to the district were promoted.

[6] The original monetization proposal assumed that the commodity sale would generate $7 million in revenues. The actual sale generated $9 million in revenues.

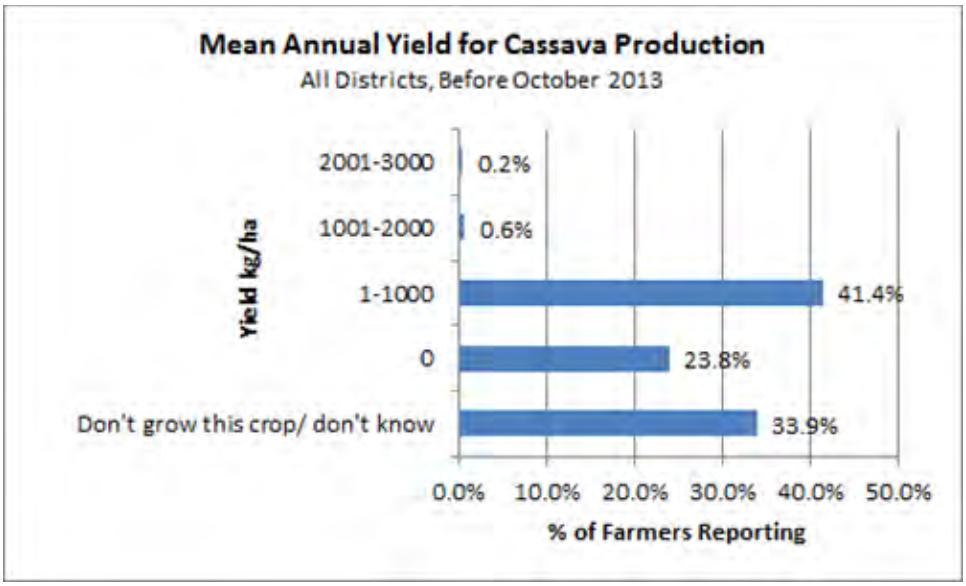


Figure 34

Cassava Processing

The CCT cassava flour mill was completed in early 2015 and processing the product has begun. The cooperative will utilize a network of buyers (former extension agents) to source cassava for the processing plant. CCT will introduce cassava with improved genetics under the USDA project. The new variety is suitable in a wider range of soils and climates and produces higher yields than local varieties.

The new mill produces two products – cassava flour and cassava fiber. About 90% of the output is in flour form. Cassava flour is used in a variety of food products, including noodle manufacturing and as a flour substitute for gluten-free baking. Cassava starch is also used in the laundry industry. CCT plans to export its cassava products to Indonesia for sale to the noodle industry, but will make the product available if markets within East Timor develop.

Cassava is a staple crop in rural East Timor. The baseline survey found that approximately 93% of farmers produced local genotype cassava on their farms. Much of the cassava is used at home, never reaching the market; however, findings from question #29 (see below) indicate that slightly over half of all households generate some income from the sale of cassava (see Figure 34).

Accurately measuring cassava yield is difficult, as many farmers have multiple plots and do not know the exact area of each plot. Additionally, farmers harvest the cassava as needed and do not typically record their yields from plots. For USDA/NCBA to accurately capture statistical data on new genotype cassava yields, they can randomly select farmers who will allow the project to monitor their fields for yield.

Table II: Survey Question #29, Average Annual Income from Cassava

29	202	**Before October 2013, what was your average annual income from cassava ?** *(check one)* **(Number of Farmers in this range)**	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
29	a	Did not grow this crop	15	9	1	7	32	**6.7%**	6.7%
29	b	0 USD	54	68	14	28	164	**34.3%**	41.0%
29	c	1-100	64	102	30	43	239	**50.0%**	91.0%
29	d	101-200	8	0	1	2	11	**2.3%**	93.3%
29	e	201-300	2	0	0	0	2	**0.4%**	93.7%
29	f	301-400	4	0	0	0	4	**0.8%**	94.6%
29	g	401-500	1	0	0	0	1	**0.2%**	94.8%
29	h	501-600	1	0	0	0	1	**0.2%**	95.0%
29	i	601-700	0	0	0	0	0	**0.0%**	95.0%
29	j	701-800	0	0	0	0	0	**0.0%**	95.0%
29	k	801-900	0	0	0	0	0	**0.0%**	95.0%
29	l	901-1000	0	0	0	0	0	**0.0%**	95.0%
29	m	1001-1100	0	0	0	0	0	**0.0%**	95.0%
29	n	1101-1200	0	0	0	0	0	**0.0%**	95.0%
29	o	1201-1300	0	0	0	0	0	**0.0%**	95.0%
29	p	1301-1400	0	0	0	0	0	**0.0%**	95.0%
29	q	1401-1500	0	0	0	0	0	**0.0%**	95.0%
29	r	>1500, USD	0	0	0	0	0	**0.0%**	95.0%
29	s	Don't Know	14	10	0	0	24	**5.0%**	100.0%

Yields are difficult to estimate in East Timor. Many farmers do not calculate yields in kilos/ha or other standard units. Farmers can usually tell you approximately how many kilos they harvested, and/or how large their farm is, but these units are not accurately measured and are very rough estimations. The USDA project Result Indicators (RIs) ask for yield metrics in kilos/ha. To accommodate the metric, the survey included questions on yield/unit area on each crop.

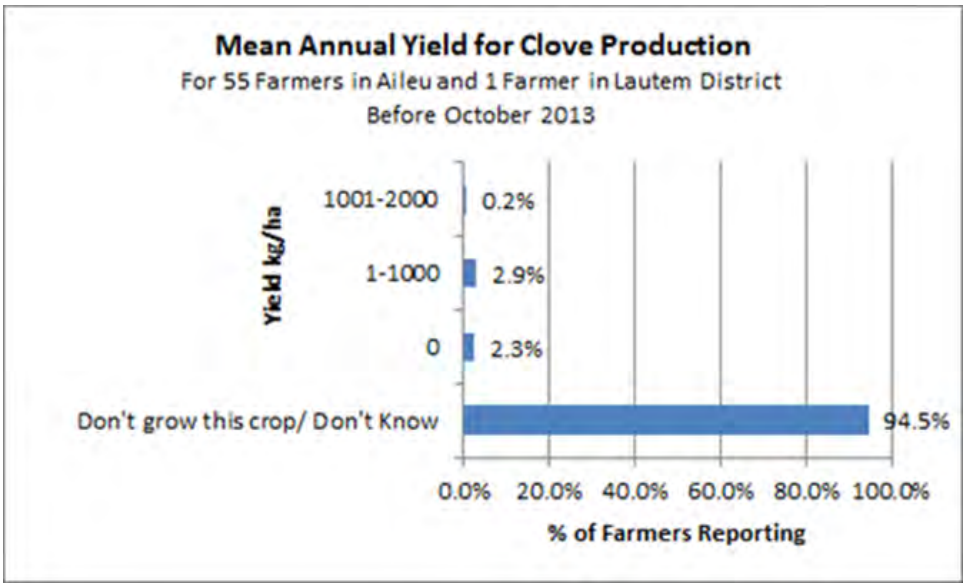


Figure 35

Figure 34 shows that 94.5% of farmers did not grow cloves and/or could not provide an accurate yield estimate. Approximately 5.5% (rounded) of the farmers interviewed indicated that they had either not received a yield from their cloves, or harvested up to 2,000 kg/ha (see Figure 35).

Table III (below) provides a greater level of detail for clove yields. The data shows that over 99% of all cloves produced in the project area came from Aileu District. Four farmers in Lautem reported producing this crop, three of which received an average annual yield of zero kilos and one farmer reported average annual yield between 1 and 1,000 kg/ha.

Table III: Survey Question #33, Average Annual Yield for Cloves

33	201	**Before October 2013, what was your average annual yield (kg/ha) for Cloves (dry)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
33	a	Did not grow this crop in 2013	138	159	42	55	394	**82.4%**	82.4%
33	b	0	3	0	0	8	11	**2.3%**	84.7%
33	c	1-1000 kg/ ha	1	0	0	13	14	**2.9%**	87.7%
33	d	1001-2000	0	0	0	1	1	**0.2%**	87.9%
33	e	2001-3000	0	0	0	0	0	**0.0%**	87.9%
33	f	3001-4000	0	0	0	0	0	**0.0%**	87.9%
33	g	4001-5000	0	0	0	0	0	**0.0%**	87.9%
33	h	5001-6000	0	0	0	0	0	**0.0%**	87.9%
33	i	6001-7000	0	0	0	0	0	**0.0%**	87.9%
33	j	7001-8000	0	0	0	0	0	**0.0%**	87.9%
33	k	8001-9000	0	0	0	0	0	**0.0%**	87.9%
33	l	9001-10,000	0	0	0	0	0	**0.0%**	87.9%
33	m	>10,000 kg/ha	0	0	0	0	0	**0.0%**	87.9%
33	n	Don't Know	21	30	4	3	58	**12.1%**	100.0%

Mean annual cassava yields before October 2013 are examined in Figure 36 and Table IV.

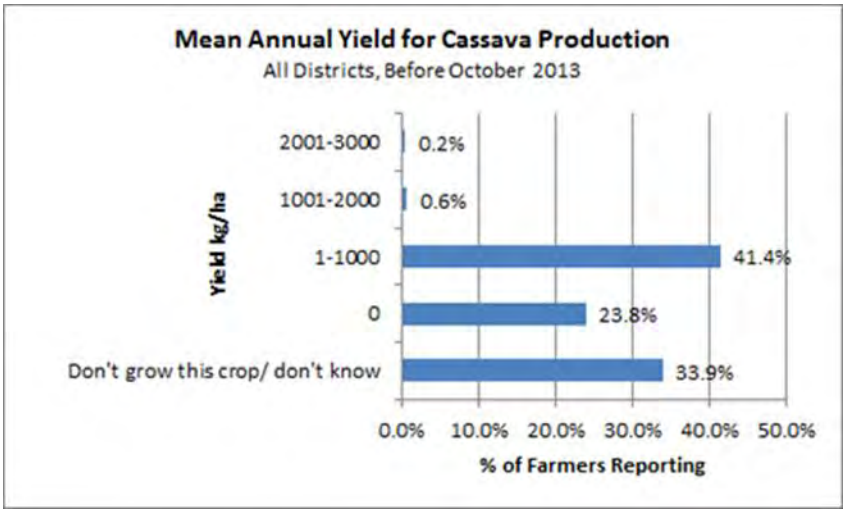


Figure36

The survey data shows that 41.4% of farmers realized mean annual cassava yields of between 1 and 1,000 kg/ha. A large percentage of individuals (57.7%) responded that they had either received a yield of zero, they didn't grow the crop, or they didn't know their yield. This high percentage is probably a reflection of most farmers not being able to calculate (or not being interested in calculating) yield/ha. Estimating farming area (square meters) and crop yield (kg) and translating this into standard units of kg/ha was found to be a difficult calculation for the survey enumerators who had at least three years of agricultural college experience. Project management worked with the enumerators during the training period in an effort to familiarize them with calculating standard yields. Given the challenges faced by the enumerators in this area, the reliability of data provided by farmers on standard yields (kg/ha) needs to be looked at cautiously.

Table IV: Survey Question #35, Average Annual Yield for Cassava

35	202	**Before October 2013, what was your average annual yield (kg/ha) for Cassava (dry)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
35	a	Did not grow this crop in 2013	14	8	1	7	30	**6.3%**	6.3%
35	b	0	43	63	3	5	114	**23.8%**	30.1%
35	c	1-1000 kg/ha	45	47	40	66	198	**41.4%**	71.5%
35	d	1001-2000	2	0	1	0	3	**0.6%**	72.2%
35	e	2001-3000	1	0	0	0	1	**0.2%**	72.4%
35	f	3001-4000	0	0	0	0	0	**0.0%**	72.4%
35	g	4001-5000	0	0	0	0	0	**0.0%**	72.4%
35	h	5001-6000	0	0	0	0	0	**0.0%**	72.4%
35	i	6001-7000	0	0	0	0	0	**0.0%**	72.4%
35	j	7001-8000	0	0	0	0	0	**0.0%**	72.4%
35	k	8001-9000	0	0	0	0	0	**0.0%**	72.4%
35	l	9001-10,000	0	0	0	0	0	**0.0%**	72.4%
35	m	>10,000 kg/ha	0	0	0	0	0	**0.0%**	72.4%
35	n	Don't Know	58	71	1	2	132	**27.6%**	100.0%

In an effort to capture more accurate standard yield data for the midterm and final evaluations of the USDA project, the project funder and implementer could consider monitoring a limited number of farmer plots. This would involve measuring the plot sizes (using GPS or hand-held tapes), calculating farming area and returning to the farm at harvest to weigh all product harvested. This would need to be done for each crop (cassava, Robusta coffee, cocoa, vanilla, black pepper, and cloves) where yield information is desired. To generate statistically significant data, there should be approximately 26 individual data points (farm plots) tracked.

Assuming 6 crops and 26 sites, the project would need to track 156 individual farm plots annually. This would require a significant level of financial and human resources (currently not budgeted for) and would require farmers to cooperate. Farmers could not harvest their crops until CCT project staff were onsite with scales and supervised the harvest and weighing of the crop.

The data produced would allow a time-series comparison of changes in yield and a comparison between districts, but the sample size would not be large enough to develop statistically significant data for comparison within districts as each district would only have an average sample size (n) of 6.5 for each crop.

4.2 Agro-Product Buyer Survey

The Agro-Product Buyer Survey was developed to provide baseline information for the USDA project Result Indicators (RIs) relative to project tasks and outcomes relating to CCT activities. The survey included 30 questions. All questions and answers can be reviewed in Annex II of this document.

The project consultant and translator met with senior CCT staff and selected board members on 16 May 2015 to review the questions in the Agro-Product Buyer Survey.

In summary, all baseline survey questions directed toward CCT revealed that no USDA project activity occurred prior to or during October 2013. No technology transfer had occurred prior to this date; no farmers employed knowledge or information learned from CCT. No additional dry or cold storage capacity was installed as a result of CCT actions. No farmers or businesses benefitted from the USDA project prior to or during October 2013. No increases in value-addition occurred to post-harvest products as a result of project activities. No regional trade expansion, trade promotion activities, etc., occurred under the USDA project prior to or during October 2013.

5.0 Project Performance Indicators Rationalization and Validation

The Result Indicators as written reflect the objectives of the project. In summary, these objectives include:

- Increasing agricultural productivity at the farm level through transfer of improved techniques and technology, as well as expansion of financial services provided by CCT.
- Expanding markets and trade volumes for commodities associated with the USDA project through improved product quality, enhanced post-harvest processing, and improved market linkages.

The structure of the RIs relative to the project objectives is rational from a project monitoring standpoint. The challenges come at the farmgate, where the transfer and application of new techniques needs to be measured.

6.0 Amendment Options to the Project Monitoring and Evaluation Process

There are approximately nine unique language groups in the project target geography. This increases the complexity of measuring deliverables (performance indicators) through an interview process. It is important to keep questions relating to performance indicators as simple and straightforward as possible to minimize any possible confusion during multiple translations. The baseline survey was designed with this in mind, while at the same time trying to satisfy the needs of USDA Washington to track meaningful changes in outcomes at the field level.

To mitigate the effects that language and education levels observed in the target population on measuring/tracking the RIs, USDA/CCT could develop a more objective approach to collecting statistical information. Specifically, monitoring plots could be created on cooperative members' farms that would be tracked for changes in yield, technology transfer and use of the final product within the household or sale into the regional or international market supply chain. This sampling technique would require that CCT extension agents work directly with farmers to create a statistically significant number of monitoring plots and measure yields on these plots during a specific (agreed-on) harvest period. This may be possible for crops such as coffee, cocoa, vanilla, cloves and black pepper, which tend to have very specific harvest periods. Cassava, on the other hand, is often held in the field (in the ground) and harvested only when needed. Fruit from project-supplied trees and Moringa would also be difficult to track on a monitoring plot basis, as these products are likely to be harvested periodically. The foregoing plot monitoring system would reduce or eliminate the human error element associated with undertaking a midterm and end of project (EOP) performance survey.

7.0 Data Limits and Quality Control

The enumerator training activity, as well as the survey and database, contained a number of protocols to assure that the information provided by the farmers would be accurately recorded and safely stored in the database. The following includes some of the data limits and quality control measures that were included in the baseline survey protocol.

- Findings from each survey are entered into their own unique Excel primary database file. This system contains damage if files become corrupted, or data entered into the file is incorrect. Using a single data filing system also allows for rapid insolation of file problems and their repair.
- The primary database automatically posts a "bold, large font, red, warning alert" at the top of the data entry form if the Excel file name and the survey number are not a match (all raw Excel data files used the survey number as their file unique name).
- The primary database uses drop-down boxes to limit input options by enumerators, thereby reducing the opportunity to input incorrect data.

- There are 69 fields for the drop-down boxes in the primary database. These include 60 for questions and 9 for primary information such as farm name, enumerator name, district, sub-district, ward, village, date of the interview, the attending project extension agent and survey number. At the top of the survey form there is an automatic "field count" cell that counts down the fields as they are filled. If one or more fields are not filled, the corresponding number will appear in the field count box.
- There is a button at top left on the Excel primary database file that allows the file to be expanded to show all answer options available per field (question) and show which answer was selected. This function is available in both the English and Bahasa Indonesian language.
- All survey forms and primary database files are coded by district, for example, all surveys and primary database files from Lautem are coded 101 – 299. Viqueque survey forms and primary database files are coded 301 – 599, Baucau surveys and primary database files are coded from 601-799 and Aileu is from 801 – 999.
- In survey questions that ask the enumerator, answer "all that apply", there is an automatic color coded box at the top of each set of answers which shows the enumerator if boxes have been marked. If they have not, the box at the top of the set will be colored red.
- Cells "not" intended for data entry in the primary database are blocked so that that they cannot be accidently filled and thereby omitted from the data analysis.
- There were always two enumerators involved in the data entry process. One enumerator read the findings (completed survey form) from the paper copy and the second enumerator entered the answers into the computer / primary database. After the enumerator entered survey data into the primary database, the input was cross-checked by having the person that inputted the data read the hard copy (paper form) survey findings back to their partner who checked the entries in the computer database.
- Each day the primary database files from the enumerator's laptops will be backed up on flash drives and on a 3rd drive maintained by the consultant.
- The enumerators competed 4 full days of training, including lecture, discussion and simulation. Training was provided in English, Tetum and Bahasa.
- After training and simulation, the most computer / database proficient enumerators were paired with the least proficient to ensure that by working together data would be entered and saved correctly.
- Exit interviews were conducted with the project enumerators after training. The exit interview questions focused on enumerators understanding of the interview and data entry process, safety protocols while in the field, the enumerators' thoughts on the training process including strengths, weaknesses and ways to improve the training. The

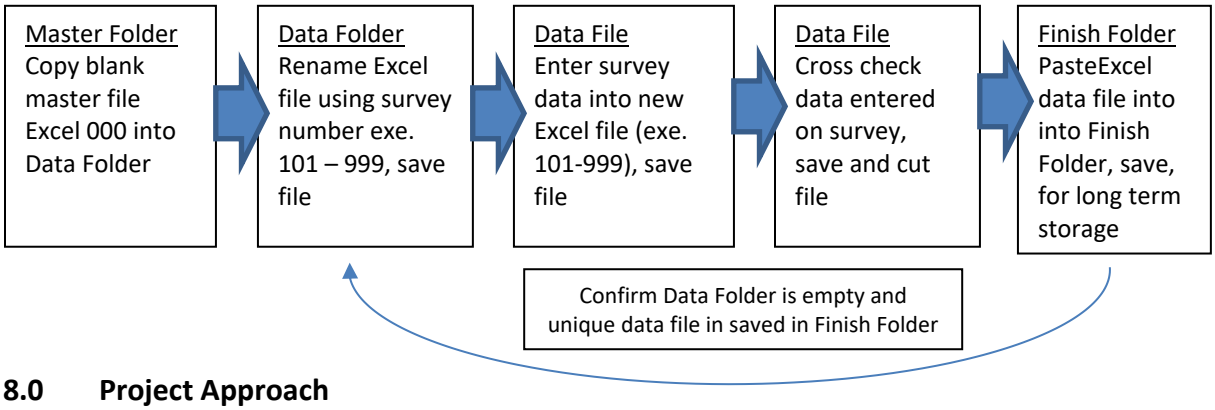
project staff also confirmed that each enumerator was available to work on the survey for the entire projected time period in all four districts.

- The exit interviews also requested input from the enumerators on ways to improve the training process in the future, as well as to identify weaknesses in the training.

7.1 Date Entry and Archiving Process

The following flow chart describes how the enumerators entered the survey data starting at a completed paper copy, and ended with a finished survey form recorded in the database. Once individual survey forms were entered into the database, they were linked using an Excel macro application to aggregate the statistics from within the district and between districts.

Flow Chart I: The Data Entry Process



8.0 Project Approach

The project provides farmers with technology transfer and training for specific commodities within their district. The commodities were selected in relation to the appropriateness of these species relative to the agricultural climates and soils in the districts, as well as CCT's ability to sell these commodities in international markets.

8.1 Appropriateness of Commodity Focus

The following chart (Figure 37) illustrates the distribution of crops promoted by the project, measured by the number of sub-districts where they will be planted/promoted. The most widely promoted products are shade tree seedlings, which in themselves are not a crop, but are an essential part of the crop production system. Coffee, cocoa, black pepper, cloves and vanilla are all understory species. These plants evolved in an environment growing under the canopy

(overstory) of larger shade trees. Providing shade for these commodities is an essential part of growing a quality product in a sustainable way.

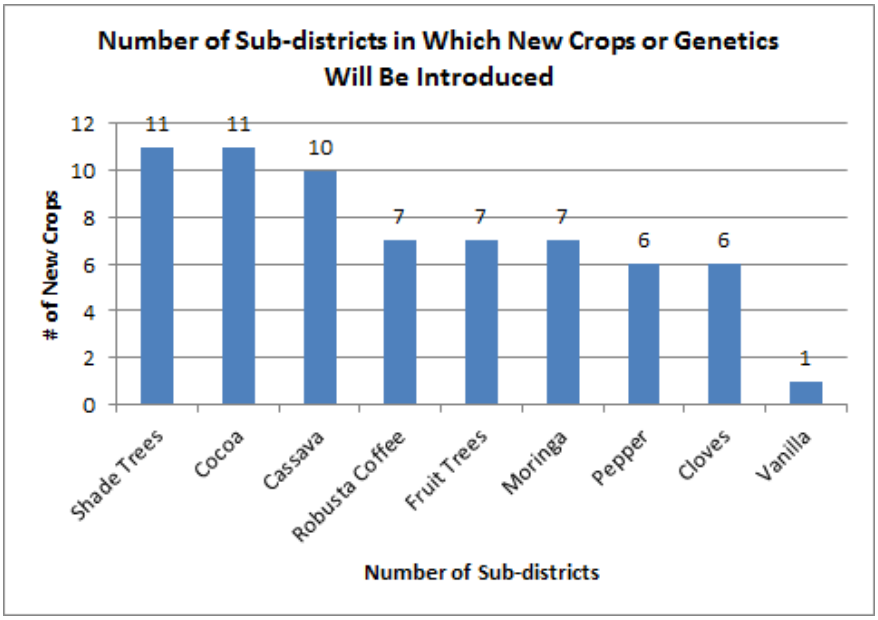


Figure 37

Cocoa (to be promoted in 11 sub-districts) is relatively new to East Timor. Indonesia is one of the leading cocoa producers in the world. The genotypes for many of the cocoa varieties produced in Indonesia have historically been plagued by pod bore problems. Pod bore infestations result in lower yields and reduced quality. The new/improved genotypes that will be introduced as part of the USDA project will have a significant level of pod bore tolerance. This will give East Timor growers a significant advantage over Indonesian cocoa growers.

Improved cassava will be introduced into 10 of the 14 sub-districts where the project works. Since over 93% of households surveyed reported that they produce cassava, this is an important staple crop and is appropriate to include in the project's product mix. In addition to being a regular part of the rural diet in East Timor, CCT's cassava flour mill will give growers an opportunity to sell cassava as a cash crop.

Table V: USDA Project, Distribution of Crops by Sub-district

District & Sub-district	Cassava	Shade Trees	Cocoa	Robusta Coffee	Fruit Trees	Moringa	Pepper	Cloves	Vanilla
Aileu, Aileu Villa					x		x	x	
Aileu, Remexio							x	x	
Aileu, Laulara					x		x	x	x
Baucau, Venilale		x	x	x					
Lautem, Lospalos	x	x	x	x	x	x	x	x	
Lautem, Lautem	x	x	x	x	x	x		x	
Lautem, Iliomar	x	x	x	x	x	x	x	x	
Lautem, Luro	x	x	x	x	x	x	x		
Lautem, Tutuala	x	x	x		x	x			
Viqueque, Ossu	x	x	x	x					
Viqueque, Watulari	x	x	x						
Viqueque Viqueque	x	x	x			x			
Viqueque, Uatucarban	x	x	x			x			
Viqueque, Lacluta	x	x	x	x					

Coffee and spices have very specific climate requirements. The distribution of these commodities has been determined by agro-climate suitability within each sub-district.

8.2 Appropriateness of Geographic Focus

Figure 38 examines the number of new crops (enhanced genetic materials) that will be provided within each sub-district by the USDA project.

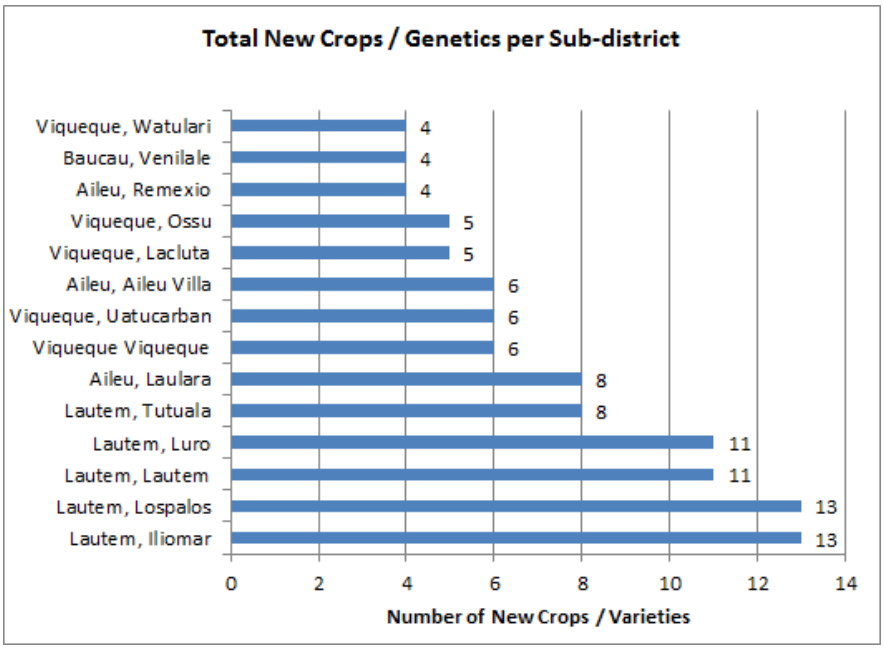


Figure 38

The eastern part of East Timor, including the districts of Lautem, Viqueque and selected sub-districts within Baucau, have not received as much attention from development agencies and donors as many of the districts in central and western East Timor. The USDA project will make a significant effort to work in Lautem and other areas that have been underserved in the past.

As can be noted in Figure 38, Lautem District will receive more new genetic material than any other district.

8.3 Appropriateness of Target Indicators

East Timor's population is nutritionally challenged. UNICEF estimates that between 2008 and 2012, 44.7% of the population (for children) was underweight and stunting occurred in 58% of the childhood population. Diversifying and increasing the availability of food (via introduction of additional fruit trees and varieties) in the rural diet will help mitigate some of the suffering that children endure within the project area.

8.4 Project Risk Factors and Risk Mitigation

Risk factors associated with the USDA project are similar to those that affect any agricultural operation. These may include but are not limited to pest and pathogen risk, weather anomalies, and climate change. Climate change is a real concern. Coffee production in East Timor tends to be highly variable. From 2009 – 2014, CCT has seen its Arabica coffee sales volume range between 17 million kilos in 2010, dropping to 2.5 million kilos (in 2011). Alternative bearing is a common phenomenon seen in many tree crops. In the case of Arabica coffee, the 6.8-fold change in productivity may be exacerbated by climate change, but is certainly affected by the plant's own physiology (taking a rest year after a very large crop in 2010). Similar yield variations should be expected with the USDA project. It is important, given the propensity for tree crop alternative bearing, to look at trends in productivity, rather than one-off years when measuring project performance.

Soil erosion is an issue in East Timor. Many farms are located on steep slopes that enhance the risk of erosion. Planting shade trees and other cover crops will reduce erosion potential. Additionally, project farmers should be encouraged to maintain stream/river buffers so that there is a significant area of vegetation between their farms and waterways to capture and/or slow sediment transport.

Market risk can be mitigated in Robusta coffee and cocoa by hedging in international commodity markets. Currently, hedges are managed on CCT Arabica coffee through the NCBA Java, Indonesia office. Where possible, NCBA should look for opportunities to expose CCT staff to market management techniques for coffee, cocoa and spices. This may include utilizing programs such as the USDA Cochran Grant Program to provide in-house (overseas) training for CCT staff with the cooperative's international marketing partners, including but not limited to Starbucks and Royal Coffee.

8.5 Staffing and Organizational Structure

Cooperative Café Timor already has a well-established staffing and organizational structure that the USDA project can tap into. CCT has over 500 employees in East Timor, including extension agents located throughout the project geography.

8.6 GoET Strategic Plans and Project Goals

CCT's Ongoing Relationship with East Timor's Communities

NCBA began working in East Timor's coffee sector before the 1999 referendum on independence and the civil unrest that followed.

Today, the cooperative has approximately 24,000 members representing about 70% of the country's coffee growers. After natural gas, coffee is the single largest export in U.S. dollar value produced by the country.

Over the past 16+ years, CCT has developed deep ties to local communities throughout rural parts of the country, and has won the trust of both farmers and the government.

The strong relationship that CCT has built with institutions and communities is exemplified by the willingness of political leaders (including the village chiefs, cabinet ministers and the President) to attend CCT events and assist the cooperative on issues that are important to the development of the country's rural economy and agricultural sector.

The project consultant met with three key government partners while in the field. These meetings included discussions with 1.) Angela da Cruz, Senior Advisor to the Minister of Agriculture and Fisheries, East Timor, 2.) Julie Canto, Vice Administrator for Lautem District (an elected - party official), and 3.) Galeny Galhos, Regional Director of MAF for Aileu District.

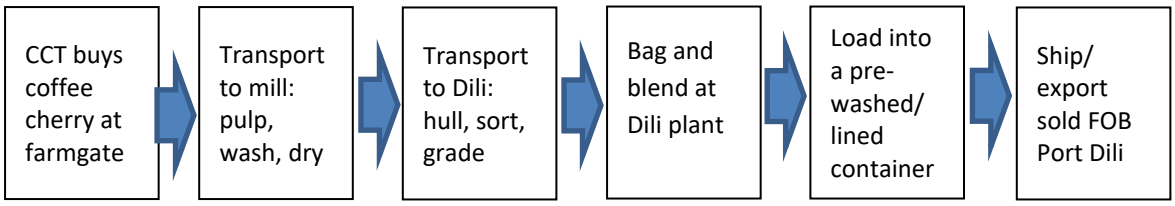
All three government representatives articulated the need to expand agricultural development as a vehicle to achieve improved standards of living in rural areas. This is a fundamental goal of the government at both the local district and national levels.

All of the government representatives voiced their strong support for the USDA project and stated that the goals of the project are in alignment with the goals of the East Timor government. They encouraged USDA to expand its role in assisting the GoET in developing agriculture within the country, with particular emphasis on eastern districts.

9.0 Value Chain Consideration

The following section of the baseline survey report examines the process of value addition of selected products through a series of flow charts that describe how the commodities move from the farm to markets. All of the CCT products are sold as Certified Organic, which commands a premium price. Arabica coffee produced by CCT is also sold under the Fair Trade label, which protects farmers against downside market risk. The Fair Trade label and organic labels can be extended to other commodities being produced via the USDA project.

Robusta Coffee: CCT purchases raw coffee in the form of cherry from farmers at both the farmgate and rural wet mills. Farmers who deliver cherry directly to the wet mill receive a 0.04 USD price premium. At the wet mill, the coffee pulp is removed; the beans are washed and dried, and the resulting parchment is shipped to the CCT main coffee processing facility in Dili.



At the Dili processing facility, the coffee is dry-processed. Dirt, defect beans and stones are removed, as well as any metal fragments (using an automated magnetic system). The dry beans are electronically sorted by bulk density, color, then passed through a four-lane visual inspection system. After this, the coffee is blended to ensure consistent taste, bagged and stored in the warehouse. Containers for export are received, cleaned (pressure washed to remove odor) and lined with cardboard to absorb moisture. The coffee is loaded and sold to the buyer FOB port Dili.

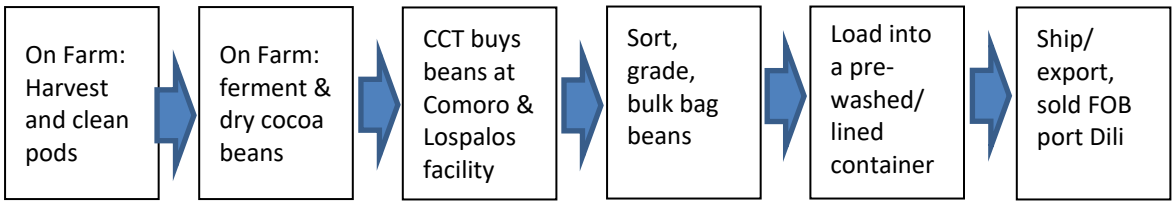
The USDA project will focus on Robusta coffee. Prices for Robusta tend to be less than Arabica in the international market. For example, in 2014, CCT paid 0.35 USD/kg for Arabica cherry and 0.25 USD/kg for Robusta cherry. The revenue difference for the farmer is made up in part by a higher yield for Robusta. Typically, farmers in East Timor receive 700 kg of cherry/ha for Arabica versus 1,000 kg/ha of cherry for Robusta. The higher Robusta yields allow approximately the same income/hectare to be generated for Robusta as Arabica, even though Robusta farmers are paid less per kilo for their crop.

Cocoa: CCT began working with farmers in Triloka sub-district of Baucau in 2011 to plant cocoa. This district is near the city of Baucau, not far from the airport. This sub-district is not part of the USDA project. CCT also planted cocoa in 3 western districts of East Timor, not included in the USDA project geography. This cocoa will help fill the supply chain and allow the cocoa processing and export business to reach an economy of scale sooner that would be allowed by

only relying on cocoa planted by the USDA project. The 2011 cocoa planting was funded by USAID.

Under the USDA project, CCT will build a cocoa and spice warehouse on property owned by the GoET. This property has been leased to CCT for 25 years and is currently used for farmer training and as a nursery production site.

Working in concert with USDA, CCT will provide improved cocoa varieties to farmers in Baucau (sub-district Venilale), four sub-districts in Lautem, and two sub-districts in Viqueque. The genotype being used is tolerant to cocoa pod bore. This is a major pest in Indonesia, and can have significant negative impacts on yields. The pod bore tolerant varieties will provide farmers in East Timor with a significant comparative advantage over farmers using older varieties common to Indonesia.

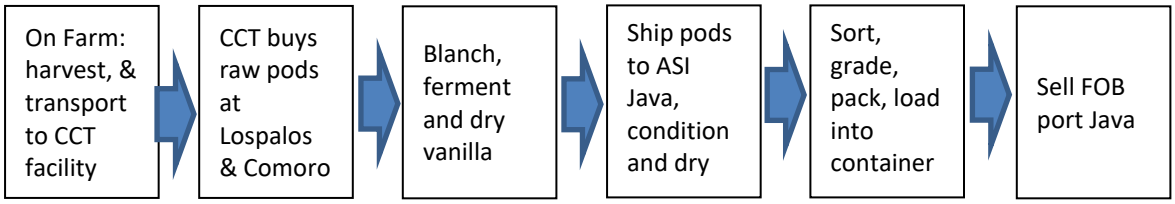


Cocoa farmers will harvest pods and after a week of pod storage, remove the beans. The beans are fermented on the farm (or at rural collection centers operated by CCT) and dried[7]. CCT will purchase the beans at its Comoro and Lospalos warehouses. At the warehouse, the beans will be sorted, graded and bulk bagged. The cocoa beans will be loaded into cleaned containers and shipped to Dili port, where they will be sold FOB.

Vanilla: this understory vine crop (vanilla) requires shade and a host tree to provide structure/scaffolding for climbing. Farmers harvest pods (green) and deliver them to the CCT facilities at Lospalos and Comoro. CCT blanches the pods in 70 degree C water for about 2.5 minutes to stop enzymatic processes. The pods are then dried and fermented for approximately two days. After fermentation, the pods have a moisture content of approximately 40%.

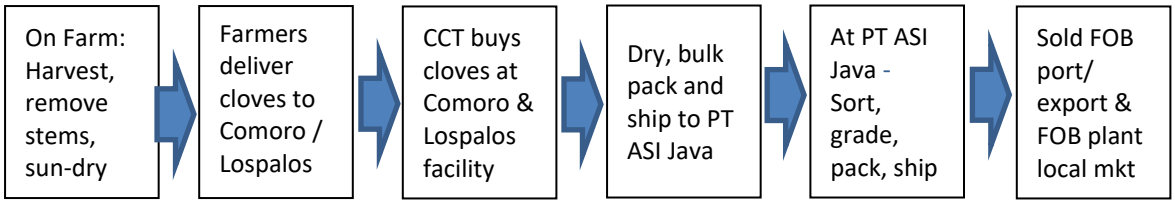
Once the moisture level is reduced to a point where they can be shipped, the pods are loaded into a container and forwarded to ASI Java. At ASI, the pods will be further dried to approximately 15% moisture and conditioned inside wooden boxes over a 3 – 6 month period.

[7] Cocoa in Indonesia is typically fermented on the farm; however, in East Timor, CCT may opt to collect wet beans and ferment and dry them at rural fermentation facilities. This process could enhance bean quality, consistency and price.



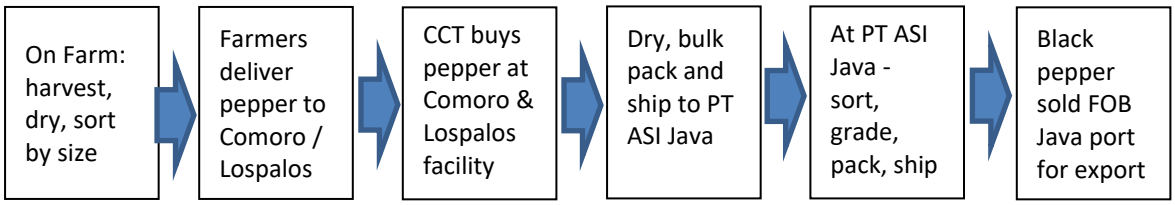
After conditioning at the PT Agri Spice Indonesia (ASI)vanilla processing facility in Klaten (central Java), the pods are sorted, graded and packed. Once packed, the vanilla is loaded into washed and pre-lined containers, where it is sold FOB port Java to international buyers.

Cloves: when matureclove trees are medium-height (+/- 10 meters) and have very specific climatic requirements within the tropical rainforest ecosystem. The cloves are hand-harvested by family labor; however, some farmers may hire outside labor to assist with this physically-demanding process. Once harvested, the stems are removed and the cloves are sun-dried.



CCT currently purchases cloves at its Comoro warehouse and plans to also purchase cloves at its Lospalos facility. At the warehouse, final drying is completed, bringing the product to 12% moisture. The cloves are bulk-packed into bags and shipped to the PT ASI facility at Klaten, Java for sorting, grading and packing. Cloves are sold into the local Indonesian market (to the clove cigarette industry) and exported. Export sales are executed as FOB port Java contracts. Once minimal volumes are achieved, it is planned that CCT will export directly to the U.S. and EU markets.

Black Pepper: thisvine crop is produced on farms as an understory plant. The pepper is harvested and the peppercorns are sorted by size. The peppercorns are sun-dried to approximately 15% at the farm.



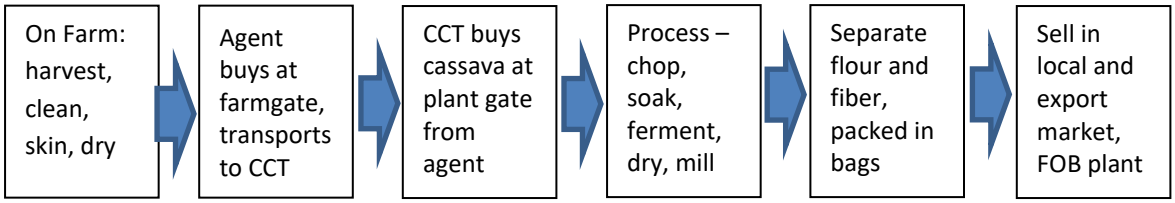
CCT purchases black pepper at its Comoro facility (and its future Lospalos facility). In Comoro, the peppercorns are bulk packed and loaded into a container for shipment to the PT ASI facility

at Klaten, Java. Once in Klaten, the pepper is sorted, graded and packed for export. Export sales are made as FOB Java port contracts.

Cassava: In early 2015, CCT commissioned its cassava flour processing plant. To date, they have purchased approximately 2,000 tons of dry cassava chips from farmers in the western area of the country. All of the historical purchases have been from districts outside of the USDA project area (except for Lautem). CCT began buying cassava in Lautem District in 2014 and plans to continue purchasing product from farmers as part of its supply chain for the cassava flour mill.

Cassava is widely grown in East Timor. It is consumed mainly at home and is an important food that carries many households through the dry season. Local cassava varieties tend to have low levels of hydrogen cyanide (HCn). This is a naturally-occurring molecule in all cassava genotypes. It is oxidized into a non-toxic form when the tuber is cut, washed or otherwise exposed to air. Local varieties tend to have HCn levels less than 40 ppm. The improved varieties being promoted by CCT have HCn levels in the 50 – 150 ppm range. The higher HCn gives the tuber a bitter taste. This bitter taste is beneficial to the farmer as it discourages pigs and other animals that pilfer the crop. Also, cassava is sometimes stolen out of the field. The higher HCn levels and bitter taste will discourage theft.

The new varieties of cassava being promoted by CCT have higher yields than local genotypes and can be produced in a wider range of soils and agro-climatic conditions. Cassava harvest occurs twice a year, August to September and March to April. One hectare of improved cassava (being promoted by CCT) will yield approximately 6,500 kg using typical East Timor farming practices. Under good farming practices, the new varieties can potentially product 10,000 kg/ha. At 6,500 kg/ha and 0.18 USD/kg, this crop can generate 1,170 USD of gross income/hectare. Assuming a tractor is hired for ground preparation at 50 USD/ha, and weeding labor is paid 25 USD/ha, the improved cassava genotype will net the farmer 1,095 USD/ha.



On the farm, the cassava is harvested and cleaned (dirt removed). The skin is removed and cut into pieces to facilitate drying to approximately 14% moisture. The cassava is purchased by independent agents who work with CCT to consolidate product. These purchasing agents are former CCT extension agents. The agents pay farmers 0.18 USD/kg at the farmgate and sell it to

CCT at the plantgate for 0/21 USD/kg. CCT provides the agents with bags, truck transport and money for purchasing the crop.

At the processing plant, the cassava is chopped and soaked in water for 24 hours. The wet cassava is then run through a chipper and augured into a fermentation tank where bacterial starter is added. The product is held in the fermentation tank for 24 hours. After fermentation, the mash is augured out of the tank and placed on drying racks. The mash is dried in plastic tunnels from about 60% moisture to about 13% moisture. After drying, the cassava is run through a hammer mill and sifter. The fiber is separated from the cassava flour and both products are packed separately. The fiber is packed into 30 kg plastic bags and the flour is packed in to 10 and 25 kg bags.

9.1 Value Chain Calculation

Value chain calculations can be determined for a number of export products associated with the USDA Agribusiness project. Table V (below) shows the change in values for products as they move from the farmgate to the export market. All of these products have some degree of value addition, although the amount varies, depending on the product and market. All raw products are valued at the farmgate and all finished products are valued Freight on Board (FOB) selling price Dili or ports in Java (for vanilla, black pepper and cloves which will be consolidated and exported via CCT's Indonesian operations). Once a minimal level of volume is attained, for example 20 MT of cloves, 5 MT of cured vanilla, etc.), full processing and export directly from Dili will be viable.

Table V: Value Chain Calculations[8]

Value Chain Calculations For Selected Commodities						
On Farm Costs & Income	**Robusta Coffee**	**Cocoa**	**Vanilla**	**Black Pepper**	**Clove**	**Cassava**
Cash Production Cost, USD/kg (see below)	0	0	0	0	0	0
Farmgate Sale Price USD/kg	$1.39	$2.25	$42.00	$7.00	$7.00	$0.18
Farmer Net Income USD/kg						
CCT Costs & Income						
Farmgate Purchase Price USD/kg	$1.39	$2.20	$42.00	$7.00	$7.00	$0.18
Transport Cost USD/kg	$0.06	$0.07	$1.80	$0.03	$0.04	$0.05
Processing, Grading, Drying & Labor Cost, USD/kg	$0.24	$0.13	$5.50	$0.14	$0.28	$0.08
Overhead Cost USD/kg	$0.08	$0.09	$3.25	$0.26	$0.42	$0.03
Processing and Drying Losses USD/ kg	$0.08	$0.11	$2.20	$0.66	$0.35	$0.04
Warehouse, Packing & Port Costs, USD/kg	$0.08	$0.08	$0.80	$0.11	$0.13	$0.02
FOB Port Selling Price USD/kg	$2.40	$2.98	$60.00	$9.00	$9.00	$0.50
Net Income (before depreciation & taxes)	$0.47	$0.30	$4.45	$0.80	$0.78	$0.10

[8] Value Chain Calculation Assume:

- Costs not including contributed family labor, not including opportunity costs
- Farmgate sales price an average of all grades and with certifications for coffee, cocoa, spices
- Includes current international price levels
- No fertilizer or pesticides/herbicides used
- Land preparation done with family labor
- Seedlings provided by project free of charge initially
- Cash production costs assumed to be zero as all labor is provided by family and seed materials or seedlings are provided by CCT or saved by the farmer from last year's crop.
- Farmgate Sales price for Robusta coffee assumes cherry to dried bean ratio of 18%
- Costs not including extension and certification (which is absorbed by CCT)
- Final products include whole black pepper ASTA grade whole; organic gourmet/extract grade I vanilla; cloves grinding 70%/gourmet 30%; Fermented organic cocoa beans 100/110 sized; modified cassava flour, wholesale; green bean washed Robusta grade one organic coffee.

CCT will sell its Robusta coffee, cocoa and spices on the international market. Cassava flour markets will most likely develop locally and regionally.

10.0 Projected Impact of Project on Smallholder Farmers

The project will result in significant beneficial impacts to farmers in the four districts of East Timor (all of which can be classified as smallholders). The project will provide crop and income diversification to farmers in Lautem, Viqueque, and Baucau districts with products that have historically not been produced in these geographies. The project will also provide direct access to international markets via CCT's marketing and sales activities in coffee, cocoa, vanilla, black pepper and cloves. In the proposed Aileu District if approved, the project will provide crop and income diversification, as well as market access to farmers who have not benefitted from donor activities or commercial activities to date within the black pepper, clove, and vanilla sectors.

All project participants will benefit from the inclusion of fruit trees and shade trees. Coffee, cocoa and spices are understory species. These plants evolved as part of the understory tropical forest ecology. When they are grown as an understory crop, they can produce high-quality product commanding a higher market price. Including shade trees in the mix of products promoted by the USDA project is very important to maintaining East Timor's reputation as a supplier of quality high-value agricultural commodities.

Fruit trees, as part of the project activity, will enhance nutritional levels within the household and create opportunities for local sales. In the long-run, fruit from the project's plant materials may enter regional markets, but this type of activity will probably have a time horizon beyond the end date of the project.

11.0 USDA Project Exit Strategy

Coffee, cocoa, cloves, and fruit trees are permanent crops, all requiring more than three years from outplanting project produced seedlings before producing a significant crop. Because of this, the real benefit of these crops may not be captured completely within the time-frame of the project's monitoring and evaluation period. Nevertheless, it cannot be over-emphasized how important it is that these permanent crops be included in the product mix of the project. These tree crops are environmentally sound and help promote soil conservation on East Timor's highly erodible soils. The tree crop commodities selected for this project have excellent post-harvest handling attributes. Good post-harvest handling techniques are within the capabilities of CCT's operating environment. These crops are also sustainable, with minimal inputs and have well-established, deep international markets.

USDA/NCBA will be able to exit the project with the knowledge that CCT will be able to continue providing extension services, post-harvest processing, and access to markets for

farmers/cooperative members. To ensure access to international markets, it is likely that CCT will continue its relationship with NCBA's Java-based commodity sales offices into the foreseeable future (after EOP).

12.0 The Path Forward

The following section provides insight on ways to optimize the future path of the project to improve its impact on beneficiaries and ensure its sustainability. Moving forward, there are two key areas that need to be addressed - 1.) How to best incorporate the additional $2 million of project funding to maximize benefits, 2.) How to best measure project success in achieving targets.

To address the first key question on incorporation of the additional monetization revenue, NCBA should be encouraged to add 2,000 additional farmers to the original 8,000 farmer client base. This will bring the total number of beneficiaries to 10,000 households. The additional 2,000 farmers/beneficiaries should be added in the Aileu District (as proposed by NCBA). Focusing additional resources on this district will allow CCT to rapidly build its supply chain for cloves, black pepper, vanilla, and selected fruit. The knowledge and networks that CCT already has in Aileu will support market development for the export commodities by creating the critical mass and volume needed for the organization to establish a Dili-based export facility. This will benefit all four districts in which the project operates and the 10,000 beneficiary households.

The project's timeline should be expanded from four years to 5.5 years. This can be justified by two factors: the first factor was the six month delay in project start-up, resulting from the need to undertake the baseline survey prior to full implementation of the activity. The second and more important issue is that the perennial crop mix being promoted by the USDA project will not come into production until approximately five years after funding. If the project ends before the fifth year, USDA will not benefit from an accurate end-of-project evaluation that shows the actual change in on-farm income, increases in crop yields, rise in aggregate production by commodity and district, development of the supply chain, value of exports and new markets developed.

USDA and NCBA should time the project's mid-term evaluation for a point after the seedling distribution/nursery activities have been completed. This will allow the evaluation to capture the results of the seedling distribution process and set the stage (make projections) for expected end-of-project results.

Some of the Result Indicators included in the monitoring and evaluation plan involved tracking changes in yield and volumes at the farm level. As discussed in this report, collecting this data from farmers is difficult, as they do not have an accurate accounting of the size (square meters)

of their farms or their yields (measured in standard units). To meet USDA's monitoring and evaluation planned criteria, CCT should develop a monitoring plot system with randomly selected farmers in all four districts where the project is being implemented. This is the best way to collect accurate statistical information on yields as required by the current result indicators.

Decisions on how to move forward on the above issues need to be agreed on in a timely fashion (by end September 2015). East Timor will be entering its rainy season in the last quarter of 2015. Specific agricultural operations need to be timed with the rainy season. If decisions relating to the project's future path are delayed, the project could miss one agricultural year. This would have serious negative effects on the implementation timeline, knowledge and technology transfer to the beneficiaries/ farmers, and end-of-project results.

Report Annex

Annex I: **Farmer Survey Questionnaires and Dataset**

Annex II: **Agro-Input Deal Questionnaires and Dataset**

Annex III: **Project Result Indicators**

Annex IV: **Specific Quotes from Stakeholders**

Annex V: **Baseline Survey Staff and Consultants**

Annex VI: **Power Point Presentation Based on the Baseline Report**

Annex VII: **Baseline Survey Database (English)**

Annex VIII: **Baseline Survey Form (English and Bahasa Indonesian Language)**

Annex IX: **Photo Set of Baseline Activity**

Annex I: Farmer Survey Questionnaires and Dataset

Timor Leste Agribusiness Development Project

Baseline Survey

July 2015

Total Population (n)	**478**	
Disricts	**Lautem**	**Viqueque**	**Baucau**	**Aileu**
Sample Size (n) per District	**163**	**189**	**46**	**80**
Margin of Error 4.8%				

Question #	RI # and Answer	Question	Units, Numbers of Farmers Responding					All Districts	
1	x	**Gender** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
1	a	Male	136	163	41	72	412	**86.2%**	86.2%
1	b	Female	27	26	5	8	66	**13.8%**	100.0%
2	x	**What is your age?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
2	a	<20	0	1	0	0	1	**0.2%**	0.2%
2	b	20-29	7	13	2	3	25	**5.2%**	5.4%
2	c	30-39	26	32	6	11	75	**15.7%**	21.1%
2	d	40-49	60	53	11	19	143	**29.9%**	51.0%
2	e	50-59	45	40	10	27	122	**25.5%**	76.6%
2	f	60+	25	50	17	20	112	**23.4%**	100.0%
2	g	Don't Know	0	0	0	0	0	**0.0%**	100.0%
3	x	**What language do you speak at home?** *(pri*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
3	a	Fataluku	112	0	0	0	112	**23.4%**	23.4%
3	b	Makasae	13	114	0	0	127	**26.6%**	50.0%
3	c	Makalero	31	2	0	0	33	**6.9%**	56.9%
3	d	Tetumterik	0	47	0	0	47	**9.8%**	66.7%
3	e	Naueti	0	25	0	0	25	**5.2%**	72.0%
3	f	Waimua	0	0	43	0	43	**9.0%**	81.0%
3	g	Mambae	0	0	0	77	77	**16.1%**	97.1%
3	h	Tetum	0	1	0	3	4	**0.8%**	97.9%
3	i	Bahasa Indonesian	0	0	0	0	0	**0.0%**	97.9%
3	j	Other	7	0	3	0	10	**2.1%**	100.0%
3	k	Don't Know	0	0	0	0	0	**0.0%**	100.0%
4	x	**How many years of school have you completed?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
4	a	None	1	0	0	0	1	**0.2%**	0.2%
4	b	1- 4 yrs.	18	25	13	19	75	**15.7%**	15.9%
4	c	5-8 yrs.	31	26	6	16	79	**16.5%**	32.4%
4	d	9-12 yrs.	33	25	3	7	68	**14.2%**	46.7%
4	e	>12 yrs.	16	22	1	7	46	**9.6%**	56.3%
4	f	Don't Know	64	91	23	31	209	**43.7%**	100.0%

5	x	**In October 2013, how many people, including yourself, lived in your household?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
5	a	1	2	1	1	0	4	**0.8%**	0.8%
5	b	2	1	10	0	0	11	**2.3%**	3.1%
5	c	3	5	12	1	3	21	**4.4%**	7.5%
5	d	4	17	18	8	7	50	**10.5%**	18.0%
5	e	5	15	29	6	10	60	**12.6%**	30.5%
5	f	6	21	28	3	13	65	**13.6%**	44.1%
5	g	7	27	32	7	9	75	**15.7%**	59.8%
5	h	8	31	22	7	7	67	**14.0%**	73.8%
5	i	9	17	7	3	10	37	**7.7%**	81.6%
5	j	10+ people	27	30	10	21	88	**18.4%**	100.0%
5	k	Don't Know	0	0	0	0	0	**0.0%**	100.0%

6	x	**In October 2013, how many school age children lived in your household?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
6	a	None	21	32	5	6	64	**13.4%**	13.4%
6	b	1	11	25	3	9	48	**10.0%**	23.4%
6	c	2	26	22	10	11	69	**14.4%**	37.9%
6	d	3	21	44	4	9	78	**16.3%**	54.2%
6	e	4	30	32	5	16	83	**17.4%**	71.5%
6	f	5	23	18	9	13	63	**13.2%**	84.7%
6	g	6	19	6	6	8	39	**8.2%**	92.9%
6	h	7	6	5	2	3	16	**3.3%**	96.2%
6	i	8	2	5	1	3	11	**2.3%**	98.5%
6	j	9	4	0	1	1	6	**1.3%**	99.8%
6	k	10+ Children	0	0	0	1	1	**0.2%**	100.0%
6	l	Don't Know	0	0	0	0	0	**0.0%**	100.0%

7	x	**In October 2013, how many school age children in your household regularly attended <u>primary</u> school?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
7	a	None	33	69	14	18	134	**28.0%**	28.0%
7	b	1	32	42	11	22	107	**22.4%**	50.4%
7	c	2	51	44	7	20	122	**25.5%**	75.9%
7	d	3	29	23	8	10	70	**14.6%**	90.6%
7	e	4	11	9	3	7	30	**6.3%**	96.9%
7	f	5	6	2	2	2	12	**2.5%**	99.4%
7	g	6	1	0	1	1	3	**0.6%**	100.0%
7	h	7	0	0	0	0	0	**0.0%**	100.0%
7	i	8	0	0	0	0	0	**0.0%**	100.0%
7	j	9	0	0	0	0	0	**0.0%**	100.0%
7	k	10+ Children	0	0	0	0	0	**0.0%**	100.0%
7	l	Don't Know	0	0	0	0	0	**0.0%**	100.0%

8	x	**In October 2013, how many school age children in your household regularly attended secondary school?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
8	a	None	64	83	19	19	185	**38.7%**	38.7%
8	b	1	47	54	10	24	135	**28.2%**	66.9%
8	c	2	30	33	4	19	86	**18.0%**	84.9%
8	d	3	10	14	9	9	42	**8.8%**	93.7%
8	e	4	6	2	1	6	15	**3.1%**	96.9%
8	f	5	5	3	1	1	10	**2.1%**	99.0%
8	g	6	1	0	1	0	2	**0.4%**	99.4%
8	h	7	0	0	1	1	2	**0.4%**	99.8%
8	i	8	0	0	0	1	1	**0.2%**	100.0%
8	j	9	0	0	0	0	0	**0.0%**	100.0%
8	k	10+ Children	0	0	0	0	0	**0.0%**	100.0%
8	l	Don't Know	0	0	0	0	0	**0.0%**	100.0%

9	105	**In October 2013, were you a member of any of the following groups, associations an organization? -** *If No or Don't Know #10, #11, #12, #13 are NA , (check all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
9	a	No	160	189	46	80	475	**99.4%**	99.4%
9	b	Water Users Associations	0	0	0	0	0	**0.0%**	99.4%
9	c	Farmer/ Producer Organization	0	0	0	0	0	**0.0%**	99.4%
9	d	Trade and Business Association	0	0	0	0	0	**0.0%**	99.4%
9	e	Community Based Organization (CBO)	0	0	0	0	0	**0.0%**	99.4%
9	f	Private Enterprise (firms)	0	0	0	0	0	**0.0%**	99.4%
9	g	Other	0	0	0	0	0	**0.0%**	99.4%
9	h	Don't Know	3	0	0	0	3	**0.6%**	100.0%

10	401	**Before October 2013, had your farmer group or farmer association received training in new agricultura technology or management practices from the project?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
10	a	Yes	0	0	0	0	0	**0.0%**	0.0%
10	b	No	149	175	42	74	440	**92.1%**	92.1%
10	c	Don't Know	0	2	0	0	2	**0.4%**	92.5%
10	d	NA	14	12	4	6	36	**7.5%**	100.0%

11	105	**In October 2013, if you were a member of any organization noted in question #9 did your group apply new technology or management practices as a result of project assistance?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
11	c	Yes	0	0	0	0	0	**0.0%**	0.0%
11	d	No	146	172	42	73	433	**90.6%**	90.6%
11	c	Don't Know	4	1	0	1	6	**1.3%**	91.8%
11	d	NA	13	16	4	6	39	**8.2%**	100.0%

12	401	**In October 2013, if you were a farmer group member did you apply new technology or management practices as a result of project assistance? *(check one)***	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
12	a	Yes	0	0	0	0	0	**0.0%**	0.0%
12	b	No	147	173	42	74	436	**91.2%**	91.2%
12	c	Don't Know	0	0	0	0	0	**0.0%**	91.2%
12	d	NA	16	16	4	6	42	**8.8%**	100.0%

13	1001	**In October 2013, if you were a member of a trade association or processing organization (an agricultural processor) did you apply new technology or management practices as a result of project assistance?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
13	a	Yes	0	0	0	0	0	**0.0%**	0.0%
13	b	No	149	171	42	74	436	**91.2%**	91.2%
13	c	Don't Know	0	2	0	0	2	**0.4%**	91.6%
13	d	NA	14	16	4	6	40	**8.4%**	100.0%

14	103	**Before October 2013, had you received training in new agricultural technology or management practices from the project?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
14	a	Yes	0	0	0	0	0	**0.0%**	0.0%
14	b	No	161	189	46	80	476	**99.6%**	99.6%
14	c	Don't Know	2	0	0	0	2	**0.4%**	100.0%

15	103	**If trained by the project (before October 2013), had you applied the new technology or management practices you learned?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
15	a	Yes	0	0	0	0	0	**0.0%**	0.0%
15	b	No	162	188	46	79	475	**99.4%**	99.4%
15	c	Don't Know	1	1	0	1	3	**0.6%**	100.0%

16	x	**If you applied new technology or management practices you learned from the project before October 2013, did they result in increasing your income?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
16	a	Yes	0	0	0	0	0	**0.0%**	0.0%
16	b	No	162	189	46	79	476	**99.6%**	99.6%
16	c	Don't Know	1	0	0	1	2	**0.4%**	100.0%

17	x	**In October 2013, were you activity working with any other MAFF or NGO agricultural projects, other than the USDA project?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
17	a	Yes	2	1	0	0	3	**0.6%**	0.6%
17	b	No	160	187	46	80	473	**99.0%**	99.6%
17	c	Don't Know	1	1	0	0	2	**0.4%**	100.0%

18	x	**Before October 2013, did you produce any of the following crops?** *(Check all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
18	a	Robusta Coffee	0	0	0	11	11	**2.3%**	2.3%
18	b	Cocoa	0	0	0	1	1	**0.2%**	2.5%
18	c	Moringa	0	0	0	1	1	**0.2%**	2.7%
18	d	Cassava	146	180	45	72	443	**92.7%**	95.4%
18	e	Pepper	0	0	0	10	10	**2.1%**	97.5%
18	f	Clove	0	0	0	22	22	**4.6%**	102.1%
18	g	Vanilla	0	0	0	4	4	**0.8%**	102.9%
18	h	Fruit Trees	71	146	33	71	321	**67.2%**	170.1%
18	i	Shade Trees (Seedling)	0	2	1	13	16	**3.3%**	173.4%
18	k	No	8	6	1	0	15	**3.1%**	176.6%
18	l	Don't know	4	0	0	0	4	**0.8%**	177.4%

19	101	**In October 2013, how many of the following plants, <u>not</u> provided by the project, did you grow** *(number of plant, value)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**Mean (μ) Frequency per Farmer**	% Reporting
								μ # of Plants	Farmers
19	a	Robusta Coffee plants	-	-	-	6,050	6,050	13	100.0%
19	b	Cocoa plants	-	-	-	100	100	0	100.0%
19	c	Moringa plants	-	-	-	-	-	0	100.0%
19	d	Cassava	136,358	115,566	17,140	49,825	318,889	667	100.0%
19	e	Black Pepper - plants	-	-	-	3,432	3,432	7	100.0%
19	f	Clove plants	-	-	-	3,815	3,815	8	100.0%
19	g	Vanilla plants	-	-	-	205	205	0	100.0%
19	h	Fruit Trees	4,912	8,394	1,559	2,687	17,552	37	100.0%
19	i	Shade Trees	20	60	30	1,830	1,940	4	100.0%
19	j	None	5	4	1	-	10	0	100.0%
19	k	Don't Know	7	1	-	-	8	0	100.0%

20	302	**Before October 2013 had you received any seedlings from the project?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
20	a	Yes	0	0	0	0	0	**0.0%**	0.0%
20	b	No	160	189	46	80	475	**99.4%**	99.4%
20	c	Don't Know	3	0	0	0	3	**0.6%**	100.0%

21	302	**Before October 2013, which improved plant materials (seedlings) did you receive, as a result of the project?** *(check all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
21	a	Robusta Coffee	0	0	0	0	0	**0.0%**	0.0%
21	b	Cocoa	0	0	0	0	0	**0.0%**	0.0%
21	c	Moringa	0	0	0	0	0	**0.0%**	0.0%
21	d	Cassava	0	0	0	0	0	**0.0%**	0.0%
21	e	Pepper	0	0	0	0	0	**0.0%**	0.0%
21	f	Clove	0	0	0	0	0	**0.0%**	0.0%
21	g	Vanilla	0	0	0	0	0	**0.0%**	0.0%
21	h	Fruit Trees	0	0	0	0	0	**0.0%**	0.0%
21	i	Shade Trees	0	1	0	0	1	**0.2%**	0.2%
21	j	None	148	187	46	80	461	**96.4%**	96.7%
21	k	I don't know	15	1	0	0	16	**3.3%**	100.0%

22	101	**In October 2013, how many of the following plants provided by the project did you grow?** *(number of plants - values, all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
22	a	Robusta Coffee plants	0	0	0	0	0	**0.0%**	0.0%
22	b	Cocoa plants	0	0	0	0	0	**0.0%**	0.0%
22	c	Moringa plants	0	0	0	0	0	**0.0%**	0.0%
22	d	Cassava Ailuka-1	0	0	0	0	0	**0.0%**	0.0%
22	e	Pepper plants	0	0	0	0	0	**0.0%**	0.0%
22	f	Clove plants	0	0	0	0	0	**0.0%**	0.0%
22	g	Vanilla plants	0	0	0	0	0	**0.0%**	0.0%
22	h	Fruit Trees	0	0	0	0	0	**0.0%**	0.0%
22	i	Shade Trees	0	0	0	0	0	**0.0%**	0.0%
22	j	None	153	185	46	80	464	**97.1%**	97.1%
22	k	Don't Know	10	4	0	0	14	**2.9%**	100.0%

23	201	**Before October 2013, what was your annual average income from Robusta coffee, cherry ?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
23	a	Did not grow this crop	147	188	46	69	450	**94.1%**	94.1%
23	b	0 USD	1	0	0	6	7	**1.5%**	95.6%
23	c	1-100	0	0	0	5	5	**1.0%**	96.7%
23	d	101-200	0	0	0	0	0	**0.0%**	96.7%
23	e	201-300	0	0	0	0	0	**0.0%**	96.7%
23	f	301-400	0	0	0	0	0	**0.0%**	96.7%
23	g	401-500	0	0	0	0	0	**0.0%**	96.7%
23	h	501-600	0	0	0	0	0	**0.0%**	96.7%
23	i	601-700	0	0	0	0	0	**0.0%**	96.7%
23	j	701-800	0	0	0	0	0	**0.0%**	96.7%
23	k	801-900	0	0	0	0	0	**0.0%**	96.7%
23	l	>900 USD	0	0	0	0	0	**0.0%**	96.7%
23	m	Don't Know	15	1	0	0	16	**3.3%**	100.0%

24	201	**Before October 2013, what was your annual average income from Cocoa (dry)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
24	a	Did not grow this crop	153	188	46	79	466	**97.5%**	97.5%
24	b	0 USD	1	0	0	1	2	**0.4%**	97.9%
24	c	1-100	0	0	0	0	0	**0.0%**	97.9%
24	d	101-200	0	0	0	0	0	**0.0%**	97.9%
24	e	201-300	0	0	0	0	0	**0.0%**	97.9%
24	f	301-400	0	0	0	0	0	**0.0%**	97.9%
24	g	401-500	0	0	0	0	0	**0.0%**	97.9%
24	h	501-600	0	0	0	0	0	**0.0%**	97.9%
24	i	601-700	0	0	0	0	0	**0.0%**	97.9%
24	j	701-800	0	0	0	0	0	**0.0%**	97.9%
24	k	801-900	0	0	0	0	0	**0.0%**	97.9%
24	l	>900 USD	0	0	0	0	0	**0.0%**	97.9%
24	m	Don't Know	9	1	0	0	10	**2.1%**	100.0%

25	201	**Before October 2013, what was your annaul average income from Black Pepper (dry)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
25	a	Did not grow this crop	155	188	46	70	459	**96.0%**	96.0%
25	b	0 USD	0	0	0	4	4	**0.8%**	96.9%
25	c	1-100	0	0	0	3	3	**0.6%**	97.5%
25	d	101-200	0	0	0	0	0	**0.0%**	97.5%
25	e	201-300	0	0	0	0	0	**0.0%**	97.5%
25	f	301-400	0	0	0	0	0	**0.0%**	97.5%
25	g	401-500	0	0	0	1	1	**0.2%**	97.7%
25	h	501-600	0	0	0	1	1	**0.2%**	97.9%
25	i	601-700	0	0	0	0	0	**0.0%**	97.9%
25	j	701-800	0	0	0	1	1	**0.2%**	98.1%
25	k	801-900	0	0	0	0	0	**0.0%**	98.1%
25	l	901-1000	0	0	0	0	0	**0.0%**	98.1%
25	m	1001-1100	0	0	0	0	0	**0.0%**	98.1%
25	n	1101-1200	0	0	0	0	0	**0.0%**	98.1%
25	o	1201-1300	0	0	0	0	0	**0.0%**	98.1%
25	p	>1300 USD	0	0	0	0	0	**0.0%**	98.1%
25	q	Don't Know	8	1	0	0	9	**1.9%**	100.0%

26	201	**Before October 2013, what was your annual average income from Cloves (dry)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
26	a	Did not grow this crop	155	188	46	58	447	**93.5%**	93.5%
26	b	0 USD	0	0	0	9	9	**1.9%**	95.4%
26	c	1-100	0	0	0	4	4	**0.8%**	96.2%
26	d	101-200	0	0	0	4	4	**0.8%**	97.1%
26	e	201-300	0	0	0	3	3	**0.6%**	97.7%
26	f	301-400	0	0	0	0	0	**0.0%**	97.7%
26	g	401-500	0	0	0	1	1	**0.2%**	97.9%
26	h	501-600	0	0	0	1	1	**0.2%**	98.1%
26	i	601-700	0	0	0	0	0	**0.0%**	98.1%
26	j	701-800	0	0	0	0	0	**0.0%**	98.1%
26	k	801-900	0	0	0	0	0	**0.0%**	98.1%
26	l	901-1000	0	0	0	0	0	**0.0%**	98.1%
26	m	1001-1100	0	0	0	0	0	**0.0%**	98.1%
26	n	1101-1200	0	0	0	0	0	**0.0%**	98.1%
26	o	1201-1300	0	0	0	0	0	**0.0%**	98.1%
26	p	1301-1400	0	0	0	0	0	**0.0%**	98.1%
26	q	1401-1500	0	0	0	0	0	**0.0%**	98.1%
26	r	>1500 USD	0	0	0	0	0	**0.0%**	98.1%
26	s	Don't Know	8	1	0	0	9	**1.9%**	100.0%

27	201	**Before October 2013, what was your annual average income from Moringa (fresh leaf)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
27	a	None	155	188	46	80	469	**98.1%**	98.1%
27	b	0 USD	0	0	0	0	0	**0.0%**	98.1%
27	c	1-100	0	0	0	0	0	**0.0%**	98.1%
27	d	101-200	0	0	0	0	0	**0.0%**	98.1%
27	e	201-300	0	0	0	0	0	**0.0%**	98.1%
27	f	301-400	0	0	0	0	0	**0.0%**	98.1%
27	g	401-500	0	0	0	0	0	**0.0%**	98.1%
27	h	501-600	0	0	0	0	0	**0.0%**	98.1%
27	i	601-700	0	0	0	0	0	**0.0%**	98.1%
27	j	701-800	0	0	0	0	0	**0.0%**	98.1%
27	k	801-900	0	0	0	0	0	**0.0%**	98.1%
27	l	>900 USD	0	0	0	0	0	**0.0%**	98.1%
27	m	Don't Know	8	1	0	0	9	**1.9%**	100.0%

28	201	**Before October 2013, what was the annual average income for Vanilla (fresh pods)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
28	a	Did not grow this crop	155	188	46	77	466	**97.5%**	97.5%
28	b	0 USD	0	0	0	1	1	**0.2%**	97.7%
28	c	1-100	0	0	0	1	1	**0.2%**	97.9%
28	d	101-200	0	0	0	0	0	**0.0%**	97.9%
28	e	201-300	0	0	0	0	0	**0.0%**	97.9%
28	f	301-400	0	0	0	0	0	**0.0%**	97.9%
28	g	401-500	0	0	0	1	1	**0.2%**	98.1%
28	h	501-600	0	0	0	0	0	**0.0%**	98.1%
28	i	601-700	0	0	0	0	0	**0.0%**	98.1%
28	j	701-800	0	0	0	0	0	**0.0%**	98.1%
28	k	801-900	0	0	0	0	0	**0.0%**	98.1%
28	l	>900 USD	0	0	0	0	0	**0.0%**	98.1%
28	m	Don't Know	8	1	0	0	9	**1.9%**	100.0%

29	202	**Before October 2013, what was your average annual income from cassava ?** *(check one)* **(Number of Farmers in this range)**	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
29	a	Did not grow this crop	15	9	1	7	32	**6.7%**	6.7%
29	b	0 USD	54	68	14	28	164	**34.3%**	41.0%
29	c	1-100	64	102	30	43	239	**50.0%**	91.0%
29	d	101-200	8	0	1	2	11	**2.3%**	93.3%
29	e	201-300	2	0	0	0	2	**0.4%**	93.7%
29	f	301-400	4	0	0	0	4	**0.8%**	94.6%
29	g	401-500	1	0	0	0	1	**0.2%**	94.8%
29	h	501-600	1	0	0	0	1	**0.2%**	95.0%
29	i	601-700	0	0	0	0	0	**0.0%**	95.0%
29	j	701-800	0	0	0	0	0	**0.0%**	95.0%
29	k	801-900	0	0	0	0	0	**0.0%**	95.0%
29	l	901-1000	0	0	0	0	0	**0.0%**	95.0%
29	m	1001-1100	0	0	0	0	0	**0.0%**	95.0%
29	n	1101-1200	0	0	0	0	0	**0.0%**	95.0%
29	o	1201-1300	0	0	0	0	0	**0.0%**	95.0%
29	p	1301-1400	0	0	0	0	0	**0.0%**	95.0%
29	q	1401-1500	0	0	0	0	0	**0.0%**	95.0%
29	r	>1500, USD	0	0	0	0	0	**0.0%**	95.0%
29	s	Don't Know	14	10	0	0	24	**5.0%**	100.0%

30	201	**Before October 2013, what was your average annual yield (kg/ha) for robusta coffee, cherry?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
30	a	Does not grow this crop	140	160	42	66	408	**85.4%**	85.4%
30	b	0 kg/ha	2	0	0	3	5	**1.0%**	86.4%
30	c	1-100	0	0	0	7	7	**1.5%**	87.9%
30	d	101-200	0	0	0	0	0	**0.0%**	87.9%
30	e	201-300	0	0	0	0	0	**0.0%**	87.9%
30	f	301-400	0	0	0	0	0	**0.0%**	87.9%
30	g	401-500	0	0	0	0	0	**0.0%**	87.9%
30	h	501-600	0	0	0	1	1	**0.2%**	88.1%
30	i	601-700	0	0	0	0	0	**0.0%**	88.1%
30	j	701-800	0	0	0	0	0	**0.0%**	88.1%
30	k	801-900	0	0	0	0	0	**0.0%**	88.1%
30	l	900-1000	0	0	0	0	0	**0.0%**	88.1%
30	m	1001 1200	0	0	0	0	0	**0.0%**	88.1%
30	n	1201-1300	0	0	0	0	0	**0.0%**	88.1%
30	o	1301-1400	0	0	0	0	0	**0.0%**	88.1%
30	p	1401-1500	0	0	0	0	0	**0.0%**	88.1%
30	q	>1500	0	0	0	0	0	**0.0%**	88.1%
30	r	Don't Know	21	29	4	3	57	**11.9%**	100.0%

31	201	**Before October 2013, what was your average annual yield (kg/ha) for Cocoa (dry)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
31	a	Does not grow this crop	137	159	42	76	414	**86.6%**	86.6%
31	b	0 kg/ha	3	0	0	1	4	**0.8%**	87.4%
31	c	1-200	0	0	0	0	0	**0.0%**	87.4%
31	d	201-400	0	0	0	0	0	**0.0%**	87.4%
31	e	401-600	0	0	0	0	0	**0.0%**	87.4%
31	f	601-800	0	0	0	0	0	**0.0%**	87.4%
31	g	801-1000	0	0	0	0	0	**0.0%**	87.4%
31	h	1001-1200	0	0	0	0	0	**0.0%**	87.4%
31	i	1201-1400	0	0	0	0	0	**0.0%**	87.4%
31	j	1401-1600	0	0	0	0	0	**0.0%**	87.4%
31	k	1601-1800	0	0	0	0	0	**0.0%**	87.4%
31	l	1801-2000	0	0	0	0	0	**0.0%**	87.4%
31	m	>2000 kg/ha	0	0	0	0	0	**0.0%**	87.4%
31	n	Don't Know	23	30	4	3	60	**12.6%**	100.0%

32	201	**Before October 2013, what was your average annual yield (kg/ha) for Black Pepper (dry)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
32	a	Did not grow this crop	138	159	42	67	406	**84.9%**	84.9%
32	b	0	2	0	0	4	6	**1.3%**	86.2%
32	c	1-1000 kg/ha	1	0	0	6	7	**1.5%**	87.7%
32	d	1001-2000	0	0	0	0	0	**0.0%**	87.7%
32	e	2001-3000	0	0	0	0	0	**0.0%**	87.7%
32	f	3001-4000	0	0	0	0	0	**0.0%**	87.7%
32	g	4001-5000	0	0	0	0	0	**0.0%**	87.7%
32	h	5001-6000	0	0	0	0	0	**0.0%**	87.7%
32	i	6001-7000	0	0	0	0	0	**0.0%**	87.7%
32	j	7001-8000	0	0	0	0	0	**0.0%**	87.7%
32	k	8001-9000	0	0	0	0	0	**0.0%**	87.7%
32	l	9001-10,000	0	0	0	0	0	**0.0%**	87.7%
32	m	>10,000 kg/ha	0	0	0	0	0	**0.0%**	87.7%
32	n	Don't Know	22	30	4	3	59	**12.3%**	100.0%

33	201	**Before October 2013, what was your average annual yield (kg/ha) for Cloves (dry)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
33	a	Did not grow this crop in 2013	138	159	42	55	394	**82.4%**	82.4%
33	b	0	3	0	0	8	11	**2.3%**	84.7%
33	c	1-1000 kg/ ha	1	0	0	13	14	**2.9%**	87.7%
33	d	1001-2000	0	0	0	1	1	**0.2%**	87.9%
33	e	2001-3000	0	0	0	0	0	**0.0%**	87.9%
33	f	3001-4000	0	0	0	0	0	**0.0%**	87.9%
33	g	4001-5000	0	0	0	0	0	**0.0%**	87.9%
33	h	5001-6000	0	0	0	0	0	**0.0%**	87.9%
33	i	6001-7000	0	0	0	0	0	**0.0%**	87.9%
33	j	7001-8000	0	0	0	0	0	**0.0%**	87.9%
33	k	8001-9000	0	0	0	0	0	**0.0%**	87.9%
33	l	9001-10,000	0	0	0	0	0	**0.0%**	87.9%
33	m	>10,000 kg/ha	0	0	0	0	0	**0.0%**	87.9%
33	n	Don't Know	21	30	4	3	58	**12.1%**	100.0%

34	201	**Before October 2013, what was your average annual yield (kg/ha) for Vanilla (fresh pods)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
34	a	Did not grow this crop in 2013	140	158	42	74	414	**86.6%**	86.6%
34	b	0	2	1	0	1	4	**0.8%**	87.4%
34	c	1-1000 kg/ha	0	0	0	2	2	**0.4%**	87.9%
34	d	1001-2000	0	0	0	0	0	**0.0%**	87.9%
34	e	2001-3000	0	0	0	0	0	**0.0%**	87.9%
34	f	3001-4000	0	0	0	0	0	**0.0%**	87.9%
34	g	4001-5000	0	0	0	0	0	**0.0%**	87.9%
34	h	5001-6000	0	0	0	0	0	**0.0%**	87.9%
34	i	6001-7000	0	0	0	0	0	**0.0%**	87.9%
34	j	7001-8000	0	0	0	0	0	**0.0%**	87.9%
34	k	8001-9000	0	0	0	0	0	**0.0%**	87.9%
34	l	9001-10,000	0	0	0	0	0	**0.0%**	87.9%
34	m	>10,000 kg/ha	0	0	0	0	0	**0.0%**	87.9%
34	n	Don't Know	21	30	4	3	58	**12.1%**	100.0%

35	202	**Before October 2013, what was your average annual yield (kg/ha) for Cassava (dry)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
35	a	Did not grow this crop in 2013	14	8	1	7	30	**6.3%**	6.3%
35	b	0	43	63	3	5	114	**23.8%**	30.1%
35	c	1-1000 kg/ha	45	47	40	66	198	**41.4%**	71.5%
35	d	1001-2000	2	0	1	0	3	**0.6%**	72.2%
35	e	2001-3000	1	0	0	0	1	**0.2%**	72.4%
35	f	3001-4000	0	0	0	0	0	**0.0%**	72.4%
35	g	4001-5000	0	0	0	0	0	**0.0%**	72.4%
35	h	5001-6000	0	0	0	0	0	**0.0%**	72.4%
35	i	6001-7000	0	0	0	0	0	**0.0%**	72.4%
35	j	7001-8000	0	0	0	0	0	**0.0%**	72.4%
35	k	8001-9000	0	0	0	0	0	**0.0%**	72.4%
35	l	9001-10,000	0	0	0	0	0	**0.0%**	72.4%
35	m	>10,000 kg/ha	0	0	0	0	0	**0.0%**	72.4%
35	n	Don't Know	58	71	1	2	132	**27.6%**	100.0%

36	201	**Before October 2013, what was your average annual yield (kg/ha) for Moringa (fresh leaf)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
36	a	Does not grow this crop	136	157	43	76	412	**86.2%**	86.2%
36	b	0 kg/ha	2	1	0	0	3	**0.6%**	86.8%
36	c	1-100	0	0	0	0	0	**0.0%**	86.8%
36	d	101-200	0	0	0	0	0	**0.0%**	86.8%
36	e	201-300	0	0	0	0	0	**0.0%**	86.8%
36	f	301-400	0	0	0	0	0	**0.0%**	86.8%
36	g	401-500	0	0	0	0	0	**0.0%**	86.8%
36	h	501-600	0	0	0	0	0	**0.0%**	86.8%
36	i	601-700	0	0	0	0	0	**0.0%**	86.8%
36	j	701-800	0	0	0	0	0	**0.0%**	86.8%
36	k	801-900	0	0	0	0	0	**0.0%**	86.8%
36	l	900-1000	0	0	0	0	0	**0.0%**	86.8%
36	m	1001 1200	0	0	0	0	0	**0.0%**	86.8%
36	n	1201-1300	0	0	0	0	0	**0.0%**	86.8%
36	o	1301-1400	0	0	0	0	0	**0.0%**	86.8%
36	p	1401-1500	0	0	0	0	0	**0.0%**	86.8%
36	r	>1500 kg/ ha	0	0	0	0	0	**0.0%**	86.8%
36	s	Don't Know	25	31	3	4	63	**13.2%**	100.0%

37	301	**In October 2013 how many hectares did you activity farm?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
37	a	0 ha	2	3	1	0	6	**1.3%**	1.3%
37	b	>0 - 1 ha	117	155	40	50	362	**75.7%**	77.0%
37	c	>1 - 2 ha	33	27	4	23	87	**18.2%**	95.2%
37	d	>2 - 3 ha	8	1	0	3	12	**2.5%**	97.7%
37	e	>3 - 4 ha	0	0	0	3	3	**0.6%**	98.3%
37	f	>4 - 5 ha	0	1	1	1	3	**0.6%**	99.0%
37	g	>5 ha	0	1	0	0	1	**0.2%**	99.2%
37	h	Don't Know	3	1	0	0	4	**0.8%**	100.0%

38	301	**Before October 2013, on how many hectares of your farm did you use new agricultural technology or management practices which came from the project?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
38	a	0	23	46	11	13	93	**19.5%**	19.5%
38	b	0-0.5	0	0	0	0	0	**0.0%**	19.5%
38	c	0.6-1.0	0	0	0	0	0	**0.0%**	19.5%
38	d	1.1-1.5	0	0	0	0	0	**0.0%**	19.5%
38	e	1.6-2.0	0	0	0	0	0	**0.0%**	19.5%
38	f	2.1-2.50	0	0	0	0	0	**0.0%**	19.5%
38	g	2.6-3.0 ha	0	0	0	0	0	**0.0%**	19.5%
38	h	Don't Know	140	143	35	67	385	**80.5%**	100.0%

39	701	**Before October 2013, had you adopted any new crops or plant varieties as a result of the project?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
39	a	Yes	0	0	0	0	0	**0.0%**	0.0%
39	b	No	157	189	46	77	469	**98.1%**	98.1%
39	c	Don't Know	6	0	0	3	9	**1.9%**	100.0%

40	106	**Before October 2013, did you sign a business operating agreement with the ET government (enter into a PPP), as a result of project assistance?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
40	a	Yes	0	0	0	0	0	**0.0%**	0.0%
40	b	No	158	189	46	80	473	**99.0%**	99.0%
40	c	Don't Know	5	0	0	0	5	**1.0%**	100.0%

41	107	**Before October 2013, had you installed cold or dry storage capacity as a result of project assistance?** *(check all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
41	a	No	159	189	46	80	474	**99.2%**	99.2%
41	b	Dry Storage	0	0	0	0	0	**0.0%**	99.2%
41	c	Cold Storage	0	0	0	0	0	**0.0%**	99.2%
41	d	Don't Know	4	0	0	0	4	**0.8%**	100.0%

42	107	**In October 2013, how many cubic meters of storage had you installed with support from the project?** *(fill in value for all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
42	a	None	158	189	46	80	473	**99.0%**	99%
42	b	Cold Storage (cubic meters)	0	0	0	0	0	**0.0%**	99%
42	c	Dry Storage (cubic meters)	0	0	0	0	0	**0.0%**	99%
42	d	Don't Know "	5	0	0	0	5	**1.0%**	100%

43	203	**Before October 2013, had you personally benefited from the project?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
43	a	Yes	0	0	0	0	0	**0.0%**	0.0%
43	b	No	158	188	46	80	472	**98.7%**	98.7%
43	c	Don't Know	5	1	0	0	6	**1.3%**	100.0%

44	204	**Before October 2013, how many members of your household benefited from the project? (indirect beneficiaries)** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
44	a	None	145	177	42	74	438	**91.6%**	91.6%
44	b	1	0	0	0	0	0	**0.0%**	91.6%
44	c	2	0	0	0	0	0	**0.0%**	91.6%
44	d	3	0	0	0	0	0	**0.0%**	91.6%
44	e	4	0	0	0	0	0	**0.0%**	91.6%
44	f	5	0	0	0	0	0	**0.0%**	91.6%
44	g	6	0	0	0	0	0	**0.0%**	91.6%
44	h	7	0	0	0	0	0	**0.0%**	91.6%
44	i	8	0	0	0	0	0	**0.0%**	91.6%
44	j	9	0	0	0	0	0	**0.0%**	91.6%
44	k	10+	0	0	0	0	0	**0.0%**	91.6%
44	l	Don't Know	18	12	4	6	40	**8.4%**	100.0%

45	x	**In October 2013, did you have running water inside or next to your house?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
45	a	Yes	101	72	7	67	247	**51.7%**	51.7%
45	b	No	62	117	39	13	231	**48.3%**	100.0%
45	c	Don't Know	0	0	0	0	0	**0.0%**	100.0%

46		**In October 2013, did your house have its own toilet?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
46	a	Yes	94	64	11	64	233	**48.7%**	48.7%
46	b	No	69	124	35	16	244	**51.0%**	99.8%
46	c	Don't Know	0	1	0	0	1	**0.2%**	100.0%

47	x	**In October 2013, what was your house made of?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
47	a	Thatch	9	35	4	4	52	**10.9%**	10.9%
47	b	Wood - timber	107	127	34	33	301	**63.0%**	73.8%
47	c	Brick / concrete	47	27	8	43	125	**26.2%**	100.0%
47	d	Don't Know	0	0	0	0	0	**0.0%**	100.0%

48	x	**In October 2013, did your house have electricity?** *(Check all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
48	a	We did not have Electricity	13	59	0	8	80	**16.7%**	16.7%
48	b	EDTL Supply	148	120	46	56	370	**77.4%**	94.1%
48	c	Your Own Generator	0	0	0	0	0	**0.0%**	94.1%
48	d	Non-EDTL source	0	0	0	0	0	**0.0%**	94.1%
48	e	Solar panels	4	12	0	18	34	**7.1%**	101.3%
48	f	Don't Know	0	0	0	0	0	**0.0%**	101.3%

49	x	**In October 2013, on average, how many hours per day did you have electricity at your house?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
49	a	0 hours	5	55	0	6	66	**13.8%**	13.8%
49	b	1-4 hours	0	2	0	7	9	**1.9%**	15.7%
49	c	4-8 hours	0	2	0	1	3	**0.6%**	16.3%
49	d	8-12 hours	4	7	0	10	21	**4.4%**	20.7%
49	e	12-16 hours	0	0	0	0	0	**0.0%**	20.7%
49	f	16-20 hours	0	0	0	0	0	**0.0%**	20.7%
49	g	20-24 hours	0	0	0	0	0	**0.0%**	20.7%
49	h	Full Time Service - 24 hours a day	149	120	46	56	371	**77.6%**	98.3%
49	i	Don't Know	5	3	0	0	8	**1.7%**	100.0%

50	x	**In October 2013, did anyone in your household have a cellphone?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
50	a	Yes	121	127	35	60	343	**71.8%**	71.8%
50	b	No	41	62	11	20	134	**28.0%**	99.8%
50	c	Don't Know	1	0	0	0	1	**0.2%**	100.0%

51	x	**In October 2013, was there a cellphone signal available in your village (could you connect to the network from your village)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
51	a	Yes	121	129	35	60	345	**72.2%**	72.2%
51	b	No	42	60	11	20	133	**27.8%**	100.0%
51	c	Don't Know	0	0	0	0	0	**0.0%**	100.0%

52	x	**In October 2013, did you have a way to charge a cell phone (a power source) at home?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
52	a	Yes	121	127	35	60	343	**71.8%**	71.8%
52	b	No	42	62	11	20	135	**28.2%**	100.0%
52	c	Don't Know	0	0	0	0	0	**0.0%**	100.0%

53	x	**In October 2013, did anyone in your household know how to use SMS (text messaging)?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
53	a	Yes	120	126	35	60	341	**71.3%**	71.3%
53	b	No	43	63	11	20	137	**28.7%**	100.0%
53	c	Don't Know	0	0	0	0	0	**0.0%**	100.0%

54	x	**In October 2013, did your house have a _____?** *(Check all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
54	a	None - we did not have a radio, DVD or TV	79	115	25	34	253	**52.9%**	52.9%
54	b	TV	41	36	13	27	117	**24.5%**	77.4%
54	c	DVD Player	13	13	1	12	39	**8.2%**	85.6%
54	d	Radio	56	43	12	30	141	**29.5%**	115.1%
54	e	Don't Know	0	0	0	0	0	**0.0%**	115.1%

55	x	**Before October 2013, how did you transport your crop to market?** *(check all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
55	a	Your Pony	0	0	0	0	0	**0.0%**	0.0%
55	b	Your Motor Bike	2	0	0	2	4	**0.8%**	0.8%
55	c	Your Car	1	0	0	1	2	**0.4%**	1.3%
55	d	Borrow motor bike / car	1	0	0	1	2	**0.4%**	1.7%
55	e	Public Transport	64	57	5	41	167	**34.9%**	36.6%
55	f	Walking	78	125	41	42	286	**59.8%**	96.4%
55	g	Did Not Transport Crop	20	16	1	3	40	**8.4%**	104.8%
55	h	Don't Know	3	0	0	0	3	**0.6%**	105.4%

56	x	**Before October 2013, what was your household's greatest source of cash income?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
56	a	None - we had no cash income	0	0	0	0	0	**0.0%**	0.0%
56	b	Farming crops	120	148	43	58	369	**77.2%**	77.2%
56	c	Farming livestock	22	29	2	6	59	**12.3%**	89.5%
56	d	Fishing or other ocean products	6	1	0	0	7	**1.5%**	91.0%
56	e	Wood, charcoal or other forest products	2	3	0	0	5	**1.0%**	92.1%
56	f	Honey collecting	0	0	0	0	0	**0.0%**	92.1%
56	g	Trading (buying and reselling)	5	1	0	11	17	**3.6%**	95.6%
56	h	Full time employment	7	3	0	5	15	**3.1%**	98.7%
56	i	Part time employment	0	2	1	0	3	**0.6%**	99.4%
56	j	Other	1	2	0	0	3	**0.6%**	100.0%
56	k	Don't Know	0	0	0	0	0	**0.0%**	100.0%

57	x	**In October 2013, how many of the following livestock did you own?** *(value - all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
57	a	None - I did not own livestock	17	20	6	3	46	na	100%
57	b	Ponies	60	108	53	37	258	na	100%
57	c	Cows / Cattle	112	326	17	140	595	na	100%
57	d	Water Buffalos	170	593	15	81	859	na	100%
57	e	Pigs	349	613	70	193	1225	na	100%
57	f	Goats	78	170	104	130	482	na	100%
57	g	Sheep	2	1	29	4	36	na	100%
57	h	I don't know	1	0	0	0	1	na	100%

58	x	**In October 2013, did you or anyone in your household own a nursery (seedling) business or were you partners in a nursery business? -** *If NO or Don't Know, # 59 and 60 will be NA (check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
58	a	Yes	0	0	0	0	0	**0.0%**	0.0%
58	b	No	163	189	46	80	478	**100.0%**	100.0%
58	c	Don't Know	0	0	0	0	0	**0.0%**	100.0%

59	701	**In October 2013, did you operate a seedling nursery for the project?** *(check one)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
59	a	Yes	0	0	0	0	0	**0.0%**	0.0%
59	b	No	146	176	44	73	439	**91.8%**	91.8%
59	c	Don't Know	1	2	0	0	3	**0.6%**	92.5%
59	d	NA	16	11	2	7	36	**7.5%**	

60	701	**Before October 2013, did your nursey business sell <u>new</u> plant/crop varieties as a result of the project?** *(Check all that apply)*	Lautem	Viqueque	Baucau	Aileu	Frequency (Total)	**% of Frequency**	% Reporting
60	a	None - no new varieties sold before Octobe	70	95	24	45	234	**49.0%**	49.0%
60	b	Robusta Coffee	0	0	0	0	0	**0.0%**	49.0%
60	c	Cocoa	0	0	0	0	0	**0.0%**	49.0%
60	d	Moringa	0	0	0	0	0	**0.0%**	49.0%
60	e	Cassava, Ailuka-1	0	0	0	0	0	**0.0%**	49.0%
60	f	Pepper	0	0	0	0	0	**0.0%**	49.0%
60	g	Clove	0	0	0	0	0	**0.0%**	49.0%
60	h	Vanilla	0	0	0	0	0	**0.0%**	49.0%
60	i	Fruit Trees	0	0	0	0	0	**0.0%**	49.0%
60	j	Shade Trees	0	0	0	0	0	**0.0%**	49.0%
60	k	Don't' Know	29	32	4	13	78	**16.3%**	65.3%
60	l	NA	64	62	18	22	166	**34.7%**	100.0%

Annex II: Agro-Input Dealer Questionnaires and Dataset

Annex II: Agro-Input Dealer Questionnaires and Dataset

East Timor Baseline Agricultual Survey					
		Questions for NCBA & CCT Agribusiness Project			
		Project Funded by: USDA FAS			
		May 2015			
Question #	RI #				
1	501	**Before October 2013, were there any improved plant materials (seedlings) available to farm as a result of the project?** *(check one)*			
1	a	Yes			
1	b	No	x		
1	c	Don't Know			
2	501	**Before October 2013, which improved plant materials (seedlings) were available to farmers as a result of the project?** *(check all that apply)*			
2	a	Robusta Coffee	0		
2	b	Cocoa	0		
2	c	Moringa	0		
2	d	Cassava	0		
2	e	Pepper	0		
2	f	Clove	0		
2	g	Vanilla	0		
2	h	Fruit Trees	0		
2	i	Shade Trees	0		
2	j	I don't know	0		
2	k	None	x		
3	701	**Before October 2013, how many farmers had adopted any plant varieties as a result of the project?** *(check one)*			
3	a	Total farmers adopting new varieties	0		
4	102 & 302	**As of October 2013, what was the total number of farmers that had applied new techniques or technologies as a result of project assistance?** *(value)*			
4	a	Total Number of Farmers	0		

5	1601	**In October 2013, to how many markets did the project export the following commodities, as the result of project activities?** *(value, all that apply)*			
5	a	Robusta Coffee	0		
5	b	Cocoa	0		
5	c	Moringa	0		
5	d	Cassava	0		
5	e	Pepper	0		
5	f	Clove	0		
5	g	Vanilla - number of export markets	0		
5	h	None	x		
6	1701	**On 1 October 2013, for how many products did the project have improved marketing programs for?** *(value, all that apply)*			
6	a	Robusta Coffee	0		
6	b	Cocoa	0		
6	c	Moringa	0		
6	d	Cassava	0		
6	e	Pepper	0		
6	f	Clove	0		
6	g	Vanilla - number of export markets	0		
6	h	None	x		
7	901	**On 1 October 2013, what was the USD value of private resource support of trade expansion in the following markets serviced by the project ?** *(value, all that apply)*			
7	a	Robusta Coffee	0		
7	b	Cocoa	0		
7	c	Moringa	0		
7	d	Cassava	0		
7	e	Pepper	0		
7	f	Clove	0		
7	g	Vanilla	0		
7	h	None	x		

8	801	**In the market year ending 1 October 2013, what was the FOB warehouse, USD value of the project's <u>domestic annual sales</u> for?** *(value, all that apply)*			
8	a	Robusta Coffee	0		
8	b	Cocoa	0		
8	c	Moringa	0		
8	d	Cassava	0		
8	e	Pepper	0		
8	f	Clove	0		
8	g	Vanilla	0		
8	h	None	x		
9	801	**In the market year ending in 1 October 2013, what was the FOB warehouse, USD value of the project's <u>international annual sales</u> for?** *(value, all that apply)*			
9	a	Robusta Coffee	0		
9	b	Cocoa	0		
9	c	Moringa	0		
9	d	Cassava	0		
9	e	Pepper	0		
9	f	Clove	0		
9	g	Vanilla	0		
9	h	None	x		
10	1101	**For the market year ending on 1 October 2013, what was the total annual sales (metric tons or kgs) of the following value-added products handled by the project?** *(value, all that apply)*			
10	a	Robusta Coffee, new genetics - cleaned, dried, sorted &	0		
10	b	Cocoa, new genetics, - cleaned, dried, sorted & bagged	0		
10	c	Moringa cleaned, dried, sorted & bagged	0		
10	d	Cassava Ailuka-1 - cleaned, dried, sorted & bagged	0		
10	e	Pepper - cleaned, dried, sorted & packed	0		
10	f	Clove - cleaned, dried, sorted & packed	0		
10	g	Vanilla - cleaned, fermented, sorted & packed	0		
10	h	None	x		

11	1201	**For the market year ending on 1 October 2013, how many metric tons of agricultural products were certified as meeting international standards as the result of project activities?** *(value, all that apply)*			
11	a	Robusta Coffee	0		
11	b	Cocoa	0		
11	c	Moringa	0		
11	d	Cassava Ailuka-1	0		
11	e	Pepper	0		
11	f	Clove	0		
11	g	Vanilla	0		
11	h	None	x		
12	x	**For the market year ending on 1 October 2013, what international certications were in place for the following products, as the result of project activities?** *(name/ type of certification, all that apply)*			
12	a	Robusta Coffee	0		
12	b	Cocoa	0		
12	c	Moringa	0		
12	d	Cassava	0		
12	e	Pepper	0		
12	f	Clove	0		
12	g	Vanilla	0		
12	h	None	x		
13	1801	**On 1 October 2013, how many new buyer-seller relationships had been developed with a signed MOU for the following, as the result of project activities?** *(value, all that apply)*			
13	a	Robusta Coffee	0		
13	b	Cocoa	0		
13	c	Moringa	0		
13	d	Cassava	0		
13	e	Pepper	0		
13	f	Clove	0		
13	g	Vanilla - number of buyer-seller MOU's signed	0		
13	h	None	x		

14	1401	**In October 2013, how many firms in the target regions were <u>using</u> modern equipment to process agricultural products, as the result of the project activities?** *(value, all that apply)*		
14	a	Viqueque	0	
14	b	Lautem	0	
14	c	Baucau	0	
14	d	Aileu - Number of Firms	0	
14	e	None	x	
15	1501	**In October 2013, how many farms in the target regions had <u>access</u> to post-harvest processing facilities, as the result of project activities?** *(value, all that apply)*		
15	a	Viqueque	0	
15	b	Lautem	0	
15	c	Baucauthe	0	
15	d	Aileu - Number of Firms	0	
15	e	None	x	
16	1501	**In October 2013, how many farms in <u>Viqueque</u> had access to post-harvest processing facilities for the following products, as the result of project activities?** *(value, all that apply)*		
16	a	Robusta Coffee	0	
16	b	Cocoa	0	
16	c	Moringa	0	
16	d	Cassava	0	
16	e	Pepper	0	
16	f	Clove	0	
16	g	Vanilla - number of post harvest-pocessing facilities	0	
17	e	None	x	
17	1501	**In October 2013, how many farms in <u>Aileu</u> had access to post-harvest processing facilities for the following products, as the result of project activities?** *(value, all that apply)*		
17	a	Robusta Coffee	0	
17	b	Cocoa	0	
17	c	Moringa	0	
17	d	Cassava	0	
17	e	Pepper	0	
17	f	Clove	0	
17	g	Vanilla - number of post harvest-pocessing facilities	0	
17	e	None	x	

18	1501	**In October 2013, how many farms in <u>Lautem</u> had access to post-harvest processing facilities for the following products, as the result of project activities?** *(value, all that apply)*			
18	a	Robusta Coffee	0		
18	b	Cocoa	0		
18	c	Moringa	0		
18	d	Cassava	0		
18	e	Pepper	0		
18	f	Clove	0		
18	g	Vanilla - number of post harvest-pocessing facilities	0		
18	e	None	x		
19	1501	**In October 2013, how many firms in <u>Baucau</u> had access to post-harvest processing facilities for the following products, as the result of project activities?** *(value, all that apply)*			
19	a	Robusta Coffee	0		
19	b	Cocoa	0		
19	c	Moringa	0		
19	d	Cassava	0		
19	e	Pepper	0		
19	f	Clove	0		
19	g	Vanilla - number of post harvest-pocessing facilities	x		
20	1301	**In the market year ending on 1 October 2013, what was the <u>average number of days</u> required to transport selected agricultural products from purchase point to warehouse?** *(value, all that apply)*			
20	a	Robusta Coffee - farmgate to Dili warehouse, days	na		
20	b	Cocoa - farmgate to Dili warehouse, days	na		
20	c	Moringa	na		
20	d	Cassava - Ailkuka-1, farmgate to Dili warehouse, days	na		
20	e	Pepper - farmgate to Comoro warehouse, days	na		
20	f	Clove - farmgate to Comoro warehouse, days	na		
20	g	Vanilla - farmgate to Comoro warehouse, days	na		
20	h	NA (no products where purchase by project in Oct 2013)	x		

21	107	**As of 1 October 2013, how many (total) cubic meters of storage were installed with support from the project?** *(value)*			
21	a	Cold Storage (cubic meters)	0		
21	b	Dry Storage "	0		
22	-	**As of 1 October 2013, how many private firms had invested in dry and cold stores with support from the project?** *(value)*			
22	a	Cold Storage (number of firms)	0		
22	b	Dry Storage "	0		
23	104 & 602	**Before October 2013, what was the USD value of loans (used by CCT to purchase agricultural products from farmers) provided by USDA ?** (value)			
23	a	Total value of loans	0		
24	108	**Before October 2013, how many farmers benefited from the projects financial services provide by USDA *(value)***			
24	a	Number of Farmers	0		
25	106	**As of 1 October 2013, how many PPP's were formed as the result of project assistance?** *(value)*			
25	a	Total Number of PPP's	0		
26	105	**As of 1 October 2013, what was the total number of groups, assocations and organizations applying new technology or management practices as a result of project assistance?** *(value)*			
26	a	Water User Associations	0		
26	b	Farmer / Producer Organization	0		
26	c	Trade and Business Association	0		
26	d	Commmunity Based Organization	0		
26	e	Private enterprize (firms)	0		
26	f	Others	0		
26	g	Total Number of Groups *(sum of the above)*	0		

27	401	**On 1 October 2013, how many coops and smallholder groups had applied the new techniques management practices or technologies as the result of project asssistance?** *(value)*			
27	a	Total number of Coops and smallhoulds	0		
28	1001	**On 1 October 2013, what was the number of processor and/or trade associations that applied the new techniques or management practies learned, as the result of the project?** *(value)*			
28	a	Processor Associations	0		
28	b	Trade Associations	0		
29	601	**Before October 2013, how many farmers, benefited from the project's financial services - credit line for buying crops?,** *(value, all that apply)*			
29	a	Farmers	0		
29	b	Farmer Groups	0		
29	c	Nursery Businesses	0		
30	203	**Before October 2013, how many farmer households directly benefited from the project?** *(value)*			
30	a	Total number of farmers	0		
31	204	**Before October 2013, how many people indirectly benefited from services provided by the project ?** *(value)*			
31	a	Total indirect beneficiaries (farmers x 5.2)	0		

Annex III: Project Result Indicators

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#	RI # & Target	Result	Indicator	Base Line	Final Target
1	RI101, Farmers*	Contributions for Feed the Future	Number of hectares under improved techniques or technologies as a result of USDA assistance	0	2,000
2	R1102, CCT		Number of farmers and others who have applied new techniques or technologies as a result of USDA assistance	0	8,000
3	RI103, Farmers		Number of farmers and others who have received training on improved agricultural techniques and technologies as a result of USDA assistance	0	8,000
4	RI104, CCT		Value of agricultural and rural loans provided with USDA assistance	0	1,000,000
5	RI105, Farmers & CCT		Number of private enterprises, producers organizations, women's groups, trade and business associations, water users associations and community based organizations(CBOs) that applied new technologies or management practices as a result of USDA assistance	0	150
6	RI106. Farmers & CCT		Number of public - private partnerships formed as a result of USDA assistance	0	60
7	RI107, Farmers & CCT		Total of installed storage capacity (dry or cold storage) as a result of USDA assistance (total cubic meters)	0	7560
8	RI108, CCT		Number of farmers and others benefiting from financial services as a result of USDA assistance	0	8,000
9	RI201, Farmers	Increased Agricultural Productivity	Volume of selected crops produced/harvested per hectare (yield) Kg/ha (Average yields for Robusta Coffee, cacao, Dried Black pepper, Cloves, Vanilla)	0	560
10	RI202, Farmers		Volume of selected crops produced/harvested per hectare (Yield) Mtons/ha for Cassava	0	25
11	RI203, Farmers & CCT		Number of beneficiaries benefiting directly from USDA funded interventions	0	8,000

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12	RI204, Farmers & CCT		Number of Beneficiaries benefiting indirectly for USDA funded Interventions	0	40,000
13	RI301, Farmers	Increased used of Improved Agricultural Techniques and Technologies	Number of hectares under improved techniques or technologies as a result of USDA assistance	0	2,000
14	RI302, CCT		Number of farmers and others who have applied new techniques as a result of USDA assistance	0	8,000
15	RI401, Farmers & CCT	Improved Capacity of Key Groups in Agriculture Production Sector (Coops and small shareholder groups)	Number of private enterprises, producers organizations, women's groups, trade and business associations, water users associations and community based organizations(CBOs) that applied new technologies or management practices as a result of USDA assistance	0	150
16	RI501, Farmers & CCT	Increased Availability of Improved Inputs	Number of specific improved inputs available to farmers in target region	0	6
17	RI601, CCT	Increased use of Financial Services	Number of farmers and others benefiting from financial services as a result of USDA assistance	0	8,000
18	RI602, CCT		Value of agricultural and rural loans provided with USDA assistance	0	1,000,000
19	RI701, Farmers & CCT	Increased Knowledge by Farmers of Improved Agricultural Techniques and Technologies	Number of farmers who have adopted the new varieties of crops introduced by the project	0	8,000
20	RI801, CCT	Expanded Trade of Agricultural Products (Domestic, Regional and International)	Value of regional or international trade in selected agricultural products (USD)	0	10,250,000

Annex III: Result Indicators – Page 3

21	RI901, CCT	Increased Leverage of Private -Sector Resources	Value of private resources in support of trade expansion	0	3,750,000
22	RI1001, CCT	Improved Capacity of Key Organizations in the Trade Sector (Processing Organizations and Trade Association)	Number of private enterprises, producers organizations, women's groups, trade and business associations, water users associations and community based organizations(CBOs) that applied new technologies or management practices as a result of USDA assistance	0	25
23	RI1101, CCT	Increased Value Added to Post-Production Agricultural Products	Total volume of value added production derived from selected agricultural commodities (metric tons)	0	14,000
24	RI1201, CCT	Improved Quality of Post-Production Agricultural Products	Volume of agricultural products certified as meeting international standard	0	437,500
25	RI1301, CCT	Increased Efficiency of Post-Production Processes	Average number of days required to move selected agricultural products from purchase of initial inputs to final product ready for sale	0	14
26	RI1401, CCT	Increased Use of Improved Post-Production Processing and Handling Practices	Number of firms in target region using modern equipment to process agricultural products	0	1
27	RI1501, CCT	Improved Post-Harvest Infrastructure	Number of farms in target region that have access to post-harvesting processing facilities	0	8,000
28	RI1601, CCT	Increased Access to Marketing to Sell Agricultural Products	Number of markets to which selected agricultural products are exported	0	10
29	RI1701, CCT	Improved Marketing of Agricultural Products	Number of products with improved marketing	0	6
30	RI1801, CCT	Improved Linkages between Buyers and Sellers	Number of buyer-seller relationships established with MoUs signed	0	20

Annex IV: Specific Quotes from Stakeholders from Interviews

Annex IV: Specific Quotes from Stakeholders from Interviews

- 17 May, breakfast meeting with **a** Vice Administrator (a political party appointed position) for Lautem District at Nova Tourismo hotel, Dili. He knows the project (has visited the CCT Los Palos training center with the President of East Timor). He said "the USDA project activities and objectives are 100% in-line with goals and objectives of his government". He added that "the capacity building and training,as well as the new plantsand seedlings provided by the project are important to the farmers". He said," unlike many international NGO's that have worked the District, CCT gets things done and produces a positivelong-lasting effect". He added that "with over 70% of the District population involved in farming, the project provides an important contribution to the District's economic growth by increasing farmer incomes. I hope the project will continue to work in the District for many years to come."

- 27 May, had coffee with **an** Advisor to the ET Minister of Agriculture. She said that the USDA project goals and objectives are in line with GoET / MAF goals and objectives. She said that the eastern districts need development and the GoET supports USDA efforts to focus on the 4 target districts. She said that security issues in Watulari make it an important area to focus resources. The GoET needs to show the population that they are effectively dealing with poverty and other issues and the USDA project directly supports their efforts. She said that "the government would like to see the USDA extended into a Phase II, to allow additional development in the Eastern Region, as most donor funds to date have been targeted at the western and central districts".

- 3 June, meeting with **a** Regional Director of MAF for Aileu District at the regional MAF headquarters building. The Regional Director stated that his office holds regional NGO coordination (harmonization) meetings every quarter. A CCT representative has been attending; however, he would like to have contact with people at a higher level within CCT (higher than the regional field staff). He felt that this would allow better communications between CCT and the Ministry. Currently, the Aileu regional MAF office is working with two NGOs – World Vision and Road to Development. The NGOs, along with MAF, are working to expand clove production in the district. To date, they have no clear plan or strategy to develop the market. This is an area where CCT could provide a vital link between farmers and importers. MAF would also like to focus on expanding fruit tree production in the region with an emphasis on citrus (U.S. government aid projects are generally barred from working within the citrus sector, due to Bumpers Amendment restrictions). In closing the meeting, the MAF Director stated that "We need U.S. government support to bring East Timor out of poverty and develop a more democratic society."

Annex VI: **Power Point Presentation Based on the Baseline Report**- *please see separate electronic file*

Annex VII: **Baseline Survey Database** *(English and Bahasa Indonesian language) – please see separate electronic file*

Annex VIII: **Baseline Survey Form** *(English and Bahasa Indonesian language) - please see separate electronic file*

Annex IX: **Photo Set of Baseline Activity** - *please see separate electronic file*