



Programming for Capacity

Evaluation of Impact Against Climate Hazards in Timor Leste

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Pat Foley
Gavriel Langford

Independent
Consultants

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Acronyms

ACIDPM	Augmentation to Community-Led Innovation in Drought Preparedness and Mitigation
ADC	Austrian Development Cooperation
CBDRM	Community Based Disaster Risk Management
CIDPM	Community-Led Innovation in Drought Preparedness and Mitigation
CVCA	Climate Vulnerability and Capacity Analysis
DDMC	District Disaster Management Committee
DMC	Disaster Management Committee
DRR	Disaster Risk Reduction
EC	European Community
IOM	International Organisation for Migration
LIFT	Local Initiatives for Food Security Transformation
M&E	Monitoring and Evaluation
OFDA	Office for Disaster Assistance
PDRA	Participatory Disaster Risk Assessment
PRA	Participatory Rural Appraisal
SDDMC	Sub-District Disaster Management Committee
SDMC	Suco Disaster Management Committee

Terminology

Adaptive Capacity	Ability of a household or community to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences. ¹
Aldeia	Administrative cluster of households, a hamlet or small village.
Disaster	A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. ²
Disaster Risk Reduction	The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.
Hazard	A dangerous phenomenon, substance, human activity, or condition that may cause loss of life, injury, or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
Risk	The combination of the probability of an event and its negative consequences.
Suco	Administrative cluster of aldeia.
Vulnerability	The characteristics and circumstances of a community, system, or asset that make it susceptible to the damaging effects of a hazard.

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¹ IPCC 2001

² UNISDR 2009 (for disaster, disaster risk reduction, hazard, risk, and vulnerability definitions above)

Executive Summary

This is an evaluation of the impact, effectiveness, and sustainability of four CARE Timor Leste projects in relation to climate hazards. The evaluation begins with the understanding that climate change will increase global temperatures. This in turn is expected to increase the frequency and severity of existing rain variability, with potentially negative consequences on food and livelihood security.

A range of hazards affects food security and livelihoods in rural Liquica. Climate hazards are the primary cause for the chronic uncertainty currently facing production, rain variability in particular. Predictions are that current rain variability will become increasingly frequent and severe as a result of climate change, negatively impacting existing livelihood strategies. Other hazards not related to climate also affect food access, such as crop and storage pests, but these are more consistent and predictable than those related to rain. This evaluation explores the achievements and impact of CARE programming in relation to current hazards and the uncertain climate future of Timor Leste.

Rural households and communities in Liquica district, including the relatively poor, already demonstrate adaptive capacity against the impact of existing climate hazards. A range of food and income sources is managed throughout all years. For most households these include maize production, extensive backyard gardens, tuber cultivation, routine livestock sales, wild food consumption, and market purchase. Some of these are vulnerable to climate hazards. Poorer households also engage in activities like labour for food or cash and sales of firewood, alcohol, or handicrafts. Many of these options can be expanded according to seasonal need. The diversity of food and income strategies appears to be consistent in good and bad maize production years alike, but their relative importance can change. As in the present, future household and community adaptive capacity to absorb potentially more frequent production losses will continue to be a function of the strength and diversity of the assets households manage.

The four evaluated projects each engaged in a range of food security and disaster risk management activities, although not with explicit intent to respond to climate hazards. Nonetheless, CARE programming, particularly in food security, contributes to household and community adaptive capacity against climate hazards. The most obvious achievement is the introduction and multiplication of drought resistant maize by farmer groups. CARE programming also contributes to adaptive capacity through dry season gardens that augment food and income of group members. Promoting increased soil fertility and reduced land erosion are further examples of supporting adaptive capacity. These activities are not all direct responses to climate hazards, but they can nonetheless strengthen the household asset base against future climate variability. There is potential for reversal of some of these achievements, caused by several possibilities not related to climate change. The evaluation argues that disaster risk reduction impact is modest so far but that it is an appropriate approach to increasing adaptive capacity and reducing vulnerability and therefore should be integrated with food security activities rather than conducted as an independent project.

The evaluation argues that the overall impact of programmatic achievements on households remains limited to date, primarily from insufficient analytical detail in context, vulnerabilities of particular groups, and hazard risks. Not all opportunities for effective design, implementation, and evaluation have been capitalised, resulting in missed chances for greater impact. Additionally, the scale and duration of some projects was insufficient for meaningful change.

Finally, the evaluation considers programmatic achievement and limitations to suggest how the effectiveness and sustainability of integrated approaches can be improved alongside considerations for future initiatives. The evaluation concludes that achievement can be strengthened for greater impact on household and community adaptive capacity in a more integrated and 'no regrets' approach to an uncertain climate future.³ That is, CARE can improve programming for sustainable community development with benefits against multiple hazards, regardless of the extent or rate of climate change.

³ Kelly and Adger 2000 in Barnett 2007

Summary of Conclusions and Recommendations

	Conclusions	Recommendations
Livelihoods, Capacity, Hazards, and Vulnerability	<ul style="list-style-type: none"> Liquica households and communities have diverse livelihood opportunities that they utilise on a normal basis, but there are inherent environmental limitations to some of these. Households face a range of hazards, but the primary climate hazard affecting agricultural production is rain variability. The most significant vulnerability facing poorer households is that their main staple food crop is highly sensitive to climate changes. Household vulnerability and capacity are functions of relative assets, but how these differ across wealth groups and gender is not particularly well understood. Communities did not demonstrate existing capacity to analyse hazard risks and how they might be prevented or reduced. The secondary literature describes high levels of malnutrition and food security. 	N/A
Food Security Impact	<ul style="list-style-type: none"> CARE projects are building on existing capacities and livelihood systems. Households have increased access to food through increased production and increased ability to purchase. Introduction of Sele seed is CARE's strongest and most direct programmatic response to a climate hazard. Sele could be part of a long term, sustainable change to more resilient maize varieties. The most significant achievement of CARE food security programming is the effectiveness of farmer group Sele multiplication. The benefits of Sele could be reversed if national and household level replacement systems are not established. Group pond and garden activities contribute to food access and dietary diversity. Insufficient attention to pond maintenance could reverse the impact of group gardens. Although too early to evaluate, the complementary package of LIFT conservation activities has potential to increase household adaptive capacity further. Opportunities remain for ongoing CARE projects to learn from completed projects. 	<ul style="list-style-type: none"> Continue building the strategic collaboration between CARE and Seeds of Life. Investigate the prevalence of poor utilisation for more comprehensive food security programming. Improve farmer-level yield measurement systems to enable better monitoring and evaluation. Conduct savings analyses of project garden sales to increase the likelihood of maintenance and replacement of pond liners. Pay strategic attention to farmers who could increase yields through improved weed management. Continue to expand maize storage capacity for increased household access to food.
Disaster Risk Reduction Impact	<ul style="list-style-type: none"> Disaster action plans were not based on analysis of hazards, capacity, or vulnerability. Community plans and flexible funds were not used effectively for increasing project impact and sustainability. Initial suco disaster management committees have potential for more prolonged DRR initiatives in the future. DRR project planning and implementation would have been better to concentrate more at aldeia and suco levels than with nascent national structures. DRR programming is not likely to achieve the objectives outlined in project documents. 	<ul style="list-style-type: none"> Return action plan copies to each suco disaster management committee. A more holistic approach to risk analysis is required for appropriate project design and community action planning. Make women equal contributors to the risk reduction process. Concentrate risk reduction activities at community level more than government level committees. Conduct disaster risk reduction in communities where other programmes are being implemented. Realistic timeframes are required for building disaster risk reduction capacity at multiple levels.
Programming for Climate Hazards	<ul style="list-style-type: none"> CARE programme achievements contribute to household adaptive capacity. Programmatic achievements to date have limited overall impact on household food, income, or risk reduction. Project designs do not reflect a detailed understanding of food security and livelihood complexity in Liquica. Programming has not responded to particular vulnerabilities. Stronger linkages between programmes and climate hazards could have achieved greater impact. More representative and effective groups would have contributed to more sustainable impact. Project designs do not anticipate evaluation. Some projects and activities were too short or too small to affect change. 	<ul style="list-style-type: none"> Make systematic risk analysis the basis of all programme design. Better baselines are needed for more effective design, targeting, monitoring, and evaluation. Continue to expand and diversify existing household assets. Ongoing research would foster increased programmatic relevance and impact. Increase participation so that groups become the drivers of project design and analysis. Organisational and staff capacity building is required at multiple levels. CARE should advocate donors for more conducive project durations and funding.

1. Introduction

This section summarises the evaluation context, rationale, and approach. The objectives and research questions are outlined, along with a synopsis of the methodology and limitations of the overall process. The Introduction concludes with an outline of the report structure.

1.1 CARE Timor Leste⁴

CARE Timor Leste seeks hope, tolerance, and social justice where poverty has been overcome and all people live in dignity and security. CARE works with poor, vulnerable, and marginalised individuals and families in Timor Leste to facilitate positive, lasting change through:

- Enhancing long term food security
- Promoting sustainable environmental management
- Providing economic opportunities
- Strengthening capacity for self-help
- Promoting access to basic social services
- Promoting equal opportunities free of discrimination
- Advocacy and policy development

CARE Timor Leste's enduring focus is on long-term sustainable development in food security and disaster risk reduction, capacity building for local partners including governmental and nongovernmental organisations, micro-enterprise and employment generation, women's participation and gender equality, nutrition and malaria prevention, primary and pre-secondary education, child rights, urban community outreach and peace-building, and community health. CARE's previous operations have also included emergency response during the violent events of 1999 and 2006.

CARE works in all 13 districts of Timor Leste and is the largest international NGO operating in the country. The main office is located in Dili, with district sub-offices and warehouses in Liquica, Bobonaro, and Covalima where programming is concentrated.

1.2 Evaluation Objectives

CARE Australia annually invests in a thematic ex-post evaluation to inform greater programme quality and effectiveness. The terms of reference were revised twice during the evaluation, initially during briefings in Canberra. The objective and research questions were then refined further in the course of fieldwork (see Annex J for the complete terms of reference):

Evaluation Objective

To evaluate the effectiveness and sustainability of selected CARE Timor Leste projects in relation to household adaptive capacity and reduced vulnerability to climate hazards.

Specific Objectives

1. To determine the effectiveness and sustainability of CARE's work in water, food security, and disaster risk reduction in the context of a changing climate.
2. To document and share learning regarding programming.
3. To make recommendations to improve future CARE programmes in Timor Leste and beyond.
4. To provide an opportunity for learning and capacity building of CARE staff.

Research Questions

1. To what extent, and how, does programming reflect specific linkages with climate related hazards, vulnerability, and capacity?

⁴ Adapted from the CARE Long Range Strategic Plan for Timor Leste for 2009-2014 (draft).

2. Did climate related issues emerge during the project? Did implementation have the flexibility to respond?
3. Has disaster risk reduction been integrated in design and/or implementation of the projects?
4. Have interventions taken account of particular vulnerabilities and capacities, such as those of women or other vulnerable groups?
5. Have interventions worked towards increasing or decreasing women and men's vulnerability to climate risks and their adaptive capacities?
6. What were the major programmatic achievements or impacts in relation to climate hazards?
7. To what extent are the observed major achievements or impacts of these projects susceptible to being reversed by climate hazards?

The evaluation objective was reformulated to concentrate on climate *hazards* instead of climate *change* as stated in the original terms of reference. This was an important change that resulted in a shift away from global climate projections (that are insufficiently detailed for a small mountainous island like Timor Leste) to a more grounded investigation into how anticipated climate changes could affect existing food security and livelihoods in the context of current hazards in Timor Leste. The evaluation therefore explores CARE programming in response to current climate hazards to suggest future programmatic considerations for reducing vulnerability and strengthening adaptive capacity against changing climate patterns.

1.3 Evaluation Rationale and Approach

Climate hazard lens

Internationally, anticipated temperature increases and their potential threat to agricultural food security and livelihoods have become a growing concern. Poorer households will be affected most, increasing their vulnerability to climate changes while reducing their adaptive capacity as a result of agricultural losses affecting food and income.⁵ Small local temperature increases of even 1-2° Celsius could decrease crop productivity at lower latitudes in seasonally dry and tropical regions, which could be further accentuated if estimated increases between 1.8° C and 4.0° C prove accurate.⁶

These changes in temperature and rainfall are expected to affect people and the environment in Timor Leste.⁷ Rain variability that already affects rural households could become increasingly frequent and severe, with probable reductions in agricultural production having negative consequences on food security and livelihoods. Timor Leste's climate variability is influenced by the El Niño Southern Oscillation, which in El Niño years changes the timing and volume of rainfall so that the wet season is delayed by two to three months, negatively affecting crop planting and food security – all of which could become more severe in the future as the Pacific Ocean shifts toward a more El Niño-like pattern.⁸ In the year after an El Niño event, rainfall can be higher than annual averages, with implications for flooding.⁹

As part of CARE's commitment to learning, it sought to explore what lessons could be learned for more climate sensitive programming in the future, in Timor Leste and elsewhere. For this purpose, CARE identified four projects that were not designed to integrate climate change but which were nonetheless engaged in the climate sensitive sectors of food security and disaster risk reduction – at a time when climate concerns in Timor Leste were becoming more pronounced. CARE also seeks through this evaluation to contribute to a wider community of practitioners, which is engaged to varying degrees with how to integrate climate change into programming. This evaluation will also contribute directly to finalising the CARE Integration of Climate Change Adaptation Toolkit.¹⁰

⁵ Costello et al 2009

⁶ IPCC 2007; Costello et al 2009

⁷ Barnett 2003

⁸ Barnett 2007

⁹ BMRC 2003 in Barnett 2007

¹⁰ <http://www.careclimatechange.org/adaptation/integration-initiatives>

Projects and programming

CARE identified a suite of four projects to be evaluated. Three have concluded and one is ongoing, each concentrating on different parts of Liquica district (see Annex A for a Timor Leste map and Annex B for an outline of project objectives, outputs, and activities). The following summary combines project document information with country office input:

Figure 1: Summary of Evaluated CARE Projects in Liquica District

Detail	CIDPM	ACIDPM	CBDRM	LIFT
Title	Community-Led Innovation in Drought Preparedness and Mitigation	Augmentation to Community-Led Innovation in Drought Preparedness and Mitigation	Community Based Disaster Risk Management	Local Initiatives for Food Security Transformation
Goal	To enhance community capacity in preparedness planning while developing expertise in low-cost, innovative drought mitigation & preparedness technologies	To undertake community based disaster preparedness planning and produce more food during times of drought	To reduce the vulnerability of rural communities to disasters and shocks while increasing their capacity for disaster preparedness and mitigation	To improve food security and strengthen farming household resilience, thereby contributing to government's food security policy
Sub-district	Bazartete	Bazartete	Liquica	Maubara*
Duration	July 2006 – Oct 2008	July – Oct 2008	Nov 2008 – Oct 2009	Jan 2007 – Dec 2010
Beneficiaries	16,213	1,058	9,837	18,000
Donor	OFDA	Hanbury	IOM	EC, ADA
Budget	USD 1,200,000**	AUD 50,000	USD 120,000	EUR 1,500,000

* LIFT activities in Bobonaro district are not included in the evaluation.

** Figure includes activities in Cambodia and Viet Nam in addition to Timor Leste.

The evaluation consolidates project activities into two programmatic approaches, food security and disaster risk reduction. This allowed the evaluation team to link activities across several projects with a more integrated look at the totality of CARE programming in Timor Leste.

Methodology

The evaluation began with a review of the secondary literature about climate change in Timor Leste, followed by extensive reading of CARE project proposals and reports in Canberra, Australia that made clear how the fieldwork would need to fill existing gaps in documented achievement. In Timor Leste the evaluation began with a staff workshop to explore the food security and livelihood situation in relation to seasonality, relative wealth, and CARE activities. Building on these discussions, fieldwork locations were purposively sampled on a range of criteria including agro-ecological zone, completed and ongoing project activities, comparative success and limitations of farmer groups, and distance from main roads. Seventeen aldeia in twelve suco were consulted across three sub-districts.¹¹

A combination of focus groups, key informants, and household visits was conducted in each location using a semi-structured approach to participatory rural appraisal (PRA) tools: wealth ranking, seasonal calendars, proportional piling, pairwise ranking, and matrix scoring (discussed further in Annex G). These PRA tools were used differently in each location for increased triangulation – a central aspect of the methodology alongside direct observation – but ultimately sought to investigate hazard characteristics, comparative wealth and resilience, relative importance and sensitivity of food and income sources, seasonal strategies and considerations, and preferences for seed varieties and their climate resilience. The process and outputs of these tools shape the analysis of programme impact.

Relevant CARE terminology has been used throughout, building on the Climate Vulnerability and Capacity Analysis Handbook.¹² A second staff workshop was convened in Dili to consolidate fieldwork findings. Managerial debriefings were conducted in Dili and Canberra to present these findings alongside initial recommendations after which representatives from each location provided extensive feedback to a discussion draft for incorporation into this completed product.

¹¹ These administrative units are defined in the Terminology given on page iv.

¹² <http://www.careclimatechange.org/adaptation/analyzing-vulnerability>

Limitations

The evaluation proved to be more challenging than expected, in that the projects were not well documented with respect to strategic planning, thorough baselines, and final reporting of impact against specific indicators to use as an evaluation launching point. Whereas the evaluation intended to begin from an established foundation of project-specific achievement for exploring overall impact in relation to climate hazards, the insufficient documentation necessitated the evaluation fieldwork to spend as much time piecing together the context and project activities as it did exploring impact in relation to climate hazards. This in turn has limited the depth of some findings and recommendations.

Key limitations in field team composition also compromised the depth of evaluation findings. No current CARE Timor Leste staff members were able to participate in the full process from design to analysis because of ongoing project implementation commitments. Rehiring previous project staff involved in the three completed projects also proved challenging, with only one appropriately skilled person available. Greater participation from current and previous staff would have facilitated an evaluation process that built on established contextual experience, but with the evaluation forced to rely on different members joining for different days in different sub-districts it was difficult to establish a consistent analytical thread throughout the team. External translators were used for part of the process, but their limited programmatic understanding slowed some discussions, as did the periodic necessity to shift between Tetum and Takudele in addition to Bahasa Indonesia and English. In addition to affecting the quality of findings, these challenges reduced achievement of the evaluation's capacity building objective. All of the above limitations resulted in the evaluation not projecting as far into the programmatic future as anticipated.

The evaluation is a rapid glimpse into a complicated but largely undocumented project history. The conclusions and the analysis that support them are therefore representative only of the individuals and groups consulted during evaluation fieldwork, and are in no way meant to represent Liquica district or Timor Leste as a whole. All report content was corroborated during fieldwork, and anything that appears to be exceptional is noted as such. The authors are confident in the validity of their findings for the locations visited but accept responsibility for omissions that may remain. Distinction is therefore made between some conclusions and recommendations reached collectively by the evaluation team and those reached independently by the evaluators during report preparation.

1.4 Document Structure

The report is divided into five sections:

1. Introduction
2. Livelihoods, capacity, hazards, and vulnerability
3. Food security programme impact
4. Disaster risk reduction programme impact
5. Programming for climate hazards

Sections 2-5 each begin with a synthesis of how it relates to the overall evaluation and a summary of key ideas. This is followed by a list of the section conclusions. The conclusions are then used as sub-section headings for a more detailed discussion of each. Section 2 provides contextual analysis against which CARE programming is evaluated in subsequent sections. Sections 3-5 all close with recommendations emerging from the analysis, with supporting discussion on the rationale behind the suggestion. Recommendations in the food security and disaster risk reduction sections (Sections 3 and 4) relate specifically to CARE programming; recommendations in the final Section 5 take a broader perspective encompassing integrated approaches and considerations for increasing the impact of future programming against multiple types of hazards.

2. Livelihoods, Capacity, Hazards, and Vulnerability

This section presents conclusions reached during the evaluation fieldwork on the livelihoods situation of Liquica district. It describes the primary livelihood production systems of households, hazards that affect these systems, and specific vulnerabilities that households face. These conclusions are the foundation for the sections that follow, the basis on which programmatic impact is assessed.

Liquica households are engaged in a range of livelihood activities that are strategically managed to provide multiple food and income sources throughout the year. Some of these livelihood options are vulnerable to climate hazards, while others are relatively immune. We argue that households already have good adaptive capacity due to the diversity of these options and the expandability of some of them.

This capacity is however tempered because of the vulnerability of the primary staple food crop, maize, to rain-related hazards. There is already significant variability in the timing, frequency, and severity of these hazards according to location. If rain variability becomes more frequent and severe in the future, then households will need to respond with parallel increases in adaptive capacity.

The combination and type of livelihood strategies that any particular household pursues is a function of their relative wealth status, defined largely in relation to assets. Better off households typically engage in a wider range of activities, tend to be less reliant on maize production for food than poorer households, and employ more reliable strategies that are less sensitive to climate variability.

2.1 Conclusions

1. Liquica households and communities have diverse livelihood opportunities that they utilise on a normal basis, but there are inherent environmental limitations to some of these.
2. Households face a range of hazards, but the primary climate hazard affecting agricultural production is rain variability.
3. The most significant vulnerability facing poorer households is that their main staple food crop is highly sensitive to climate changes.
4. Household vulnerability and capacity are functions of relative assets, but how these differ across wealth groups and gender is not particularly well understood.
5. Communities did not demonstrate existing capacity to analyse hazard risks and how they might be prevented or reduced.
6. The secondary literature describes high levels of malnutrition and food security.

2.2 Analysis

Livelihoods and capacity

Liquica district is characterised by steep, coastal frontal hills with aldeia located at varying altitudes from sea level to approximately 1,500 metres. Lowland aldeia tend to be drier and flatter and have better infrastructural access while highland aldeia are wetter, steeper and more isolated. The unimodal rain season typically begins in November and continues until April/May with an average annual rainfall of 500-1,500 millimetres in the lowlands and 1,500-3,000 millimetres at altitudes above

500 metres.¹³ Liquica households engage in a range of livelihood options but, despite proximity to the coast, most do not pursue sea-related livelihood options.

Rainfed maize is the primary staple food crop and is cultivated from approximately November to April, depending on the onset of rain. Several varieties of local maize are cultivated based on their maturation times. Households typically sequence short and long maize varieties so that green maize consumption (on the cob) can begin six to eight weeks after November planting. Green maize is consumed from early January to late March, and is a major proportion of daily diets during



Photo 1: Maize seed stored above kitchen fires for next season.

those three months (see Annex F for more on maize cultivation). Maize varieties with a longer maturation are the majority variety in household plots and are harvested in March/April. Harvested maize stocks are rationed for use through the year, although stocks in many households become low to exhausted by September/October. Maize is cultivated mostly for own consumption, however some households also sell maize at times when they need cash. Farmers usually store their own seed for use in the following season. There are limited opportunities to increase the land area under maize cultivation (an average of 0.8 hectares per household), due to restraints in household land holdings and labour availability.

Complementing maize, most households cultivate a range of other high energy food crops including cassava, sweet potato, and taro. These cultivated tubers, in addition to their wild versions, constitute up to 20-25% of annual household food energy needs for most households. Cassava is typically consumed for breakfast daily, and may be eaten two or three times per day from August to December when household maize stocks can begin running low. Consumption of sweet potato replaces cassava from June to September. Except in

extremely dry conditions of limited rainfall, cassava is not particularly vulnerable to moisture stress. Households often increase the amount of tubers they harvest, dry, and sell when anticipating shortages of food or cash during bad maize production years. They similarly increase cassava weeding to increase tuber growth when poor maize harvests are expected. Rice is cultivated in some lowland villages. Most households also grow beans, peanuts, bananas, and papaya. These are predominantly harvested between April and June but are available at other times of year. Extensive wet season vegetable gardens are cultivated individually by most households, in which they produce a range of vegetables including leafy greens, tomatoes, onions, garlic, and chilli. (See Annexes D and E for highland and lowland seasonal calendars.)

All households raise livestock that are regularly sold or bartered for cash and food as part of their normal annual activities. Chickens and pigs are the most common animals, owned by virtually everybody. Goats and cattle are less numerous and not owned by as many households. The type and number of livestock owned was a consistent entry point for focus group discussions about relative wealth during the evaluation. Goats and pigs are often not sold until the middle of the dry season when home garden production is at its lowest. Routine food purchases are the most common reason for animal sales, although expenditure on



Photo 2: Coffee is an important cash crop in the highlands.

other household necessities such as education and health are typical. Households typically increase livestock sales to cover food and cash needs, but it is exceptional for them to sell reproductive females.

¹³ WFP 2005

Coffee is cultivated as a cash crop by most households in highland villages, but with different amounts of land according to relative wealth. Two coffee varieties with two different harvest periods are cultivated. Arabica is harvested in April/May and Robusta is harvested in July/August, providing additional household income at two times in the year. Some poorer households earn cash by selling betel nut, local alcohol, or firewood. This is done in all years, but can be expanded if cash needs increase as a result of less maize production.

Selling labour is an important source of income for many households. Weeding maize fields and coffee plantations, harvesting, land preparation, and working on government projects are the most common opportunities for labour work. It is common for households facing food or livelihood stress to expand paid labour opportunities. This can be within the village but can also include sending a family member, usually male, to a district centre or even to the capital, Dili.

Markets are an important source of food throughout all years for most households. Households routinely purchase rice, maize, oil, sugar, beans, noodles, coffee, and salt. Rice is often cheaper than maize (through government subsidy), has no processing loss, is faster to cook, and is preferred by children. Households purchase rice even before their own maize stocks have been depleted as part of their food preference and to help ration maize stocks throughout the year. Commodities can be purchased within communities on fixed market days or can be found more regularly in sub-district and district centres. Neither food availability nor access appears problematic in Liquica.

Wild foods are consumed throughout the year by most households and are considered an important and normal part of household diets. Highland forests offer a greater diversity of wild foods, but lowland aldeia are equally reliant on wild foods as a food source. Wild foods are important for all households in all years, not simply, for example, poorer households in periods of food stress. Wild food consumption does however increase in years of reduced maize production, especially for poorer households. That said, consumption of less preferred 'famine foods' did not appear common, even in problematic years (discussed further below).

Although all households have diverse food and income sources that are maintained throughout all years and strategically sequenced within each year, there are variations in food and livelihood options by wealth - an important distinction between households in Liquica. For the evaluation, focus group participants distinguished relative wealth (poor, middle, and better off) on the basis of household assets including cultivated land for maize, coffee, and rice; number of chickens, pigs, goats, and cows; diversity of food and income sources; years of education; and housing type (see Annex C for more detail in wealth groups). As would be expected, better off households have the advantage of greater asset diversity and expandability combined with less dependence on climate sensitive food sources in relation to their annual food and income.

Poor households were typically described as those that might have five chickens and two pigs, for example, compared with a better off household with at least fifteen and eight, respectively. The same applies to goats, for which poor households might have two and better off households up to ten or more. Cattle are usually owned by middle and better off households only. Better off households typically maintain larger plantations of coffee than the poor. In some villages better off households cultivated the largest maize fields in the village. In other



Photo 3: Interrupted rain causes a maize crop failure in Maubaralisa, their worst year in the last ten. The palm tree on the right has bands to climb for fermented alcohol collection, a common income source in this aldeia.



Photo 4: Handicrafts are a regular source of additional income for some households.

locations, cash crop (particularly coffee) and livestock production were more lucrative, so the better off produced less maize than the poor.

Despite the differences in wealth groups, there are strong linkages between them. Labour in maize or coffee fields for food or cash wages is an important source of intra-community exchange in many locations. Wealthier households tend to provide labour opportunities for poorer households (while middle households were often defined as those with sufficient land and labour to manage by themselves). Wealthier households are also sources of food or cash loans in times of stress. Although not investigated in detail, there appear to be differences in labour value if paid in cash or food, with food wages being less advantageous.¹⁴ Sharecropping and bonded labour were also mentioned during some discussions but could not be explored properly. We nonetheless suspect that these too might be important institutions for intra-community exchange.

Hazards

Respondents regularly cited late rain or less rain as the most frequent climate hazard. However, although these are the more common, they are not necessarily the climate hazards with the greatest impact on reducing maize yields. Interrupted, erratic rains (particularly when rain is insufficient around flowering time) and flooding in lowland villages are rated as the most severe hazards in terms of maize yield losses. Flooding is usually the least frequent but can have the highest impact on maize production, as flood can destroy an entire standing crop. Rain variability – including late, less, and interrupted rains – usually results in partial yield losses (of varying degrees) but happens more regularly. Figure 2 outlines the main hazards to Liquica production:

Figure 2: Hazard Profile*

Hazard	Tetum Translation	Characteristics
Late rain	Udan tarde	<ul style="list-style-type: none"> • Rain that should have started in Oct/Nov but did not begin until Nov/Dec
Less rain	Udan menos	<ul style="list-style-type: none"> • Rains that start on time, end at normal time, but with overall less volume
Short rain	Udan badak	<ul style="list-style-type: none"> • Rains that start on time but finish early
Interrupted, erratic rain	Udan maran	<ul style="list-style-type: none"> • Rain that starts on time, then stops (at the time maize should flower), then restarts
Strong wind	Anin bo'ot	<ul style="list-style-type: none"> • Mostly affecting exposed highland areas
Heavy rain/flood	Udan bo'ot/Mota sa'e	<ul style="list-style-type: none"> • Distinguished differently in different locations: rain and flood, the latter only affecting lowland areas
Landslide	Rai halai	<ul style="list-style-type: none"> • Only affecting highland areas
Pests	Pesti	<ul style="list-style-type: none"> • Primarily rats but also locusts, monkeys, worms, snails, and storage weevils

* This table presents a summary picture of hazards and their characteristics. There is variability in the frequency and severity of these hazards, in relation to each other and in terms of the impact of each when compared with the same hazard in another time or another location. This is explored further in Figure 3, Microclimate Variation, below.

In cases where strong winds are associated with heavy rains, standing crops are vulnerable to major yield losses. Waterlogged plants are blown over by the wind, resulting in greater cob damage from rats that are able to climb the fallen plants more easily. Landslide is not rated highly as a hazard affecting food production.

There is little consistency in the location, frequency, duration, or severity of rain variability. The degree of damage to maize production is equally varied, evidenced by many focus groups and key informant discussions citing a different "worst year in the last 10." The reason and impact of these bad years also differs geographically. Aldeia fifteen minutes apart at the same altitude on the same road often described different "worst years." Examples of these microclimate variations are given in Figure 3:

¹⁴ For example coffee labour is usually \$2 per day, but if paid in coffee beans is a small basket worth \$1.50. Similarly, a \$10 cash loan is normally repaid quickly with \$11 but can increase to \$20 if repaid after one year. If repaid in labour, however, it can be for weeding a 40x40 metre maize plot for which the market value is \$25.

Figure 3: Examples of Maubara Microclimate Variation

Location (suco, aldeia)	Worst Year in last 10 for Maize Yields	Cause
Maubaralisa, Lisalara	2010	Interrupted rain
Vatuvoro, Raik Lelo	2009	Heavy rain, pest (rat)
Lisadila, Mancabia	2008	Less rain
Lisadila, Glai	2008	Less rain
Vatuvou, Lisaico	2007	Late rain
Fahilebo, Fatuniso	2007	Wind, pest (rat)
Vatuvou, Maubo	2007	Less rain
Guguleur, Vatumori	2004	Late rain
Ulmera, Kasaid	2002	Less rain

Pests including rats, insects, and monkeys were in most cases rated as a more serious and regular threat to maize production than the above-mentioned climate hazards.

Focus group participants in all cases were unable to describe an example in which there had been successive years (two or more) of low production. In retrospect, this might have been due the discussions concentrating on climate hazards and their affect on household food and income, thereby biasing responses away from possible examples of successively bad years resulting from pest, or from a bad pest year followed by a bad rain year. All discussions about the potential impact of increasingly frequent or successive bad years on household food and income never went further than speculation, despite facilitator efforts.



Photo 5: Rat damage on standing crops.

Vulnerability

There are several inherent factors that contribute to reduced agricultural production in Liquica, such as steep terrain, high variability and unpredictability of rainfall (associated with Timor Leste being a small, mountainous island in the tropics), a long dry season, limited opportunities for using traction or agricultural machines, and weak maize varieties are all factors that inherently limit productivity. Degrading land use practices also reduce overall food security in Liquica. The degree to which poorer households can or cannot meet their annual food needs, as well as the associated causal factors, are not particularly well understood in the Timor Leste context.



Photo 6: A farmer in Maubaralisa demonstrates how moisture stress impairs cob development.

The most serious vulnerability in Liquica is that the primary staple food, maize, is the crop most susceptible to the most frequent and severe hazards around rainfall variability. At the same time, poorer households are more dependent on maize production than other households. Several focus group analyses comparing the impact of hazards on food sources and income sources revealed that hazards affect food more than income (Figures 4 and 5). Furthermore, of the various food sources, maize is affected by hazards more than any other. Maize is particularly vulnerable to rain variability in the early

growth stages, but also when cobs are developed and are susceptible to water logging, wind, and pest damage. Finally, even once harvested, maize is vulnerable to weevils that are responsible for a reported average loss of 20 to 30 percent.¹⁵

Figure 4: Lisadila Food Sources Affected by Hazards*

Food Source	Hazard			
	Late/Short/Less Rain	Heavy Rain	Wind	Pest
Maize	1	1	1	1
Rice	2	4	2	2
Cassava and Sweet Potato	3	3	7	3
All Gardens	4	2	3	4
Wild Foods	6	5	5	5
Own Livestock	5	6	4	6
Market Purchase ¹⁶	7	7	6	7

Figure 5: Hazards Affecting Lisadila Income Sources*

Hazard	Income Source					
	Maize Sales	Own Garden Sales	Livestock Sales	Coffee Sales	Project Garden Sales	Handicrafts
Heavy Rain	1	3	1	2	-	-
Wind	2	2	2	1	-	-
Short Rain	3	4	4	4	-	-
Late Rain	4	1	5	5	-	-
Less Rain	5	5	3	3	-	-

*Ranked vertically by most serious

Diversity and expandability of these complementary livelihood options mean that households can adjust relative contributions to meet food and income needs when a particular component is affected by a stress or shock. Complementary livelihood strategies around cassava, livestock, wild foods, market purchase, and labour selling are comparatively immune to climate hazards. It is important to note, however, that some of these options are subject to other hazards. Vulnerabilities to reductions in global coffee prices, for example, can be an income shock for many households, as can livestock diseases. Given that poorer households are more reliant on maize and have less cultivated area, the sensitivity of maize to climate hazards has more serious implications for them.

Focus group participants met during the evaluation consistently stated that they could not recall a time even during the 'worst year' scenarios discussed above in which their usual range of food sources was not available. However, not all households are able to access all food sources at all times in all years, nor preferred quantities of food. Poorer households with the greatest maize losses stated that they have sometimes needed to reduce meal frequency from three to two per day: cassava and banana for breakfast and a combination of rice, maize and cassava for dinner (with different types of cultivated or wild leaves). Respondents were equally insistent that they do not experience hunger, even during the worst maize production years they could describe. Even if reducing meal frequency, nobody reportedly slept with an empty stomach.

At the same time, the secondary literature describes problems with food insecurity and particularly high levels of both chronic and acute malnutrition in Liquica.¹⁷ The reasons for these problems are complex and likely the result of several factors. One possibility is that some households experience insufficient or unstable access to food at different times of year. Another is that households have poor food utilisation resulting from poor hygiene, sanitation, food preparation quality, or other health issues affecting individual ability to absorb nutrients. It is equally possible that individuals may have adequate kilocalorie consumption but inadequate micronutrients and proteins, which is possible in a carbohydrate based diet like that found in Liquica, even where respondents do not report 'hunger.' It was beyond the scope of this evaluation, however, to assess malnutrition and the apparently problematic relationship between food access and utilisation.

¹⁶ The ranking was conducted immediately after proportional piling food sources, so all sources were included even if hazard impact was not expected like with Market Purchase (the same applies to Project Garden Sales and Handicrafts in Figure 5; also see Annex G for more on PRA tool sequencing). Climate hazards might affect household ability to purchase food, but analysis did not reach this level of detail.

¹⁷ The 2007 Timor Leste Survey of Living Standards reports Liquica figures of 21.9% wasted (weight for height), 41.5% stunted (height for age), and 35.5% underweight (weight for age). Also see Dubray and Rose (2004) for an assessment of nutrition status and vaccine coverage that includes Liquica district.

3. Food Security Programme Impact

This section evaluates whether CARE programming is increasing household access to food, diversifying and expanding existing food and income sources, and strengthening household adaptive capacity. Food security activities are assessed in relation to the livelihood strategies and related hazards introduced in Section 2. Analysis here also contributes to the larger conclusions and recommendations presented in Section 5 for improved CARE programming.

We find that CARE's improved seed multiplication can increase food access through directly enhancing household capacity against rain-related hazards. Other contributions to household adaptive capacity are also being achieved through activities such as group ponds and gardens that contribute toward increased household assets. Gradual production-related asset accumulation is likely to be what defines future adaptive capacity. There are, however, potential threats of reversibility to these initial achievements, alongside opportunities to increase further the impact of food security programming.

3.1 Conclusions

1. CARE projects are building on existing capacities and livelihood systems.
2. Households have increased access to food through increased production and increased ability to purchase.
3. Introduction of Sele seed is CARE's strongest and most direct programmatic response to a climate hazard.
4. Sele could be part of a long term, sustainable change to more resilient maize varieties.
5. The most significant achievement of CARE food security programming is the effectiveness of farmer group Sele multiplication.
6. The benefits of Sele could be reversed if national and household level replacement systems are not established.
7. Group pond and garden activities contribute to food access and dietary diversity.
8. Insufficient attention to pond maintenance could reverse the impact of group gardens.
9. Although too early to evaluate, the complementary package of LIFT conservation activities has potential to increase household adaptive capacity further.
10. Opportunities remain for ongoing CARE projects to learn from completed projects.

3.2 Analysis

CARE projects are building on existing capacities and livelihood systems

As discussed in Section 2, some of the food production and income generation activities that households employ are vulnerable to hazards, notably maize cultivation. CARE's food security programming not only builds on what farmers are already doing but it is reducing vulnerability to climate hazards. Introduction of Sele directly strengthens household adaptive capacity as it responds to a specific hazard (rain variability) and a specific vulnerability (weak maize varieties susceptible to rain variability). Sele is less sensitive to drought and pests, thereby reducing household vulnerability to hazards. Importantly, Sele requires the same management regime that farmers utilise for local varieties, as it does not require a completely new regime of inputs or practices meaning that adoption of the new variety is more likely.

Group ponds and dry season gardens are an expansion of the rain season gardening that most households already practice. Although not a direct response to a particular hazard, this type of programming can strengthen household capacity to adapt to livelihood stresses through a gradual increase of food and cash availability and build up of production-related assets. Similar to Sele, this type of intervention does not require households to adopt new techniques. Rather, it expands upon options that households already practice.

Seed storage drums are being introduced as a response to a specific hazard, namely weevils. This response directly reduces the exposure of Sele to pests and as a result strengthens household capacity against a hazard that impacts food security. Building on and expanding existing capacity is the strongest way to strengthen household adaptive capacity to climate and non-climate hazards.

Households have increased access to food through increased production and increased ability to purchase

CARE food security programming focuses primarily on improving access to food.¹⁸ This is achieved through increasing own production of maize as well as production of garden vegetables for both consumption and sale (discussed further below). Increased access to food resulting from CARE programming is currently limited but appears likely to increase with greater adoption of the improved maize variety, Sele.

Sele is an officially-released,¹⁹ improved maize variety that with normal rain conditions can yield up to 40 percent higher than the main local varieties.²⁰ Figure 6 compares yields of Sele and local varieties grown by 15 CARE farmer groups in the highlands. The data illustrate increased Sele yields compared with those of local varieties, 57 percent on average. Increases were realised by all participating suco, ranging from 40 to 75 percent more than the local variety.

Figure 6: Maize Crop Cut Data (Sele versus Local Varieties)*

Suco	Group Name	Yield: Improved (kg)	Yield: Local (kg)	Yield Increase (%)
Bobonaro	Hametin	2,760	1,680	64
Bobonaro	Haburas	2,976	1,560	91
Lourba	Gumer 1	2,280	1,540	48
Malilait	Taimea	2,040	1,320	55
Malilait	Taimea	2,400	1,600	50
Atuaben	Mugis	2,688	1,820	48
Atuaben	Mugis	2,688	1,820	48
Colimau	Maunia 1	2,712	1,780	52
Colimau	Atublogo	2,808	1,600	75
Carabau	Atumanuru	3,120	1,800	73
Carabau	Nunubuti 3	1,776	1,240	43
Lour	Tosgolo	1,848	1,060	74
Lour	Olo Olo	1,752	1,180	48
Tebabui	Atupae 1	1,776	1,240	43
Leber	Bucuk 1	1,992	1,400	42
Average		2,374	1,509	57%

*Data are from Bobonaro district, but the increases are nonetheless representative of improved yields in Liquica.

The real impact of Sele will be realised once large numbers of individual farmers (i.e. not simply CARE farmer groups) are cultivating a significant proportion of their household maize fields with the improved variety. Almost all cultivation is so far done collectively rather than by individual farmers. It is therefore too early to determine the degree of impact on individual household access to food. However, given the positive results of extensive trials and the feedback from farmers so far it is

¹⁸ Food security is typically analysed according to three pillars: availability, access, and utilisation.

¹⁹ Sele was released by the Ministry of Agriculture and Fisheries with support from Seeds of Life. Funding for the programme is provided collaboratively by MAF and AusAID.

²⁰ Seeds of Life (2007)

reasonable to expect that there will be a significant adoption and scaling up of Sele cultivation by individual farmers in the coming growing seasons (discussed further below). For example, if a particular farmer plants half her 0.8 hectare field with Sele and the other half with a local variety, she could theoretically expect a 20 percent increase in total production. (That is, half of the field is planted with Sele, which can produce up to 40 percent higher yield). This degree of adoption and expansion of a new variety typically takes place over a period of several years, once the farmer is satisfied that cultivating a new variety is no longer risky. Those individual farmers who have already adopted Sele are so far cultivating it on not more than 10 percent of their fields (2.5 kilograms of Sele seed compared with approximately 30 kilograms of local variety seed).

Some components of CARE food security programming address utilisation through training and demonstration on nutritional food preparation. The evaluation did not investigate this component, as its links to climate hazards are indirect and the complexities of poor utilisation are beyond the current scope. Utilisation is nonetheless touched on in the recommendations.

Introduction of Sele seed is CARE’s strongest and most direct programmatic response to a climate hazard

Under conditions of moisture stress (i.e. rain deficits prior to and around flowering), Sele outperforms all local varieties and all other improved varieties. In pre-release trials, Sele yielded 2.4 MT/ha in a season with severe rain deficits while the average of all other varieties was 0.8 MT/ha.²¹ By facilitating the introduction of Sele, CARE is directly strengthening household capacity against the most frequent and most production-limiting climate hazard, rain variability, especially once it evolves from group to household cultivation.



Photo 7: Maize seed varieties are ranked for their resilience against rain variability, creating Figure 7.

A matrix scoring exercise conducted with farmers in Guguleur compared Sele to other varieties as they rate against the main food production hazards, in this case all climate related (see Figure 7). Sele was rated the most resistant variety to all hazards except short (or interrupted) rains, in which case the local variety *Batar Lais* rated best. *Batar Lais* is a fast maturing variety, meaning that it can usually mature even if rains are short or interrupted. However it is a lower-yielding variety cultivated primarily for green consumption and, as noted in Section 2, it is usually cultivated alongside another variety with longer maturation as part of a short/long maize variety sequence.

Figure 7: Desirability of Maize Varieties in Relation to Climate Hazards

Maize Seed Variety	Hazard			
	Wind	Late Rain	Less Rain	Short Rain
Sele (improved)	1	1	1	2
Suwan 5 (improved)	2	2	2	3
Batar Lais (local)	3	3	3	1
Batar Bot (local)	4	4	4	4

Sele could be part of a long term, sustainable change to more resilient maize varieties

Farmers consider Sele to be an appropriate variety. Sele is open pollinating and non-genetically modified. It does not require inputs such as fertiliser, pesticide, or herbicide and is thus consistent with the agronomic practices already employed by most Liquica farmers. This could prove to be an important part of its apparent acceptability to date, in that its use does not require a new set of practices or inputs. Sele can be cultivated at altitudes ranging from sea level to the higher altitude aldeia of Liquica. The same Guguleur farmers agree with other respondents that Sele has favourable consumption and use criteria (such as taste, grinding, storage). This combination of important characteristics, in addition to its drought tolerance, suggests that likelihood of long term adoption and expansion of the variety is high.

²¹ Seeds of Life (2007)

The most significant achievement of CARE food security programming is the effectiveness farmer group Sele seed multiplication

CARE chose to work primarily with farmer groups to maximise the use of its resources in growing and multiplying Sele.²² Groups cultivate Sele on a communal plot that is isolated from neighbouring fields in an effort to reduce the chance of ‘pollen drift’ (genetic contamination) from local varieties. Seed is selected from plants in the middle of the communal plot and stored in airtight drums, also provided by CARE, for the following agricultural season. In some cases seed is also sold or given to individual farmers. Farmer groups in CARE project areas produced 10 metric tonnes of Sele seed which, when compared to the 20 metric tonnes produced nationally by Seeds of Life, is an impressive achievement.



Photo 8: Sele seed drying.

The effectiveness of CARE’s seed multiplication model has proven so successful that Seeds of Life is expecting it to inform the development of phase three of their national extension system. A recent learning mission commented on the following aspects of CARE’s model:

- CARE’s technical support package to farmer groups is more intensive and comprehensive than other organisations have used. The CARE model covers the important phases of seed multiplication, from initial seed distribution through to post-harvest seed storage. It is this comprehensiveness that is considered to be the crucial aspect of the system making adoption so much higher among CARE farmers than other models have managed to achieve.
- Women are central to the model and are meaningfully involved in all stages of seed multiplication.
- Farmer knowledge of seed selection, seed drying and storage, and use of maize shelling machines is good.
- The model has successfully demonstrated the ability to disseminate technology and facilitate scale-up at community level.

Figure 8 shows increasing amounts of Sele seed being produced and kept annually. The 42 farmer groups working with CARE increased Sele seed available for planting by a factor of 9, from 646 kilograms in 2008 to 5.7 MT in 2009. (Also note that these figures do not include the additional 95-98% of yield that is consumed or sold.²³)

Figure 8: Sele Seed Multiplication by CARE Farmer Groups

Suco	Number of Farmer Groups	Sele Seed Used in 2008 (kg)	Sele Seed Reserved for Planting in 2009 (kg)
Vatuvou	9	155	792
Guguleur	11	173	1,908
Vatuvoro	4	62	576
Guico	6	94	972
Lisadila	7	107	1,044
Vaviquinia	5	55	468
Total	42	646	5,760

NB: Average seed rate 40kg planted/hectare in Timor Leste

The benefits of Sele could be reversed if national and household level replacement systems are not established

Once individual farmers have adopted Sele and are cultivating it in their fields, the close proximity of local varieties will lead to inevitable pollen drift. This annual genetic contamination will gradually decrease Sele yields and necessitate replacement with certified Sele seed once every 4 to 6 years. Individual farmers would currently find this replacement challenging in the absence of a reliable national production system. By 2015 the individual farmers who are adopting Sele in 2009/10 will

²² The LIFT project works with 3,000 farmers in Liquica and Bobonaro, organised into groups of roughly 15 members each.

²³ Note that there has been no opportunity for CARE to determine levels of production under drought (moisture stress) conditions, as Sele has been a project activity for only two years.

need to replace their seed. If the national system for production and certification is not yet reliably able to supply household needs, it is unclear what alternative would be available to them. This underlines the importance of the current collaboration between CARE and Seeds of Life described above to ensure that Sele becomes available nationally.

Group pond and garden activities contribute to food access and dietary diversity

CARE pond and garden activities provide an opportunity for households to cultivate vegetables in the dry season.²⁴ Although not designed as a response to a particular hazard, the increased dietary diversity with its associated health benefits as well as the supplemental income from sales, help strengthen household capacity to absorb shocks.

Approximately 40 percent of group garden produce is consumed. Consumed garden produce is providing additional dietary diversity at a time of year in which households normally eat fewer vegetables. It was beyond the evaluation scope to determine the micronutrient contribution of this consumed garden produce, however it is reasonable to assume that there would be micronutrient benefits. The caloric contribution of garden produce is limited. A family of six requires 12,600 kilocalories per day, whereas a kilogram of green leaf vegetables provides at most 480 kilocalories; a kilogram of tomatoes provides 200 kilocalories; pumpkin 360 kilocalories; and beans and peanuts, the highest contributors, 3,390 and 3,320 respectively.



Photo 9: Dry season vegetables. CARE photo.

The remaining 60 percent of garden produce is sold. Garden group members typically earned \$17 to \$26 each over the 3-month period July-August/September 2009, with average garden profits of \$256 shared between 10 to 15 members. In almost all cases some of the profits were kept in the group to purchase seed for the following year, or to make other production investments such as hiring a tractor to plough or weed maize fields. Group members have different preferences for spending the remaining money that include expenditure on food, education, soap, and other household items. It is important to put these amounts into perspective against the total annual volume of cash in the average household. Although there are no comparative figures



Photo 10: Pond filled by village water supply system.

available, households generally earn cash from combinations of sales of coffee, rice, banana, papaya, livestock, tubers, rain season vegetables, and labour. As described in the LIFT Food Security Baseline Survey, Maubara in particular is known to be a food deficit area due in large part to its emphasis on coffee production. This suggests that cash is an important livelihood component for many households and that garden cash is therefore a small proportion of total household income and expenditure.

Some focus group respondents suggest that women are the primary vendors of garden produce and also the primary money handlers. It is considered normal for women to manage the daily financial matters of the household. CARE is therefore increasing the amount of household money that passes through women's hands.

²⁴ The dry season (May to October) is a normal part of the Timor Leste climate and cannot be described as a hazard, despite use of the word *bailoron* in Tetum that is commonly translated "drought" in English.

The water supply facility constructed as part of the ACIDPM project in Leorema is enabling dry season garden cultivation. Approximately ten families are now able to cultivate vegetables in the dry season. The facility also provides drinking water to approximately 70 households in the dry season (36 households during the rainy season). The system consists of spring catchment tanks feeding into a main collection tank and then into a distribution system consisting of smaller tanks and public taps. All tanks are well constructed with reinforced concrete and have galvanised iron pipes, meaning that the system could last as long as 15 years.



Photo 11: Main collection tank, Leorema.

Insufficient attention to pond maintenance could reverse the impact of group gardens

A durable plastic liner is used as the base of excavated ponds. This liner, if maintained correctly, has a lifetime of approximately 7 years. Replacement costs \$270, although the liners are not currently available in the local market. The most likely way that groups would be able to meet this expense is if they regularly set aside a proportion of their annual profits. Groups are not currently being encouraged to do this, however, it is not clear whether group members understand that replacement is inevitable, even if they are careful with the liner. The availability of these liners on the local market five to seven years from now remains unknown. Failure to replace the liner will result in disuse of the pond and therefore the dry season garden and its contribution to supplemental income and dietary diversity. Only one damaged liner was found during the evaluation, but this is nonetheless indicative of the types of problems that groups might face after the project is completed.



Photo 12: Empty pond with unrepaired liner.

Although too early to evaluate, the complementary package of LIFT conservation activities has potential to increase household adaptive capacity further

The LIFT project also includes complementary activities for improving soil nutrition (composting, liquid fertilisation, rotation with a legume), physical protection of soils (sloping agricultural land technology and agro-forestry), and maize storage. Although too early to draw conclusions on impact, it is likely that such complementary packages will help strengthen household capacity to absorb and adapt to shocks that affect their production. Links between these types of interventions and climate hazards are limited, however, but gradual improvements to overall assets are nonetheless crucial steps in supporting households to increase their overall resilience.

Opportunities remain for ongoing CARE projects to learn from completed projects

Direct observation and discussions with farmer groups suggest that there might be opportunities to increase the rate of adoption of some of the improved agronomic principles promoted by CARE.

Soil fertilisation through composting was promoted by the CIDPM project for use in existing household gardens. In discussions with farmer groups in Ulmera and Leorema, for example, it was evident there was essentially little to no onward transmission of knowledge or learning. It was the intention of the project that key people would be trained in the principles of composting and they would go on to share these new principles with other households in their aldeia. Members of the group stated, however, that the only people continuing to practice composting were those who attended the original trainings. Due to the time of year the evaluation took place (during rains, before compost is prepared) it was not possible to verify whether even these ten households were still composting. The exact reasons behind the lack of knowledge transmission were unclear. Some

group members suggested that culturally it was not normal to share knowledge in that way within the community. Others said that there might be reluctance among non-participating farmers to ask for advice for fear they would be ineligible for assistance the next time an NGO arrived with inputs and training.

Improvement in weed management is an important component of the LIFT project. Observation of some fields at the time of evaluation, as well as discussions with farmer groups, suggest that this remains a challenge. Although the evaluation timing makes it difficult to make conclusive comments on weed management at the early stages of the growth cycle, observations of some fields in the latter stages of growth nonetheless suggest that earlier stages of weeding may have missed. Some farmers also stated that there was not much point in expending effort on weeding. This could indicate that farmers do not consider the time investment worth the potential yield gains, or that they are not yet fully aware of the potential gains. It could also be indicative of limited labour in some households. The same problem was observed with CIDPM locations, such as Motaulun. Direct observation also suggests that limited weeding applied to comparatively level maize plots, not only to steep plots that are more difficult to maintain.



Photo 13: Opportunities for improved weed management in Vatuvoro.

3.3 Recommendations

Continue building the strategic collaboration between CARE and Seeds of Life.

Through the LIFT project, particularly in regards to successes in multiplication of improved Sele seed, CARE has earned solid credibility with key stakeholders in the agriculture and food security sector. This offers a unique opportunity to share best practice and influence development of protocols for improved seed multiplication nationally. From this base, CARE is in a strong position to engage future opportunities for improving other aspects of agricultural practice in Liquica and Timor Leste more broadly, discussed further in Section 5.

Investigate the prevalence of poor utilisation for more comprehensive food security programming.

In addition to the importance of stable and sufficient access to food, there appears to be problems in Liquica with poor utilisation. Stronger and more meaningful links between projects focusing on food security (e.g. LIFT) and nutrition activities could help CARE achieve food security objectives that reach beyond access alone. There are contradictions between some project documents that were unable to be clarified during the evaluation but there are obvious problems in under-five nutrition that can be more directly linked to risk reduction and food security programming in terms of prevalence and causality.

Improve farmer-level yield measurement systems to enable better monitoring and evaluation.

For more rigorous evaluation of crop yields and their food security impact it would be valuable for CARE to work with farmers to develop a simple but reliable yield estimate system. This would not only assist field staff with monitoring and project impact evaluation, but could also encourage farmers to identify improved production targets. Greater involvement of farmers as active experimenters and data collectors could also increase participant ownership and onward transmission of new varieties and practices. Coupled with this, a simple system for recording rainfall at the village level would be useful data for both farmers and government extensions workers.

Conduct savings analyses of project garden sales to increase the likelihood of maintenance and replacement of pond liners.

The food and income benefits of dry season gardens are contingent on pond maintenance, for which the plastic liner is critical but impermanent. An accurate understanding of costs to the group for annual garden operation – such as seed purchase and fence/pond repairs – should be

compared with the cash income members actually net and what is typically done with that money. From this level of understanding a group agreement on the most realistic option for liner replacement will be possible. As the liners are a technological component specific to CARE projects, it is crucial that CARE plays a role in facilitating the availability of supply in local markets while at the same time ensuring groups are prepared for replacing them.

Pay strategic attention to farmers who could increase yields through improved weed management.

The success achieved by CARE farmer groups producing Sele demonstrates that with careful design and attention to detail in the field, farmers can improve the way they farm. Weed management is an area that could potentially benefit from similar levels of strategic attention. Given the competition of labour demands in many households it would be worth continuing to focus efforts on non-physical approaches to weed management. Velvet bean mix cropped with maize is an example of an alternative method that appears effective in the LIFT project. These efforts should focus on those farmers who to date demonstrate weakness in this area and for whom maize is a greater proportion of their overall production.

Continue to expand maize storage capacity for increased household access to food.

Although losses from crop pests were more prominent in farmer's minds during this evaluation, losses to storage pests (especially weevils) are considered to be as high as 20-30 percent. CARE is already making progress on improving maize storage in airtight drums, although current data do not allow for quantifying reduced post-harvest loss. There are already plans in place to increase the distribution of drums as part of LIFT programming. It is important to emphasise that improving food security can be achieved just as appropriately through prevention of food losses (i.e. improved storage) as through increased food production. Both are of course important parts of the solution. Finally, similar to pond liner and Sele seed availability in the long term, it would be worth considering how CARE could facilitate local production or availability of airtight seed storage drums to ensure that supply can match increases in demand as the approach gains acceptance.

4. Disaster Risk Reduction Programme Impact

This section analyses the impact of CARE programming in disaster risk reduction (DRR).²⁵ All four evaluated projects intended to deal with some combination of prevention, preparedness, response, and mitigation. Minimal impact in risk management or reduction has been achieved, however, from a combination of inherent limitations in project duration, the operational environment, and insufficient analysis of hazards, vulnerability, and capacity. It is nonetheless possible that future DRR programming can build on this initial experience for more meaningful engagement with community groups and government structures.

This section concentrates primarily on the CBDRM project, the one most focused on disaster risk reduction by aiming to reduce disaster vulnerability and increase preparedness and mitigation capacity. The other projects have similar statements of intent but not as their primary objective.

4.1 Conclusions

1. Disaster action plans were not based on analysis of hazards, capacity, or vulnerability.
2. Community plans and flexible funds were not used effectively for increasing project impact and sustainability.
3. Initial suco disaster management committees have potential for more prolonged DRR initiatives in the future.
4. DRR project planning and implementation would have been better to concentrate more at aldeia and suco levels than with nascent national structures.
5. DRR programming is not likely to achieve the objectives outlined in project documents.

4.2 Analysis

Disaster action plans were not based on analysis of hazards, capacity, or vulnerability

A major component of the CBDRM project was development of suco level 'risk based' action plans. However the action plans did not analyse hazards in detail and did not identify specific vulnerabilities that individuals, households, or communities face in relation to the hazards. Opportunities for risk reduction were missed in the absence of a more holistic analysis that should have also included gender and wealth.

It is apparent that the risk component of the analysis was topical, as the activities identified by communities were in most cases simply a request for sub- or district level authorities to address a list of community '*problema*.' Problems like human health (expressed as "no clinic"), poor roads, damaged bridges, and limited coffee production were typically at the top of action plans, despite the fact that they did not relate to hazards. Actual hazards like flood, wind, or crop pests were not the primary focus of community based planning, and did not investigate what existing capacity could be built on in relation to such hazards.

Disaster management committees at the suco level saw their role as leading a disaster response, mainly providing data to sub-district authorities once a disaster occurs. 'Data' here mean names of affected households and itemised lists of damage. On the whole there was little mention of disaster preparation and almost nothing on disaster prevention or early warning identified during the evaluation. One of the only preventative activities completed was removal of trees that posed a threat to houses during wind or flood, but it is likely that this type of preventative action would have

²⁵ Disaster risk reduction is referred to as disaster risk management in some of the CARE documentation, such as the community based disaster risk management project, CBDRM.

been normal before CARE programming. Indeed, the Darulete suco chief even said, "Action plans are not necessary for responding to a disaster and helping those affected." This demonstrates how inherently limited field level thinking was in relation to DRR, even after completing the CBDRM and CIDPM projects and the training they included. Part of the limitation may also lay with CARE staff capacity, not simply that of communities and local authorities. That is, CARE staff may not have been sufficiently prepared to facilitate more comprehensive risk analysis and exploration of prevention instead of simply response. (Organisational capacity is discussed further in Section 5.)

Community plans and flexible funds were not effectively used for increasing project impact and sustainability

None of the committees met during the evaluation has a copy of their action plan. The three consulted groups each reported that CARE project staff gave their action plans to the sub-district administrator, without leaving a copy with the suco. Since then, suco committees have not received any acknowledgement of their plans from sub-district authorities. There has also not been follow up to the content of suco action plans or the specific inputs requested therein for local authority support in cash or kind. By removing the plans and not leaving copies with suco committees, CARE appears to have undermined suco committee legitimacy and chances for independent continuation of the process without external support.

To complement suco level planning, a flexible fund was available to respond to selected action plan activities. For example, the Lucolai suco committee intended to fix a bridge that is damaged regularly by rains and flooding, and requested only that the cement be provided by the flexible fund while they would contribute all labour; in Darulete the suco committee wanted to construct gabions to minimise flood damage (these were the only preventative recommendations found during the evaluation). Unfortunately the project end date was approaching rapidly by the time these plans were formulated, offering insufficient time to facilitate detailed planning with suco and sub-district committees around flexible fund access and implementation. Local authorities (i.e. the sub- and district disaster management committees also involved in the project) also questioned whether suco committees had the capacity to manage external funds transparently. Ultimately the flexible fund money was quickly spent to purchase a standardised package of materials, without reflecting any of the specific needs in suco action plans: shovels, wheelbarrows, crowbars, information boards, and plastic chairs. The evaluation team did not see any of the information boards displayed and noted that some of the other materials, especially chairs, were being used elsewhere other than at the suco office where intended.

Neglecting the action plans also failed to capitalise on established community mechanisms like *gotong royong*, by which households contribute to community projects such clearing fallen trees after heavy rain and wind, repairing roads, or building shared structures. More practical engagement with the action plans might have offered an opportunity to legitimise this social practice further as an appropriate mechanism for meaningful risk reduction activities in the future, thereby building on existing social structures rather than depending on new, externally established committees more susceptible to decline (discussed further in Section 5).

Initial suco disaster management committees have potential for more prolonged DRR initiatives in the future

The Liquica District Administrator suggested that the five suco involved in the CBDRM project (of total seven) are "more aware and more prepared" than the other two suco in the sub-district that were not in the CARE project. These two suco have never prepared disaster plans, for example, and are reportedly less organised to respond. On the one hand response activities at suco and sub-district level are limited to simple data collection and reporting. But on the other hand, the Administrator's observation suggests that the process CARE facilitated in group analysis and planning has generated some degree of momentum not previously expected by local authorities. Even if suco chiefs were replaced and action plans lost, we can nonetheless assume that future DRR programming with these same communities can build on the foundation initiated during CBDRM, as some of the language and process will already be familiar. On this basis, provided programming is more sustained, it could be possible to facilitate more meaningful and lasting committees and action plans.

DRR project planning and implementation would have been better to concentrate more at aldeia and suco levels than with nascent national structures

The national government's disaster management structure had not been formalised at the time of project design or implementation, and is in fact still not formalised at the time of writing. The government nonetheless has sanctioned NGOs to begin working with disaster risk management at all levels, requesting them to 'sponsor' individual districts to establish a foundation of capacity and momentum that the national disaster risk management committee can build on once the administrative structures are formalised. It was appropriate for CARE to engage with the sub-district and district authorities in this regard, but considering the nascent structures and low capacity of disaster committees, combined with their slow progress, it would probably have been more effective to concentrate effort at community level where lasting momentum might have been more possible. More investment at suco and aldeia level might also have contributed to greater risk analysis capacity that could contribute to longer term thinking than what might be expected from local authorities, especially with the national structure not yet formalised.

Suco chief elections were held in November 2009 in adherence to a relatively predictable five-year cycle. CARE's DRR activities at the suco level, including establishment of suco disaster management committees, were implemented and completed in October, one month before the elections. Of the five suco included in the CBDRM project, four now have new chiefs. Suco chiefs chair each suco disaster management committee, which means that four of the five committees now have a head that was not included in any of the DRR activities (mobilisation, training, or action planning). It also appears that disaster management committee members are politically associated with the chief, so when the chief is replaced by election all committee members are subsequently replaced as well. In summary, of the five committees established in the five suco, four of them are now apparently inactive after the chief was voted from office. Interviewed members of these committees thought it was unlikely that they would be transferring any skills, training, or action plan briefing to the new chief and his so-called 'packet' (committee).

Suco disaster management committees were not gender balanced and did not provide an opportunity for women to contribute meaningfully to decisions or activities. Female group members were reportedly not vocal, and when asked directly during the evaluation could usually not even recall their position or role. The entire process at suco level seems to have been more top down than the "community based" approach suggested by the CBDRM project title and documentation.

Interviews with district and sub-district disaster management committee authorities indicate that there is little to no awareness of preparedness or prevention as they relate to risk reduction. Like the suco action plans, local authorities were better prepared to discuss disaster response. When asked about prevention or preparation there was a sense that such concepts had never been considered as part of the committee meetings convened during the project (but largely discontinued upon project completion). It would be expected that at least the language of risk reduction would be more familiar after the CBDRM project, if not the practice. Local authorities see the district and sub-district committees primarily as mechanisms for coordinating disaster response. On the topic of early warning there was similarly little to discuss, exemplified by one official who suggested merely that his office could notify farmers of heavy rain only as the rain was falling. CARE intentions to build local "capacity to support community level action plans" are therefore unfulfilled.²⁶

It is clear that an unexpected reversal of the decision by IOM to fund a CBDRM continuation undermined progress, process, and impact. However, acceptance of funds for a short term, stand-alone project should not have assumed that additional funding would materialise; in strategic planning this should have been identified as a 'killer assumption' that could inherently preclude achievement. Furthermore, attempts to build capacity, as part of DRR or otherwise, should not realistically expect lasting momentum or impact if project duration is limited, as in this case to a nine-month project.

²⁶ This was objective 2 of the CBDRM project.

DRR programming is not likely to achieve the objectives outlined in project documents

Based on the team's observations above, it is unlikely that the intended disaster management or risk reduction objectives from any of the four projects will eventuate. In short, CARE did not "closely coordinate disaster management activities taking place under separately funded projects to allow for improved synergies between DRM and other relevant activities (including livelihoods, health, infrastructure, and water-sanitation)" as suggested in project documentation. Part of the problem, of course, is that the national disaster committee structures have not been formalised, although this is less problematic than the suco elections that replaced the chiefs and the removal of action plans that should have included more realistic activities achievable within the project period. Project documentation also suggests secondary impacts such as increased access to treatment for problematic diseases like malaria and tuberculosis, but there is no reason to expect these to manifest.

4.3 Recommendations

Return action plan copies to each suco disaster management committee.

Even if no further DRR programming is anticipated in Liquica sub-district, suco disaster management committees should have copies of their action plans returned. It is possible that receiving the action plan could contribute to renewed momentum in some suco, even if the chief has been replaced since the plans were developed. These plans could also contribute to programming facilitated by another NGO in the future, or at least provide an entry point for renewed analysis and planning.

A more holistic approach to risk analysis is required for appropriate project design and community action planning.

Community based assessment should begin with hazard analysis that identifies, for example: characteristics, seasonality, frequency, severity, and variability. Vulnerability analysis should follow: who is affected, by which hazards, how and to what degree, and impact on food and income sources. Vulnerability analysis should also look at differences between wealth groups, women and men, highland and lowland communities, etc so that interventions do not assume that standardised inputs will be appropriate for all locations or households, or that they will achieve similar degrees of impact. Finally, existing and potential capacity requires exploration: what are different communities, households, or individuals already doing in relation to particular hazards? What can they contribute themselves to projects or to prevention, preparation, or response? How can existing capacity (and existing livelihood assets) be enhanced?

These are examples of the types of questions that need to be asked to develop a more informed approach to risk reduction, particularly when experts warn of increasing frequency and severity of climate hazards in Timor Leste. Once initiated, however, it should be possible to plan more effective interventions with more direct linkages to specific hazards, vulnerability, or capacity. This will help to make cause-effect or input-output relationships more explicit. This could also help generate increased community ownership of the risk reduction process, as action plans will better reflect participant analysis and priority setting.

Make women equal contributors to the risk reduction process.

The issue of greater male participation than female appears to have been a particular shortcoming of the CBDRM project, its committees, and its action planning. Not only are women and men affected differently by hazards or project activities, but they also offer different perspectives on possible interventions and what type or degree of change can be anticipated. During CBDRM, however, female contribution was limited to token attendance at meetings where men outnumbered them three to one. The evaluation was unable to confirm whether there were no female disaster committee members, but the number is clearly minimal. Future committees and action planning should therefore begin with separate female and male groups to ensure more balanced contributions, after which a modality for integrating the groups can be agreed among participants.

Concentrate risk reduction activities at community level more than government level committees.

CARE should continue to work with district and sub-district disaster management structures during the interim before their formalisation by the national government. Rather than trying to strengthen the structures, however, CARE should focus on building capacity in risk analysis and its components so that a more holistic approach is possible by the time these committees are officially mandated.

Programmatic priority meanwhile should be concentrated at community level, developing risk analysis capacity while planting the seeds for committees prepared to work more independently until sub-district funding becomes available and able to lobby for that support. Considering the variability of microclimates and hazards in Liquica, it might be necessary to conduct risk analyses with individual aldeia instead of clustering their different priorities at suco level. But even if continuing to work with suco committees it should still be possible to include analysis at aldeia level. Beyond further detail in the analysis and planning processes, concentrating more on aldeia and suco will increase opportunities to build on existing livelihood activities and established institutions like farmer groups. Analysis and planning at this level should continue to inform sub-district committees and to leverage the material and financial support that eventually are expected to make available once the national structure formalises.

Conduct disaster risk reduction in communities where other programmes are being implemented.

Efforts to reduce disaster risk should be done only in aldeia and suco where other programmes are ongoing at the same time. Risk reduction can be quite conceptual, especially in the early stages when stakeholders are not yet conversant in the approach. As evidenced by the CBDRM experience, people can also grow disinterested without more tangible implementation of activities to complement the planning. More strategically, integrating risk reduction with other programming can create more meaningful opportunities for complementary approaches to reducing vulnerability and increasing capacity through existing food security strategies and livelihood assets.²⁷ More integrated programming is discussed further in Section 5.

Realistic timeframes are required for building disaster risk reduction capacity at multiple levels.

Proper capacity building cannot simply be 'implemented,' as it requires an ongoing and iterative approach to analysis, application, and reflection. The implicit challenges of capacity building become even more complicated if working with rural communities and local authorities simultaneously, especially if aiming to reduce risk and not simply respond to disasters as they occur. Short project durations are partly the fault of official donors with agendas that can differ from those of NGOs, but NGOs are also responsible when accepting funds for unrealistically short projects. In the case of CBDRM and the ambitious scope of its objectives, it appears that two years would have been much more conducive to progress than only nine months, but still challenging nonetheless.

²⁷ This integrated approach is already reflected in the draft strategic plan for CARE Timor Leste for the period 2009 to 2014.

5. Programming for Climate Hazards

This section looks at the achievements and limitations of CARE food security and disaster risk reduction programming in relation to climate hazards and livelihoods in Liquica. The section responds to larger evaluation research questions about the affect of these achievements on vulnerability and capacity and, where possible, tries to look beyond them toward increasing overall programmatic relevance and impact.

We maintain that CARE programming is contextually appropriate and that some achievements have been made. Food security activities that build on existing capacities appear particularly effective. Despite an appropriate direction, however, the degree of change these achievements are likely to influence on the household remains limited, when considered from the perspective of the complexity of livelihoods systems, the vulnerabilities that households face, and the scale of project activities.

The limitations in impact come primarily from weaknesses in programmatic assessment, design, implementation, and evaluation – principally from insufficient depth and detail in the analysis of food security, livelihoods, hazards, vulnerabilities, and capacities and how these relate across variations in wealth, gender, and location. Additionally, the limited duration and scale of some projects created inherent difficulties in achieving lasting change, particularly in facilitating suco and district level disaster management committees through previously unfamiliar risk analysis frameworks.

CARE nonetheless has potential for increased impact in the future through refinements to its existing programmatic approaches. Given that climate change will be a gradual process and that households already demonstrate livelihood expandability and diversity to absorb existing variability, continued programming to strengthen assets will build adaptive capacity against the uncertain future. The recommendations in this section try to provide realistic guidance for improved programming in relation to climate and non-climate hazards in Timor Leste and beyond.

5.1 Conclusions

The first conclusion is a statement of overall CARE achievement in Liquica resulting from the four evaluated projects, while the second is a qualifying statement on the limitations of impact to date. The remaining six conclusions that follow are more specific statements about why impact was limited despite appropriate programme approaches that built on existing capacities.

1. CARE programme achievements contribute to household adaptive capacity.
2. Programmatic achievements to date have limited overall impact on household food, income, or risk reduction.
3. Project designs do not reflect a detailed understanding of food security and livelihood complexity in Liquica.
4. Programming has not responded to particular vulnerabilities.
5. Stronger linkages between programmes and climate hazards could have achieved greater impact.
6. More representative and effective groups would have contributed to more sustainable impact.
7. Project designs do not anticipate evaluation.
8. Some projects and activities were too short or too small to affect change.

5.2 Analysis

CARE programme achievements contribute to household adaptive capacity

Household capacity to absorb and adapt to future climate shocks will continue to be, as at present, a function of the range and strength of livelihood assets and opportunities available. Several CARE activities contribute directly to community and household asset development. These achievements potentially reduce the stress placed on other assets during low production years. This could help households maintain those existing assets or possibly even invest in their expansion (for example retaining livestock or purchasing additional animals). The strongest programmatic achievements in relation to community and household asset development are:



Photo 14: A group garden participant shows her produce. CARE photo.

- Effective seed multiplication that enables farmer groups to produce and store improved seed. This should eventually be adopted by individual households enabling them to produce more maize, even in years of moisture stress.
- Dry season group gardens expand member opportunities to increase household income and dietary diversity, potentially contributing to improved nutrition.
- Organic soil fertilisation improves the physical and natural assets households require for agricultural production maintaining good yield potential into the future.
- Households using protected water supplies are less likely to contract water-borne diseases that can undermine individual food utilisation.

Programmatic achievements to date have limited overall impact on household food, income, or risk reduction

The core determinant of programmatic impact, regardless whether judged in relation to climate hazards or not, is the degree of lasting change to household and community food security and livelihoods. Analysis in Section Two describes a situation in which Liquica households maintain a diverse combination of livelihood activities that are expanded and adjusted to manage stress and shocks, while at the same time facing complex vulnerabilities that lead to reportedly high levels of food insecurity and malnutrition. The scale of programmatic achievements described in the previous conclusion, when considered from this perspective, appears limited in the degree of change on household food, income, or risk reduction.

- **Food:** Sele is primarily cultivated by farmer groups, meaning impact at the household level will come only when individual households adopt the variety and cultivate significant proportions of their fields with it. This shift appears realistic, but will not happen during the LIFT project lifetime. A change in food security at household level is so far limited to more vegetables between July and September through dry season group gardens. The nutritional value of these vegetables has not been quantifiably compared with background dietary diversity nor measured in terms of potential changes in micronutrient consumption. Although beneficial, the LIFT gardens are not yet likely to have influenced significant or measurable reductions in the reportedly high prevalence of malnutrition in Liquica.
- **Income:** Increases in available cash for group garden participants are not more than \$15-20 for any particular household (although in many cases likely to be less, as a proportion of the group revenue is used for seed and other garden inputs before being distributed to individuals). This has not been quantifiably compared with total annual household income and expenditure flows. However, given that most households regularly sell labour, livestock, agricultural produce, fruit, and sometimes rice and coffee as part of their ongoing annual livelihoods, \$15-20 is unlikely to represent a significant proportion of annual income.
- **Risk:** Communities and their disaster committee members did not demonstrate an increased understanding of risk analysis, including the concepts of prevention and mitigation. The same

applies to sub-district and district level officials engaged in CARE's disaster risk reduction training and activities to date. Awareness is higher, disaster response is reportedly more organised, and it might be easier to initiate similar and more constructive programming in the future, but observable changes in capacity to analyse and reduce risk are however limited so far.

Project designs do not reflect a detailed understanding of food security and livelihood complexity in Liquica

The necessary starting point for programming that affects specific change in this context is a rigorous, detailed, and disaggregated understanding of food security and livelihoods. Although CARE projects build on existing livelihood activities, project documentation does not demonstrate a thorough analysis of the seasonal and annual contributions to food and income from the complementary range of livelihood strategies managed by households. There are also debatable interpretations of distinctions between livelihood and coping strategies, with routine activities like livestock sales and wild food consumption considered 'coping' even when they are normal household activities in good and bad production years alike. The limitations of current analytical documentation are best illustrated by the LIFT baseline assessment of March 2008. It is more of a livelihoods summary than an actual project baseline linked to specific characteristics of the livelihood situation or specific project indicators signalling measurable change. Not only is there no disaggregation of data for Bobonaro and Liquica by district or agro-ecological zone (or even highland and lowland), there is little disaggregation of data by wealth group or sex. This means that the pre-project conditions needed for meaningful quantification or qualification of achievement after four years of LIFT implementation will not be available. The level of aggregation is so great that a similar exercise conducted after LIFT conclusion will probably not show any changes, and certainly not in relation to the project logical framework. The other three projects were not designed alongside a specific baseline, instead emerging from a general context analysis centring on drought. There is also surprisingly little causal analysis into linkages between access, utilisation, and malnutrition.

Programming has not responded to particular vulnerabilities

Programme impact to date is limited in part because vulnerability is not well understood. Despite regular reference to "vulnerable households" in project documents, the characteristics and criteria of vulnerability are not described. The general lack of apparent linkages between programmes and particular vulnerabilities has therefore made it difficult for programming either to affect change or to demonstrate specifically how it reduces vulnerability. For example, previously discussed shortcomings in livelihoods analysis are weakened by no apparent investigation into potentially more subtle differences in gender or wealth groups. There are no specific programmatic responses as a result. Half of the LIFT farmer groups are exclusively female, but beyond the imperative for inclusion and representivity it is unclear whether gender-specific vulnerability or capacity in relation to hazards is addressed. The LIFT participatory disaster risk assessments (PDRAs) conducted at aldeia level describe different production responsibilities of women, men, and children but do not then link these with hazard analysis. Project design therefore does not reflect how the impact of production losses, for example, might be affecting particular groups or households differently. LIFT has cooking and nutrition demonstrations for women, in addition to a distribution of solar powered lamps, but the vulnerability-based rationale and anticipated outcome of these activities are unclear. This is similar to geographic and household targeting approaches that do not reflect prioritisation of vulnerability.

Geographic targeting appears problematic in Bazartete for CIDPM in particular, where an effort was made to include equal numbers of participants from each of the seven participating sub-district suco. Differences in vulnerability to hazards (and conversely relative wealth) between highland and lowland communities, however, which were immediately apparent in the evaluation, seem not to have been taken into consideration. The lowland communities consulted during fieldwork were close to the Dili road, connected to the electricity grid, and included many concrete houses with zinc roofs and metal poles – with parabolic television dishes mounted outside. Compared with the highland communities visited during the evaluation, where for example building materials were typically bamboo and road connections more problematic, it was difficult

to understand why these lowland suco should have been included in programming. The only rationale appears to be the well intending approach of distributing project inputs across an administrative area rather than prioritising particular locations with targeted criteria based on vulnerability.

Household targeting has also not focused specifically on those most vulnerable to hazards, although for different reasons than geographic targeting. This applies particularly to LIFT, which has mobilised farmer groups through self-selection without prioritising those households considered most vulnerable. The logic appears valid that comparatively wealthier households will opt out of projects after deciding that potential benefits are less than the time and labour costs of participation. However, it is just as possible that wealthier households are more willing to be experimental, or that they have sufficient labour availability to commit one member to a project group in an effort to diversify their assets further. The opposite could equally apply to poorer households, who were regularly described in wealth group discussions as those without an adequate labour force. The main issue is, however, that the absence of wealth group based targeting reduces the likelihood of reducing vulnerability among poorer households less able to cope with hazards and obscures a more strategic organisational understanding of how different interventions affect different households.

Stronger linkages between programmes and climate hazards could have achieved greater impact

None of the four evaluated projects was designed explicitly to address climate change, but they all in some way respond to climate hazards in relation to production and risk management. Specific linkages between programmes and climate hazards to date include the introduction of drought resistant maize and activities like agro-forestry and sloping agricultural land technology. Agro-forestry (CIDPM, ACIDPM, LIFT) responds to problems associated with wind damage to crops while protecting soil from erosion. Sloping agricultural land technology reduces soil losses associated with erosion on steep slopes. Sele has been released nationally because of its resilience to rain variability (drought).

Given the importance of climate hazards in Liquica and the risks they pose to production and natural and physical assets, we feel that stronger programmatic impact could have been achieved if projects had more specifically designed responses in relation to relevant hazards. Of the four projects, CIDPM and ACIDPM were specifically designed to address a climate hazard, so-called 'drought.' CBDRM, although not specific to climate hazards, was intended to increase disaster risk management capacity. However, despite the programmatic language of hazards, most activities did not reflect linkages with critical hazards affecting production and natural and physical assets. The CIDPM project, for example, was a drought response project intended to strengthen preparedness and mitigation. It remains unclear how project activities including composting, gardening, marketing, and hygiene promotion were intended to link with drought or any other hazard beyond generally strengthening household assets. It seems that only the agro-forestry component relates explicitly to a hazard, although its relationship with drought is not particularly direct.

The LIFT participatory disaster risk assessments were a good opportunity for integrating risk reduction into food security programming. However, in addition to not understanding the relationships between hazards and particular vulnerabilities of women or poorer households, the opportunity to inform design based on the PDRA seems to have been missed. Each PDRA lists the hazards that affect the particular aldeia, but then limit the description of the hazard impact to "crop destroyed" or "decreased productivity" without indicating the scale of impact as it varies by hazard, year, wealth group, or gender. Furthermore, there is no evidence that the PDRA conducted by a particular aldeia then informs the package of interventions conducted in the aldeia or surrounding suco as a whole. The interventions are standardised rather than tailored to respond to specific priorities.

More representative and effective groups would have contributed to more sustainable impact

CARE has already recognised the importance and relevance of working with groups. When all four projects are taken into consideration, however, potential group power and longevity have been undermined over time as a result of inconsistent gender representation and lack of momentum after CARE inputs have concluded.

Gender-balanced groups are partly about equal representation in analysis and decision making, but also about recognising the different roles women and men play in productive activities and how hazards can affect them differently. Half of the LIFT farmer groups are exclusively female, but this is the only example from the four projects. At the opposite extreme is CBDRM, in which most of the suco disaster management committees are composed entirely of men. CARE facilitators tried to increase female participation but this resulted only in women composing roughly 25 percent of meeting attendants, which is not an indicator of participation. Without effective mobilisation of women and men into genuinely representative groups, projects risk continued lip service to gender inclusion without actual achievement. CARE staff can discuss in detail the gender landscape of project communities: They know who is usually responsible for selling animals (men) and selling vegetables (women), who manages the household (women), who controls family finance (also women), and who is responsible for particular agriculture activities (both, depending on the task). Unfortunately, this level of understanding is not reflected in project design, targeting, or documentation.

Most of the groups from completed projects consulted during the fieldwork appear to have lost much of their momentum now that CARE staff members no longer visit. This does not apply to LIFT, but the experience from other projects offers lessons for improving the cohesion or viability of its farmer groups. Attempted discussions with CIDPM and CBDRM groups proved surprisingly difficult during the evaluation as some had disbanded and others had grown inactive, both of which suggest low levels of ownership or perceived value. In groups that have remained active, there are nonetheless concerns about a lack of apparent plans for new committee elections or follow through with planned financial contributions that were intended to ensure financial viability for technical repairs or input purchases.

Groups can nonetheless be powerful vehicles for collective analysis and action toward shared goals, and not all have failed to remain active or innovative. In Ulmera, for example, the CIDPM water user group independently initiated a monthly \$0.35 collection from each of its 42 member households and opened a bank account that still has \$130. At least one female LIFT group, in Guguleur, has independently instituted a savings and loan scheme that provides loans to members.²⁸ Of the groups consulted during the evaluation, however, such proactive examples were more the exception than the norm, especially for the three completed projects.



Photo 15: Water user group showing their bank account with \$130.

Project designs do not anticipate evaluation

The designs of the four projects do not lend themselves to ready evaluation because none demonstrates a strong analytical backbone linking assessment, baseline, indicators, and monitoring.

The lack of systematic investigation into hazards, vulnerability, and capacity has resulted in unclear linkages between project inputs and outcomes. This could be one explanation for the weak 'vertical logic' of project goals, objectives, and outputs where they exist in project documentation. The CBDRM and CIDPM projects in particular are unclear in their anticipated cause-effect

²⁸ \$10 borrowed, repaid at \$11; funds are revolved within the group only.

relationships between inputs and outcomes, and appear more focused on achieving outputs than impact. It is unclear, however, why effective logical frameworks have not been a priority in project design. More rigour in logical frameworks, especially indicators and the overall vertical logic, would create more opportunities to document programmatic learning and strengthen design. Project indicators and the M&E that should inform them are equally problematic, best evidenced by the descriptive summaries offered in the final documents of the CIDPM, ACIDPM, and CBDRM projects that do not offer empirical learning opportunities for improved programme quality and impact.

The LIFT project makes greater effort in this regard but the outcome of this commitment could prove lower than expected. The baseline, for example, does not align with indicators in the logical framework – some of which are actually outputs more than signals of attributable change.²⁹ An extensive mid-term evaluation was undertaken, with effort made to report progress against indicators, but here too there is no link with the baseline. The same will probably apply to a final evaluation if conducted in 2011, in that a coherent sense of progress from baseline to interim and final will not be available. In this case there is clear dedication to meaningful evaluation but with methodological limitations in analytical continuity.

Some projects and activities were too short or too small to affect change

The short duration of the CBDRM project and its consequences has already been discussed in Section 4. In addition to short duration, the scale of some projects or interventions is simply too small. CIDPM piloted improved methods of maize production using 1 kilogram of seed. Not only are these amounts too small, but these pilot demonstrations were conducted in the second (and final) year of the project, meaning that independent household attempts to apply post-project learning would have no chance of being supported by CARE technical staff. ACIDPM contributed funds to one water supply system, which although well constructed, improves water supply and quality for only 70 households.

5.3 Recommendations

As stated above, achievements to date are contextually and programmatically appropriate. Future impact on vulnerable households can nonetheless be greater with improvements in analysis, design, and approach. Outlined below are recommendations for increasing programme relevance and impact.

Make systematic risk analysis the basis of all programme design.

Consistent with emerging organisational objectives, disaster risk reduction needs to be an integral component of all programming and the starting point of assessment, design and targeting. Targeted initiatives that reduce hazard risk and vulnerability originate from systematic risk analysis. Such analysis should look at both climate and non-climate hazards. In cases where future hazard scenarios are uncertain (in terms of type, severity, or frequency), design projects that will be effective in relation to existing conditions and potential situations that could eventuate. Analysis should be done by both men and women, and the differences between them in relation to hazards, vulnerability, and capacity should be documented and disaggregated for project design and impact evaluation alike.

Better baselines are needed for more effective design, targeting, monitoring, and evaluation.

The risk analysis described above should be coupled with a comprehensive and quantified assessment of annual and seasonal household food sources, income sources, and expenditure patterns. This should be disaggregated by wealth group and the roles of men and women described. Where relevant, findings should also be disaggregated by sex. Any significant differences in prevalent livelihood options such as those determined by altitude, proximity to influential features like the ocean or large markets may require disaggregation by geographic

²⁹ For example, '70 percent of women's groups establishing gardens' does not indicate increased agricultural productivity as suggested in the LIFT logical framework. Garden establishment is an output, the means through which increased productivity can be achieved.

location. In addition to food, income, and expenditure the baseline analysis should also include expandability of livelihood options and coping strategies. This level of specificity would ultimately enable CARE to design and target more strategically and to describe and measure change and impact more effectively. This in turn would offer the possibility of continuously improved project design and subsequently greater impact.

The outcome of risk analysis combined with detailed livelihoods analysis would lead, for example, to a specific profile of poor households. It would include a quantified description of their food and income sources, the degree to which these are affected by hazards, the expandability of these options during bad years, a description of available coping strategies, and the particular vulnerabilities that women and children might face. Programmes based on this depth of understanding could achieve greater impact through more targeted activities, which could even increase participant ownership through perception of greater potential development benefits.

Continue to expand and diversify existing household assets.

The achievements of CARE programming on household adaptive capacity have come from enhancing existing production capacities. Given that future adaptive capacity will continue to be a function of existing community and household assets, CARE should continue to develop the expandability and diversity of these assets. In the same way that programming should not concentrate solely on climate hazards, future programming should not be limited to food production alone. Strategic interventions to strengthen food and income sources alike would offer a more complementary approach to further increases in household access to food through both production and purchase. Below are priority areas for programmatic analysis to strengthen household assets and adaptive capacity further:

- **Cassava:** Cassava is the most hazard-resilient crop for Liquica households, and is calorifically their second most important food crop after maize. Strengthening this natural asset through introduction of improved varieties could contribute to household capacity, regardless whether the additional cassava is sold or consumed. In 2009, Seeds of Life pre-released two improved cassava varieties that have a yield advantage over local varieties up to 50 percent. CARE, building on its relationships with farmers and credibility with the Ministry, should investigate ways to replicate with cassava the adoption success it currently enjoys with Sele so that household production and food access can continue expanding.
- **Peanut:** LIFT is already working on introduction of Utamua, an improved peanut variety. A scale up of efforts to match the intensity of effort invested in Sele is recommended for future projects. Its benefits are manifold as both a food and income source, as households consume and sell roughly equal amounts of their harvest. Peanut has high values in calories, protein, and income in addition to being beneficial for soil nutrition.
- **Livestock:** Working with poorer households to increase their livestock assets would be another way to increase household income and thereby access to food by building on an existing activity. Livestock are relatively insensitive to climate hazards. Programmatic activities would need to consider: provision and availability of veterinary services, most resilient animal type (chicken, goat, or pig), least cost-intensive in terms of feed and other inputs balanced against potential sale value, inter-wealth group dynamics, cultural and customary factors associated with livestock and ceremonies, and realistic options for sourcing



Photo 16: Women and children on the way home from collecting food in the forest.



Photo 17: Drying cassava for supplemental food and income. CARE photo.

livestock in the numbers required. Changes in livestock ownership could also be used as impact indicators of increasing household assets and, by extension, adaptive capacity.

- **Natural Assets:** CARE should continue to support households and communities to protect their natural assets such as soil and forests, both of which are enduring depletion. Continued programming could explore possible linkages between poverty and unsustainable natural resource management, which are currently implied by not directly addressed. Although interventions such as sloping agricultural land technology, agro-forestry, and soil fertility management could not be included in the evaluation in that their impacts are longer term, we nonetheless recommend that CARE continue with these activities as they offer potential benefits to enhance long term household capacity. In some parts of Liquica it may be worth investigating the introduction of fuel-efficient stoves, as wood continues to be the primary cooking fuel despite its finite availability.

Ongoing research would foster increased programmatic relevance and impact.

In addition to the complementary interventions recommended above, there are four areas for ongoing analysis that would benefit CARE programming and participants, broadly summarised as nutrition, livelihoods, markets, and weather. It is possible that other stakeholders are already engaged in similar research, and that CARE could tap into existing knowledge without overextending in primary research.

- **Nutrition and Food Security (Utilisation and Access):** There are complex and dynamic relationships not yet fully understood in Liquica between chronic malnutrition, acute malnutrition, kilocalorie deficiencies, protein deficiencies, micronutrient deficiencies, diarrhoea, household hygiene and sanitation, and food preparation practices. There is secondary literature on some of these issues but surprisingly little analysis into linkages or causality. Further research might not only add clarity, but could provide strategic coherence for how programming can address these problems. CARE would be in a position to affect greater food security impact if they could improve nutrition.
- **Livelihoods:** From the basis of a comprehensive and disaggregated livelihoods baseline linked with project indicators it would be useful for future programming to include additional analysis of inter-wealth group dynamics as they relate to share-cropping, land tenure, loans, debt, bonded labour, and the role of social support networks in meeting food or cash needs. These topics all arose during evaluation fieldwork but could not be explored in detail. An understanding of relationships between poor and better-off households would enable more strategic geographic and household targeting. Livelihood analysis should also include more analysis into distinctions between livelihood and coping strategies. We suspect but cannot prove that some activities called 'coping' in the Timor Leste literature are in fact normal livelihood strategies for all households, such as livestock sales and market purchase of food. Food insecurity is being externally defined in relation to inherent variability and uncertainty, rather than with respect to asset diversity and existing capacity to meet food needs (if not macro- or micronutrient requirements), but some challenging of these assumptions could add strategic value to programming and analysis.
- **Markets:** It was apparent during fieldwork that growers are not in a strong position to control the time and price of commodity sales such as coffee and rice (and probably peanut, although not verified). Sales are typically made in the aldeia to outside buyers who come to purchase from all households on the same day. There appears to be general knowledge in local commodity prices but less about global prices. There also appear to be unexplored opportunities for household groups or aldeia to market products collectively to secure better prices, such as through shared bulking and transport to shorten market chains and link farmers more directly with local markets.³⁰
- **Weather and Early Warning:** Linked to a recommendation in Section 3, a systematic but simple approach to suco-level rainfall data collection should be explored in Liquica. If farmer groups could collect data and feed it to sub-district and district disaster management committees there might be opportunities for analysing suco level data and linking it with El Niño information that the national disaster management committee could facilitate at the same time, given that rain variability is not new in Liquica, there are probably existing skills in forecasting or early

³⁰ See Langoisseux 2009 for a rapid market assessment investigating income diversification possibilities in Liquica and Bobonaro.

warning that have not been recognised in programming but which could offer new insight into existing or potential approaches.

Increase participation so that groups become the drivers of project design and analysis.

CARE should continue implementing its work through groups. However, a shift of focus needs to happen through which groups are given time and support to identify their own development priorities and strategies, engage as active analysts in M&E, and be able to articulate the targets and changes they expect to see.

This kind of 'common language' between project participants, CARE staff, and other stakeholders should be possible if committed time is invested in mobilisation and participation. CARE staff and project participants each require greater capacity and opportunity to engage in this shift of focus, especially if giving participants a lead role in experimentation and analysis. It will also require that the emphasis shift away from group formation for the sake of implementation efficiency. Rather, groups should be fostered for the strength and cohesiveness they offer, which can increase the possibility of ongoing momentum after CARE inputs have ceased.

Organisational and staff capacity building is required at multiple levels.

Increasing the relevance and impact of CARE programming in Timor Leste will require an ongoing commitment to building capacity at multiple levels.

Organisational capacity building in this case should begin with the country office, reflected first in a commitment to more substantial risk and livelihoods analysis as discussed above. This would be part of a larger commitment to increasing programme participation and quality. Such overt dedication to long-term investment would help communicate to staff, participants, and stakeholders the sincerity of the initiative. Building on this, project staff will also need continued mentoring for additional skill development, not simply a series of technical trainings, but rather opportunities to reinforce learning through guided application in actual project activities. This will need to begin with reinforcing foundation concepts like risk (and its hazard, vulnerability, and capacity components), food security, and livelihoods before embarking on the more challenging process of strengthening analytical capacity including gender and programmatic outcomes.

CARE Australia can support this process with a combination of decentralised mandate, technical backstopping, and constructive pressure. This is particularly timely as the regional office explores a more outcome-oriented approach to integrated programming. Technical support will need to be provided to ensure that country level project documentation demonstrates cause-effect relationships alongside specific and measurable indicators of change.

CARE should advocate donors for more conducive project durations and funding.

Alongside internal investment in more rigorous and inclusive approaches, appropriate project timelines and funding are necessary to achieve meaningful change, especially if working at both community and sub/district levels simultaneously to strengthen institutions. CBDRM is the best example of an impossibly short project duration: nine months to mobilise disaster management committees at suco, sub-district, and district levels – while at the same time aiming to support implementation of suco action plans with the IOM flexible fund. Eventually the short duration is part of what undermined lasting momentum. CARE therefore should take a more proactive approach to lobbying donors for more appropriate project periods that allow more time for participatory engagement in integrated food security and disaster risk reduction programmes that span multiple production cycles and create more opportunities for collective learning.

5.4 Afterword

This evaluation has maintained that ongoing asset development will continue to determine household adaptive capacity against a range of hazards, including those associated with climate. For CARE Timor Leste, achievements have been made in asset development through food security programming in particular. Overall impact on households is limited, however, when the achievements are considered in relation to the diversity of livelihood options, the complexity of

vulnerabilities households face, and the scale of projects completed to date. Increased effectiveness in programming will come in part from a more concerted approach to analysing and, ultimately, reducing risk as it relates to food security and other relevant sectors such as water supply, nutrition, or micro-enterprise development.

Integrated disaster risk reduction programming to increase adaptive capacity will be based on a more rigorous context analysis including livelihoods, food security, gender, and risk. Emerging CARE resources for CVCA and climate integration can help shape such analysis, but they are only part of the process. Future CVCAs will need to bring long term climate scenarios to ground level by contextualising them in relation to current climate hazards and household capacity to facilitate tangible engagement and analysis. As discussed in Section 5, integrated food security and DRR programming will feature climate hazards as one part of a larger analysis of hazards and risk, rather than being the sole focus. A more participatory approach in the vein of that pursued during this evaluation would also foster a more informed discussion on the impact of consecutive bad years in relation to increased and more severe rain variability, reorienting the investigation from externally to internally led.

Such a reorientation could be the strongest contributing factor toward increased programmatic relevance and impact. As discussed, the hazards affecting households are not limited to climate but include other production challenges like pests and inadequate dietary diversity. More broadly, climate hazards are also more varied than the rain variability discussed herein, with global temperature increases also expected to erode coastal land and salinate groundwater.³¹ The development challenges to Timor Leste are therefore manifold and cannot be considered in isolation.

More meaningful linkages between assessment, design, and evaluation will be necessary to promote programmatic learning beneficial for CARE and stakeholders alike in relation to contextual complementarity and complexity. For this to happen, commitment to capacity development is central:

- Enhancing organisational capacity to facilitate, analyse, plan, manage, and report.
- Mobilising legitimate and effective groups through more active participation as project analysts and evaluators.
- Strategically facilitating adaptive capacity with households and communities by building on existing livelihood activities in continued alignment with government policies for food security and disaster risk reduction.

Ultimately this is about good development, a no regrets approach to an uncertain future in which all contributions can be meaningful.

³¹ Barnett 2003 and 2007.

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Annex A: Timor Leste Map (by District)



Map No. 4111 Rev. 10 UNITED NATIONS
April 2008 (Colour)

Department of Field Support
Cartographic Section

Annex B: Summary of Projects

	CIDPM (July 06 – October 08)	ACIDPM (July – October 08)	CBDRM (November 08 – October 09)	LIFT (ongoing, 2007 to 2011)
Goal	Enhancement of target communities' capacity to undertake community-based preparedness planning while also developing expertise in a range of low-cost and innovative drought mitigation and preparedness technologies.	Target communities are able to undertake community based disaster preparedness planning and produce more food during times of drought.	To reduce the vulnerability of targeted rural communities in 5 targeted suco in Liquica District to disasters and shocks and increase their capacity for disaster preparedness and mitigation.	To improve food security and strengthen the resilience of farming households in two western districts of Timor-Leste, thereby contributing to the government's food security policy.
Objective	<p>1. Using a Community Based Risk Management (CBRM) strategy, target communities in Timor Leste will be empowered to develop a portfolio of options that can respond to the critical phases of a drought-related crisis, from preparedness to mitigation.</p> <p>2. To develop and field-test a range of innovative low-cost, low-technology techniques on land management and soil conservation that are gender inclusive, socio-culturally and ecologically appropriate to target communities.</p> <p>3. To compile knowledge on CBDRM and low-cost drought mitigation techniques into a set of regional best practices that can be shared among and replicated by project partners as well as other external government, NGO and community stakeholders.</p>	<p>1. To enhance adoption of water and soil conservation techniques to improve agricultural production.</p> <p>2. To construct a low cost water system in Leorema village for 80 families with active participation of women and men.</p> <p>3. To strengthen the village disaster management system and produce multi-hazard preparedness plans.</p>	<p>1. The 5 targeted suco in Liquica District are able to produce risk based action plans that have been jointly facilitated by district personnel and that have been based on community involvement.</p> <p>2. Active Disaster Management Committees (DMCs) are in place at suco, sub-district and district level and have capacity to support community level action plans.</p>	<p>1. 3,000 vulnerable households in target communities in Liquica and Bobonaro Districts have increased, year-round access to adequate quantity of diverse food in a sustainable manner.</p>
Outputs	1.1 Targeted communities have integrated and functional drought preparedness and	1.1 Targeted farmer group have adopted water and soil conservation techniques and	1. Ten local CBDRM facilitators capable of supporting participatory community risk assessment and	1.1 Farmers groups in targeted communities, especially female members, are formed

	CIDPM (July 06 – October 08)	ACIDPM (July – October 08)	CBDRM (November 08 – October 09)	LIFT (ongoing, 2007 to 2011)
	<p>mitigation strategies and management structures in place by the end of the project.</p> <p>2.1 Targeted communities have increased access to safe water.</p> <p>2.2 Targeted communities have implemented communal resource development / rehabilitation activities to address agricultural productivity.</p> <p>2.3 Individual farmers have adopted improved land, soil, water and/or crop management techniques.</p> <p>3.1 Targeted communities have sustained access to mitigation technology information.</p> <p>3.2 Regional good practices in community preparedness and drought mitigation are disseminated.</p>	<p>improved agricultural production.</p> <p>2.1 Targeted communities have increased access to safe water.</p> <p>2.2 Three spring catchment tanks, one collection tank, two storage tanks and eight public distribution taps constructed in the village.</p> <p>3.1 Targeted communities have an established and functional village disaster management system and multi-hazard preparedness plans finalized.</p>	<p>facilitating community activities in Liquica District.</p> <p>2. Risk reduction action plans have been produced for 5 targeted suco in Liquica (directly supported by this project).</p> <p>3. Five suco in Liquica District have established DMCs (directly supported through this project).</p> <p>4. The establishment of Liquica District DMC and three sub-districts DMCs in Liquica is supported.</p> <p>5. Suco level initiatives deriving from action plans, as well as disaster response actions to significant hazards, have been approved at district level and some activities are initiated through flexible fund.</p>	<p>and strengthened to provide mutual support, make joint decision, access agricultural inputs, training and services from NGOs, private and public service providers.</p> <p>1.2 Farmer groups achieve sustainable increase in agricultural productivity and food and income diversity in the targeted communities through adoption of environmentally sustainable farming and non-farming practices.</p> <p>1.3 Farmer groups have access to improved seeds from their own seed production by the end of the project.</p> <p>1.4 Extension officers work in their community to sustain food and livelihood activities.</p>
Activities	<p>Disaster Risk Management Land management and soil conservation</p> <ul style="list-style-type: none"> • farmer groups • seeds • hygiene promotion • agro-forestry • composting • gardening • marketing <p>Knowledge management</p>	<p>Water Supply Water and soil conservation</p> <ul style="list-style-type: none"> • farmer groups • seeds • tools <p>Community action plans</p>	<p>Community action plans Disaster management committees</p>	<p>Gardens Ponds Improved maize seed Improved peanut seed Hygiene Cooking demonstrations Seed storage in bags and drums Maize shelling machines Soil conservation</p> <ul style="list-style-type: none"> • Sloping Agricultural Land Technology • Agro-forestry <p>Soil Nutrition</p> <ul style="list-style-type: none"> • Legume • Liquid fertiliser • Organic compost • Organic pest control • Bean cover crop <p>Farmer group development plans Supporting Ministry of Agriculture staff</p>

Annex C: Wealth Groups Differentiated by Assets

	Highlands Poor	Highlands Middle	Highlands Better off	Lowlands Poor	Lowlands Middle	Lowlands Better off
Chickens*	5	10	15+	5	10	20+
Pigs*	2	4	8	2	3	10+
Goats*	2	5	10	2	3	10+
Cattle*	0	1-2	7	0	2-3	15
House Type	Bamboo/ thatch roof and walls	Zinc roof, walls	Zinc roof, concrete rendered walls	Bamboo/ thatch roof and walls	Zinc roof, walls	Zinc roof, concrete rendered walls
Education Level	Primary or Lower Secondary	Senior Secondary	Senior Secondary or University	Primary or Lower Secondary	Senior Secondary	Senior Secondary or University
Primary Income	Selling small livestock, labour sales, selling cassava, fruit and other foods, coffee minimal	Selling livestock (mostly small but occasionally cattle), moderate coffee sales, selling cassava, fruit and other foods, minimal labour sales	Coffee sales, livestock sales (all types), village shops, jobs in town.	Selling small livestock, labour sales, selling fruit and other foods	Selling livestock (mostly small but occasionally cattle), selling bananas and other fruit, minimal labour sales	Livestock sales (all types), selling bananas
Primary Food	Own produced maize, own produced cassava, sweet potato and taro, bought rice and beans, local beans, fruits and vegetables, wild foods	Own produced maize, own produced and purchased cassava, sweet potato and taro, bought rice and beans, local beans, fruits and vegetables, wild foods	Own produced maize, bought rice and beans, mostly locally purchased cassava, sweet potato and taro, beans, fruits and vegetables	Own produced maize, own produced cassava, sweet potato and taro, bought rice and beans, local beans, fruits and vegetables, some wild foods	Own produced maize, some locations own produced rice, own produced and purchased cassava, sweet potato and taro, bought rice and beans, produced beans, fruits and vegetables, wild foods	Own produced maize, some locations own produced rice, bought rice and beans, mostly locally purchased cassava, sweet potato and taro, beans, fruits and vegetables

* Number of mature animals (mostly breeding females). Number does not include offspring bred annually for sale

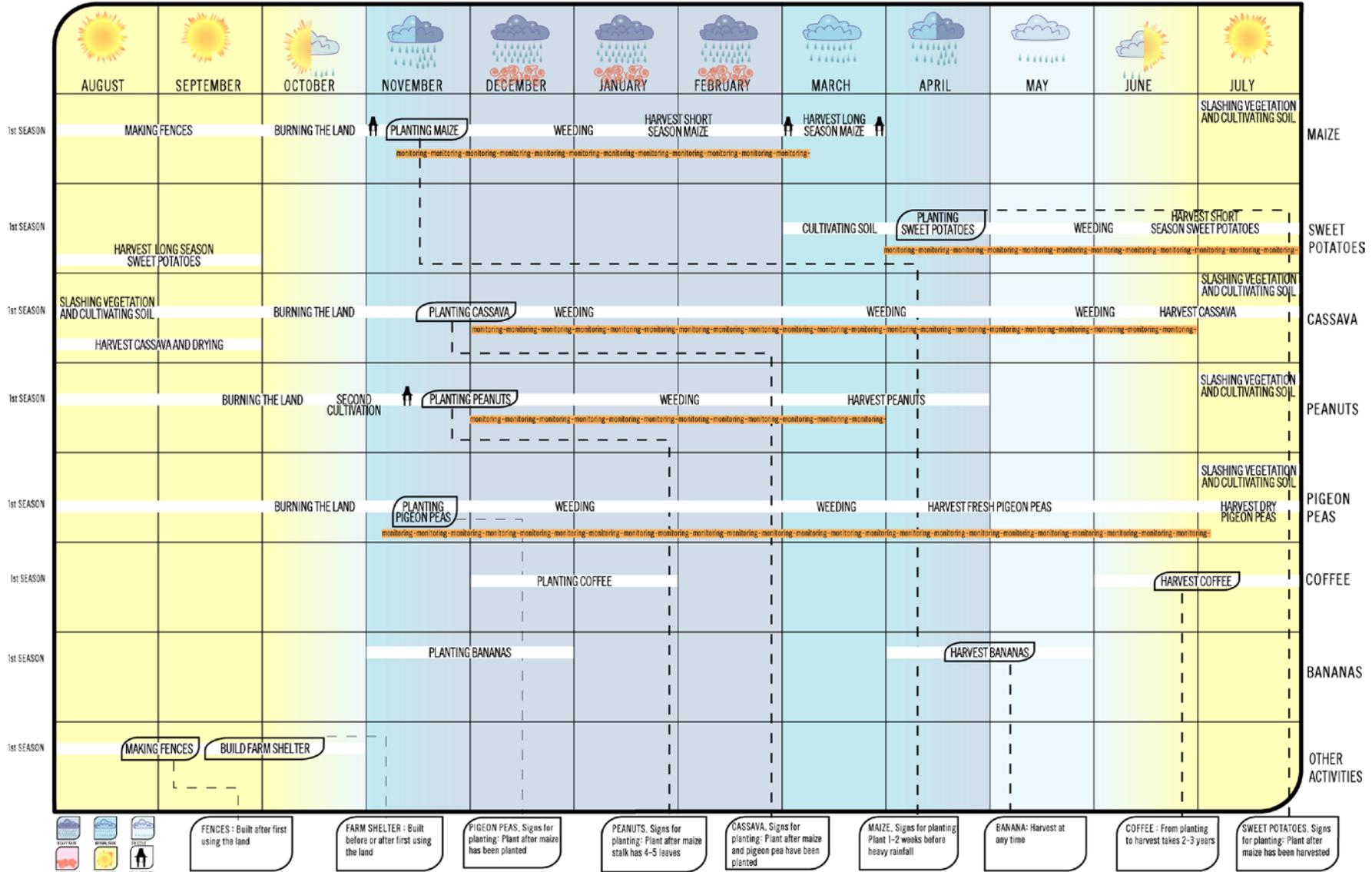
Annex D: Seasonal Calendar (Highland)

AGRICULTURE CALENDAR

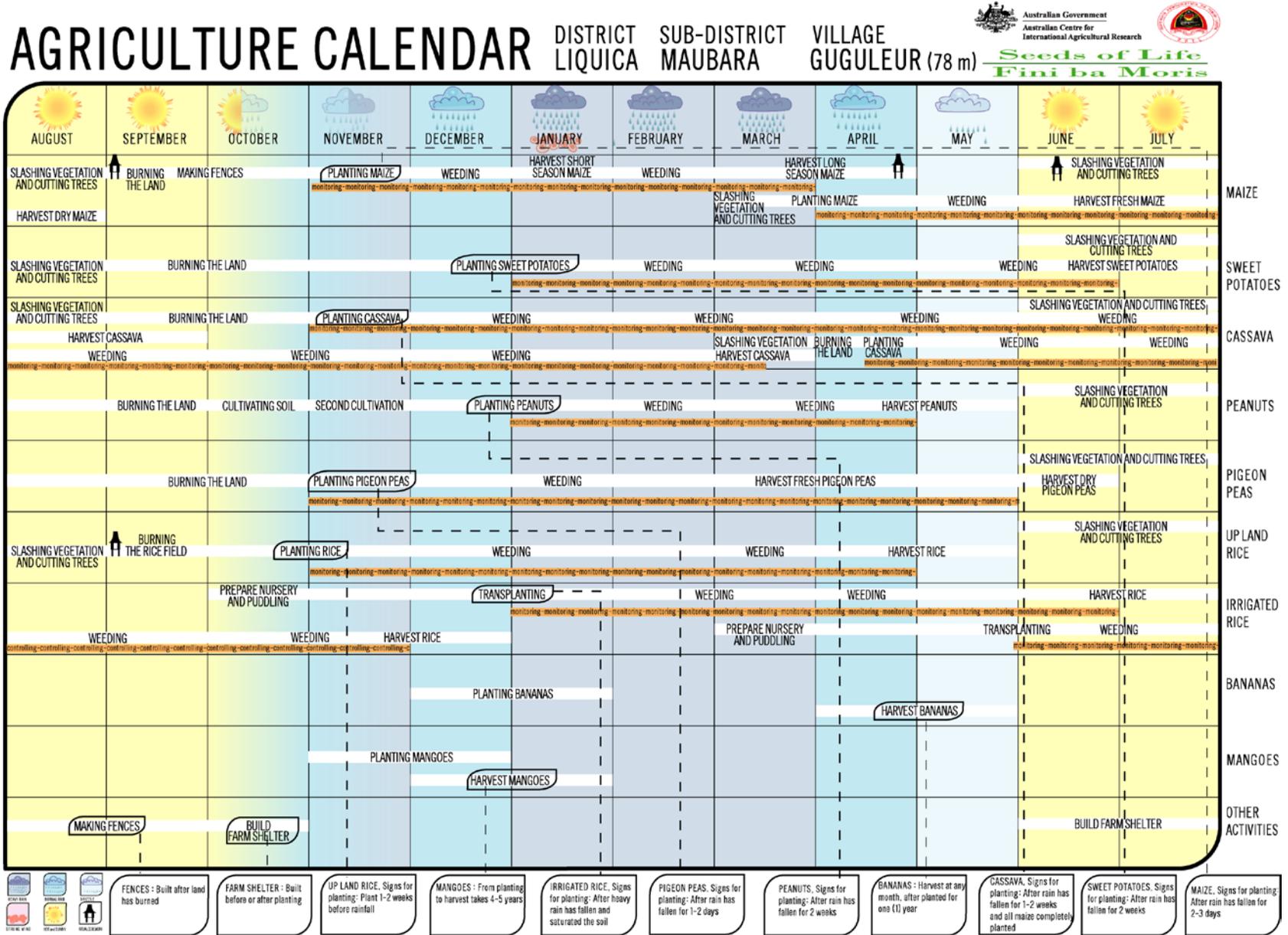
DISTRCT LIQUICA

SUB-DISTRICT LIQUICA

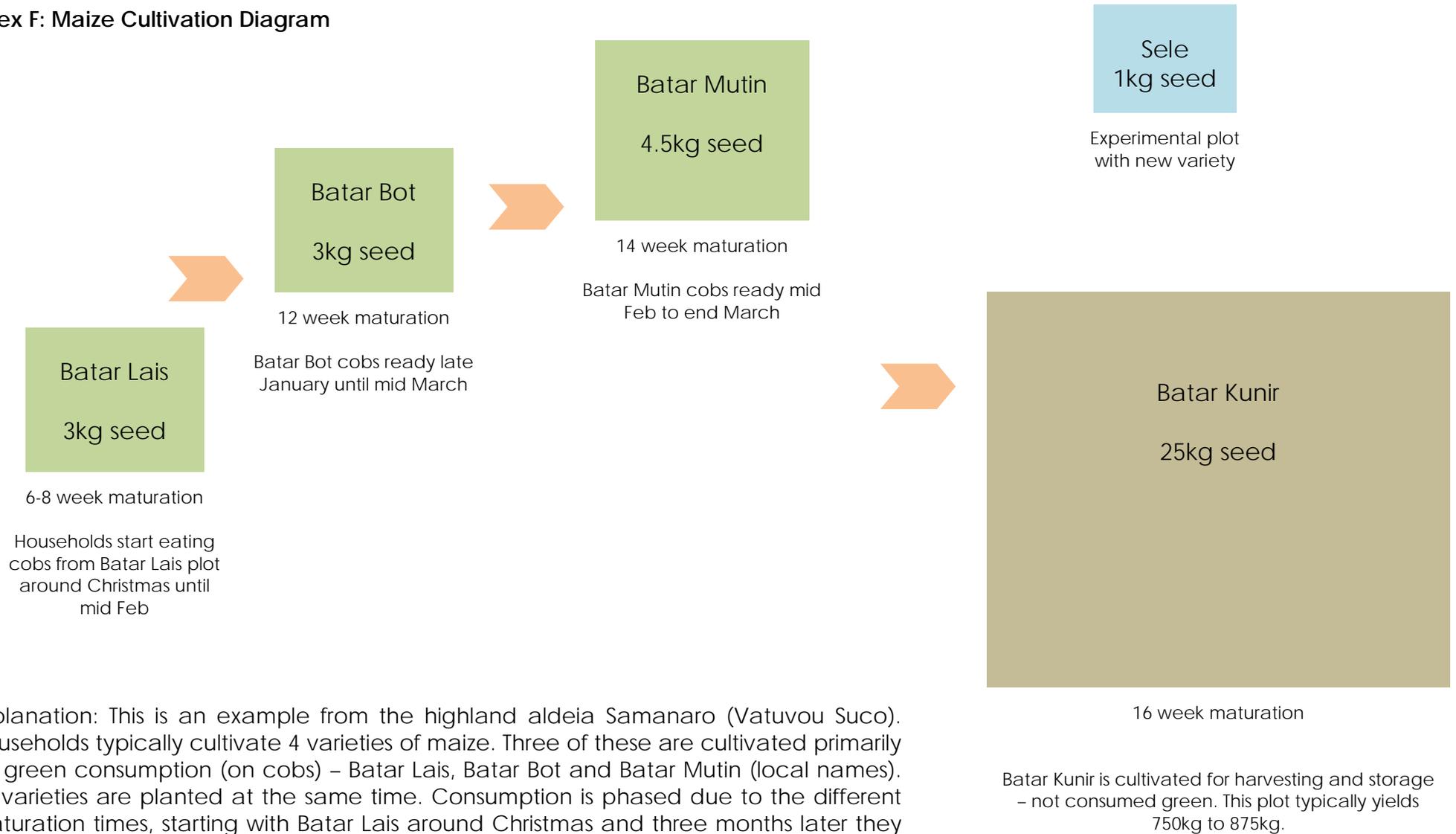
VILLAGE DARU LETE (1241 m)



Annex E: Seasonal Calendar (Lowland)



Annex F: Maize Cultivation Diagram



Explanation: This is an example from the highland aldeia Samanaro (Vatuvou Suco). Households typically cultivate 4 varieties of maize. Three of these are cultivated primarily for green consumption (on cobs) – Batar Lais, Batar Bot and Batar Mutin (local names). All varieties are planted at the same time. Consumption is phased due to the different maturation times, starting with Batar Lais around Christmas and three months later they consume the last green maize from the Batar Mutin plot. Batar Kunir is the main variety for harvest purposes (25kg seed planted, roughly two-thirds of a hectare). Some of the households in the aldeia cultivated 1kg Sele for the first time this last agricultural season.

Annex G: Notes on the Fieldwork Tools

This Annex offers short notes to practitioners on the participatory rural appraisal tools used during the evaluation fieldwork. Most of the tools utilised pictorial cards so that literacy was not a precondition to participation, with each card reviewed several times to ensure everybody agreed on what it represented, thereby reducing confusion. In addition to these more formal tools, informal diagrams, piling, and timelines were regularly drawn in the earth to cue memories and facilitate discussion. Tools were used interchangeably, with some of the content not established in advance (such as specific lists of hazards, or food sources used by all groups for comparability). Instead, each group had the flexibility to define its own categories. This ensured that they were responding more accurately on the basis of their preceding discussion and that facilitators had more opportunities to triangulate findings.

All tools were used to open discussion to a wider set of people beyond those more likely to respond to direct questions, and all proved to be effective means of structuring conversations sometimes lasting ninety to one-hundred twenty minutes and covering a range of topics. Emphasis was less with finalising a definitive set of scores or ranks as much as simply establishing relative importance or values for facilitator probing.

1. Proportional Piling

Proportional piling was used to explore food and income sources, each of which was done with separate groups in the same location because of the time required. Discussion first concentrated on identifying the different sources, their timing in the year, and other pertinent issues. One hundred beans were used for the piling to facilitate easier analysis of results. Of all the tools, this required the most time for participants to understand fully the task and its rationale, and required diligent facilitation so that issues like food source, seasonal timing, household wealth group, etc remained consistent points of reference.



Photo 18: Female farmer group members in Vatuvoou analyse the relative proportion of different food sources.



2. Pairwise Ranking

Pairwise ranking was used to compare the relative impact of climate hazards or compare preferred maize varieties. It proved to be an easily understood tool appropriate for comparatively easy agreement on ranking as the basis of a more detailed discussion that followed.

3. Seasonal Calendars

The first seasonal calendar was conducted with CARE project staff during the first evaluation workshop (see Annex H), with key seasonal, production, livelihood, and coping information sketched for highland and lowland households in Liquica. This was elaborated further with calendars produced in CARE project areas by Seeds for Life, then expanded upon during fieldwork conversations on the timing of key activities or events. Calendars (and more improvisatory timelines) helped facilitators and respondents alike to appreciate the linkages and flow of relationships.

4. Matrix Scoring

Matrix scoring was used in several different ways during the evaluation: seed varieties against hazards, food or income sources against hazards, and hazards against food or income sources. Below are examples of each, but without summaries of the additional discussion throughout and after each scoring exercise to understand the rationale behind the numbers.

Seed varieties against hazards

In this analysis participants (vertically) scored each maize variety on its resilience to each hazard. Looking at the first hazard column for example, wind, participants said that Sele is the strongest, followed by Suwan 5, etc. With more time it would have been equally illuminating to have participants score each variety a second time, horizontally instead of vertically (or to ask another group for more triangulation). This would have given more insight into the strength of each variety in relation to the different hazards. Note that during fieldwork, the highest rank (represented by a "1" in the table below) was indicated by using a greater number of beans (here 4, seen in Photo 19). This same approach was used for all matrix scoring exercises.

Maize Seed Variety	Hazard			
	Wind	Late Rain	Less Rain	Short Rain
Sele (improved)	1	1	1	2
Suwan 5 (improved)	2	2	2	3
Batar Lais (local)	3	3	3	1
Batar Bot (local)	4	4	4	4

Food/income sources against hazards

In this analysis of food source vulnerability to hazards, participants scored each hazard vertically. That is, food sources were ranked on the basis of which was most vulnerable to the shock, second most vulnerable, etc. This tool was used after participants proportionally piled the relative amounts of food (or income) from each source, with relative importance indicated by the order presented in the left column below. The rankings here range from 1 to 7. The same approach was used to score the impact of hazards on income sources.

Food Source	Hazard			
	Drought	Heavy Rain	Wind	Pest
Maize	1	1	1	1
Rice	2	4	2	2
Cassava and Sweet Potato	3	3	7	3
All Gardens	4	2	3	4
Market Purchase	7	7	6	7
Wild Foods	6	5	5	5
Own Livestock	5	6	4	6

Hazards against food/income sources

This analysis of income source vulnerability asked participants to score each source horizontally for establishing which hazard affected income most, second, etc. This tool was used after participants proportionally piled the relative amounts of income (or food) from each source, with relative

importance indicated by the order of the left column below. The rankings in this example range from 1 to 5 (for example, maize sales [i.e. production] are most affected by heavy rain, then wind, then short rain, etc).

Income Source	Hazard				
	Late Rain	Short Rain	Less Rain	Heavy Rain	Wind
Maize	4	3	5	1	2
Own Gardens	1	4	5	3	2
Livestock Sales	5	4	3	1	2
Coffee Sales	5	4	3	2	1

Tetum Interpretations of Analytical Terminology³²

The following list of technical terms was developed during a CVCA workshop facilitated by the CARE Australia climate advisor, convened during the evaluation. The translations may prove useful in future exercises.

Adaptive capacity: Kbiit atu bele muda lalaok

Exposure: Liafuan ida hodi explika se perigu ida atu kona ema ho minia moris ka lae. Ema nec besik pangu ka lae?

Sensitivity: Sensativader esistensia. Liafuan ida ne'e koaus kona ba ema nia forsa atu hataan perigu ida. Forsa ina = la din sensitivu (bele hataan). Forsa laiha = sensitiv liu, labele hataan

Vulnerability: Vulenerabilitdada ba mudansa eklimatika la hansesan kbiit laek. Eklimatika ne'ebe mais on menus significka disasters

Coping: (Meus ne'ebe Ema ziza hodi atua problema ne'ebe hasoru). E.g. Ema tesi ia hodi fa'an sustena familia uma kain

Adaptation: (Meus ne'be ema uza atu garantia moris ba tempu naruk tuir situasaun ne'ebe sira hasoru)

e.g. Kuda variedade ai-horis no ai-han ne'ebe bele reziste ba baailoron naruk; Kuda ai-horis ne'ebe bele konserua be'e, rai no satan anin



Photo 19: After proportional piling, the same Vatuvou women rank the impact of hazards on their food sources.

³² Also see Figure 2 for translations of hazard terminology.

Annex H: Summary of Workshops

Two workshops were conducted as part of this evaluation. The workshops were held on 16 February and 1 March, respectively.

Workshop 1

The objective of the pre-fieldwork workshop was to explore the specifics of household livelihoods and CARE projects in Liquica district. This included discussions on seasonality, wealth groups, typical food and income sources, hazard frequency and severity, and household coping strategies. It was anticipated that this would provide a basis from which to evaluate impact of projects at village level.

Workshop 2

The objective of the post-fieldwork workshop was for the team to reflect on the fieldwork findings and contribute to answering the evaluation objective.

Four additional questions were discussed at length to capture additional detail and conclude the staff capacity building element of the evaluation:

- Identify three new things about household livelihoods in Liquica district that you did not know before the fieldwork.
- Identify three new things you learned about how Liquica households prepare for severe food shortages.
- How have CARE project activities increased and decreased Liquica household vulnerability to hazards?
- Specify three ways that household food insecurity in Liquica affects women differently to men.

Name	Position	Project/Organisation	Workshop I	Workshop II
Tome Guterres	National Project Manager	LIFT	√	√
Buddhi Kunwar	Project Manager	LIFT	√	√
Luis Gonzaga	Project Officer	LIFT	√	√
Jurão Miguel	Coordinator	LIFT	√	√
Diana da Costa Marques	Field Officer	LIFT		√
Carmelita ro de Jesus	Nutrition Officer	LIFT		√
Alberto do Rego	Former Staff	CBDRM, CIDPM, ACIDPM	√	√
Albino de Jesus Amaral	Former Staff	CBDRM, CIDPM, ACIDPM	√	√
Fernanda Soares	Field Officer	LIFT		√
Victor dos Santos	District Officer	LIFT	√	√
Aguito Gutarres	Director	CDEP (NGO partner)	√	√
Julie Webb	Climate Change Advisor	CARE Australia	√	√

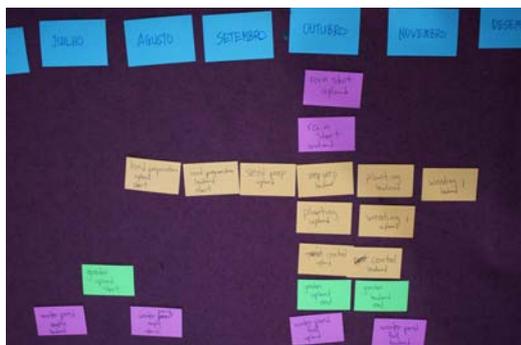


Photo 20: CARE staff analyse seasonality of food, income, hazards, and coping during Workshop I.



Photo 21: CARE staff finalise adjustments to the wealth group profiles in Workshop 2.

Annex I: Fieldwork Locations and Consultations

Date	District/Sub-District	Suco	Aldeia	Respondents
15 Feb	Dili			CARE management and programme staff
16 Feb	Dili			CARE staff workshop, part one
18 Feb	Liquica	Liquica District Administration		District Administrator
	Liquica	Liquica Sub-District Administration		Development Officer (Deputy Sub-District Administrator)
19 Feb	Liquica	Darulete Lucolai Hatuquesi		Suco CBDRM committee members Suco CBDRM Local Facilitator
20 Feb	Bazartete	Leorema	Kutulau	Suco CBDRM committee members ACIDPM water user group CIDPM farmer group
22 Feb		Motaulun	Klaso	CIDPM mixed farmer groups (3) CIDPM water user group
		Ulmera	Neran	CIDPM water user group CIDPM mixed farmer group
23 Feb	Maubara	Guguleur	Kasaid Vatumori Lautekas Pukelete Caicasa	CIDPM mixed farmer group LIFT mixed farmer group LIFT mixed farmer group LIFT female farmer group LIFT female farmer group
24 Feb		Vatuvou	Samanaro Maubo Lisaico	LIFT mixed farmer group LIFT female farmer group LIFT female farmer group
25 Feb		Lisadilla	Mancabia Glai Nunulisa	LIFT mixed farmer group LIFT female farmer group LIFT mixed farmer group LIFT mixed farmer group
26 Feb	Liquica Maubara Bazartete	Fahilebo	Fatuniso	District MAF Officer Sub-District Administrator Chef de Suco Household meetings
27 Feb	Maubara	Maubaralisa	Lisalara	Chef de Suco Chef de Aldeia Household meetings
		Vatuvoro	Raik Lelo	Chef de Aldeia Head of LIFT mixed farmer group

Annex J: Evaluation Terms of Reference



Terms of Reference
Climate Change Evaluation
Expressions of Interest open until COB Friday, November 13 2009 (5pm AEDST)
Preferred Evaluation Period: February/March 2010

1 Background

Climate change is emerging as a serious threat to development progress in the countries in which CARE Australia works. Many of our projects are in some way related to or dependent on the climate and weather patterns such as disaster risk reduction, food security, livelihoods, water and sanitation, health and agriculture. Climate change is already affecting many of our target groups and will increasingly do so in the future. As articulated in our Climate Change Policy (draft), CARE Australia seeks to work with target groups to improve their adaptive capacity and reduce their vulnerability to climate change. To this end we have developed the CARE Climate Vulnerability and Capacity Analysis (CVCA) Handbook, Community Based Adaptation Toolkit (draft) and Climate Change Adaptation Integration Toolkit (draft). Thus far, only a few of our past projects have been specifically designed as climate change interventions, or with climate change fully integrated into the design. Yet, most projects have an opportunity to contribute positively or negatively to climate vulnerability and adaptive capacity.

CARE is committed to evaluating our work in terms of its effectiveness and sustainability and to contribute to our organisational learning³³. Each year, CARE seeks to conduct one major evaluation in order to understand how we can strengthen the quality, reach and impact of our programs. We use evaluations to promote reflective practice and organisational learning, and to provide accountability for effectiveness. This year climate change is the focus of our annual evaluation.

In preparation for this evaluation, CARE conducted a screening of its project portfolio to assess its sensitivity to climate change.³⁴ This was undertaken in August – September 2009, and included projects from June 2006 onwards. From this screening, 50 out of 490 CARE projects were ranked 'extremely' climate sensitive. Drawing on this screening, we selected a suite of projects in Timor Leste focusing on water, food security and disaster preparedness. Analysis of these projects will inform future programming and practice by CARE Australia in Timor Leste and elsewhere.

2 Evaluation objectives and parameters

The overall objective of this evaluation is to provide an assessment of the effectiveness and sustainability of selected projects in Timor Leste in the context of a changing climate, leading to recommendations on improving programming.

The specific objectives of this evaluation are as follows:

- To determine the effectiveness and sustainability of CARE's work in water, food security and disaster preparedness in the context of a changing climate
- To document and share learning regarding programming
- To make recommendations to improve future CARE programs in Timor Leste and beyond
- To provide an opportunity for learning and capacity building of CARE staff

Four projects have been identified as a suite for study in this evaluation:³⁵

- Local Initiatives for Food Security Transformation Project
- Drought Mitigation / Community-Led innovation in Drought-Preparedness and Mitigation
- Strengthening Community-Based Disaster Risk Management in Liquica District and Beyond
- Improvement of a Water Supply System in Leorema Village Liquica

³³ CARE Australia Policy on Evaluation of Projects and Programs October 2005

³⁴ There were four parameters used in this assessment: the climate sensitivity of the area; the level of vulnerability of the target group; the potential of the project to affect adaptive capacity; and the sensitivity of the project interventions to climate change.

³⁵ Brief summaries of these projects can be provided on request. Some of the projects are complete and some are ongoing

The research questions are:

- What were the major achievements or impacts of the projects?
- To what extent, and how, have the projects had an explicit approach to climate change?
- To what extent are the observed major achievements or impacts of these projects susceptible to being reversed by climate change?
- Did climate related issues emerge during the project? How did the project respond to these?
- Have our interventions worked towards increasing or decreasing women and men's vulnerability to climate risks and their adaptive capacities?
- Have our interventions taken account of particular vulnerabilities and capacities, such as those of women or other vulnerable groups?
- Has disaster risk reduction been integrated in the design and/or implementation of the project?
- Have our projects been designed with the flexibility to evolve in response to climate change?

Based on this analysis, the evaluation will make **recommendations** on:

- How CARE can better embed climate change knowledge and awareness in our projects to ensure sustainability
- Measures that should be adopted by CARE to ensure our programming is climate sensitive

3 Methodology

A team of at least two people will carry out the evaluation³⁶. Following selection and initial briefing, they will work in Australia and in-country to undertake preparatory work including:

- Develop the detailed evaluation workplan, methodology and tools³⁷ that revises or confirms the evaluation questions and is confirmed by CARE Australia and CARE Timor Leste in line with need, budget and timeline
- Review and analyse any existing project documentation and climate change data
- Liaise with CARE Australia and CARE Timor Leste on approaches, logistics and any necessary preparatory work

After necessary preparatory work the consultant/s will spend up to two weeks conducting the evaluation in Timor Leste. This will include:

- Briefings with CARE Timor Leste
- Consultations and field research with project beneficiaries (both women and men), CARE staff, government and other stakeholders
- A presentation to CARE Timor Leste staff and relevant in-country stakeholders to present key findings of the research and any immediate recommendations

Following completion of fieldwork, the consultants will:

- Present initial findings to CARE Australia within two weeks of the end of the field work
- Submit the first draft of the evaluation report within three weeks of completion of fieldwork
- Submit a final evaluation report within two weeks of receipt of CARE comments on the draft report.

4 Management Arrangements

The evaluation will be undertaken both in Australia and in Timor Leste. The consultant/s shall be managed by the CARE Australia Quality and Impact Unit with the support of a Steering Committee that comprises of the following:

- The Manager Program Quality and Impact and/or the Senior Program Quality Officer
- CARE Climate Change Advisor
- One representative from CARE International Programs
- CARE International Adaptation Coordinator
- Representation from CARE Timor Leste

Other stakeholders are the Country Programs team, and the International Programs and International Operations Principal Executives.

CARE Australia will provide management support, strategic support and office accommodation in Canberra. CARE Timor Leste will assist with necessary logistical support such as accommodation arrangements, local transport, interpreter/s and arrangements for debriefing for CARE Timor Leste staff and relevant in-country stakeholders.

³⁶ Depending on the Expressions of Interest received the team may include a CARE Australia staff member

³⁷ These are to be developed in accordance with CARE's Evaluation Principles and are to be approved by the Quality and Impact Unit prior to mobilisation. CARE's CVCA and other tools can be drawn on where relevant. They may be adjusted following arrival in country.

5 Deliverables

The deliverables for this evaluation are:

- Detailed evaluation workplan, methodology and tools
- An evaluation report no longer than 30 pages plus annexes that includes:
 - Executive Summary
 - Background (including a synthesis of key climate change impacts and vulnerabilities in Timor Leste, with references)
 - Methodology
 - Key Findings
 - Recommendations, including implications for future programming

This report will be of a standard appropriate for publication and wide circulation, including with other NGOs, donors and policy makers.

- A four-page evaluation summary suitable for sharing learning with external audiences
- A debriefing with the CARE Timor Leste staff and relevant stakeholders and a presentation of key findings of the research
- A presentation to Project Steering Committee and to Principal Executives of International Programs and International Operations

6 Timeline

It is proposed that fieldwork take place in February 2010, with the final report to be completed by March 2010.

7 Consultant(s) selection criteria

The consultant/s shall individually or jointly meet the following selection criteria:

- Demonstrated experience in designing and conducting evaluations, including consultations with a wide range of in country stakeholders
- Demonstrated understanding of climate change, including in climate change analysis and adaptation
- An understanding of development practice and NGO ways of working
- Demonstrated experience in food security, water, community-based disaster risk reduction
- Demonstrated experience in detailed field research
- Ability to facilitate workshops and to prepare reports for publication
- Experience in Timor Leste and ability to speak a local language would be an advantage

8 Expressions of Interest should include:

- Up to date CV
- Completed Application Form
- Up to three page statement of capability (referencing the selection criteria) and the approach to be taken in the evaluation
- Full quotation should include all of the following:
 - day rate and maximum number of days (please note that successful consultant will need to provide proof of current insurance coverage);
 - please specify if per diem allowance is included in the quoted daily rate;
 - specific point of departure/return to take up the consultancy; and
 - confirmation of availability to complete the evaluation in February/March 2010.

Additional information:

- Travel to/from location will be provided by CARE Australia utilising the most direct and economical method (economy travel only).
- All visa costs will be reimbursed by CARE Australia.
- CARE Australia approved accommodation will be provided.

9 Enquiries

Julie Webb, CARE Australia Climate Change Advisor

julie.webb@careaustralia.org.au

+61 2 6279 0200

