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BASELINE SURVEY REPORT FOR THE AVANSA AGRIKULTURA PROJECT

FINAL REPORT: May 4, 2016

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AVANSA M&E TASK ORDER 2015-2020

FINAL REPORT: May 4, 2016

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ACRONYMS

ACDI/VOCA	Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance
APLA	Alternative People's Linkage in Asia
ATJ	Alter Trade Japan
B/L	Baseline
BNCTL	National Commercial Bank of Timor-Leste
BGK	Bangkok
CCI	Câmara de Comércio e Indústria
CLA	Collaboration, Learning and Adapting
CCT	Cooperative Café Timor
CDCS	Country Development Cooperation Strategy
COP	Chief of Party
COR	Contracting Officer's Representative
DAC	Development Agriculture Communities
DO	Development Objective
DQA	Data Quality Assessment
DSP	Developing Private Sector (Dezenvolve Setór Privadu)
EG	Economic Growth
ETADEP	East Timor Agricultural Development and Empowerment Project
FAO	Food and Agriculture Organization of the United Nations
FNM	Female/No Male adults in household
FTF	Feed the Future
GDA	Global Development Alliance
GDP	Gross Domestic Product
GIS	Geographic Information System
GIZ	Gesellschaft für Internationale Zusammenarbeit
GoTL	Government of Timor-Leste
HH	Household
HIAM Health	Hamutuk Ita Ajuda Malu /*Together we help each other*
HIP	Health Improvement Project
HQ	Headquarters
ICM	Integrated Crop Management
ILO	International Labour Organization
IMI	Institutu Mata dalan Integradu
IP	Implementing Partner
IPM	Integrated Pest Management
IR	Intermediate Result
KII	Key Informant Interviews
MAD	Minimum Acceptable Diet
M&E	Monitoring and Evaluation
MAF	Ministry of Agriculture and Fishery
MF	Male and Female adults in household
MNF	Male/No Female adults in household
M&E	Monitoring and Evaluation
MT	Management Technology
NGO	Non-Governmental Organization
NRM	Natural Resource Management
OHM	Organisasaun Haburas Moris
PERMATIL	Permaculture Timor-Leste
PMEP	Project Monitoring and Evaluation Plan
PMP	Performance Management Plan

PNDS	Programa Nasional Dezenvolvimentu Suku/*National Suco Development Program*
QA	Quality Assessment
RDMA	Regional Development Mission for Asia
RDP	Rural Development Program
SAS	Servisu Agua no Saneamentu/*Water Supply and Sanitation*
SB	Small Business
SD	Standard Deviation
SE	Standard of Error
SI	Social Impact
SOW	Statement of Work
SRI	System of Rice Intensification
SSG	Catalyzing Development Through Partnership
TBD	To be determined
TNS	Taylor Nelson Sofres
TO	Task Order
UBSP	Saving and Loan Group
UN	United Nations
US	United State
USAID	United States Agency for International Development
USD	United States Dollar
USG	United State Government
WHO	World Health Organization

Suco = Village, or village administrative unit

Aldeia = Sub-village

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EXECUTIVE SUMMARY

Avansa M&E (a USAID project implemented by Social Impact [SI]) conducted a baseline survey of 1,200 households in five municipalities for the Avansa Agrikultura project. Field data collection was conducted in November through mid-December to provide data in line with the start of project implementation in districts and before the most intense period of the rainy season, at a time when communities are more easily accessed for survey interviews. The sample covered 180 aldeias in the 48 sucos of the project implementation-area.

Prior to the survey, a Baseline Survey Plan was reviewed and approved by USAID. Avansa M&E designed the field survey methodology and completed data analysis. A sub-contractor, TNS Global from Indonesia, carried out the training of the enumerators (with SI oversight), and the field survey data collection using locally recruited enumerators and supervisors. TNS also encoded and cleaned the data before SI carried out the data analysis.

The survey used a questionnaire which was enumerated with the head of household for the household description and agricultural questions, with the main female decision maker for the questions on women's nutrition and the nutrition of children 6-23 months of age. There were also two questions for community leaders (asked at the aldeia level) to identify community natural resource management groups and groups which aggregate and market crops for farmers.

The baseline survey measured five Feed the Future (FtF) indicators and seven custom indicators. In all, there are 15 indicators for which baseline data is required. Eleven of these were measured through the field survey of households; data for Agricultural Gross Domestic Product (GDP) relied on secondary data. For another three indicators relating to availability, sales, and purchases of farm inputs, the data will be collected by the Avansa Agrikultura project. The values for some of these indicators will be used to validate or set achievement targets for the project.

Table ES-1: Values for the 12 indicators measured during the baseline survey (including GDP)

Indicator		Baseline Level		
		Unit	**Mean/Total**	**Standard Error (SE)**
	Feed the Future Indicators			
DO 1	Percent change in agriculture GDP (Secondary data from General Directorate of Statistics, Ministry of Finance - 2013)[1] *(GDP for Agriculture, Forestry and Fishing – Actual baseline value)*	USD	USD 254 Million	N/A
SB 1.4	Value of incremental sales (collected at farm-level) attributed to Feed the Future implementation *(2015 Volume and Value of sales – Baseline)*	Metric Tons	29,217	3,469
		USD	$12,775,280	$1,148,751
2.1	Number of people implementing risk-reduction practices/actions to improve resilience to climate change as a result of USG assistance	Total	23,812	1,321
3.1	Number of farmers and others who have applied improved technologies or management practices as a result of USG assistance	Total	22,688	1,266
SB 2.2	Prevalence of households with moderate to severe hunger	Percent	15%	0.01%

[1] Note: Agriculture, Forestry and Fishing. Not available for agriculture disaggregated.

Indicator		Baseline Level		
		Unit	Mean/Total	Standard Error (SE)
	Custom Indicators			
2.4	Number of co-management/user groups formed and active	Total	87.03	9.56
5.1	Number of farmers, farmer groups and associations with buyer agreements	Total	40	3.18
6.2	Number of private sector agriculture extension workers in target municipalities	Total	18.33	0
8.1	Percent increase in household savings and/or investment in productive assets *(Baseline value for assets, including savings, and loans owed to household; percent increase will be calculated based on future data collection)*	USD	$ 2,024	177
7.1	Prevalence of children 6-23 months receiving a minimum acceptable diet (Percent)	Percent	40.30% 2,419 children	1%
7.2	Mean number of food groups consumed by women of reproductive age	Food Groups	4.45	0.15
SB 2.1	Daily per capita expenditure (as a proxy for income) in USG assisted areas	USD	$ 1.76	$ 0.08

The data were disaggregated by the five municipalities, as well as by type of household which is required for some of the FtF indicators. These household classifications are: male only adult households (MNF), female only adult households (FNM), and households with mixed male and female adults (MF). There were only a few of the households with only male or female adults (2.3% and 3.5% respectively); the majority of households included both male and female adults (94.2%).

Forty-two percent (42%) of household heads had not been to school, with more female household heads than males with no education (74% compared to 38%). The numbers with no education were higher on the older age classes. Overall, 56% of respondents were 50 years of age or less.

Data were collected from the women for 295 children aged 6-23 months; there were similar numbers of girls and boys in this age class.

The data show a heavily skewed distribution for some indicators, particularly those that measure income from crop sales, daily household expenditure, and the value of assets, with more of the sampled population in the range classes with lower values for these indicators. With skewed data, the mean is no longer representative of a value with half the population higher and half lower than the mean value (as would be the case for a normal distribution), so the median may be a more representative descriptive measure (this is reported in the sections of the report covering these indicators).

In Timor-Leste, the hungry period is normally in January/February, before the harvest of the maize which is planted with the first rains. The survey was conducted in November and so the indicator for the level of hunger is likely underestimated.

For sales of crops, coffee is by far the largest income earning opportunity for farmers. Over the entire 48 sucos, it is estimated that coffee earns farmers USD 4.9 million or about $631 each for the 65% of farmers who sell coffee. The next four most important crops by overall sales were rice, boc choy, red beans, and cabbage.

Challenges faced included farmers understanding what was meant by some of technologies and risk reduction practices described in the questions about technology adoption, risk reduction, and climate change adaptation. A show card was used when asking these questions of respondents; however, the time available and the budget did not allow for field verification by the enumerators.

The standard methodology for questions for the FtF indicators can be very time consuming (an example is the standard question for daily per capita expenditure). Consequently, USAID agreed in the Baseline Survey Plan that some of the potential FtF indicators could be modified and would thereby become custom indicators. It was also found to be impractical to collect data on all the people within households who apply or use technologies or risk reduction practices. In the context of Timor-Leste conditions, where farmers do not know the area measurements of their land, frequently do not sell crops using metric weights, and where families farm their land together, there is a need to adapt the standard FtF data collection practices. There are also limits on how much time respondents are willing to spend answering questions when they have been surveyed many times before, often with no perceived subsequent benefit to them.

On investigation of the GDP data (the Development Objective and required indicator), SI found that it is not an appropriate indicator in Timor-Leste because GDP is not available with a disaggregation to the agriculture sector. The Timor-Leste General Directorate of Statistics advised the survey team that because of data reliability problems GDP data is aggregated for agriculture, forestry, and fishing.

I. INTRODUCTION

USAID's **Avansa Agrikultura Project** (Avansa) is a 5-year horticulture value chain activity in Timor-Leste implemented by Cardno Emerging Markets and three subcontractors, HIAM *(Hamutuk Ita Ajuda Malu/Together we help each other)* Health, SSG Advisors, and the Borlaug Institute. It aims to address the key challenges of rural poverty, natural resource degradation, food insecurity, and under-nutrition. The value chain approach will be applied in achieving increased productivity along key horticulture value chains that include vegetables, fruits, and legumes. Through the promotion of sustainable production practices, increased functionality of farmer groups and associations, improved market linkages, and increased availability and access to quality agricultural inputs and services--including access to finance--the project aims to stimulate and support increased economic activity and growth in targeted rural communities and municipalities.

To ensure sustainability, the project will support policy development and an enabling environment relevant to the sector, as well as efforts to increase resilience to climate change and improve natural resource management as it relates to farm systems. Avansa fully integrates the two primary Feed the Future (FtF) objectives of inclusive agricultural sector growth and improved nutritional status, particularly for women and children. The project works in five municipalities via a phased approach: implementation with initially occur in Ainaro and Ermera, and later in Bobonaro, Aileu, and Dili.

> ***Avansa Agrikultura Project Purpose:*** *To accelerate inclusive and sustainable economic growth through increased productivity/profitability of the horticulture value chain and to support nutrition- smart agriculture interventions that support increased food production, agriculture income and women's empowerment.*

Avansa M&E, implemented by Social Impact (SI) is a 5-year project (April 2015-April 2020) designed to support the USAID Avansa Agrikultura Project and USAID/Timor-Leste Economic Growth (EG) Office in its monitoring, evaluation, and Collaboration, Learning, and Adapting (CLA) efforts.[2] Avansa M&E is tasked with conducting the Baseline and End-line Surveys for the Avansa Agrikultura Project. Avansa M&E will also support the Mission and implementing partner (IP) staff in the monitoring of key indicators, conducting three performance evaluations, and strengthening activity-level M&E systems.

This report presents the baseline figures for 12 indicators in the Avansa Performance Monitoring and Evaluation Plan (PMEP) to allow for tracing trends in those indicators. SI and its data collection partner, TNS Global, conducted the baseline survey field-work from November to mid-December 2015. Prior to implementation, SI prepared a Baseline Survey Plan including the baseline methodology and proposed data collection instruments; this plan was submitted to and approved by USAID in October 2015. SI carried out a first field testing of the baseline survey questions before submitting the plan and the proposed instruments to USAID.

[2] Avansa M&E is implemented under the USAID Asia Learning Monitoring and Evaluation (ALME) Indefinite Delivery Indefinite Quantity (IDIQ) contract managed by SI Bangkok.

II. PURPOSE OF THE BASELINE SURVEY

Performance Indicators

The Avansa Agrikultura Performance Monitoring and Evaluation Plan (PMEP) includes 32 indicators (including agricultural GDP) by which project results across 8 outcomes will be monitored (Table 1). Avansa activities require the monitoring and evaluation (M&E) structure to comply and align with some FtF M&E reporting requirements. In this regard, 12 out of the 32 indicators will be FtF indicators[3].

Table 1: Avansa Agrikultura outcomes

Outcome	
1	Policy and Enabling Environment maintained or Improved
2	Change Resilience Increased through Natural Resource Management
3	Sustainable Production Practices Adopted at Farm Level
4	Capacity of Farmers' Groups and Associations Strengthened
5	Improved Market Linkages
6	Function of Private Sector-Based Input Supply System Improved
7	Knowledge and Behavior on Nutrition and Sanitation Practices
8	Improved Skills to Utilize Productive Assets for Economic Activity

There are 15 indicators in the Avansa PMEP for which the baseline is not zero and for which baseline values need to be established (Table 2). Of these 15 indicators, 5 are FtF indicators and 10 are custom indicators. Of the five FtF indicators, agricultural GDP is sourced from secondary data. For 7 of the 10 custom indicators, baseline data were collected during the baseline field survey managed by SI, whereas data for the remaining three custom indicators will be collected through the Avansa Agrikultura Agribusiness Survey. The SI managed baseline field survey therefore collected data for 11 total indicators (four FtF indicators and seven custom indicators).

The purpose of this baseline survey report is to establish the start of project values for 12 of the 15 Avansa performance indicators, including 11 indicators for which data was collected through the SI managed baseline field survey, and one indicator on GDP for which the baseline was acquired through secondary sources. This will allow an initial benchmark for program planning by which to measure progress throughout project implementation. Avansa will collect data for the remaining three indicators through the Avansa Agrikultura Agribusiness Survey.

In addition to the 15 indicators that require baseline values,[4] baseline values will be established for two other indicators: "gross margin per unit of land for crops promoted by the project (Indicator SB1.1)" and "the percentage increase in sales for targeted farmer groups and associations (Indictor 5.2)." The start value for these two indicators will be established when Avansa begins to work with farmer beneficiaries on crop production practices (for gross margins) and when the project identifies which farmer groups it will work with to strengthen farmer groups and associations.

[3] Meeting with USAID Economic Growth and Avansa Agrikultura at USAID Mission 20 August 2015

[4] Inclusive of GDP which uses secondary data

Table 2: Indicators in need of baseline values

Indicator Type		**Data Source**
Feed the Future Indictors		
Indicator	**Indicator Description**	
DO 1	Percent change in agriculture GDP	Secondary data from General Directorate of Statistics, Ministry of Finance, Timor-Leste
SB[5] 1.4	Value of incremental sales (collected at farm-level) attributed to Feed the Future implementation	SI managed baseline field survey
2.1	Number of people implementing risk-reduction practices/actions to improve resilience to climate change as a result of USG assistance	
3.1	Number of farmers and others who have applied improved technologies or management practices as a result of USG assistance	
SB 2.2	Prevalence of households with moderate to severe hunger	
Custom Indicators		
Indicator	**Indicator Description**	
2.4	Number of co-management/user groups formed and active	SI managed baseline field survey
5.1	Number of farmers, farmer groups and associations with buyer agreements	
6.2	Number of private sector agriculture extension workers in target municipalities	
8.1	Percent increase in household savings and/or investment in productive assets	
7.1	Prevalence of children 6-23 months receiving a minimum acceptable diet (Percent)	
7.2	Mean number of food groups consumed by women of reproductive age	
SB 2.1	Daily per capita expenditure (as a proxy for income) in USG assisted areas	
6.5	Value $ of inputs purchased by farmers from input suppliers (cash or credit)	Avansa Agrikultura Agribusiness Survey
6.6a	Number of companies selling agricultural inputs to farmers	
6.6b	Value of sales by agricultural input supply companies	

Establishing Targets for Project Performance Indicators

A number of indicators have targets established in the Avansa Agrikultura PMEP. For example, the target for the number of rural households benefiting from USG interventions is 7,000 households. Some of these targets are determined from the project's contract agreement with USAID. For other indicators the targets are to be determined (TBD) based on the results of this baseline survey.

Not all the indicators in the baseline survey have TBD targets. For example, indicators 2.1 and 2.4 (Table 1 above) already have targets in the PMEP; however, the baseline results may help validate the

[5] SB refer to sub-purpose, but to avoid confusion the same indicator referencing is retained as used in the original and current Avansa Agrikultura PMEP.

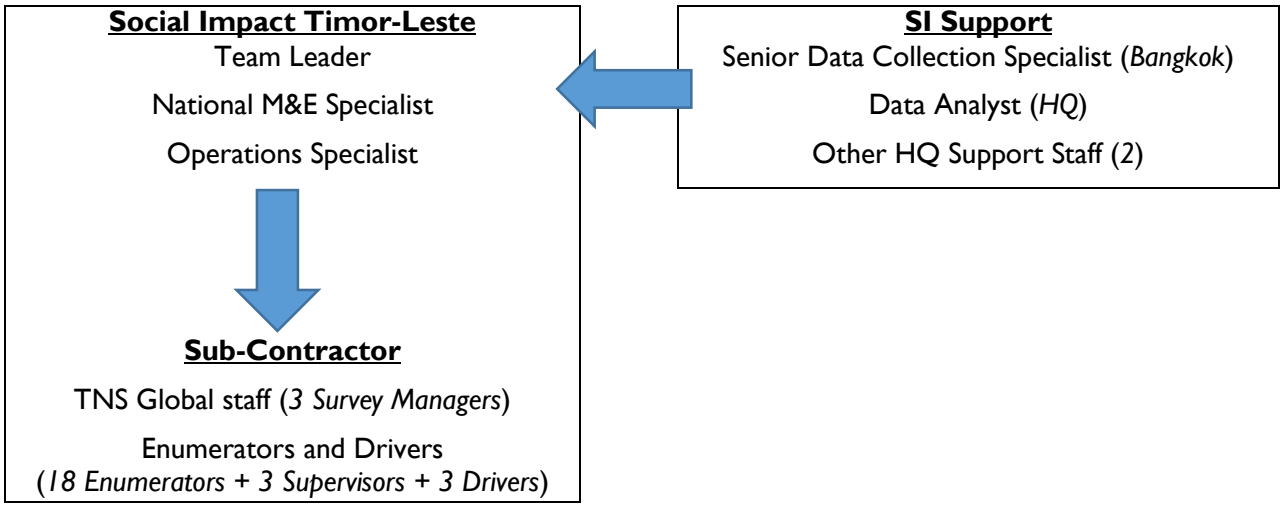
targets, or modify the targets. For other indicators (SB 1.4, 6.5, 6.6b, SB 2.1, SB 2.2) the baseline survey data will help USAID and the project to decide an achievable target.

III. METHODOLOGY

Baseline Survey Team

The baseline survey team comprised members from SI Timor-Leste supported by SI staff from Bangkok, Thailand, and headquarters (HQ) in Washington, DC. TNS Global was the sub-contractor that undertook the data collection.

Figure 1: Team composition



The Avansa M&E Chief of Party (COP) was the Team Lead with technical guidance and support from SI's regionally-based Senior Data Collection Specialist. SI's Senior Data Collection Specialist and the SI Avansa National M&E Specialist in Timor-Leste supported the pilot testing of the survey instruments, technical training of the enumerators, and field implementation oversight.

Survey Instruments

The baseline field survey questionnaire design incorporated lessons learned and best practices from similar household surveys such as the Timor-Leste Survey of Living Standards and the Demographic Health Survey. The Avansa M&E team carried out consultations with the General Directorate of Statistics, Food Security Unit of the Ministry of Agriculture and Fisheries (MAF), and the Ministry of Health in order to make use of previously tested questions and methods.

The tools used were also validated with the Avansa COP and were reviewed by USAID prior to being implemented.

Three sets questions were included for the baseline field survey:

- A household questionnaire to be enumerated with the Head of Household (male or female)
- Questions for women to be answered by the main female decision maker in the household
- Questions for community leaders

In addition, the Avansa Agrikultura Agribusiness Survey will provide the data for the indicators on the number of farm input suppliers and the sales of farm inputs.

Field Survey

The field survey questionnaire was enumerated by trained survey staff. These questions included standard methodology for the FtF indicators. For some indicators SI adapted the questions from methodologies previously used in Timor-Leste (by OXFAM, for example, for the question on the

nutritional status of women). For other indicators, SI developed and pilot tested the survey questions before using them in the full baseline survey.

The SI team tested the draft questionnaires in the field three times in Hera, Lahane and Railaco Leten suco. The questionnaire was adjusted based on any issues found in the field. The final questionnaire used (English version) is attached in **Annex F**.

TNS Global conducted a 1-week enumerator training from November 26-30. SI supported this training. This training covered basic surveying techniques, sampling, survey ethics, a question by question review of the survey instruments, a role play, and field testing of instruments.

TNS Global conducted the data collection, administering the household survey to 1,200 households. TNS also prepared the final formatting of the field survey instruments and translated the instruments into Tetun and Bahasa Indonesia. TNS Global recruited and trained local enumerators, did a final field test of the survey forms and approaches, and supervised the data collection, data entry, and data cleaning processes. TNS provided the cleaned data sets to the SI team for data analysis.

Gender

Avansa's M&E technical approach must incorporate gender considerations, and M&E activities should track progress towards Avansa's gender objectives.

The household survey recorded the sex of the household head and the composition of the household by sex and age of household members, so the indicators may be disaggregated by the sex categorisation required by FtF (i.e. Adult female, no adult males; Adult males, no adult females; Male and female adults; Child no adults).

Sample Size

SI sampled aldeias and households from all 48 sucos selected by Avansa Agrikultura for project activities. In Project Years 1 and 2, the project is working in 19 of these sucos. For Project Year 3 and beyond, the project intends to expand to other sucos within the list of 48 sucos, and will consolidate the work for the sucos already targeted in Project Years 1 and 2.

If the project reaches all 48 sucos, out of a total of 160 sucos in the five Municipalities, this will represent 30% of all sucos in the five municipalities.

SI required a sample size of 770 households to measure the indicators with an estimated confidence level of 95% and a confidence interval of +/-5%. However, some indicators required data to be collected from targeted sub-groups, for example women with children who are 6-23 months of age. Because not all households would be expected to have children in this age category, to achieve this level of confidence for this target group would have required a sample size of 3,400 households. A survey of this size would have been prohibitively expensive.

To reduce data collection costs, SI collected data from 1,200 households from the 48 sucos to provide the desired level of precision for all indicators except for the indicator referring to children between 6-23 months of age. This sample size was predicted to yield 132 children between 6-23 months of age within the sampled households, and a margin of error (or confidence interval) for this indicator of +/-8.5% at the 95% confidence level, or +/-7% at the 90% confidence level.

Sampling Approach

SI used a two-stage clustered sampling approach. First, 180 aldeias were randomly sampled from the 48 target sucos. Second, seven households in each sampled aldeia were randomly selected from the list of households provided by the aldeia chief. In addition to interviewing households (including household head and female decision maker), SI also collected data from the suco and/or aldeia chief

on community characteristics, such as whether there were active community groups with crop buying agreements with local traders, or groups implementing natural resource management practices.

Table 3: Number of sampled aldeias and households for the 48 project sucos

District	Sucos	Aldeias	Households
Aileu	9	37	244
Ainaro	11	50	332
Bobonaro	11	31	211
Dili	3	17	111
Ermera	14	45	302
	48	**180**	**1200**

Enumerators

The survey instruments contained questions for both male and female respondents. The enumerator team therefore included an equal number of male and female enumerators. The male enumerators asked the questions which related to agricultural production, household expenditure, asset ownership and questions on technology adoption and risk reduction practices. The female enumerators asked the questions for the female respondents, such as those related to the nutritional status of women and children, and hunger. If the head of household was a female, the questions for the agricultural indicators could be asked by the male enumerator.

Timeline

The field work for the baseline survey was conducted during five weeks and completed by mid-December 2015. By that time the project had identified its 48[6] target sucos, but had not yet selected its beneficiary farmers. Of the 48 target sucos, the project selected 19 for initial project roll-out during Project Years 1-2, whereas the remaining sucos would be targeted from Project Year 3 onwards. This meant that the baseline survey was able to be conducted in the 48 sucos selected by the project, even though the individual beneficiaries were still unknown.

The timeline for the baseline survey is shown in **Table 4**.

[6] The project has subsequently added a 49th suco to the list of implementation-area suco

Table 4: Baseline field survey implementation timeline

Avansa M&E Task Order 2: Revised Baseline Data Collection Plan Timeline																																				
	Year																								**2016**													
	Month/Week	**August**				**September**				**October**				**November**					**December**				**January**				**February**					**March**					
	Task 3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	1	8	15	22	29	7	14	21	28	
1	Develop B/L data collection design and plan																																			
2	Train enumerators																																			
3a	Test survey instruments																																			
3b	Review survey instruments																																			
3c	USAID approves draft survey instruments																																			
4	SI IRB certifies data collection plan & instruments																																			
5	Sample selection																																			
6	*Data collection / Field work*																																			
	- Ainaro / Ermera																																			
	- Aileu / Bobonaro / Dili																																			
	Data cleaning by TNS																																			
7	Data analysis and reporting																																			
8	Draft report shared with USAID																																			
9	CLA hosted dissemination event																																			

Field Validation

During the field work, SI conducted three separate field monitoring visits in Aileu, Ainaro, Bobonaro, Dili and Ermera, and used filter questions to ensure the quality of the data collection process. The team revisited households and community leaders in the sucos and aldeias. With the findings of the field monitoring visits, SI held a number of discussions with TNS and provided some recommendations for improvement; TNS addressed the recommendations.

After completion of the baseline survey, SI randomly selected 13 aldeia (out of 180 aldeias) to verify the respondent sheets of the questionnaires. SI presented the findings to TNS for follow up actions.

Data Cleaning and Analysis

Data collection was completed by TNS Global on 12 December 2015 when the TNS staff returned to Jakarta, Indonesia. The TNS team then entered the data into electronic data files, checked and cleaned the data, and sent the data to SI for data analysis in early February 2016. SI ran data checks on the data supplied by TNS and sought clarification for any outliers (to check if the outlier were real data or coding errors.

Data analysis was conducted by the SI HQ in February 2016, using STATA statistical software.

IV. METHODOLOGICAL CHALLENGES AND LIMITATIONS

FtF Methodological Constraints

Some FtF methodology is extremely time consuming for enumeration. For example, FtF methodology to provide data on consumption expenditure may take up to one hour for only one indicator. Due to the time constraints of the survey, some FtF indicators were assigned to be custom indicators in agreement with the Timor-Leste USAID Mission.

For example, SI used the Oxfam question module on the nutritional status of women (mean number of food groups consumed by women of reproductive age) to replace the FtF indicator. This was sourced from the Oxfam 2007 Timor-Leste Food Security Baseline Survey. For consumption expenditure SI adapted the methodology used in two national level surveys to create a less time consuming methodology to track the expenditure of households. [7]

The FtF indicators for practice and technology adoption require sex-disaggregation for the numbers of people in the household practicing each technology. However, this level of detail proved impractical when considering the time required for the data collection and when considering the difficulty in interpreting technologies and practices. Key respondents provided the data, not everyone in the household could be interviewed.

Data Based on Beneficiary Recall

Because farmers usually do not keep written records, baseline data are based on farmer recall for indicators related to crop yield and expenditure, as well as for other indicators, thus introducing recall bias. However, this risk can be mitigated by triangulating it with other project data collected from beneficiary farmers during the implementation of the project.

Single Household Visit

The time for data collection was limited so all the questions for male and female respondents needed to be completed during one visit. TNS budgeted for up to 90 minutes per household.

Community Leaders

Some community leaders were difficult to meet and coordinate with prior to the data collection. They also had concerns because there have been many previous surveys in their communities with no subsequent action occurring. On occasion, community leaders wanted to reject the SI survey team activities. The TNS teams approached some community leaders up to three times before the leaders allowed the team to undertake the data collection. The USAID official letter to the community leaders was very helpful in facilitating this process. Sometimes the Avansa M&E team also had to be present during the meetings to convince community leaders to participate.

Topography

Timor-Leste topography is rugged and it takes a lot of time to reach many field sites. Households were randomly selected from the household list provided by the suco chief or aldeia head. Because of the time it took to reach some households, if the selected household was not available then a neighbouring household was selected in the same location in order to complete the required number of households in each aldeia during the allocated time period in the village.

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[7] SI adapted questions from the Timor-Leste Survey of Living standards and the Timor-Leste Demographic Health Survey.

Indicators for Gross Margins and Hectares under Improved Technologies

Data on gross margin per hectare and area under improved technologies were not collected during the baseline field survey. This is because the gross margin data will be reported for those crops advocated by the project, and few farmers will currently be growing these crops commercially under baseline conditions. Furthermore, farmers do not generally know the area of the land they plant in particular crops[8] and often do not use kilograms/tons when selling crops.[9] As such, it is difficult in Timor-Leste to collect data on crop income and costs, and on crop area. The same challenge is faced when collecting data on areas of land under improved technologies or risk reduction technologies.

Because of these challenges, the project will establish the baseline gross margins and the area information for the relevant indicators once the project has selected the beneficiaries that will be supported for new crop production technologies. This will allow more intensive data collection with actual beneficiaries.

[8] With the exception of rice grown in paddy fields

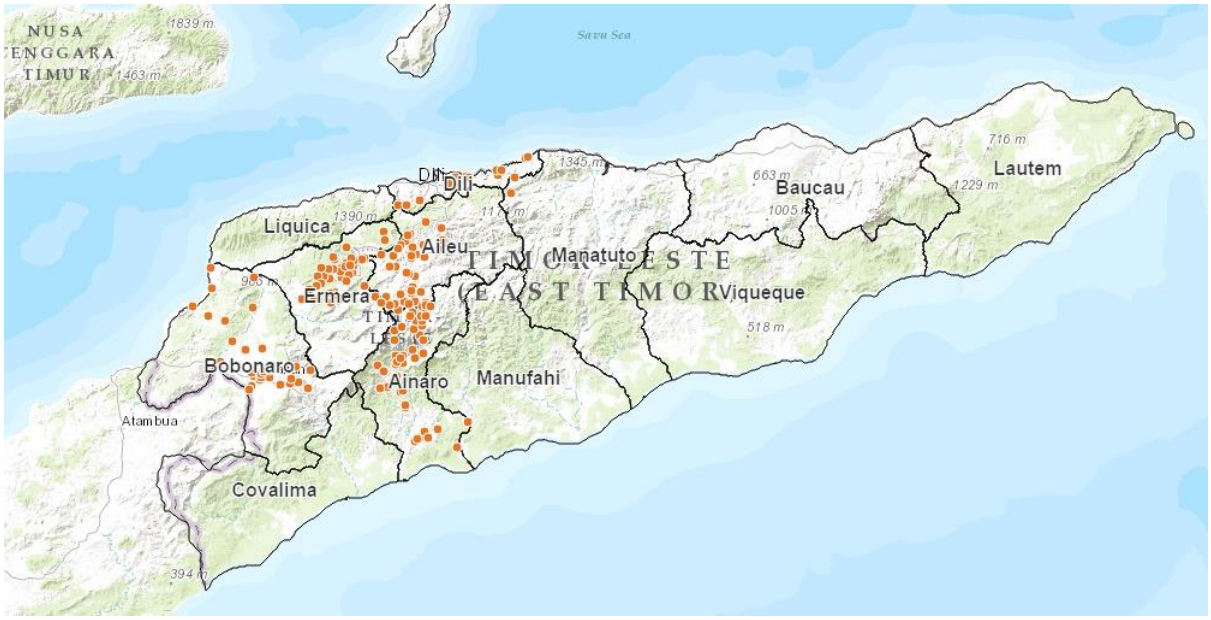
[9] Mostly selling by sack, basket or by some other volumetric measurement

V. FINDINGS

A. DESCRIPTION OF RESPONDENTS

The baseline survey included 1,200 rural households in 5 municipalities. **Figure 2** presents a map of the 180[10] aldeias in the survey sample.

Figure 2: Map of sampled aldeias



Ninety-four percent (94%) of the sampled households include both male and female adults, 3.5% included only female adults, and 2.3% of households had only male adults. These are FtF household classifications for some of the required indicator disaggregates **(Table 5).**

There were fewer respondents in Dili because only three sucos were sampled in Dili. Compared to other municipalities, the Avansa project will not work in as many sucos in Dili municipality. The percentage of respondents in each municipality are: Aileu 20%, Ermera 25%, Ainaro 28%, Bobonaro 18%, Dili 9%.

In the sample of children between 6 and 23 month of age, 49% were male and 51% female.

[10] Due to clustering on the map, not all 180 aldeias may be distinguishable on the map.

Table 5: Survey respondents by subpopulation

	Sub-Population	n	%
	Sample	**1200**	100
Household Type	MNF[11]	27	2.3
	FNM	42	3.5
	MF	1129	94.2
Municipality	Aileu	244	20
	Ermera	302	25
	Ainaro	332	28
	Bobonaro	211	18
	Dili	111	9
Children 6-23 Months	Boys	146	49
	Girls	149	51

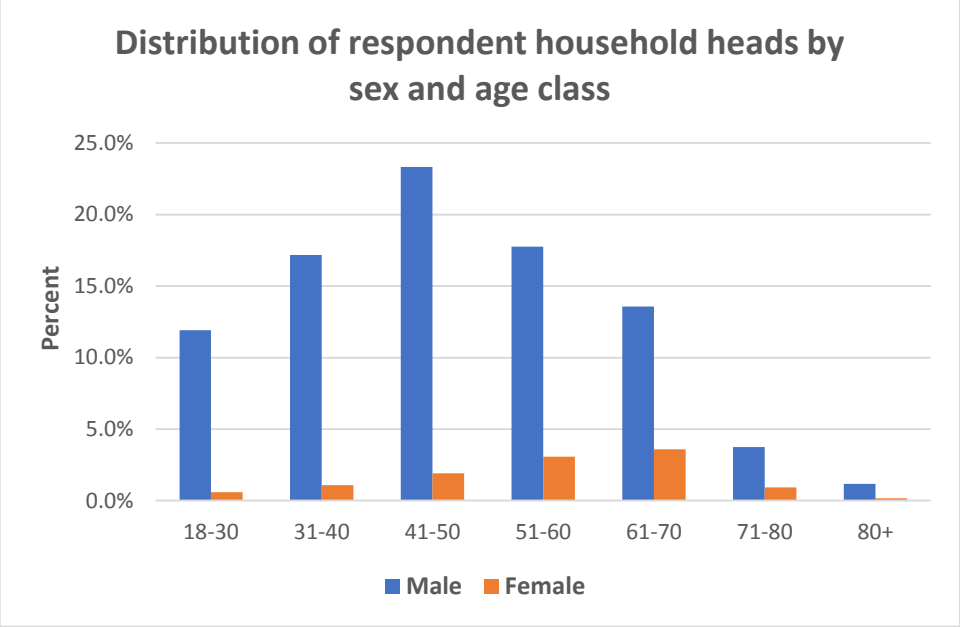
Among all respondents, 42% of household heads have had no education, not even at the primary level. A greater percentage of female household heads have had no education, compared to male household heads (74% for females, compared to 38% for males) (**Table 6**). Fifty-six percent (56%) of the respondents were 50 years old or under, and 44% were over 50 years old. Eighty-nine percent (89%) of household heads were male.

Table 6: Characteristics of household head

		Male	%	Female	%	Overall
Education	**No education**	401	38%	100	74%	**41.8%**
	Primary education	303	28%	20	15%	**26.9%**
	Secondary or higher	360	34%	16	12%	**31.3%**
Age group (years)	**18-30**	143	13%	7	5%	**12.5%**
	31-40	206	19%	13	10%	**18.3%**
	41-50	280	26%	23	17%	**25.3%**
	51-60	213	20%	37	27%	**20.8%**
	61-70	163	15%	43	32%	**17.2%**
	71-80	45	4%	11	8%	**4.7%**
	80+	14	1%	2	1%	**1.3%**
Total		**1064**		**136**		**100.0%**
		88.7%		**11.3%**		

[11] MNF means households with male adults and no female adults, FNM means female adults only, MF means households with mixed male and female adults.

Figure 3: Age and sex distribution of household head



Out of the 1200 respondents, 236 or 19.7% were not the household head (for the questions that related to farming activities). If the respondent was not the household head, in 72% of cases the respondent was the wife or husband of the household head **(Table 7)**.

Table 7: Characteristics of respondent if not household head

		Male		Female		
		Freq.	%	Freq.	%	
Relationship to HH head	Wife/husband	49	58%	120	79%	***Overall 72%***
	Daughter/son	27	32%	21	14%	
	Daughter/son-in-law	2	2%	3	2%	
	Mother/father	3	4%	6	4%	
	Sister/Brother	1	1%	1	1%	
	Sister/brother-in-law	1	1%	2	1%	
	Grandchild	0	0%	3	2%	
	Other relative	1	1%	0	0%	
	Other	1	1%	1	1%	
	Total	**84**		**152**		

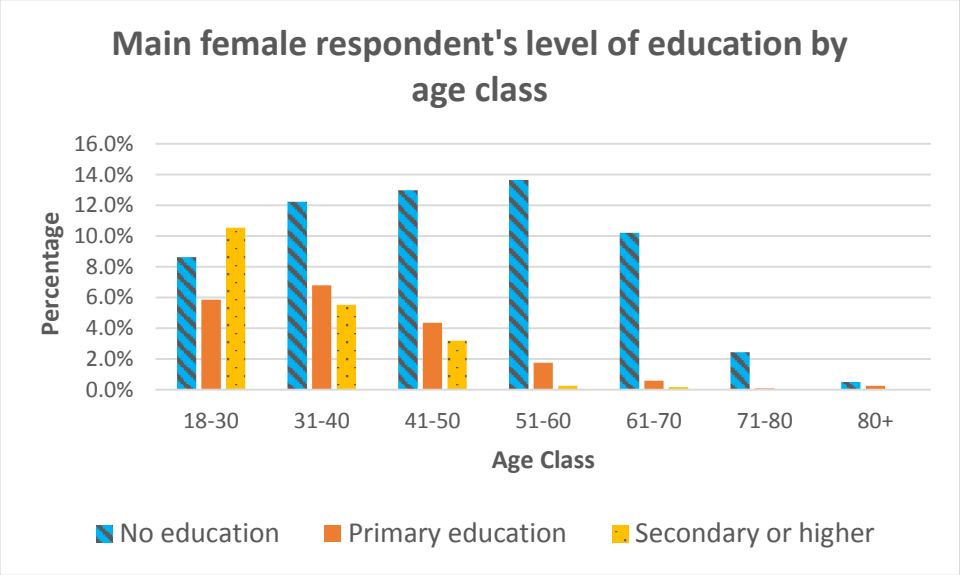
For the questions for which the main female decision maker was the respondent (questions on women's nutrition and nutrition of children 6-23 months of age), 85.4% were the wife of the household head. Twenty-five percent (25%) of these respondents were 30 years of old or less, and 70% were 50 years or less.

Sixty percent (60%) of these female respondents had not attended school and only 20% had attended secondary school. There were fewer of the main female decision makers with no education in the younger age classes, with fewest in the 30 years old or less age class (**Table 8**).

Table 8: Characteristics of main female decision-maker

Age group	Spouse of HH head (N)	Other	No education	Primary education	Secondary or higher
18-30	277	22	103	70	126
31-40	271	22	146	81	66
41-50	216	29	155	52	38
51-60	141	46	163	21	3
61-70	88	43	122	7	2
71-80	22	8	29	1	0
80+	5	4	6	3	0
	1020	174	724	235	235
	85.4%	**14.6%**	**60.6%**	**19.7%**	**19.7%**

Figure 4: Educational status of main female decision maker by age class



B. SUMMARY TABLE OF INDICATOR BASELINE VALUES

Table 9 shows the summary of the indicator baseline values based on the data collected during the baseline survey for 12 out of 32 indicators in the Avansa PMEP. There are five FtF indicators and seven custom indicators. The Development Objective 1 indicator, Agricultural GDP, is sourced from secondary data.

Table 9: Baseline values for the indicators collected during the baseline field survey

Indicator		Baseline Level		
		Unit	Mean/Total	SE[12]
	Feed the Future Indicators			
DO 1	Percent change in agriculture GDP (Secondary data from General Directorate of Statistics, Ministry of Finance - 2013)[13] *(GDP for Agriculture, Forestry and Fishing – Actual baseline value)*	USD	USD 254 Million	N/A
SB 1.4	Value of incremental sales (collected at farm-level) attributed to Feed the Future implementation	Metric Tons	29,217	3,469
	(2015 Value of sales – Baseline)	USD	$12,775,280,000	$1,148,751,000
2.1	Number of people implementing risk-reduction practices/actions to improve resilience to climate change as a result of USG assistance	Total	23,812	1,321
3.1	Number of farmers and others who have applied improved technologies or management practices as a result of USG assistance	Total	22,688	1,266
SB 2.2	Prevalence of households with moderate to severe hunger	Percent	15%	0.01%
	Custom Indicators			
2.4	Number of co-management/user groups formed and active	Total	87.03	9.56
5.1	Number of farmers, farmer groups and associations with buyer agreements	Total	40	3.18
6.2	Number of private sector agriculture extension workers in target municipalities	Total	18.33[14]	0
8.1	Percent increase in household savings and/or investment in productive assets *(Baseline value for assets, including savings, and loans owed to household; percent increase will be calculated based on future data collection)*	USD	$ 2,024	177
7.1	Prevalence of children 6-23 months receiving a minimum acceptable diet (Percent)	Percent	40.30%	0.01
7.2	Mean number of food groups consumed by women of reproductive age	Food Groups	4.45	0.15
SB 2.1	Daily per capita expenditure (as a proxy for income) in USG assisted areas	USD	$ 1.76	$ 0.08

[12] Standard error (SE) is a measure of the variability of data. It is the estimated standard deviation of individual data points from the mean for the sample distribution. It is calculated by dividing the estimated standard deviation of the population by the square root of the sample size. This means that a smaller sample size will usually generate a larger standard error.

[13] Note: Agriculture, Forestry and Fishing. Not available for agriculture disaggregated.

[14] This is a sample total, not a population estimate.

C. FEED THE FUTURE INDICATORS

This section presents the results for the five Avansa FtF indicators measured during the baseline survey. A summary of these results is provided in **Table 9** above.

Development Objective (DO): Percent Change in Agriculture GDP (From Secondary Sources) – FtF indicator reference number 4.5(3)

GDP is a required indicator. The definition of agricultural GDP follows the approach used by the UN statistical office in assisting countries to improve their national accounts. Crop output "is the product of output and the unit price at basic prices…less losses and wastes…plus the net change in inventories." In general, "most countries assign output and its associated costs to the time when the crop is harvested." The indicator reports year on year change in percent (i.e. annual growth rate).[15]

The value for this indicator is sourced from the General Directorate of Statistics, Ministry of Finance, as secondary data. The Food and Agriculture Organisation of the United Nations (FAO) conduct a food crop assessment periodically, this provides the estimates for annual crop production that forms part of the GDP calculation. The National Accounts Section of the General Directorate of Statistics uses the FAO crop production estimates for the previous year and adjusts the estimates for the current year, for which GDP estimates are required, based on current expectations of production supplied by the Ministry of Agriculture and Fisheries. Assumptions are also used in the calculations regarding input costs such as seeds, levels of stocks, consumption, and prices.

The General Directorate of Statistics do not release the value of agricultural GDP separately; only an aggregated figure is published for agriculture, forestry and fishing. So the disaggregate for agricultural GDP alone (required for this project indicator) is not available for Timor-Leste. Data also cannot be disaggregated by municipality.

GDP data are historical, so are lagged and normally available a year after data collection/estimation. The agriculture, forestry and fishing GDP data for 2014 are not yet published (as at February 2016).

Other than the FAO data, there is no other regular data on crop production collected from any statistical survey. However, an agricultural census is planned for 2017.

According to World Bank figures, in 2014 non-oil GDP (which includes agriculture) was 1.417 Billion dollars. With a population of 1.212 Million, non-oil GDP per person is therefore $1,170 USD in 2014.

From the published data, GDP for agriculture, forestry and fishing in 2013 was $254 million at current prices (which for 2013 is 19.3% of non-oil GDP - non-oil GDP was $1,319 million in 2013)[16].

SB[17]1.4 - Value of Incremental Sales (Collected at Farm-Level) Attributed to FtF Implementation (RIA)[18] - 4.5.2(23)

Overall sales were estimated to be $508 per household per year. They were lowest in Bobonaro, and highest in Ainaro. Sales were highest for households with only male adults, and lowest for households

[15] From the Feed the Future Indicator Handbook Definition Sheets, October 2014
[16] Reference Timor-Leste National Accounts 2000-2013, General Directorate of Statistics, Ministry of Finance.
[17] Sub-purpose in the indicator table; this is numbered as SB to retain the numbering used in the first draft of the Avansa project PMEP
[18] Required if appropriate

with only female adults (however, the sample size for these household disaggregates is small). The figure for Dili has a large standard error for the estimate because of the smaller sample size.

Across only those farmers growing the top 5 crops by value of sales per household,[19] the highest average sales in value per household came from coffee ($631), followed by rice ($556). However, only 39 households in the sample (3.2%) sold rice, whereas 787 (65%) sold coffee.

For those households that have only female adults (n=42), the sales income from crops is only 43% of that for the households with only male adults ($283 compared to $660 per year). Note that this is not a total income figure for households; only data on crop sales was collected during the survey.

Table 10: Sales of agricultural crops per household

Value of annual sales USD per household (n = 1200)

		USD Sales			
		n	**Mean Sales**	**SE**	**Median Sales**
Overall		**1200**	**$508**	**$33**	**$235**
Municipality	Aileu	244	$533	$67	$290
	Ermera	302	$485	$54	$250
	Ainaro	332	$637	$57	$330
	Bobonaro	211	$397	$74	$178
	Dili	111	$412	$159	$154
Household Type	MNF	27	$660	$254	$228
	FNM	42	$283	$53	$203
	MF	1129	$514	$34	$240

Table 11: Sales for the top five crops

Sales for the top five crops by sales income (n = variable)

	n	Mean Sales	SE	Median Sales	Mean tons	SE	Median tons
Coffee (all)	787	$631	$72	$319	1.46	0.23	0.65
Rice	39	$556	$127	$400	3.78	1.83	2.00
Boc choy	305	$137	$19	$50	0.28	0.10	0.08
Red beans	272	$170	$15	$100	0.12	0.02	0.06
Cabbages	116	$285	$77	$80	0.60	0.28	0.10

[19] For individual crops, the incomes per farmer selling may be high but the number of farmers growing the crop may be few

Table 12: Top 20 crops

Top 20 crops by frequency of farmers selling[20]			Top 20 crops by value of sales	
Crop Type	**No. of Farmers Selling**	**Percentage of Farmers**	**Crop Type**	**Value of Sales**
Coffee (All)	15973	63.43%	Coffee (all)	4,944,935
Boc choy	6476	25.71%	Boc choy	886,697
Red beans	5035	19.99%	Red beans	854,461
Maize	3817	15.16%	Rice	647,557
Bananas	3480	13.82%	Maize	589,564
Cassava	3003	11.93%	Aubergine	519,136
Aubergine	2871	11.40%	Cabbages	497,234
Broccoli	2856	11.34%	Lettuce	335,619
Lettuce	2844	11.29%	Tomatoes	310,592
Tomatoes	2725	10.82%	Cassava	298,356
Cabbages	2155	8.56%	Bananas	282,062
Sweet potato	1796	7.13%	Gogo rice	265,931
Onion	1593	6.33%	Broccoli	256,490
Pineapple	1406	5.58%	Carrots	203,985
Rice	1165	4.63%	Onion	161,527
Mango	1034	4.11%	Cauliflower	146,706
Carrots	1029	4.09%	Pineapple	141,206
Cucumber	991	3.94%	Irish potato	131,080
Cauliflower	990	3.93%	Pumpkin	66,990
Soya beans	897	3.56%	Papaya	62,051

[20] Based on fully weighted data across all 48 suco

Figure 5: Value of incremental sales by range class

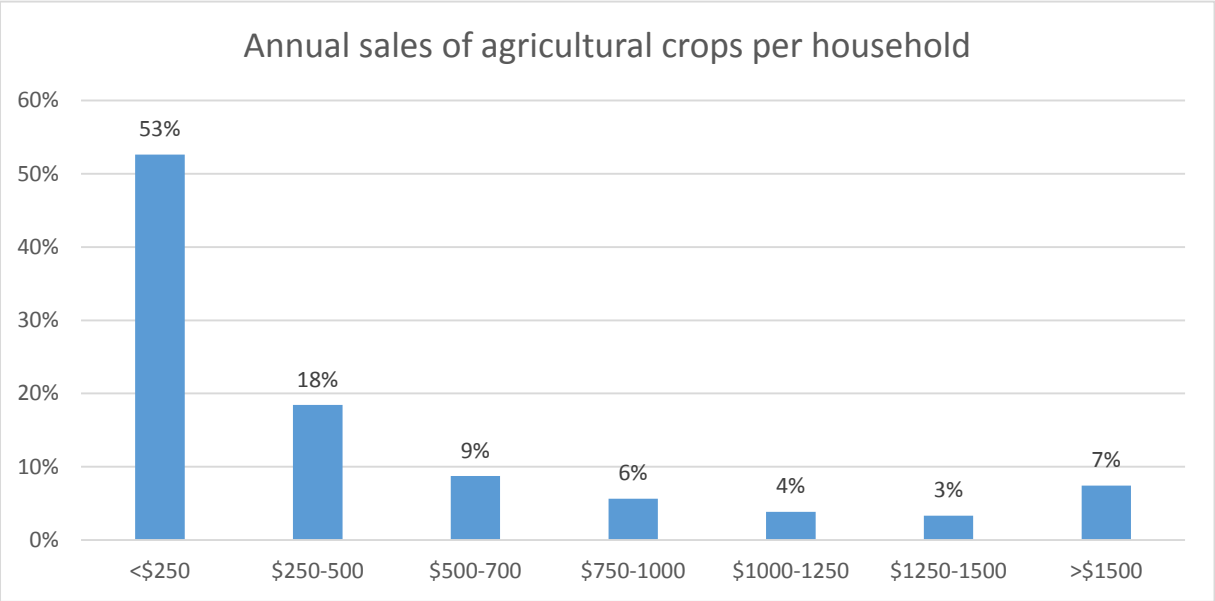


Figure 5 shows that the sales data are highly skewed, with 53% of households reporting a crop sales income of less than $250 and 71% of households reporting less than $500.

Table 13 lists the total value for sales of crops, estimated from the sample data to all households in all 48 sucos (24,876 households). This table also shows the gross sales estimates for the top five crops by value over the entire population of the 48 sucos in the project implementation area. Coffee is by far the biggest income earner for households. These estimates were generated by weighting each household's sales according to the population of the household's aldeia and number of sampled households in that aldeia, then adding all weighted sales together.

Across all 48 sucos the estimated gross value of crop sales is $12.8 million with 38% of this coming from selling coffee. By contrast, the next biggest sales item is rice which is 5.1% of the total.

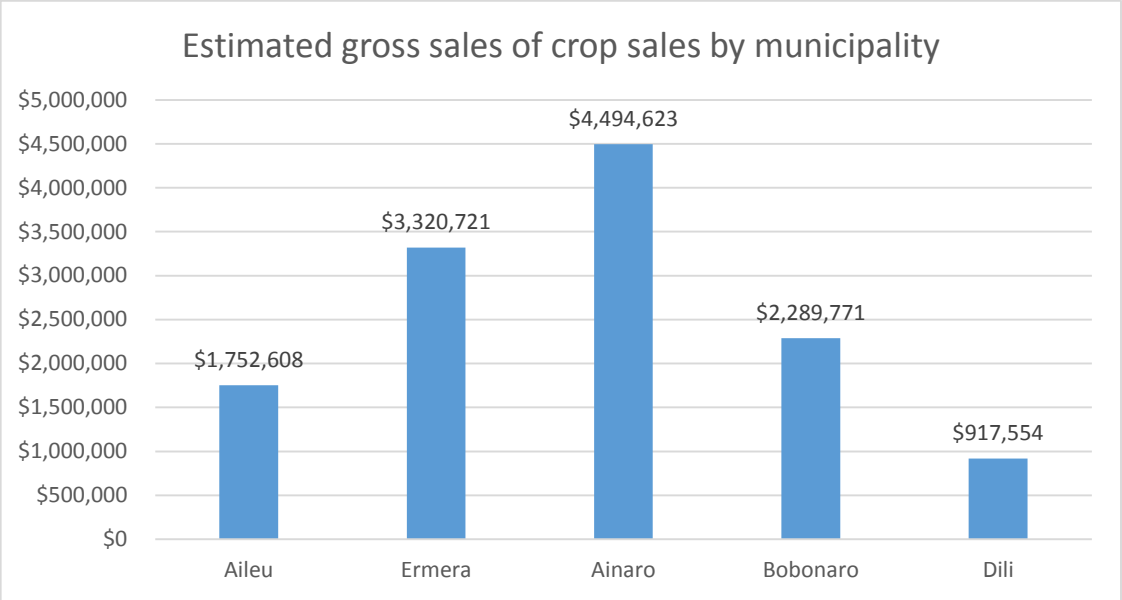
Table 13: Estimated total sales by value and volume over all households in all 48 implementation sucos

		Total USD	SE	Total MT	SE
Total	**All HHs**	$12,775,280,000	$1,148,751,000	29,217	3,469
Household Type	MNF	$302,236	$149,035	520	208
	FNM	$278,318	$87,117	539	210
	MF	$12,200,000	$1,118,294	28,159	3,449
Municipality	Aileu	$1,752,608	$388,963	4,934	1,029
	Ermera	$3,320,721	$605,878	6,856	1,268
	Ainaro	$4,494,623	$851,019	8944	1843
	Bobonaro	$2,289,771	$702,896	7019	2951
	Dili	$917,554	$518,758	1,464	947
Crop	Coffee (all)	$4,944,935	$735,447	11,344	1,967
	Rice	$647,557	$222,118	3925	2336
	Boc choy	$886,697	$175,571	2,062	445

Red beans	$854,461	$122,964	1,753	665
Cabbages	$615,091	$203,544	208	33

Figure 6 shows these estimated gross value of crop sales over all the households in the 48 project implementation sucos, by municipality. The gross figures reflect the number of households in each municipality for the sucos selected by the project. This is why the gross value is the lowest for Dili.

Figure 6: Total estimated value of crop sales, by municipality, for the project's 48 implementation sucos



2.1 - Number of People Implementing Risk-Reduction Practices/Actions to Improve Resilience to Climate Change as a Result of USG Assistance – 4.5.2(34)

An estimated 23,812 households, or 94.6% of the implementation-area population, are implementing at least one risk reduction practice. **Table 14** shows the estimated percentage and number of farmers implementing each practice.

The most commonly implemented practices were conservation forest planting (50%), row planting to prevent soil erosion (37%), and terraces (37%). However, these figures need to be interpreted in the context of farmers' knowledge and practices in Timor-Leste. Though farmers may apply a technology or practice, the manner in which the technology is applied or interpreted by farmers may not be similar to what would be advocated by the project as 'modern practice.' This is discussed further in the conclusions section of this report.

The least commonly implemented practices were use of plastic covers to increase soil temperature (2%), planting legumes in grassland (2%) and use of silos for crop storage (3%).

When asked about if they had heard of climate change, 16% of respondents had heard about it, and 68% of these respondents had received training related to climate change (11% of all respondents).

Table 14: Climate change risk reduction practices by type[21]

Category	Practice	Mean	SE
	All HH	**95%**	**1%**
	MNF	94%	4%
	FNM	86%	6%
	MF	95%	1%
	Have heard of climate change	16%	2%
	Have received training related to climate change	11%	3%
Crop Environment Management	Modifying planting dates	22%	2%
	Plasticulture / Tunnels	5%	1%
	Greenhouses	4%	1%
Soil Conservation Practices	Conservation forest planting for Natural Resource Management	50%	2%
	Row planting of perennial trees or shrubs to prevent soil erosion	37%	2%
	Construction of terraces for crop growing	37%	2%
	Construction of contour ridges to prevent soil erosion	33%	2%
Improved Grassland Practices	Use of fodder crops for animals	19%	1%
	Fencing of grasslands	9%	1%
	Rotational grazing of grassland	6%	8%
	Planting legumes in grassland	2%	1%
Crop Storage	Use of 200 L drums for crop storage	29%	2%
	Grain Prop plastic bags for crop storage	10%	1%
	Treating maize or rice with chemical to stop damage by insects	9%	2%
	Use of large silos for crop storage	3%	1%
Climate Mitigation or Adaptation	Direct drilling to reduce loss of soil moisture	28%	2%
	Use of plastic covers in vegetable production to increase soil temperature and reduce evaporation	2%	44%
Income Diversification	New farm-income earning enterprises	34%	3%
	New crops chosen for drought resistance or for tolerance to climate change	28%	0%
	New non-farm enterprises	24%	2%
None	None of the above	5%	1%

3.1 - Number of Farmers and Others Who Have Applied Improved Technologies or Management Practices as a Result of USG Assistance - 4.5.2 (5)

Based on survey results, it is estimated that 22,688 households, or 90.09% of the population in the 48 sucos, are applying improved technologies of some kind (**Table 15**). [22]

There may be lack of knowledge about technologies among Timor-Leste farmers. For example, Seeds of Life staff consider that farmers confuse hybrid seeds with other non-hybrid improved varieties of seeds, particularly as 42% of the respondents have had no schooling and there may also be a problem translating the technical terminology into Tetun. The Ministry of Agriculture does distribute hybrid

[21] Annex E includes a re-analysis of the use of risk reduction practices for farmers earning over $300 a year from the sale of vegetable and fruit crops.

[22] If clearly non horticultural practices are excluded, the number of households applying one or more of the listed technologies is reduced to 21,100 HHs (83.78%)

rice seeds to farmers, but 26% of farmers reporting using hybrid rice does seem a high figure (this would be equivalent to all the farmers who reported that they owned land for growing irrigated rice crops).

Table 15: Improved agricultural practices by type[23]

Category	Practice	Mean	SE
Household type	All HH	90%	1%
	MNF	81%	10%
	FNM	81%	8%
	MF	91%	1%
Improved Seeds / Varieties	Hybrid and/or improved seeds[24]	32%	2%
	Hybrid varieties of rice or maize	26%	2%
	New varieties of crop seeds (Not Hybrid)	18%	15%
	High quality vegetable seeds	17%	2%
	Improved varieties of sweet potatoes, cassava or taro	5%	1%
	Improved fruit tree varieties from nursery stock	4%	1%
	Fruit tree grafting	1%	0%
Improved Cropping Practices	Coffee pruning	33%	3%
	Growing commercial crops for sale in one plot of land	16%	2%
	Planting using a fixed plant spacing	15%	1%
	Trellising of crops (for climbing plants)	14%	1%
	ICM for rice production	7%	1%
	SRI for rice production	5%	1%
Pest and Disease Control	Using chemical insecticide	12%	2%
	Making organic pesticide/fungicide	7%	1%
	Using chemical herbicide/fungicide	6%	1%
	Integrated Pest Management (IPM)	2%	0%
Soil Fertility	Making compost	44%	2%
	Making organic manure	35%	2%
	Use of legumes in cropping land to improve soil fertility	34%	2%
	Crop watering using a bucket or watering can	33%	2%
	Crop rotations on the same plot of land	16%	2%
	Using chemical fertilizer	14%	2%
	Use of organic mulch to improve soil structure	10%	1%
Water Management	Flood / surface irrigation	6%	1%
	Drip irrigation using plastic pipes	2%	0%
	Pumping of water for irrigation	2%	1%
	Water harvesting using a pond or water tank from natural stream	25%	2%
	Dams	16%	2%

[23] Annex E includes a reanalysis of the use of improved agricultural practices for farmers earning over $300 a year from the sale of vegetable and fruit crops.
[24] Some farmers may not distinguish between hybrid varieties and improved varieties. For both hybrid varieties and improved varieties together, Thirty-two percent (32%) of farmers used these technologies.

	Water harvesting using a pond or water tank from rainfall	9%	1%
	Fish ponds	5%	1%
	Cultivate using hand tractor	13%	2%
	Use mechanized rice thresher	4%	1%
	Draught animals	2%	1%
Mechanization	Cultivate using large tractor	2%	1%
	Use mechanized coffee pulper	2%	0%
	Weeding using mechanical weeder for rice production	1%	0%
	Use of motorized maize sheller	0%	0%
None	None	10%	1%

USAID has promoted coffee pruning through projects implemented by Cooperative Café Timor (CCT). The projects have mainly focused on Aileu, Ainaro, and Ermera. Table 15 shows that in these USAID supported municipalities, more farmers prune their coffee than in Dili and in Bobonaro. However, there were very few coffee farmers amongst the respondents in Bobonaro and Dili.

Table 16: Improved practices and coffee pruning by municipality

	No. of Coffee Farmers	**% Pruning Coffee**	
		Mean	SE
Aileu	2,527	61%	4%
Ermera	6,229	56%	4%
Ainaro	3,655	33%	5%
Bobonaro	32	0.6%	0.60%
Dili	10	3%	2%

SB2.2 - Prevalence of Households with Moderate to Severe Hunger - 3.1.9.1(3) / 4.7(4)

The household hunger score was generated using responses from a series of questions about hunger events, such as times during the past month when the household did not have enough to eat.

The total responses were added together to generate a frequency of hunger events. If this number was 2 or 3, the household was determined to have moderate hunger. If the number was greater than 3, the household was determined to have severe hunger.

Table 17 indicates that an estimated 15% of households have moderate or severe hunger. Households with male and female adults (MF) have the highest levels of hunger, and households with only female adults have the lowest. [25]

This table also breaks down hunger by level of hunger, indicating that 15.35% of households suffer from moderate hunger, and only 0.15% from severe hunger.

Table 17: Estimated mean level of hunger

	Mean	SE
All Households	15.49%	1.48%
Female/No Male adults in household (FNM)	4.53%	3.50%

[25] Adults are classed as being 18 years of age or older

Male/No Female adults in household (MNF)	13.99%	6.26%
Male and Female adults in household (MF)	15.99%	1.53%
Little to no hunger	84.41%	1.48%
Moderate hunger	15.35%	1.48%
Severe hunger	0.15%	0.09%

The baseline survey was conducted in November 2015. As **Table 18** demonstrates, the 'hungry period' in Timor-Leste is usually before the first maize harvest which occurs in about March or April (depending on when planting occurred with the rains). Therefore, food insecurity is normally worse in February and the data are likely to underestimate hunger at that time, since the survey was conducted in November.

Table 18: Months during which household did not have enough food to meet family needs

Month	Percent of Households	SE
January	33%	4%
February	32%	5%
March	15%	3%
April	10%	3%
May	5%	2%
June	3%	2%
July	6%	2%
August	4%	1%
September	5%	2%
October	13%	3%
November	18%	5%
December	15%	3%

D. CUSTOM INDICATORS

2.4 - Number of Co-Management/User Groups Formed and Active

The survey found that that 32% of aldeias surveyed (or 57 Aldeia in the sample) contain a group for Natural Resource Management (NRM), with a standard error of 3.47%. The average group contains 22 members, +/- 2.61.

Each survey observation was assigned equal weight, because each aldeia had an equal probability of being selected from the intervention sucos. These weights were used to estimate the total number of NRM groups in the entire intervention area.

Table 19 below shows the estimated number of groups in each municipality, as well as the percentage of aldeias in each municipality that contain a group. Ainaro municipality contains the lowest percentage of groups in relation to the population. The total estimated number of groups in the entire project implementation area is 87 groups +/- 10.

Table 19: Estimated number of co-management NRM groups per municipality across the 48 sucos in the project implementation area

	Total	SE	Proportion of Population	SE
Overall	**87.08**	**9.56**	**32%**	**3%**
Aileu	15.28	4.18	27%	7%
Ermera	19.86	4.70	29%	7%
Ainaro	12.22	4.00	16%	5%
Bobonaro	27.50	4.27	58%	9%
Dili	12.22	3.24	47%	12%

Table 20 provides detail on the co-management groups that were found in the surveyed aldeias (57 groups) in 32 of the 48 sampled sucos. Although the survey identified groups in 67% of the surveyed sucos, there may actually be a greater percentage of sucos with NRM groups because some may have been missed as a result of sampling. However, there are an estimated 87 NRM groups throughout all 48 sucos.

Table 20: Number of co-management groups found in the sampled aldeias

District	Suco	Number of Groups	Supported by	Number of Members
Aileu	Aisirmou	3	Seeds of Life, World Vision	80
	Lahae	1	World Vision	25
	Liurai	2	World Vision	67
	Seloi Craic	1	World Vision	15
	Seloi Malere	3	World Vision, Plan, DAC project	89
Subtotal	**5**	**10**		**276**
Ermera	Laulala	1	Camoes	26
	Leguimea	1	CCT	20
	Mirtutu	1	ATJ (Japan), Permatil, RDP4	5
	Poetete	3	ATJ (Japan), Camoes, Mercy Corps	50
	Ponilala	1	Mercy Corps	20
	Talimoro	1	Camoes	20
	Fatubolu	1	None	142
	Hatolia	1	HIAM Health	12
	Manusae	3	RDP4, MAF	63
Subtotal	**9**	**13**		**358**
Ainaro	Ainaro	1	Mercy Corps	25
	Soro	1	None	60
	Nuno Mogue	3	RDP4, MAF	46
	Leolima	1	Mercy Corps	15
	Maubisse	2	Haburas	60
Subtotal	**5**	**8**		**206**
Bobonaro	Aidaba-Leten	2	None	45
	Ilat-Laun	1	None	20
	Manapa	1	None	10
	Raiheu	1	ETADEP / GIZ	10

	Holsa	2	MAF	27
	Lahomea	3	GIZ	42
	Odomau	1	None	12
	Raifun	3	None	35
	Ritabou	2	None	37
	Tapo	2	None	24
Subtotal	**10**	**18**		**262**
Dili	Hera	3	Mercy Corps, China Embassy, USAID (Finished)	56
	Duyung-Sereia	4	MAF, Haburas, HIAM Health	93
	Dare	1	None	2
Subtotal	**3**	**8**		**151**
Total	**32**	**57**		**1253**

5.1 - Number of Farmer Groups and Associations with Buyer Agreements

Of 180 community leaders sampled, 31 reported that there was an existing farmer group in their aldeia, 26 of these reported that their group had an existing agreement to sell crops, and two aldeias reported the presence of two groups.[26] The average group had 16 members, +/- 1.6.

These data were collected from one community leader from each sampled aldeias. In order to calculate the number of groups overall—including the aldeias that were not sampled—SI weighted the sample number of groups by the ratio of the total number of aldeias in the 48 sucos divided by the number of aldeias sampled. This gave an estimate of 40 farmer associations with buyer agreements in the implementation area, +/- 5.

The survey question for this indicator specifically asked aldeia leaders whether or not their "community have any groups which are responsible for aggregating and selling crops on behalf of farmers?" And further, "if they have an existing agreement to sell crops to any crop buyer or market?" As most farmers sell coffee to Cooperative Café Timor (CCT), the survey enumerators did not record CCT groups, and although farmers are supported by CCT, they sell their coffee to CCT as individuals at roadside collection points, rather than make sales through their groups.

Only one group was found through which farmers sell coffee. This was a group supported by Alter Trade Japan (ATJ). All but one of the other groups recorded during the survey are groups selling vegetable crops; most of these groups were established by the previous USAID-supported Developing Agricultural Communities (DAC) horticultural project. These groups sell most of their production to supermarkets at crop aggregation, weighing, and grading sites within the community.

[26] On inspection of the data SI excludes three of these groups as not having the required buyer agreements because the crops were reported to be sold in the local market.

Table 21: Estimated number of groups with buyer agreements in intervention area by municipality

	Total	SE
Overall	**39.72**	**3.18**
Aileu	25.97	0.00
Ermera	9.17	2.29
Ainaro	3.06	0.00
Bobonaro	1.53	1.53
Dili	0	0

Table 22 provides details on the groups found in the sampled aldeias.

Table 22: Number of groups with buyer agreements found in the sampled aldeias

District	Suco	Aldea	Group	Crop	Buyer
Aileu	Aisirimou	Berecati	Pasensia ba Moris Diak	Vegetables	Dilimart Supermarket
		Ercoatum	Sarlala 2	Vegetables	Dilimart Supermarket
	Bandudato	Taiblor	Taiblor	Vegetables	Kmanaek supermarket
	Fahiria	Fahiria	Rocksor	Vegetables	Kmanaek supermarket
		Fahiria	Sarin 2	Vegetables	Kmanaek supermarket
	Fatubosa	Leki	Fatubosa 2	Vegetables	Kmanaek supermarket
		Couclau	Senoura Tahan	Vegetables	Kmanaek supermarket
		Fatubosa	Fatubosa 1	Vegetables	Kmanaek supermarket
	Liurai	Meain	Liurai	Vegetables	Kmanaek supermarket
		Couclau Udo	Liurai 1	Vegetables	Kmanaek supermarket
	Seloi Craic	Taliforleu	Fo Liman	Vegetables	Kmanaek supermarket
		Faularan	Sarlala 2	Vegetables	Dilimart Supermarket
		Casamou	HIP	Vegetables	Kmanaek supermarket
		Casamou	Kahu	Vegetables	Kmanaek supermarket
	Seloi Malere	Colihoho	Moris Faun	Vegetables	Kmanaek supermarket
		Cotobuoro	Hakumor	Vegetables	Casa Nova Fresca
		Tarahiti	Hukifu	Vegetables	Kmanaek supermarket
Ermera	Lauala	Sari	Hidsagri	Vegetables	Kmanaek supermarket
	Poetete	Urletfoho	ATT	Coffee	ATJ (Japan)
		Urluli	Mercy Corp Group	Other crops	Mercycorp
	Ponilala	Cota Heu	Feto Moris Foun	Vegetables	School feeding program
	Eraulo	Olopana	UDD	Vegetables	DAC to Supermarket
Bobonaro	Aidaba-Leten	Tasi Mean	DAC group	Vegetables	W4 Supermarket
Totals:	**12**	**23**	**23**		

By Crop Type	Coffee	1
	Vegetables	21
	Other	1
Buyers	Supermarkets	20
	Japanese project	1
	School feeding program	1
	NGO	1

6.2 - Number of Private Sector Agriculture Extension Workers in Target Municipalities

While households report working with a large number of NGO or government agricultural extension workers, only 12 of the entire sample reported working with private sector agricultural extension workers. These extension workers are mostly employed by the supermarkets previously supported by the DAC project (seven extension workers); Josephina Farms, a private sector contract farming company supported by ILO (one extension worker); or are members of farmer self-help groups (four extension workers). Because these observations on farmer extension workers were all in Aileu municipality (in which the DAC project was active), in our opinion the four extension workers who were reported to work for farmer groups may have been farmer volunteers working in their own groups. If these extension workers are excluded, there are only eight paid private sector extension workers in the sample data.

Using the aldeia ratio weighting,[27] 18 private sector agricultural extension workers are estimated in the intervention sucos, +/- 8 (or 12 private sector extension workers, without counting the farmer extension workers).

Table 23: Number of male and female agricultural extension workers in the sampled aldeias, by service provider

		Number of Extension workers		
Extension Service Provider	**Private Sector**	**Male**	**Female**	**Sex Not Known[28]**
Farmer Group (self-help)[29]	Yes	3		1
Supermarket (previously worked with DAC)[30]	Yes	4		3
Entrepreneur supported by Donor (ILO)[31]	Yes	1		
Ministry of Agriculture	No	3	1	
Local NGO	No	6		

[27] Number of aldeias in 48 sucos divided by the number sampled (275/180=1.53)
[28] The sex of the extension worker was disaggregated from their name. If the name was not known by the farmer, the sex of the extension worker could not be identified from the survey data.
[29] Farmers working to assist other farmers have been classified as private sector, even though they may be unpaid.
[30] Supermarkets that previously worked with DAC are no longer supported by the project, as the project is now completed.
[31] Entrepreneur receiving some support from International Labor Organization.

International NGO	No	1		
Cooperative supported by Donor (e.g. CCT)	No	5	1	
Ministry of Health	No	1	1	
Donor Project	No	3	1	1
Not Known[32]	N.A.	7	2	1
Totals:		34	6	6
Number of Private Sector Extension Workers	12	8	0	4

Table 24: Estimated number of agricultural extension workers in each municipality

	Total	SE
Overall	**18.33**	**0.00**
Aileu	9.17	2.76
Ermera	0.00	0.00
Ainaro	0.00	0.00
Bobonaro	3.06	2.06
Dili	6.11	2.61

In Bobonaro there are some groups supported by a private sector crop trader (Farm Pro); it is possible that some of these extension workers may be associated with this trader.

SB2.1 - Daily Per Capita Expenditure (As a Proxy for Income) In USG Assisted Areas

Table 25 indicates that estimated mean per capita expenditure from the sample data was $1.76 per day. This figure was higher for households with only male adults, lower for mixed households (with male and female adults), and lowest for households with only female adults.

The mean was estimated using household expenditure divided by number of people of all ages in the household.

[32] In some cases, farmers reported receiving extension services, but did not know which organization provided the service.

Figure 7: Daily per capita expenditure by range class (% of households)

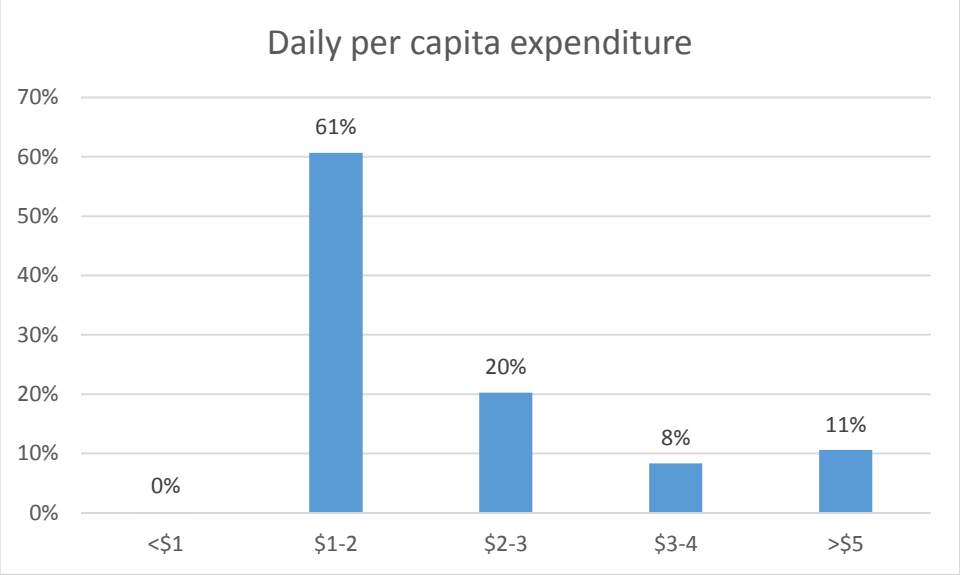


Table 25: Estimated daily per capita expenditure

	Mean	SE
All ZOI (48 Suco)	$1.76	$0.08
Female/No Male in household (FNM)[33]	$1.34	$0.30
Male/No Female in household (MNF)	$2.81	$0.53
Male and Female in household (MF)	$1.75	$0.08
Aileu	$1.51	$0.07
Ermera	$2.41	$0.21
Ainaro	$1.60	$0.10
Bobonaro	$1.32	$0.09
Dili	$1.74	$0.23
Food	$1.07	$0.05
Goods and services	$0.56	$0.03
Interest	$0.12	$0.02

Although the mean daily per capita expenditure is only $1.76 per day per person, 61% of households fall into the $1 to $2 per day range class. Thirty-nine percent (39%) of households spend more than $2 per day per person, and 11% over $5.00

7.1 - Prevalence of Children 6-23 Months Receiving a Minimum Acceptable Diet (Percent)

This indicator measures the proportion of children 6-23 months of age who receive a minimum acceptable diet (MAD), apart from breast milk. The "minimum acceptable diet" indicator measures both the minimum feeding frequency and minimum dietary diversity, as appropriate for various age groups. If a child meets the minimum feeding frequency and minimum dietary diversity for their age

[33] This means female adults, no male adults

group, and breast-feeding group and breastfeeding status, then they are considered to receive a minimum acceptable diet.

Minimum dietary diversity for breastfed children 6-23 months is defined as four or more food groups out of the following seven food groups:[34]

1. Grains, roots and tubers
2. Legumes and nuts
3. Dairy products (milk, yogurt, cheese)
4. Flesh foods (meat, fish, poultry and liver/organ meats)
5. Eggs
6. Vitamin-A rich fruits and vegetables
7. Other fruits and vegetables

Minimum meal frequency for breastfed children is defined as two or more feedings of solid, semi-solid, or soft food for children 6-8 months, and three or more feedings of solid, semi-solid or soft food for children 9-23 months.

Minimum meal frequency for non-breastfed children is defined as four or more feedings of solid, semi-solid, soft food, or milk feeds for children 6-23 months. For non-breastfed children to receive a minimum adequate diet, at least two of these feedings must be milk feeds.

Based on survey responses, it is estimated that 40.3% of children 6-23 months are receiving the minimum acceptable diet in the treatment area (equivalent to 2,419 children).

Table 26: Estimated minimum dietary diversity

Indicator 7.1	Children ages 6-23 months receiving MAD	
	Mean	SE
All children	40.30%	3.41%
Boys	38.75%	4.48%
Girls	41.91%	5.15%

7.2 - Mean Number of Food Groups Consumed by Women of Reproductive Age

For this indicator, survey respondents were asked how often they consumed a range of food groups within the last 30 days.[35] They were asked to indicate if they (1) Ate rarely (1-3 times/week), (2) Ate sometimes (3-5 times/week), (3) Ate often (daily), or (4) Did not eat. The responses are recorded in **Table 27**.

The most commonly consumed food group was grains and tubers (which includes cassava and taro), followed by leafy greens (a good source of Vitamin A).

[34] "Indicators for assessing infant and young child feeding practices: Part II Measurement." WHO, 2010. http://apps.who.int/iris/bitstream/10665/44306/1/9789241599290_eng.pdf

[35] The respondents were asked to think about the last month but then to express the frequency of consumption in number of times per week.

Table 27: Estimated frequency of consuming food groups in the last 30 days

	Never *Did not eat*	Rarely *1-3 times/week*	Sometimes *3-5 times/week*	Often *Daily*	Total >never
Grains and tubers	0%	1%	2%	97%	100%
Legumes	34%	51%	13%	2%	66%
Dairy	30%	40%	21%	9%	70%
Eggs	22%	42%	30%	5%	77%
Meat	9%	47%	31%	12%	90%
Leafy greens	1%	30%	17%	51%	98%
Other vitamin A-rich vegetables	17%	58%	19%	6%	83%
Other fruits and vegetables	8%	41%	32%	20%	93%

When the definition of "food groups consumed by women of reproductive age" includes foods consumed often, women consumed an average of two food groups. When the definition includes foods consumed often and sometimes, women consumed an average of 4.46 food groups out of the 8 groups.

The project's proposed target is to increase the number of food groups women of reproductive age consume by two groups. This would mean if the classification of "often" were considered the baseline, then the respondents reporting that they consumed an average of two food groups "Often" (which means daily) would have to increase to four groups (from two groups).

Table 28: Estimated mean number of food groups consumed by women of reproductive age within the last 30 days

Indicator 7.2		
	Mean	SE
Only Often *Daily*		
All Households	2.041226	.1107393
Female/No Male	2.053081	.112437
Male/No Female	2.00722	.1147474
Male and Female	2.019832	.1157795
Sometimes or Often *3-5 times/week*		
All Households	4.46	0.14647
Female/No Male	3.693661	0.4182269
Male/No Female	4.077637	.9158846
Male and Female	4.532967	.1542635

8.1 - Percent Increase in Household Savings and/or Investment in Productive Assets

Households were asked questions about their savings (including cash, bank deposits, and valuables such as jewellery) and ownership of productive assets. The assets were weighted according to their original value, and a depreciation schedule that assumed half-life of each asset type to generate a current estimated value for each.

Table 29 shows that households have, on average, $2,025 of savings and assets.[36] The largest asset class by far is livestock, comprising over 56% of household wealth in the average household.

Mixed male-female households have the highest level of assets in most categories, and male-only households the lowest.

Mean predicted assets were by far the highest in Dili, followed by Bobonaro, and lowest in Ermera.

Table 29: Value of savings and assets by household type, asset type and municipality

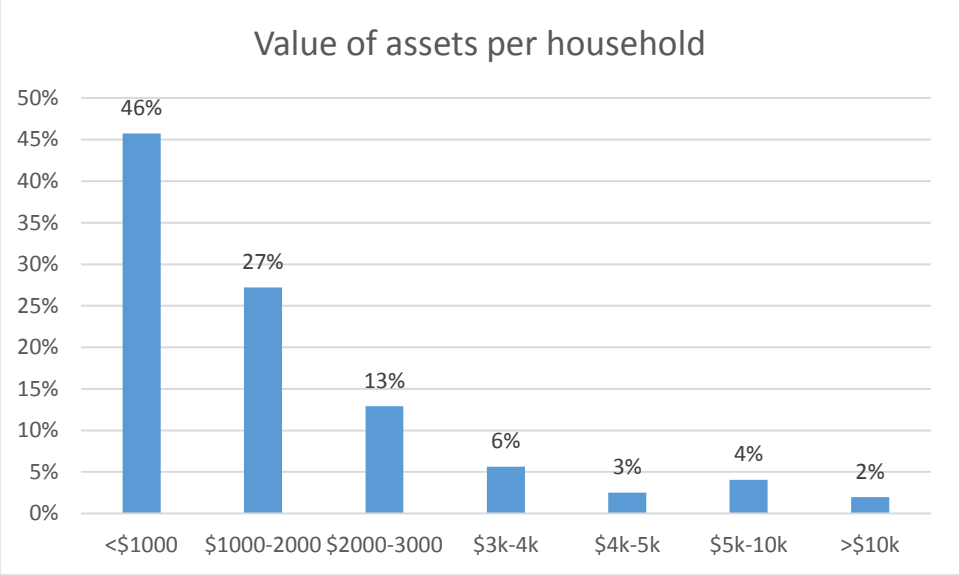
		% with Assets	Mean	SE	Median
Household type	All HH		$2,025	$178	$1,151
	MNF		$952	$213	$563
	FNM		$1,010	$155	$756
	MF		$2,088	$188	$1,185
Municipality	Aileu		$1,697	$179	$1,219
	Ermera		$1,458	$146	$921
	Ainaro		$1,604	$141	$1,029
	Bobonaro		$2,549	$274	$1,640
	Dili		$4,230	$1,378	$1,132
Savings	Cash	30%	$75.85	$28.62	$0.00
	BNCTL Government Bank	3%	$26.59	$14.49	$0.00
	UBSP (Savings and loan group)	1%	$1.27	$0.88	$0.00
	Moris Rasik	3%	$8.78	$4.43	$0.00
	Other bank	1%	$4.67	$2.14	$0.00
	Gold, silver, or other precious metals	4%	$4.39	$1.16	$0.00
	Jewelry	7%	$8.73	$2.74	$0.00
	Other	1%	$1.46	$0.82	$0.00
	Loans	27%	$31.41	$5.39	$0.00
	Total	100%	$178.67	$36.85	$16.00
Transfers	Cash	62%	$69.20	$9.70	$10.00
	In-kind	50%	$26.31	$2.79	$0.00
Assets	Fishing	14%	$159.37	$11.04	$100.00
	Livestock	93%	$1,152.14	$80.35	$630.00
	Household durables	72%	$109.72	$6.42	$80.00
	Transport	20%	$262.55	$84.78	$0.00
	Farm Equipment	40%	$162.42	$33.29	$0.00

Note: The median of zero indicates that half, or more, of the sample had none of this type of asset

Figure 8 shows the value of asset ownership by range class. The data are highly skewed with 46% of households with assets of under $1,000, and 73% under $2,000. Twenty-seven percent (27%) of households have assets over $2,000, inclusive of livestock, the largest single asset class.

[36] Savings includes loans to others, on the expectation of repayment (but does not include gifts or transfers to others).

Figure 8: Value of assets by range class



Households were also asked how many hectares of rice paddy they owned, and whether or not they owned land for growing rain-fed crops.

Almost a quarter of households reported having land for growing irrigated rice crops and 87% reported having land for growing rain-fed crops.

Table 30: Land ownership

Percentage of farmers who own land for irrigated rice crops		
	Percent	SE
Overall	24.36%	3.16%

Percentage of farmers who own land for rain-fed crops		
	Percent	SE
Overall	86.54%	1.52%

Respondents were also asked if they had land that was not cultivated and, if they did, the reason for not cultivating this land. Fifty-two percent (52%) of households reported that they had land which was not cultivated (628 respondents).

Of these respondents, most gave lack of labour as the reason for not cultivating land (80% of those reporting having land and not cultivating it). Some also reported a lack of equipment (3%), which is related to labour availability. Twelve percent (12%) reported a lack of farm inputs as the reason for not cultivating land (**Table 31**).

Table 31: Percentage of farmers owning land that is not cultivated and the reason for non-cultivation

Reason for non-cultivation	No. of respondents	% of those not cultivating	% over entire sample
Lack of labour	502	80	42
Unable to hire equipment or draught animals	19	3	1.6
Lack of farm inputs	74	12	6.2
Other	33	5	2.7
Total	**628**	**100%**	**52%**

Table 32: Percentage of households reporting asset ownership and the mean number of each asset owned, by type of asset

	Type of Asset	No. of Households Owning		No. Owned for those HHs Owning	
		Freq.	SE	Mean	SE
Fishing	Fish ponds	11.26%	1.49%	2.19	0.20
	Fishing nets	4.68%	1.10%	1.00	0.00
Livestock	Pigs	77.06%	1.27%	2.56	0.13
	Chickens	70.73%	1.94%	5.77	0.33
	Bali cattle	37.96%	2.32%	3.75	0.35
	Goats	31.82%	2.02%	3.18	0.25
	Horses or donkeys	13.27%	1.75%	1.78	0.11
	Buffalo	9.92%	1.23%	3.62	0.54
	Ducks or geese	3.72%	1.01%	3.04	0.32
	Sheep	1.98%	0.47%	1.97	0.33
Household durables	Mobile phones	64.01%	1.66%	2.07	0.07
	Solar panel	21.93%	2.61%	1.16	0.04
	Refrigerator	4.68%	1.31%	1.31	0.12
	Generator	3.62%	0.63%	1.06	0.06
	Computer	1.94%	0.53%	1.03	0.03
	Sewing machine	1.56%	0.52%	1.55	0.39
	Gas or electric cooking stove	0.59%	0.30%	1.28	0.26
	Washing machine	0.03%	0.03%	1.00	0.00
Transport	Motor bike	15.03%	1.73%	1.25	0.10
	Bicycle	5.37%	1.07%	1.14	0.08
	Canoe or boat	1.81%	0.84%	1.25	0.18
	Boat engine	1.02%	0.55%	1.00	0.00
	Car or minibus	0.82%	0.37%	1.67	0.53

	Truck or pickup	0.47%	0.28%	1.00	0.00
Farming equipment	Push cart with wheels	18.93%	2.13%	1.31	0.26
	Hand coffee pulper	17.80%	2.36%	1.04	0.03
	Hand tractor	5.59%	1.15%	1.00	0.00
	Back pack sprayer	3.53%	1.01%	1.00	0.00
	Motorized rice thresher	3.31%	1.10%	1.00	0.00
	Motorized coffee pulper	2.46%	0.58%	1.03	0.03
	Plough or harrow pulled by tractor	1.33%	0.65%	1.00	0.00
	Motorized water pump	0.59%	0.33%	1.02	0.02
	Motorized rice mill	0.53%	0.21%	1.00	0.00
	Rice weeder	0.40%	0.31%	1.00	0.00
	Ox cart	0.33%	0.15%	1.32	0.44
	Plough pulled by oxen/buffalo	0.29%	0.18%	1.17	0.07
	Large tractor	0.24%	0.21%	2.26	1.29
	Motorized maize sheller	0.17%	0.17%	1.00	0.00
	Motorized maize grinder	0.16%	0.12%	1.10	0.03
	Other	0.11%	0.08%	1.32	0.44

E. COMMUNITY PARTICIPATION

As an additional question, not related to the indicators, respondents were asked if they participated in community group activities, and how often they participated (not including in political or religious groups). Twelve percent (12%) of respondents reported that they did participate in community group activities and the most frequently mentioned groups were farming (65% of those participating).

Table 33: Percentage of respondents participating in community groups by type of group (sample size 1,200)

	Mean	SE	Total In Sample	SE
Total	**12%**	**1%**	**144**	**12**
Farming	65%	5%	780	60
Water	3%	2%	36	24
Forestry	7%	2%	84	24
Fisheries	9%	3%	108	36
Health	2%	1%	24	12
Credit	10%	3%	120	36
Women	2%	2%	24	24
Youth	0%	0%	0	0
Other	7%	3%	84	36

Table 34 shows the organisations supporting the groups, the main activity supported and the frequency with which the supporting agency was mentioned by respondents.

Table 34: Organizations giving assistance to community groups

Organization	Type	Frequency
MAF	Farming	32
World Vision	Farming	21
Other	Farming	14
Mercy Corps	Farming	13
Moris Rasik	Farming	11
Don't Know	Farming	10
Local Government	Other	10
PNDS	Water	8
USAID	Farming	7
ACDI/VOCA	Fisheries	5
Seeds of Life	Farming	5
Lahatene Naran	Farming	4
PLAN	Fisheries	4
RDP4	Farming	4
ATT	Farming	3
Alola Foundation	Women	3
GIZ	Farming	3
HABURAS	Farming	3
APLA	Farming	2
Kmanek	Farming	2
Ministry of Education	Youth	2
Ministry of Health	Health	2
OHM	Credit	2
ATJ	Farming	1
CCI-TL	Forestry	1
Halerai	Farming	1
IMI	Other	1
Ministry of Environment and Trade	Farming	1
Ministry of Social Affairs	Women	1
NCBA	Farming	1
PERMATIL	Farming	1
RDP4	Farming	1
SAS (Saneamentu)	Water & Sanitation	2

VI. CONCLUSIONS AND LESSONS

Indicators

The baseline survey of 1,200 households in 5 municipalities was successfully conducted by Avansa M&E for the Avansa Agrikultura project. Both of these projects are funded by USAID.

The baseline values for five FtF indicators and seven custom indicators were measured. Other data that supplements the measurement of the indicators (such as details of respondents, the relative importance of individual crops for income generation, and the nature of the distribution of the results around the mean values, as examples) provide additional insights.

For some of the indicators, the project will use the results to validate or modify the project targets (SB 1.4, 6.5, 6.6b, SB 2.1, SB 2.2), for other indicators the project already has contractual obligations (e.g. for 2.1 and 2.4).

On investigation of the GDP data, SI found that although GDP is a required indicator, it is not an appropriate indicator in Timor-Leste because GDP is not available disaggregated to agriculture. The Timor-Leste General Directorate of Statistics, advised that because of data reliability problems, GDP data is aggregated for agriculture, forestry and fishing. GDP data is also not available for individual municipalities.

Data Analysis

The data analysis reveals heavily skewed distributions for the results of some indicators; this is typical for data that represents rural communities in developing countries. When data are skewed, the mean (or arithmetic average) no longer serves as an accurate representation of central tendency in the data. Examples of this skew in the data are the level of sales, asset ownership, and daily per capita expenditure. In such circumstances, the mean value may be misleading and the median may be a more meaningful measure. The survey team therefore has inserted median values where appropriate.

Lessons

- Agriculture's contribution to GDP is not a suitable indicator for Timor-Leste and should not be a required indicator. It should be substituted for something available through other secondary sources or practically available through primary data collection.

- The data requirements for some FtF indicators need to be adapted if to be appropriate to Timor-Leste conditions. For example, it is more useful to know how many farm households are using technologies rather than how many people, including multiple people in the same household, and this data collection would be more straightforward. Because it is problematic to collect data on how many hectares the technologies are applied, indicators that rely on area measurements should be chosen judiciously, or avoided.

ANNEX A: SAMPLE FRAME

Municipality	Suco	Aldeia	Households in aldeia	Sample households in aldeia
Ermera	Coliate-Leotelo	Aihatadiu	100	7
Ainaro	Suro Craik	Ailau	62	7
Ainaro	Ainaro	Ainaro	425	6
Ermera	Fatubolu	Aitumua	179	7
Ermera	Mirtutu	Apidó	85	7
Ermera	Fatubolu	Apiradu	171	7
Ainaro	Suro Craik	Bazar	27	7
Aileu	Saboria	Beremanuleu	35	7
Ermera	Poetete	Biluli	142	6
Ermera	Manusae	Buana	181	6
Ainaro	Ainaro	Builico	193	7
Ermera	Talimoro	Bura	186	7
Aileu	Fatubosa	Caicasa	45	7
Ermera	Tocoluli	Caisahe	73	7
Aileu	Seloi Craic	Casamou	84	7
Ermera	Coliate-Leotelo	Claetrema	86	7
Aileu	Seloi Craic	Colihoho	25	7
Ermera	Ponilala	Cota Heu	108	7
Aileu	Seloi Malere	Cotobuoro	68	7
Aileu	Fatubosa	Couclau	45	6
Aileu	Liurai	Couclau Udo	68	7
Ermera	Manusae	Cucara	126	7
Ermera	Railaco Leten	Darema	37	7
Aileu	Fahiria	Daulala	47	7
Aileu	Lahae	Denhuni	16	7
Aileu	Fatubosa	Erehetu	40	6
Ermera	Lauala	Ervilhati	240	7
Aileu	Liurai	Fatu-Besse	89	6
Ermera	Fatubolu	Fatubolu	157	6
Aileu	Fatubosa	Fatubosa	63	7
Aileu	Seloi Craic	Faularan	40	6
Ainaro	Soro	Gerudu	112	7
Ermera	Hatolia	Hatubatu	89	7
Ermera	Leguimea	Hatuleta	60	6
Aileu	Fatubosa	Hoholete	41	6
Ermera	Hatolia	Hohopu	92	7
Aileu	Seloi Malere	Hularema	138	6
Aileu	Lahae	Lacasori	19	6
Aileu	Liurai	Laclo	130	7
Aileu	Lahae	Lahae	83	7
Ermera	Talimoro	Leberty	47	7

Ermera	Deleco	Lebudo	66	7
Ermera	Leguimea	Leguimea	87	6
Dili	Dare	Leilaus	38	6
Aileu	Fatubosa	Lekilaku Ana	46	7
Ainaro	Soro	Leo-Lala	82	7
Ermera	Eraulo	Lequisala	44	6
Ermera	Coliate-Leotelo	Leulara	33	6
Ermera	Talimoro	Liman Mesac	92	7
Ermera	Manusae	Luglaulau	78	7
Ermera	Eraulo	Madede	62	7
Aileu	Seloi Malere	Malere	89	7
Ermera	Coliate-Leotelo	Manulete	108	6
Ainaro	Mulo	Manumera	114	7
Ainaro	Mau-Nuno	Mau-Suca	129	7
Ainaro	Mulo	Maulahulo	109	6
Aileu	Seloi Malere	Maurusa	88	7
Aileu	Liurai	Meain	19	7
Ainaro	Mulo	Mulo	178	7
Ainaro	Suro Craik	Noulo	54	6
Ainaro	Ainaro	Nugufu	81	7
Ermera	Ponilala	Nunupu	90	7
Ermera	Eraulo	Olopana	79	7
Ermera	Manusae	Otete	144	6
Ermera	Leguimea	Poehei	35	7
Ainaro	Soro	Poelau	71	7
Ermera	Poetete	Poepun	70	7
Ermera	Fatubolu	Poerema	106	7
Ermera	Poetete	Poetete Vila	152	7
Ermera	Coliate-Leotelo	Raegoa	67	7
Ermera	Mirtutu	Rai-Lori	145	7
Ainaro	Manutasi	Raibuti Udo	105	7
Aileu	Liurai	Rairema	95	6
Aileu	Seloi Craic	Recoalefa	38	7
Ainaro	Suro Craik	Riamori	95	6
Ainaro	Ainaro	Sabago	87	6
Ermera	Poetete	Samatrae	156	7
Ermera	Lauala	Sari	63	7
Aileu	Fahiria	Sarin	83	6
Ermera	Manusae	Simohei	205	7
Ermera	Leguimea	Sinilelo	19	7
Aileu	Seloi Craic	Tabulasi	73	6
Ermera	Poetete	Taclela	114	6
Aileu	Seloi Craic	Taliforleu	54	6
Aileu	Seloi Malere	Tarahiti	89	6
Ermera	Mirtutu	Tata Bauria	75	7
Ermera	Eraulo	Taurema	22	6

Ainaro	Ainaro	Teliga	45	7
Ermera	Poetete	Tidibessi	39	6
Ermera	Poetete	Urletfoho	86	6
Ermera	Poetete	Urluli	86	7
Dili	Hera	Acanuno	106	7
Bobonaro	Aidabaleten	Aidabaleten	93	7
Ainaro	Leolima	Aimerlau	120	6
Ainaro	Foho-Ai-Lico	Ainaro Quic	97	7
Bobonaro	Odomau	Ana Hun	43	7
Dili	Duyung-Sereia	Benunuc	163	7
Bobonaro	Aidabaleten	Biacou	84	6
Dili	Duyung-Sereia	Birahun Matan	57	7
Ainaro	Maubisse	Canurema	49	6
Ainaro	Horai Quic	Cartolo	79	7
Dili	Dare	Casnafar	39	7
Bobonaro	Ritabou	Cor Luli	30	7
Bobonaro	Ritabou	Dai Tete	27	7
Bobonaro	Raiheu	Daruasa	99	7
Dili	Dare	Fatu Naba	39	6
Bobonaro	Lahomea	Galusapulu	37	7
Ainaro	Maubisse	Goulala	95	7
Ainaro	Nuno Mogue	Goulora	43	7
Ainaro	Leolima	Groto	61	6
Bobonaro	Lahomea	Guenuha’an	14	6
Bobonaro	Ritabou	Hale Cou	50	6
Dili	Hera	Hali Dolar	273	6
Bobonaro	Aidabaleten	Harame	91	7
Dili	Duyung-Sereia	Has Laran	38	7
Ainaro	Horai Quic	Hatosao	87	7
Ainaro	Nuno Mogue	Hatu-Builico	190	6
Ainaro	Nuno Mogue	Hatu-Quero	89	6
Ainaro	Nuno Mogue	Hatu-Seraquei	56	7
Bobonaro	Lahomea	Hatulaca	190	7
Ainaro	Maubisse	Hatululi	55	7
Ainaro	Maubisse	Hautado	48	6
Ainaro	Mulo	Hautio	71	6
Bobonaro	Lahomea	Lahomea	96	7
Ainaro	Horai Quic	Lauheli	77	7
Ainaro	Nuno Mogue	Lebu-Lau	84	6
Dili	Duyung-Sereia	Lebutun	33	6
Ainaro	Nuno Mogue	Leotelo I	109	6
Bobonaro	Tapo-Memo	Lep Guen	189	7
Ainaro	Leolima	Lese	45	7
Ainaro	Foho-Ai-Lico	Lesu	78	7
Bobonaro	Holsa	Lolo Oa	146	7

Bobonaro	Atabae	Lolocolo	25	7
Ainaro	Leolima	Luru	52	7
Bobonaro	Atabae	Made Bau	67	7
Bobonaro	Lahomea	Maliana	360	6
Dili	Duyung-Sereia	Mantelolao	29	6
Bobonaro	Tapo-Memo	Manu Aman	57	7
Dili	Duyung-Sereia	Manuleu	128	6
Ainaro	Nuno Mogue	Mau-Chiga	169	7
Ainaro	Nuno Mogue	Mausoro-Mata	27	7
Dili	Hera	Moris Foun	42	6
Dili	Hera	Mota Quic	234	7
Ainaro	Leolima	Nunu-Boco	164	6
Ainaro	Nuno Mogue	Nunu-Mogue Lau	88	7
Bobonaro	Raifun	Nunutanan	40	7
Bobonaro	Holsa	Op Legul	169	7
Bobonaro	Tapo-Memo	Pip Galag 1	106	7
Ainaro	Nuno Mogue	Queorema	13	7
Ainaro	Leolima	Raesoro	87	7
Bobonaro	Odomau	Rai Maten	341	7
Dili	Duyung-Sereia	Rai-Mean	41	6
Bobonaro	Raifun	Raifun Foho	89	7
Bobonaro	Raifun	Raifun Vila	317	7
Ainaro	Foho-Ai-Lico	Raimerlau	123	7
Ainaro	Maubisse	Ria-Leco	83	7
Ainaro	Maubisse	Riamori	52	6
Bobonaro	Odomau	Rocon	69	7
Dili	Duyung-Sereia	Sahan	64	7
Ainaro	Maubisse	Sarlala	29	6
Bobonaro	Holsa	Solu Golo	156	7
Dili	Dare	Suca Lau	35	7
Dili	Hera	Sucaer Laran	99	7
Bobonaro	Manapa	Tapomeak	123	7
Bobonaro	Aidabaleten	Tasi Mean	243	6
Ainaro	Maubisse	Teli-Tuco	35	7
Ainaro	Nuno Mogue	Tucaro	81	6
Bobonaro	Ilat-Laun	Tunero	118	7
Bobonaro	Aidabaleten	Tutubaba	204	7
Bobonaro	Ritabou	U A T	99	6
Ainaro	Maubisse	Urahou	116	7
Aileu	Aisirimou	Aiturilaran	65	6
Aileu	Aisirimou	Berecati	41	7
Aileu	Aisirimou	Besilau	77	7
Aileu	Bandudato	Dailor	27	7
Aileu	Aisirimou	Ercoatum	18	6
Aileu	Fahiria	Fahiria	43	7

Aileu	Fahiria	Fatubuti	14	7
Aileu	Fahiria	Manulete	21	6
Aileu	Bandudato	Taiblor	45	7
5	**48**	**180**	**16434**	**1200**

Note: Since the baseline survey plan was conducted, the project has added a 49th Suco, Tocoluli in Ermera

Sample Frame compared to the total population in the 48 Avansa Agrikultura implementation sucos

	Sampled Aldea						
Municipality	**Suco**	**Sampled Aldea**	**Total HHs in Sampled Aldea**	**HHs Sampled**	**% of HH Sampled**	**Total Population in Sampled Aldea**	**Population in Sampled HHs**
5	48	180	16,229	1,200	7.0%	100,462	7,937
	Project Implementation Area						
Municipality	**Suco**	**Total Aldea**	**Total HHs in All Aldea**		**% of HH Sampled**	**Total Population**	
5	48	282	23,232		5.2%	142,683	***6.14***
							People/HH

ANNEX B: CONDUCTING THE BASELINE SURVEY: OPERATIONAL LESSONS AND SURVEY TEAM RESPONSES

As in many baseline field surveys, the Avansa M&E survey team encountered some challenges worthy of note as Avansa performance measurement proceeds.

Suco Coordination

The survey team encountered some resistance from suco and aldeia leaders to participating in the survey. This was because communities have been surveyed many times; frequently there is no follow up to surveys and no observable benefits to the community. In some cases, the enumeration team had to meet more than once with community leaders to persuade them to participate in the survey. Time taken to prearrange schedules with community leaders, and to make prior arrangements for respondents to be available to the survey team, paid dividends in the context of local conditions.

Data Structuring

There were challenges faced in structuring appropriate data collection for some of the technology adoption and risk reduction practices required for the two indicators that measure technology and practice adoption. The challenges were related not so much to whether the farmers were practicing the technologies, but more about whether the manner in which the technologies or practices were being applied by farmers should be counted in light of what would be advocated by projects. The survey relied on the enumerators asking the household respondents questions and filling in a questionnaire, and there was no time for any direct validation in farmers' fields. The survey team closely examined examples of actual technologies in practice and carried out systematic approaches to capturing technologies and cases of adoption. Nevertheless, the technology adoption and risk reduction survey results must be interpreted in the context of current practices in Timor-Leste.

Other challenges were associated with the low levels of education of the rural population (almost half of respondents had not attended school). Because of farmers' lack of knowledge about crop area measurement and metrics for selling crops by weight, the sales and yield data should be regarded as indicative, rather than exact.

Timing of Data Collection

The timing of the survey was determined by the need to complete the baseline survey in time for it to be useful to the project, and to avoid the start of the most intense part of the rainy season, when access to rural areas is more difficult. Because of this, the survey did not capture data on hunger and nutrition during the hungry period (which is normally around January/February).[37] This was confirmed by the question on the months households do not have enough food. This will mean that hunger levels are underestimated.

Sample Size Estimation

The data collection plan predicted that there would be 132 children 6-23 months of age from a sample of 1200 households (based on the previous census data). In fact, the sample provided 295 children of this age. For the other indicators a sample of 770 households would have provided the required level

[37] The survey was conducted in November

of precision. Accordingly, the sample of 1200 households proved to be larger than was needed for the desired level of precision. The number of HHs required to provide 132 children of the required age was actually only 540 households (for a statistical level of confidence for this indicator of 95% +/- 8.5%).

Data Analysis

The data analysis reveals heavily skewed distributions for the results of some indicators; this is typical for data that represents rural communities in developing countries. This skew in the data means that the average result may actually represent very few of the population as it is biased by the few people at one end of the distribution. When data is skewed, the mean (or arithmetic average) result no longer describes a population with half lower and half higher than the mean value. Examples of this skew in the data are the level of sales, asset ownership, and daily per capita expenditure. In these circumstances, the mean value may be misleading and the median may be a more meaningful measure.

CONSIDERATIONS FOR FUTURE SURVEYS

Indicators

- The data requirements for some FtF indicators need to be adapted if to be appropriate to Timor-Leste conditions. For example, it is more useful to know how many farm households are using technologies rather than how many people, including multiple people in the same household, and this data collection would be more straightforward. Because it is problematic to collect data on how many hectares the technologies are applied, indicators that rely on area measurements should be chosen judiciously, or avoided.

Operational Issues

- To ensure efficient field survey activities and the availability of respondents, it is essential to brief local leaders and to coordinate community level activities with suco and aldeia chiefs in advance. Making arrangements in villages before the field team enters the community to carry our interviews is recommended.

Timing of Data Collection

- If indicators will measure the extent of food insecurity or hunger, the survey would ideally be undertaken during the hungry period which is usually in January/February. If this is not possible, consideration should be given to interviewing at least some of the respondent households again during the hungry period, in order to recalibrate the responses from the earlier period.

ANNEX C: INTERPRETING TECHNOLOGY ADOPTION AND RISK REDUCTION PRACTICES

Including questions in a survey about technology adoption and risk reduction practices has challenges in Timor-Leste because farmers may not fully comprehend the technologies and risk reduction practices they are being asked about. Furthermore, enumerators may not have the time or skills to carry out field validation of the technologies and practices.

As an example, the baseline survey reports 26% of households to be using hybrid seeds of rice or maize; this percentage is high and the accurate figure may be far fewer farmers[38]. Farmers do not make a clear distinction between "improved varieties" and "hybrid varieties"; and the "hybrida" responses in Tetun may have been interpreted by farmers as improved varieties rather than true hybrids. When taken together, 32% percent of households responded that they use 'hybrida' and/or improved varieties; this appears to be a more reasonable estimate for the use of improved varieties, including any hybrids.

MAF have distributed hybrid rice seeds to farmers for the production of irrigated paddy rice. The distribution of this hybrid rice to farmers in the survey sample would have been to fewer than 26% of the sample because there were only 39 farmers in the survey sample who reported selling rice (3.25% of the sample). To our knowledge, MAF do not distribute hybrid maize.

Some technologies are more readily understood by farmers and the survey is expected to have accurately recorded practice adoption for these practices. Examples of these readily understood technologies are the use of 200L drums to store seeds (a practice advocated by Seed of Life, MAF and other projects), the use of large tractors for cultivation, and the use of hand tractors. Questions asked of farmers were supported by a show card and the survey question's textual description; this show card proved sufficient to elicit an accurate response from farmers

However, for some practices it was difficult for farmers to understand the exact context of the technologies or practices, and site validation visits by the enumerators were not feasible within the time constraints of the survey. As an example, it was difficult to reliably identify farmers who are adopting the '*row planting of perennial trees or shrubs to prevent soil erosion*'. This might be considered "alley cropping", a practice where farmers plant lines of trees and plant crops in the rows between the trees, or it may be a situation where trees are planted in a less systematic pattern with the intension of preventing soil erosion. In both cases the enumerators recorded the farmers as practicing this technology (Figure C1 shows photos of trees planted in rows to prevent soil erosion that were considered by enumerators as the use by farmers of this practice, but the examples are quite different to "alley cropping".

[38] In the opinion of Seeds of Life staff.

Figure C1: Examples from the baseline survey of the row planning of perennial trees or shrubs to prevent soil erosion, under the Timor-Leste context

Other technology adoption interpretation challenges were the *fencing of grassland* and the *rotational grazing of livestock*. A modern agricultural context would envisage the use of fencing of planted pastures and the moving of mobs of animals through the paddocks created as a result of fencing. In Timor-Leste it was expected to find few farmers practicing these technologies. However, in Timor-Leste farmers do fence pastures (often to prevent animals straying onto crop land) and they do move their livestock to new grazing, often by tethering animals to prevent them wandering away from the grazing area. These situations were recorded by enumerators as farmers adopting these practices – in the Timor-Leste context this may be considered practice adoption; however, the manner of the practice may not be considered as a true practice adoption under the modern farming techniques that may be advocated by projects (Figure C2).

Figure C2: Examples of fencing and rotational grazing in the Timor-Leste context

ANNEX D: NUTRITIONAL DIETARY DIVERSITY FOR WOMEN

DFAT are interested in moving to a new indicator to measure the nutritional status of women - this indicator is the *Minimum Dietary Diversity for Women*[39]. The methodology is led by FAO. At the time of writing, this indicator is not being used in Timor-Leste.

USAID may request Avansa Agrikultura to collect data on this indicator in future. This new data may replace the data collected during the baseline survey, or may supplement the data. This annex examines the extent to which the existing baseline data may be compared to data to be collected for the new indicator.

"The MDD-W is a dichotomous indicator defined as "the proportion of women 15–49 years of age who consumed food items from at least five out of ten defined food groups the previous day or night".[40] The ten food groups are:

1. Grains, white roots and tubers, and plantains
2. Pulses (beans, peas and lentils)
3. Nuts and seeds
4. Dairy
5. Meat, poultry and fish
6. Eggs
7. Dark green leafy vegetables
8. Other vitamin A-rich fruits and vegetables
9. Other vegetables
10. Other fruits

The table below compares these ten food groups with the groups for which data was collected in the baseline survey.

Table D1: Comparison of the food groups used in the baseline survey with those for the new indicator Nutritional Dietary Diversity for Women

	Food Groups in the BL Survey **(As used by OXFAM in the 2007 Timor-Leste Food Security Survey)**	**NDDW category (FAO)**
1	Rice, maize, sorghum, cassava, noodles	1
2	Pumpkins, carrots, squash, chayote and other yellow colored foods	9
3	Irish potatoes, sweet potatoes, tapioca, yam, corm and other roots/tubers	1
4	Cassava leaves, spinach, papaya leaves, pumpkin leaves, broccoli, kale and other green leafy vegetables	7
5	Other vegetables: brinjal, papaya flowers, green papaya and others	9
6	Legumes/vegetable proteins – all green beans, green/dry peas, lentils, nuts and other leguminous vegetables	2, 3

[39] *Minimum Dietary Diversity for Women: A Guide to Measurement*, Food and Agriculture Organization of the United Nations and USAID's Food and Nutrition Technical Assistance III Project (FANTA), managed by FHI 360, Rome, 2016

[40] Ibid.

7	Vitamin A rich fruits – ripe papaya, tomatoes and other colored fruits	8
8	Other fruits – mango, orange, pomegranate, pineapple and other fruits	10
9	Meat – goat meat, sheep meat, pork, chicken, beef and other wild meat	5
10	Eggs – chicken eggs, duck eggs, and other wild eggs	6
11	Seafood – wet and dry fish, prawns, crabs, and other sea foods	5
12	Milk and milk based foods – milk, yogurt, lassi, etc.	4
13	Oils and fats – cooking oils, cheese, butter, ghee, palm oil, coconut oil, etc.	NA
14	Sugar and honey	NA
15	Coffee, tea	NA

The new indicator asks women about whether they ate various food groups during **the previous day or night**.

For the Avansa Agrikultura baseline survey, respondents were asked **how often they ate each food group in the last 30 days**. To get closest to whether they ate that food group in the previous day or night, the most comparable response from the baseline is where respondents noted that they ate that food daily in the last 30 days. However, this comparison is likely to lead to an underestimate.

It is not possible to disaggregate groups 2 and 3 [pulses (beans, peas and lentils) and nuts and seeds, groups in the new indicator] because they are listed together in our survey.

Accordingly, from the baseline data it is only possible to count the number of food groups consumed out of 9 total groups, which would also tend to underestimate the true value on the FAO scale.

With those caveats, from the baseline data it is estimated for the weighted sample:

- Average number of food groups (out of 9) consumed daily: 2.06
- Percentage of women consuming at least 5 (out of 9) food groups daily: 2.90%

ANNEX E: AGRICULTURAL TECHNOLOGIES AND RISK REDUCTION PRACTICES FOR FARMERS WITH SALES OF FRUIT AND VEGETABLES OVER USD 300 PER YEAR

The baseline survey included a random sample of farmers in the target suco, not only farmers who grow and sell horticultural crops. In order to get a better idea of the use of agricultural technologies and risk reduction practices for farmers who mainly earn income from selling horticultural crops, the data analysis was carried out again for only those farmers who earn more than USD 300 per year from selling horticultural crops.

The horticultural crops were defined as:

Vegetables		***Fruits***	***Other***
aubergine	long beans	bananas	candlenuts
avocado	onion	limes	coconut
boc choy	other beans	mango	
broccoli	other veg	oranges	
cabbages	other veg	other fruit	
capsicum	pumpkin	papaya	
carrots	spinach	passion fruit	
cauliflower	squash	pineapple	
celery	tomatoes	tangerines	
chili	zucchini	watermelon	
lettuce			

There were 195 households with income over USD 300 from selling these crops (16% of the sample).

This corresponds to 4,010 households over the entire population of households in the 48 suco to be targeted by the project.

The two tables below show the percentage of households using the risk reduction practices and agricultural technologies for the subset of 195 farmers with sales of fruit and vegetables over USD 300 per year.

Table E1: Percentage of Households with Sales of Fruit and Vegetables over $300/year, Applying Risk-Reduction Practices/Actions to Improve Resilience to Climate Change

For farmers with fruit and vegetable sales over $300 per year, 94.9% of household apply one or more of the risk reduction practices.

Practice	Mean	SE
"Greenhouses"	10.1%	0.037224
"Plasticulture / Tunnels"	11.4%	0.041592
"Modifying planting dates"	32.8%	0.049373
"Construction of terraces for crop growing"	48.2%	0.06087
"Construction of contour ridges to prevent soil erosion"	37.4%	0.048303
"Row planting of perennial trees or shrubs to prevent soil erosion"	35.3%	0.037534
"Conservation forest planting for Natural Resource Management"	50.0%	0.059775
"Fencing of grasslands"	9.4%	0.025741
"Planting legumes in grassland"	1.8%	0.007982
"Rotational grazing of grassland"	6.6%	0.017028
"Use of fodder crops for animals"	22.1%	0.03933
"Treating maize or rice with chemical to stop damage by insects"	17.9%	0.052268
"Grain Prop plastic bags for crop storage"	7.0%	0.0229
"Use of 200 L drums for crop storage"	38.1%	0.057876
"Use of large silos for crop storage"	6.3%	0.023032
"Direct drilling to reduce loss of soil moisture"	35.8%	0.053007
"Use of plastic covers in vegetable production to increase soil temperature and reduce evaporation"	3.7%	0.013951
"New crops chosen for drought resistance or for tolerance to climate change"	26.4%	0.036334
"New farm-income earning enterprises"	46.6%	0.06002
"New non-farm enterprises"	26.6%	0.040731
"None"	5.1%	0.019256

Table E2: Percentage of Households with Sales of Fruit and Vegetables over $300/year, Applying Improved Agricultural Technologies and Management Practices

For farmers with fruit and vegetable sales over $300 per year, 88.6% of household apply one or more of the technologies/practices.

Technology	Mean	SE
"High quality vegetable seeds"	36.7%	0.056719
"Improved fruit tree varieties from nursery stock"	10.8%	0.026712
"Fruit tree grafting"	1.5%	0.008697
"Growing commercial crops for sale in one plot of land"	24.0%	0.042827
"Planting using a fixed plant spacing"	24.8%	0.051861
" Trellising of crops (for climbing plants)"	13.4%	0.027438
"Using chemical insecticide"	22.3%	0.052017
"Using chemical herbicide/fungicide"	13.1%	0.026952
"Integrated Pest Management (IPM)"	4.7%	0.01888
"Making organic pesticide/fungicide"	15.6%	0.036083
"Making organic manure"	51.6%	0.053276
"Making compost"	59.8%	0.063505
"Use of legumes in cropping land to improve soil fertility"	41.4%	0.062582
"Use of organic mulch to improve soil structure"	15.0%	0.029506
"Crop rotations on the same plot of land"	28.8%	0.052472
"Using chemical fertiliser"	27.8%	0.057474
"Crop watering using a bucket or watering can"	51.1%	0.055803
"Drip irrigation using plastic pipes"	3.8%	0.012985
"Flood / surface irrigation"	8.5%	0.023077
"Pumping of water for irrigation"	5.1%	0.020821
"Water harvesting from natural stream"	32.3%	0.039988
"Water harvesting rom rainfall"	13.0%	0.03095
"Dams"	25.5%	0.040601
"Cultivate using hand tractor"	13.4%	0.043688
"Cultivate using large tractor"	2.1%	0.008463
"None"	8.3%	0.030525

ANNEX F: BASELINE SURVEY INSTRUMENTS

Baseline Survey Plan for Avansa Agrikultura

Baseline Survey Questions

A. Baseline Survey Questions for Head of Household

HOUSEHOLD INFORMATION

Please try to interview the HH head if at all possible

Part 1 Household identification

1. District			
2. Sub district			
3. Suco			
4. Aldea			
5. Survey number			Unique number for survey form
6. GPS coordinates	Latitude:		
	Longitude:		

Part 2 Interview particulars

	Interviewer	Supervisor
Name	1. 2.	
ID	1. 2.	
Date		
Signature	1.	

	2.	
Result of visit		1. Completed
		2. Not found
		3. Refused
		4. Revisited

Part 3 Information on farm household

1. Name of HH Head			
2. Age in years	_____ yo	3. Sex M/F	1. Male 2. Female
4. Marital status		1. Married; 2. Widowed; 3. Divorced/Separated; 4. Never married	
5. Education		0. No school; 1. Primary only; 2. Junior high school; 3. Senior high school; 4. Vocational college; 5. University	
6. Phone number			

7. Household composition	
How many people currently live in your household	_____ people

Total number

Please list the number of HH members by age and gender

	Name	Gender		Age
		M	F	

1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Interviewer: please calculate the number of HH member as per below table

	No. of Males	No. of Females
Adults >65 years		
Adults 21-64 yrs		
Young adults 15-20 yrs		
Children 6-14 yrs		
Children <5 yrs		
Totals:		

The total members has to be the same as 7 above

Note: Use name and age card to list household members before writing the HH numbers in the table

8. Name of respondent (if not the HH head)

1. Name of respondent			
2. Age in years	_____ yo	3. Sex M/F	1. Male 2. Female
4. Relationship to HH head	1. Wife/husband 2. Daughter/son 3. Adopted	9. Sister/brother-in-law 10. Grandchild 11. Grandparent	

	4. Stepchild 5. Daughter/son-in-law 6. Mother/father 7. Sister/Brother 8. Mother/father-in-law	12. Niece/Nephew 13. Other relative 14. Non-relative 15. Other: _____
5. Phone number		

SB 2.1

Daily per capita expenditure

Assumes HH Head or respondent answers for the entire family.

A. In the last WEEK how much did your HH spend on the following items?
Note: do NOT include value of own farm production

	Food items	**$ Total Expenditure**
1	Cereals (wheat, rice, maize for **FOOD**)	
2	Tubers (potatoes, cassava etc. for **FOOD**)	
3	Fresh fish	
4	Tinned or dried fish	
5	Fresh meat	
6	Tinned or dried meat	
7	Eggs and milk	
8	Vegetables	
9	Legumes and nuts	
10	Fruit incl. Tinned fruits	
11	Oil and fat	
12	Sugar	
13	Beverages and non-alcoholic drinks	
14	Ingredients/spices	
15	Alcohol	
16	Tobacco and betel (include lime etc.)	

B. In the last MONTH how much did your HH spend on the following items?

Goods and services	**$ Total Expenditure**

17	Personal care items (toiletries)	
18	House cleaning products	
19	Health and medical treatment	
20	School fees and text books	
21	Stationary, newspapers and postage	
22	Maintenance of motor car / motorbike	
23	Bus fares and other transport charges	
24	Entertainment	
25	Payments to household servants	
26	License fees (vehicles)	
27	Petrol and Kerosene	
28	Electricity	
29	Gas	
30	Clothing and footwear	

Interest payments (in the last month)		**$ Total Expenditure**
31	Interest on bank loans	
32	Interest to traders or shopkeepers	
33	Interest to friends or relatives	
34	Other creditors: _____	

C. In the last YEAR how much did your HH spend on the following items?

Goods and services		**$ Total Expenditure**
35	Tax and insurances	
36	Festivals and ceremonies	
37	Household hardware (e.g. pots, pans)	
38	Furniture	
39	Electrical equipment (e.g. radio, TV)	
40	Vehicle (car, motor bike, etc…)	
41		

➡ Do not include farm equipment

	Other: _____	
42	Other: _____	

6.2 Number of private sector agricultural extension workers in target districts

A1. In the last year have you received any agricultural extension services?	YES	1	(continue to the next question)
	NO	2	Go to SB 1.4

A2. Who has provided these extension services?

	Tick √	**Name of organization providing the extension services?**
Ministry of agriculture (MAF)	1	
Local NGO	2	
International NGO	3	
Supermarket	4	
Church	5	
Crop buyer	6	
Livestock buyer	7	
Agricultural input supplier	8	
Other _____	9	

A3. Can you name the agricultural extension worker that you saw most often?	YES	1	(continue to the next question)
	NO	2	Go to SB 1.4

A4. Write the name and organization below:

Extension worker name	Organization they worked for

SB 1.4

Value of crop sales

Thinking about the last 12 months, please tell us what income you have received from selling crops, vegetables and fruits?

(1)				(2)	(3)	(4)		(5)	
Crops harvested in the last 12 months				Is this crop grown as a mono crop? Yes = Y No = N	No. of times harvested in the last year?	Total sales Refer to unit codes below Note: including any share of crop paid as rent		Price per unit of sales	Total value of sales
	Common name	**Local name**	**Tick**			**Quantity**	**Weight code**	**Dollars per unit**	**Calc $**
Staple foods crops									
1	Gogo rice								
2	Cassava								
3	Maize								
4	Rice								
5	Sweet potato								
6	Taro (talas/kontas)								
7	Other staples								
Pulses and beans									
8	Mug beans								
9	Peanuts								
10	Red beans								
11	Soya beans								
12	Other beans								
Fruits									
13	Bananas								
14	Avocado								

15	Limes								
16	Mango								
17	Oranges								
18	Papaya								
19	Passion fruits								
20	Pineapple								
21	Tangerines								
22	Water melon								
23	Other fruits								
Tree crops									
24	Candlenuts								
25	Cocoa								
26	Coconut								
27	Coffee (cherry)								
28	Coffee (dry beans)								
29	Other tree crops								
30	**VEGETABLES**								
	Only go to question SB 1.4.2 (next question table) if the vegetables are more than $ 50.00 in table (5) above								

Unit weight code for (4):

Kg	– 1
Kaleng (11 litres)	– 2
kaleng susu (390g)	– 3
buah	– 4
karung 50kg	– 5
karung 100 kg	– 6

SB 1.4.2

As you told me that the vegetables are more than $ 50.00/year – which vegetables?

(1)				(2)	(3)	(4)		(5)	
Crops harvested in the last 12 months				Is this crop grown as a mono crop? Yes = Y No = N	No. of times harvested in the last year?	Total sales Refer to unit codes below Note: including any share of crop paid as rent		Price per unit of sales	Total value of sales
	Common name	**Local name**	**Tick**			**Quantity**	**Weight code**	**Dollars per unit**	**Calc $**
Vegetables									
31	Aubergines								
32	Boc choy								
33	Broccoli								
34	Cabbages								
35	Capsicum								
36	Carrots								
37	Cauliflower								
38	Celery								
39	Chili								
40	Cucumber								
41	Irish potato								
42	Lettuce								
43	Long beans								
44	Okra								
45	Onion								
46	Pumpkin								
47	Spinach								
48	Squash								

49	Tomatoes								
50	Zucchini								
51	Other vegetables								
52	Other vegetables								

Unit weight code for (4):

Kg – 1

Kaleng (11 litres) – 2

kaleng susu (390g) – 3

buah – 4

karung 50kg – 5

karung 100 kg – 6

8.1 TRANSFERS, BORROWING AND SAVINGS

RESPONDENT: HOUSEHOLD HEAD OR MOST INFORMED HOUSEHOLD MEMBER

A. SAVINGS

NUMBER	SAVINGS	(1) Do you or any member of the household have savings in the form of ... *[Type of saving]...?*		(2) How much is the current value of such assets?
		YES	1	
		NO ► NEXT SOURCE	2	DOLLAR
1	**Cash (Dollar)**			
2.1	***Deposits with banks / institutions:*** BNCTL Government bank			
2.2	UBSP (Community savings and loans group)			
2.3	Moris Rasik			
2.4	Other.....			

3	**Gold, silver or other precious metals**		
4	**Jewelry**		
5	**Other (Specify.....)**		

B. TRANSFERS GIVEN AND LOANS

(1) How much money have members of this household **given** to persons

Who are not household members in the past 12 months?

DOLLAR: $

(WRITE ZERO IF NOTHING).

(2) How much money have members of this household **loaned** to persons

Who are not household members in the past 12 months?

DOLLAR: $

(WRITE ZERO IF NOTHING).

(3) What is the approximate value in cash of the assistance given **to other people** in food

Or other goods in the past 12 months?

DOLLAR: $

(WRITE ZERO IF NOTHING).

…. Continued

8.2 Access to productive assets including livestock

Note: assets must be in working order to be eligible to be recorded

A	**Access to land**			
A1. Do you own land for growing irrigates rice crops?		Yes	1	Continue to the next question
		No	2	Go to A3

A2. What is the area of irrigated paddy? (Hectares) Note 1 Are = 100 m sq or 0.01 Ha.			
A3. Do you own land for growing rain fed crops?	Yes	1	
	No	2	
A4. Do you have enough land for growing your own food?	Yes	1	
	No	2	
A5. In the last year did you have land that was not cultivated?	Yes	1	Continue to the next question
	No	2	

A6. What was the reason it was not cultivated?	Tick
- Lack of labour	1
- Unable to hire cultivation equipment/draft animals	2
- Lack of farm inputs	3
Other: _____	4

Fishing			
A7. Do you own fish ponds?	Yes	1	Continue to the next question
	No	2	Go to A9
A8. How many? (Number)			
A9. Do you own a fishing net?	Yes	1	
	No	2	

Livestock	
A10. How many if the following types of livestock do you own?	Number
Buffalo	
Bali cattle	
Sheep	

Goats	
Pigs	
Chickens	
Ducks or geese	
Horses or donkeys	

8.2.1 Does your HH own any of the following?

B	Household durable goods	Number
	Refrigerator	
	Gas or electric cooking stove	
	Washing machine	
	Sewing machine	
	Generator	
	Computer	
	Solar panel	
	Mobile phones	

C	Transport	Number
	Truck or pickup	
	Car or minibus	
	Motor bike	
	Bicycle	
	Canoe or boat	
	Boat engine	

D	Farm equipment	Number
	Motorized rice mill	
	Motorized rice thresher	
	Rice weeder	
	Motorized maize sheller	
	Motorized maize grinder	
	Hand coffee pulper	
	Motorized coffee pulper	
	Hand tractor	
	Large tractor	

	Motorized water pump	
	Back pack sprayer	
	Plough or harrow pulled by tractor	
	Plough pulled by oxen/buffalo	
	Push cart with wheels	
	Ox cart	
	Other (_____)	
	Other (_____)	

Question on community participation 2.4 / 5.1 for HH survey

Q1. During 2015, did your household participate in any community groups? [Do NOT include religious and political group]	Yes	1	Continue to Q2
	No	2	Continue to 3.1 / 2.1

NO.	Q2	Q3	Q4	Q5
	What were the names of the groups? *List up three by name*	What is the principal focus of each group? Refer to <u>list</u> below *Insert the code*	Did any organization, such as an NGO or government, support this group? If yes, which organization? *Write the name*	In the last 3 months how many times did representatives from your household attend meetings? *Number of times*
1				
2				
3				

For Q3 Choose from the LIST	
Farming	01
Water	02
Forestry	03
Fisheries	04
Health	05
Credit	06
Women	07
Youth	08

Other (_____)	09

3.1 / 2.1 Indicators for Improved Agricultural Technologies and Risk Reduction Strategies for Climate Change

Please record the results of adoption for each individual practice in each group.

Improve Agricultural Practices Indicator

Q. Do you know about and have you applied any of the following agricultural practices?

3.1 Improved Agricultural technologies/management practices **A. Indicator:** 3.1 - No. of farmers and others who have applied improved technologies or management practices as a result of USG assistance 4.5.2 (5)		
Suggested Wording (English)	Suggested wording (Tetun)	**Tick √**
<u>Improved Seeds / Varieties</u>		
• New varieties of crop seeds (Not Hybrid)		☐
• Hybrid varieties of rice or maize		☐
• Improved varieties of sweet potatoes, cassava or taro		☐
• High quality vegetable seeds		☐
• Improved fruit tree varieties from nursery stock		☐
• Fruit tree grafting		☐
<u>Improved Cropping Practices</u>		
• SRI for rice production		☐
• ICM for rice production		☐
• Growing commercial crops for sale in one plot of land		☐
• Planting using a fixed plant spacing		☐
• Trellising of crops (for climbing plants)		☐
• Coffee pruning		☐
<u>Pest and Disease Control</u>		
• Using chemical insecticide		☐
• Using chemical herbicide/fungicide		☐
• Integrated Pest Management (IPM)		☐

• Making organic pesticide/fungicide		
Soil Fertility		
• Making organic fertiliser		
• Making compost		
• Use of legumes in cropping land to improve soil fertility		
• Use of organic mulch to improve soil structure		
• Crop rotations on the same plot of land		
• Using chemical fertiliser		
• Crop watering using a bucket or watering can		
• Drip irrigation using plastic pipes		
• Flood / surface irrigation		
• Pumping of water for irrigation		
Water Management		
• Water harvesting using a pond or water tank		
- From natural stream		
- From rainfall		
• Fish ponds		
• Dams		
Mechanisation		
• Draught animals		
• Cultivate using hand tractor		
• Cultivate using large tractor		
• Weeding using mechanical weeder for rice production		
• Use mechanized rice thresher		
• Use mechanized coffee pulper		
• Use of motorized maize sheller		

Climate Change Indicator

Q1. Have you heard about climate change?	Yes	1	Continue to the next question
	No	2	Go to Q3
Q1.1. If yes, have you received any training activities related to climate change?	Yes	1	Continue to the next question
	No	2	Go to Q3

Q2. If yes, you received training, can you remember who provided this training?	Yes	1	Continue to the next question
	No	2	Go to Q3
Q2.1. If yes, what was the name of the organization that provided the training?	_____		

Q3. Do you know about and <u>have you applied</u> any of the following practices?

2.1 Climate Change Risk reducing practices: **B. Indicator:** 2.1 Number people implementing risk-reduction practices/actions to improve resilience to climate change as a result of USG assistance		
Suggested Wording (English)	**Suggested wording (Tetun)**	**Tick √**
<u>Crop Environment Management</u>	In final document only need one language for one questionnaire	
• Greenhouses		☐
• Plasticulture / Tunnels		☐
• Modifying planting dates		☐
<u>Soil Conservation Practices</u>		
• Construction of terraces for crop growing		☐
• Construction of contour ridges to prevent soil erosion		☐
• Row planting of perennial trees or shrubs to prevent soil erosion		☐

• Conservation forest planting for Natural Resource Management		☐
Improved Grassland Practices		
• Fencing of grasslands		☐
• Planting legumes in grassland		☐
• Rotational grazing of grassland		☐
• Use of fodder crops for animals		☐
Crop Storage		
• Treating maize or rice with chemical to stop damage by insects		☐
• Grain Prop plastic bags for crop storage		☐
• Use of 200 L drums for crop storage		☐
• Use of large silos for crop storage		☐
Climate mitigation or adaptation:		
• Direct drilling to reduce loss of soil moisture		☐
• Use of plastic covers in vegetable production to increase soil temperature and reduce evaporation		☐
Income Diversification		
• New crops chosen for drought resistance or for tolerance to climate change		☐
• New farm-income earning enterprises		☐
• New non-farm enterprises		☐

Baseline Survey Plan for Avansa Agrikultura

Baseline Survey Questions

THIS SECTION (7.2 AND SB 2.2) IS FOR WIFE OF HOUSEHOLD HEAD
INTERVIEWER INSTRUCTION: FOR THE FOLLOWING QUESTIONS PLEASE INTERVIEW THE WIFE

C. Questions for the Main Female Decision Maker (the wife of household head) in the HH

7.2 Mean number of food groups consumed (by women of reproductive age)

- This question must be asked of the main female decision maker in the HH
- Assumes that women of reproductive age eat the same food in the HH

Details of main female decision maker / respondent

Name of respondent	
Age in years	
Marital status	1. Spouse of HH head 2. Other
Education	0. No school 1. Primary only 2. Junior high school 3. Senior high school 4. Vocational college 5. University

Household Diet Diversity

a) How often did your household eat the following 'groups of foods' over the last 30 days?

Mark the responses using the following codes:

1) Ate often (daily).
2) Ate sometimes (3-5 time/week).
3) Ate rarely (1-3 time/week).
4) Did not eat.

	Food Group	Frequency
1	Cereals: Rice, maize, sorghum, noodles	
2	Yellow vegarables: Pumpkins, carrots, squash, chayote and other yellow colored foods	
3	Tubers: Irish potatoes, sweet potatoes, tapioca, cassava, yam, corm and other roots/tubers	
4	Leafy vegetables: Cassava leaves, spinach, papaya leaves, pumpkin leaves, broccoli, kale and other green leafy vegetables	
5	Other vegetables: brinjal, papaya flowers, green papaya and others	
6	Legumes/vegetable proteins – all green beans, green/dry peas, lentils, nuts and other leguminous vegetables	
7	Vitamin A rich fruits – ripe papaya, tomatoes and other colored fruits	
8	Other fruits – mango, orange, pomegranate, pineapple and other fruits	
9	Meat – goat meat, sheep meat, pork, chicken, beef and other wild meat	
10	Eggs – chicken eggs, duck eggs, and other wild eggs	
11	Seafood – wet and dry fish, prawns, crabs, and other sea foods	
12	Milk and milk based foods – milk, yogurt, lassi, etc.	
13	Oils and fats – cooking oils, cheese, butter, ghee, palm oil, coconut oil, etc.	
14	Sugar and honey	
15	Coffee, tea	

SB 2.2 Prevalence of household with moderate to severe hunger

Ask THESE QUESTIONS of the main female discussion maker in the HH.

Q. Now asking about the availability of food in your home?

Q No.	Question	Response		
F01	In the past month was there ever no food to eat any kind in your house because of lack of resources to get food?	Yes	1	Continue to the next question
		No	2	GO TO F03

F02	How often did this happen in the past month?	Rarely (1-2 times)	1
		Sometimes (3-10 times)	2
		Often (more than 10 times)	3

F03	In the past month did you or any household member go to sleep at night hungry because there was not enough food?	Yes	1	Continue to the next question
		No	2	GO TO F05

F04	How often did this happen in the past month?	Rarely (1-2 times)	1
		Sometimes (3-10 times)	2
		Often (more than 10 times)	3

F05	In the past month did you or any household member go a whole day and night without eating anything at all because there was not enough food?	Yes	1	Continue to the next question
		No	2	END MODULE

F06	How often did this happen in the past month?	Rarely (1-2 times)	1
		Sometimes (3-10 times)	2
		Often (more than 10 times)	3

F07. In the past twelve months, were there any months during which your household did not have food to meet your family needs?	Yes	1	Continue to the next question
	No	2	GO TO 7.2

F08. Which were those months? Check all that apply to this household.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

D. Questionnaire for women with children 6 – 23 months of age

7.1 Prevalence of children 6-23 months receiving a minimum acceptable diet (percent).

Note: fill in this sheet for every child in the HH under 2 years of age.

Q. No.	Question	**CHILD Name**			**CHILD Name**		
		_____			_____		
116	Has (child's name) ever been breastfed?	Yes	1		Yes	1	
		No	2	**SKIP TO 118**	No	2	**SKIP TO 118**
		DON'T KNOW	8	**SKIP TO 118**	DON'T KNOW	8	**SKIP TO 118**

117	Was (child's name) breastfed yesterday during the day or at night?	Yes	1	**SKIP TO 119**	Yes	1	**SKIP TO 119**
		No	2		No	2	
		DON'T KNOW	8		DON'T KNOW	8	

118	**"Sometimes babies are fed breast milk in different ways, for example by spoon, cup or bottle. This can happen when the mother cannot always be with her baby. Sometimes babies are breastfed by another woman or given breast milk from another woman by spoon, bottle or some other way. This can happen if a mother cannot breastfeed her own baby."** Did (child's name) consume breast milk in any of these ways yesterday during the day or at night?						
		CHILD Name			**CHILD Name**		
		_____			_____		
		Yes	1	**SKIP TO 119**	Yes	1	**SKIP TO 119**
		No	2		No	2	
		DON'T KNOW	8		DON'T KNOW	8	

119		Yes	1		Yes	1	

	"Now I would like to ask you about some medicines and vitamins that are sometimes given to infants" Was (child's name) given any vitamins drops or other medicines as drops yesterday during the day or at night?	No	2		No	2	
		DON'T KNOW	8		DON'T KNOW	8	

120	Was (child's name) given [local name for oral rehydration solution] yesterday during the day or at night?	Yes	1		Yes	1	
		No	2		No	2	
		DON'T KNOW	8		DON'T KNOW	8	

121	**Now I would like to ask you about liquids or foods (CHILD NAME) had yesterday during the day or at night. Did (CHILD NAME) (drink/eat):**								
			CHILD Name			**CHILD Name**			
			_____			_____			
			YES	**NO**	**DK**	**YES**	**NO**	**DK**	
	1	Plain water?	1	2	8	1	2	8	
	2	Commercially produced infant formula?	1	2	8	1	2	8	
	3	Any fortified baby food such as Cerelac, Sun?	1	2	8	1	2	8	
	4	Any (other) porridge or gruel?	1	2	8	1	2	8	

122	**Now I would like to ask you about (other) liquids or foods that (CHILD NAME) may have had yesterday during the day or at night. I am interested in whether your child had the item even if it was combined with other foods.** **Did (Child NAME) drink (eat):**								
			CHILD Name			**CHILD Name**			
			_____			_____			
			YES	**NO**	**DK**	**YES**	**NO**	**DK**	
	1	Milk such as tinned, powdered, or fresh animal milk?	1	2	8	1	2	8	
	2	Tea or coffee?	1	2	8	1	2	8	

	3	Any other liquids?	1 2 8	1 2 8
	4	Bread, rice, noodles, or other foods made from grains?	1 2 8	1 2 8
	5	Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside?	1 2 8	1 2 8
	6	White potatoes, cassava, or any other foods made from roots?	1 2 8	1 2 8
	7	Any dark green, leafy vegetables?	1 2 8	1 2 8
	8	Ripe mangoes or papayas?	1 2 8	1 2 8
	9	Any other fruits or vegetables?	1 2 8	1 2 8
	10	Liver, kidney, heart or other organ meats?	1 2 8	1 2 8
	11	Any meat, such as beef, pork, lamb, goat, chicken, or duck?	1 2 8	1 2 8
	12	Eggs?	1 2 8	1 2 8
	13	Fresh or dried fish or shellfish?	1 2 8	1 2 8
	14	Any foods made from beans, peas, lentils, or nuts?	1 2 8	1 2 8
	15	Cheese, other milk products?	1 2 8	1 2 8
	16	Any oil, fats, or butter, or foods made with any of these?	1 2 8	1 2 8
	17	Any sugary foods such as chocolates, sweets, candies, pastries, cakes, or biscuits?	1 2 8	1 2 8
	18	Any other solid or semi-solid food?	1 2 8	1 2 8

123	CHECK I21 (LAST 2 CATEGORIES: BABY CEREAL OR OTHER PORRIDGE/GRUEL) AND 579 (CATEGORIES d THROUGH r FOR CHILD):		
	AT LEAST ONE "YES"	1	**GO TO 124**
	NOT A SINGLE YES	2	**END**

124	How many times did (CHILD NAME) eat solid, semisolid, or soft foods yesterday during the day or at night? **IF 7 OR MORE TIMES, RECORD '7'.**	Number of times _____ Don't know - 8

THIS SECTION (2.4 AND 5.1) IS FOR COMMUNITY LEADERS
INTERVIEWER INSTRUCTION: PLEASE FIND COMMUNITY LEADER IN THE SELECTED SUCO AND INTERVIEW THEM

D. Questions for Community Leaders (BL Questions 2.4 and 5.1)

Indicator: 2.4 - Number of co-management/user groups formed and active

Collected from community meeting. This is relation to *Natural Resource Management* change resilience.

Questions.

1. In this community is there any group which is responsible for Natural Resource Management? *Such a group would be making decisions about things like planting trees to stop soil erosion or to provide a supply of fuel wood, encouraging farmers to manage sloping land to reduce soil erosion, and to introduce plans to reduce the community's risk to natural disasters.*	**Yes**	**1**	**(continue to next question)**
	No	**2**	**GO TO 5.1**

2. What is the name of this group?	

3. How many members does it have?	

4. What is the name of the group leader?	Name: _____ Contact Number: _____ Aldea of residence: _____

5. Are the leaders of the group elected or appointed?	

6. Is there any NGO or organization now supporting this group?	**Yes**	**1**	**(continue to next question)**
	No	**2**	

If yes, What is the name of the organization?	_____

7. What activities are the group now practicing?	
Construction of terraces for crop growing	1
Construction of contour ridges to prevent soil erosion	2
Row planting of perennial trees or shrubs to prevent soil erosion	3
Conservation forest planting for Natural Resource Management	4
Planting trees for fuel wood	5
Water harvesting using a pond or water tank - From natural stream	6
Water harvesting using a pond or water tank - From rainfall	7
Making plans for Natural Resource Management	8
Agroforestry	9
Other? _____	10

Indicator: 5.1 - Number of farmer groups and associations with buyer agreements

Collected from community meeting. For *sale of agricultural crops*.

1. Does this community [Suco / Aldea?] have any groups which are responsible for aggregating and selling crops on behalf of farmers?.	**Yes**	**1**	**(continue to next question)**
	No	**2**	**END**

2. Does the group(s) have an existing agreement to sell crops to any crop buyer or market?	**Yes**	**1**	**(continue to next question)**
	No	**2**	**END**

If yes, Please list the groups that now have an existing agreement to sell crops to buyers or markets?	**a.**
	b.
	c.
	d.

For <u>each group</u> please complete the following questions:

<u>GROUP A:</u>

3. Name of Group: _____

3.1 For what crops and to what buyer (Make a list)

Crop Name [1]	**Name of Buyer**	**Volume** *<u>Responses:</u>* a. Fixed volume b. All we can produce c. Amount can vary **d.** Don't know	**Price** *<u>Responses:</u>* a. Price fixed in advance b. Market price at the time **c.** Don't know	**Type of Agreement** *<u>Responses:</u>* a. In writing b. Verbal **c.** Don't know

1/ If vegetables just write "Vegetables"

3.2 About how many farmers belong to this group?	

3.3 What is the name of the group leader?		
	Name:	
	Contact Number:	
	Aldea of residence:	

3.4 Are the leaders of the group elected or appointed?	

3.5 Is there any NGO or organization now supporting this groups?	**Yes**	**1**	**Continue to next question**
	No	**2**	**END**
If yes, what is the name of the organization?			

GROUP B:

3. Name of Group: _____

3.1 For what crops and to what buyer (Make a list)

Crop Name [/1]	**Name of Buyer**	**Volume** *Responses:* e. Fixed volume f. All we can produce g. Amount can vary **h.** Don't know	**Price** *Responses:* d. Price fixed in advance e. Market price at the time **f.** Don't know	**Type of Agreement** *Responses:* d. In writing e. Verbal **f.** Don't know

1/ If vegetables just write "Vegetables"

3.2 About how many farmers belong to this group?	

3.3 What is the name of the group leader?		
	Name:	
	Contact Number:	

	Aldea of residence:	

3.4 Are the leaders of the group elected or appointed?	

3.5 Is there any NGO or organization now supporting this groups?	**Yes**	**1**	**Continue to next question**
	No	**2**	**END**
If yes, what is the name of the organization?			

GROUP C:

3. Name of Group: _____

3.1 For what crops and to what buyer (Make a list)

Crop Name [/1]	**Name of Buyer**	**Volume** *Responses:* i. Fixed volume j. All we can produce k. Amount can vary **l.** Don't know	**Price** *Responses:* g. Price fixed in advance h. Market price at the time **i.** Don't know	**Type of Agreement** *Responses:* g. In writing h. Verbal **i.** Don't know

1/ If vegetables just write "Vegetables"

3.2 About how many farmers belong to this group?	

3.3 What is the name of the group leader?		
	Name:	
	Contact Number:	
	Aldea of residence:	

3.4 Are the leaders of the group elected or appointed?	

3.5 Is there any NGO or organization now supporting this groups?	**Yes**	**1**	**Continue to next question**
	No	**2**	**END**
If yes, what is the name of the organization?			

GROUP D:

3. Name of Group: _____

3.1 For what crops and to what buyer (Make a list)

Crop Name [/1]	**Name of Buyer**	**Volume** *Responses:* m. Fixed volume n. All we can produce o. Amount can vary **p.** Don't know	**Price** *Responses:* j. Price fixed in advance k. Market price at the time **l.** Don't know	**Type of Agreement** *Responses:* j. In writing k. Verbal **l.** Don't know

1/ If vegetables just write "Vegetables"

3.2 About how many farmers belong to this group?	

3.3 What is the name of the group leader?		
	Name:	
	Contact Number:	
	Aldea of residence:	

3.4 Are the leaders of the group elected or appointed?	

3.5 Is there any NGO or organization now supporting this groups?	**Yes**	**1**	**Continue to next question**
	No	**2**	**END**
If yes, what is the name of the organization?			