

Food, water, rain, risk: the uphill struggle to adapt

Final evaluation of the MAKAAAS project on
community-based adaptation in Timor-Leste



Abbreviations

AEZ	Agro-Ecological Zone
ARAP	Aldeia Resilience Action Plan
CBA	Community-based adaptation
CBCCAG	Community-based Climate Change Action Grants Program CCA Climate Change Adaptation
CCWG	Climate Change Working Group
CDEP	Centro do Desenvolvimento da Economia Popular
CVCA	Climate Vulnerability and Capacity Assessment
DAA	District Water Supply and Sanitation Services
DAF	Department for Agriculture and Fisheries
DFAT	Department of Foreign Affairs and Trade
DNSAS	National Directorate for Water and Sanitation Services
DRR	Disaster risk reduction
GMF	Water Management Committee
HAN	Improving Agriculture and Nutrition Program
HH	Household
LIFT	Local Initiatives for Food Security Transformation
MAF	Ministry for Agriculture and Fisheries
MAKAAS	Mudansa Klimatica iha Ambiente Seguru
MTR	Mid Term Review
NAPA	National Adaptation Program of Action
NGO	Non-Governmental Organisation
NTF	Naroman Timor Foun
NWCQD	National Water Control and Quality Department
OECD	Organisation for Economic Cooperation and Development
PACCSAP	Pacific-Australia Climate Change Science Adaptation Planning
PDD	Programa de Desenvolvimento Descentralizado
PNDS	Programa Nacional de Desenvolvimento do Suco
PPS	Probability-Proportional-to-Size
TLSDP	Timor-Leste Socioeconomic Development Plan
WASH	Water, Sanitation and Hygiene

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This report shows the results of an evaluation of the project “Climate Change in a Secure Environment/ Mudansa Klimatika iha Ambiente Seguru (MAKAAAS).” CARE implemented this project between July 2012 and March 2015 with funding from the Australian Department of Foreign Affairs and Trade (DFAT) under its Community-based Climate Change Action Grants (CBCCAG) program. The evaluation was carried out by Banyaneer and included visits to eight villages in Liquica District.

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Executive summary

Food, water, rain, risk: these four aspects are at the heart of MAK'AAS project that CARE and WaterAid implemented with funding from the Australian Department of Foreign Affairs and Trade (DFAT). Launched in July 2012, the project set out to facilitate community-based adaptation to climate change amongst 33 villages in Timor-Leste's Liquica district. This included **promoting** of climate-resilient livelihoods (e.g. through crop diversification and conservation farming), **enhancing** the access to safe drinking water and improved sanitation, **reducing** the risk from erosion and landslides, and **enabling** broader village plans for climate change adaptation.

This evaluation finds that the project led to better yields and reduced crop losses amongst farmer group members. It also generated significant improvements in water and sanitation, and raised climate change awareness amongst villagers and government partners. Yet, the project's broader effect towards greater climate resilience and adaptive planning was constrained by multiple factors - these include a) insufficient overall funding for national-level policies and plans in adaptation, b) the fact that the focus on farmer and water management groups did not provide a village-wide basis for adaptive planning, and c) the observation that weather patterns have been conducive over the past two years, and did thus not provide any sense of urgency for adaptation. A slightly amended focus and a longer breath, this report argues, are therefore required for even more effective community-based adaptation.

The report begins with an overview of the project and of the evaluation (**section A**). Research was carried out in February 2015 and included visits to eight of the 33 target villages in Liquica district. The study is based on a mixed-methods approach, featuring a survey amongst 292 households, community workshops (with various exercises and a focus group discussion) and key informant interviews.

Section B presents its findings with regard to (a) relevance, (b) efficiency, (c) effectiveness, (d) impact, and (e) sustainability. **Section C** draws conclusions and supports evidence-based learning. Key findings are summarized below.

Relevance

- At the **national level**, the project was aligned with two main aspects of the recently elaborated NAPA strategy for Timor-Leste, i.e. food and water security. The appointment of key governmental institutions and relevant donor organizations and NGOs to a project steering committee, and the organization of a first conference on climate change in the country raised awareness and understanding of climate change, and resulted in an established working group on climate change adaptation.

- Despite this commendable alignment, actual interest in climate change adaptation remained considerably low in practice. With many national plans unfunded as well as personnel and resource gaps, climate change adaptation tends to be not amongst the key set of many government priorities.
- At the **district level**, interviewees from government institutions said that the project had been highly relevant to them and to local residents. For the Department of Agriculture and Fisheries, the support of farmer groups turned out to be a highly welcome initiative in line with its own activities. For the District Water and Sanitation Services, the project was perceived as a helpful "extended arm", supporting the department in achieving its goals.
- At the **village level**, the majority of households have experienced changes in the climate over the past ten years. The project conducted initial analyses (CVCAs, baseline study) to warrant the relevance of its activities. However, CVCAs were only performed in a minority of project villages. Overall, the local population expressed the view that only a few households in their respective villages benefitted from the project, and that beneficiary selection criteria were unknown to them. While members of GMF and farmer groups saw project interventions as highly relevant, neither this recognition nor the generally increased awareness of climate change transcended into greater interest in overall village-level adaptation planning.

Efficiency

- The MAK'AAS project successfully built on expertise, networks and structures that CARE and WaterAid had nurtured and maintained through earlier project in Liquica district. This enabled a rather swift roll-out across the 33 target villages.
- The implementation of activities related to water, sanitation and hygiene (WASH - outcome 1) as well as those related to food security (outcome 2) is found to be highly efficient.
- Collaboration between the two main partners of the consortium was an efficient and effective pooling of expertise, and collaboration was close and strong.
- The maintenance of two separate structures however is found to have brought several drawbacks, the most severe of which stems from the fact that each partner had different target groups (GMF for outcome 1, Water Aid/farmer groups for outcome 2, CARE). With these groups being treated as target groups in practice, little was done to reach the wider village population. Not only did this omission represent a missed opportunity for wider leverage

(and thus greater efficiency), it also failed to create the basis for wider village-level planning, as anticipated for the Aldeia Resilience Action Plans (ARAP).

Effectiveness

- The project directly benefitted around 9,500 villagers across 1,700 households and thus exceeded its target (4,000 beneficiaries). Around one-third of households counted themselves as either member of a GMF (33.3%) or of a farmer group (31.2%). These group members were effectively supported and frequently visited by project staff. However, support extended very little beyond group members.
- Regarding **outcome 1**, all but one project indicators were fully attained: across the twenty sub-villages, water access, management practices and sanitation improved substantially - to the extent that 82.6% of GMF members see a reduction of water-borne diseases.
- With regard to **outcome 2**, most indicators were fully attained: farmer group members diversified crops (the average number of planted crops over one cycle increased from 5.66 to 6.61) and extended some conservation farming practices (particular uptake of integrated pest management, contour farming and crop covering), and reduced post-harvest losses. While the share of those with access to climate information doubled, it remains rather low at 27%.
- Concerning **outcome 3**, results were rather mixed. While the level of understanding of climate change impact and options for adaptation increased substantially, and while most villagers feel better prepared (89% of farmer group members, 76% of GMF members), this increased awareness has yet to translate into broader adaptation planning as envisaged in the ARAP concept.

Impact

- The project succeeded in increasing crop and vegetable yields. Most farmers group members were able to increase their income by selling their produce on local markets. Meanwhile, yield increases had a limited effect on households' food consumption. Food security had already been rather high prior to the project launch - thus, no impact was generated in increasing the level of food security. Livelihood sources shifted slightly towards a higher diversification of food sources (vegetables).
- Based on workshop findings, serious food shortages occur rarely in the target area. In this context, the term 'hunger months' is

misleading, since the key challenge for villagers is the low variety of available food rather than a lack of food.

- At the same time, water and sanitation conditions for the local population in twenty sub-villages have been improved. Demonstration plots for reducing erosion and landslides through live check dams and reforestation activities have illustrated the benefits of advanced techniques.
- Community capacity to plan and adapt has been enhanced, and the public profile of women strengthened. At the same time, increased capacity is largely due to the new groups and the experience they have gained through the MAKAAAS project. Links to external actors have been strengthened, an important element of resilience (government links, GMF association).

Sustainability

- The sustainability of the project outcomes is found to be generally high. WASH-related outcomes are in line with government priorities. The established water management committees (GMF) maintain water and sanitation structures and are backed up by both the government and the GMF association.
- Farmer group members recognized the advantages of the promoted techniques, and 95.3% of them say they will continue to apply at least some of these techniques into the future. Yet, with the project concluded, the farmer groups themselves may not endure, as most farmers say they will work on their own rather than through these groups. The severely limited capacity of the DAF also renders future support to these groups rather unlikely.
- The village nurseries, set up as an instrument for reforestation and seedling production, are unlikely to endure. This is due to the fact that villagers have little incentive (lack of marketability) to maintain seedling production. The likely demise of farmer groups is a compounding factor.
- The success in networking and bringing stakeholders together has resulted in higher awareness of climate change on all levels. The creation of a climate change working group facilitates sustainability and enables replication. However, continued funding and advocacy will be required to broaden and deepen climate change adaptation in Timor-Leste.

Figure 1 | Overview of recommendations

If there was a new project with similar characteristics and objectives, it should:

1 Enhance.	2 Sustain and replicate.	3 Extend and upscale.
<p>1a Future projects need to be based on a more solid definition of their target group.</p> <p>With WaterAid focussing on the sub-village level (working through GMF) and CARE on farmer groups, the MAKAAAS project featured two parallel target groups. Even when combined, the two target groups made up only half of the villages' population.</p> <p>There was also inconsistent language in project documents about the actual target group. CARE staff and local partners perceived the project's target group to only comprise farmer group members. This often led to misconceptions on the village level.</p>	<p>2a Maintain the group approach but use it more to reach the wider village community.</p> <p>Working with village groups such as the water management committees and farmer groups should remain the backbone of initiatives promoting adaptive community capacity.</p> <p>However, these groups should be viewed more as a means to an end than an end in themselves. Rather than being treated as target groups, they should be used to spread key messages and practices throughout the wider villages. A thereby greater reach could then form the basis for village-level adaptation planning.</p>	<p>3a Add more live check dams in mountainous areas.</p> <p>Demonstration plots to reduce erosion and landslide risk through live check dams showed the benefits of the new techniques to villagers.</p> <p>Yet, erosion remains a constant challenge that degrades soil and fertility.</p> <p>Future projects should therefore consider upscaling the use of mitigation measures such as live check dams.</p>
<p>1b Continuously review the ownership and capacity of local government partners.</p> <p>In the 'new' and rather complex field of climate change adaptation, local government partners need to take particular ownership in project activities and outcomes. In turn, this requires ensuring that local government partners are involved and have the capacity to follow and indeed drive 'what is happening' in the project.</p> <p>In WASH-related activities, this active involvement was consistently given. Regarding food security-related activities, the involvement of district-level actors could have been stronger.</p>	<p>2b Maintain the focus on gender and women's empowerment.</p> <p>While women are often found to be more vulnerable than men to the impacts of climate change, they can make important contributions to the resilience of their community.</p> <p>The MAKAAAS project harnessed this potential and led to greater roles of women in farmer groups and water management committees.</p> <p>Future projects should thus maintain similar efforts and continue to envisage gender as a cross-cutting part of their activities.</p>	<p>3b Strengthen support to foster climate change awareness and climate information.</p> <p>Access to weather forecasts and climate information are crucial elements to enhance the resilience of local farmers. By the end of the project, the share of villagers with such information had doubled to 27.8%, and almost all of these farmers used that information for planning.</p> <p>While the improvement represents a 'good start', the fact that almost three out of four villagers have no access points to the need to upscale efforts.</p>
<p>1c Ensure a shared understanding of key terms related to climate change adaptation.</p> <p>The way key terms of climate change adaptation were understood and used differed amongst project staff and partners.</p> <p>There was not always of concepts such as vulnerability, resilience, coping strategy and adaptive capacity.</p> <p>A shared language however is important when promoting adaptation to climate change, and efforts to ensure such a common understanding should be strengthened.</p>	<p>2c Replicate the use of nurseries and aim for marketability of seedlings.</p> <p>The set-up and use of village nurseries is important for reforestation efforts. In the light of continued forest degradation (largely related to firewood collection), the use of these nurseries should be replicated.</p> <p>However, as farmer group members have no direct incentive to sustain seedling production, it will be crucial to make nurseries more sustainable. In this regard, options to market seedlings (which can then provide income) should be explored.</p>	<p>3c Continue to advocate for climate change adaptation on the national level.</p> <p>The project made commendable efforts to align its actions with national policy. However, it was found that thorough planning for climate change adaptation was not yet seen as a key priority by most villagers and district-level stakeholders alike.</p> <p>This observation calls for even more effective advocacy and awareness-raising efforts. These should focus on demonstrating the concrete benefits that can be obtained through adaptation - some of which are illustrated in this report.</p>

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Introduction

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As a small island developing state, Timor-Leste is highly vulnerable to a broad range of climate change impacts. Environmental hazards such as droughts, flooding and heavy rains can affect community livelihood systems - particularly those dependent on agriculture and natural resources. Climate change is likely to exacerbate these challenges.

Over 80 percent of Timor-Leste's rural population depends on agriculture and natural resources for their livelihoods. More than 90 percent of the agriculture systems in rural areas are rain-fed. These two facts mean that rural populations are highly susceptible to environmental change. As climate change impacts intensify, food security will be harder to achieve and sustain.

In fact, while weather conditions have been favourable over the past two years, the country already experiences damaging droughts and floods (which are likely to lead to lower agricultural outputs and damage to infrastructure). The most serious implications of climate change for Timor-Leste are likely to be changing rainfall patterns, higher temperatures and more frequent extreme weather events that are predicted to increasingly affect the country.

The project "Climate Change in a Secure Environment" (*Mudansa Klimatika iha Ambiente Seguru, MAKAAAS*) started in 2012. With the overall aim of increasing the resilience of vulnerable communities to the unavoidable impacts of climate change, the project consortium between CARE in Timor-Leste and WaterAid, and several local NGOs, set out on the relatively new path of climate change adaptation.

Liquiçá, the district west to the capital Dili in which the MAKAAAS project was implemented, is one of the most food-insecure areas in the country, with inhabitants often farming un-irrigated marginal slope areas. The MAKAAAS project targeted six (out of 23) communities and 33 (out of 134) villages in two highly degraded watersheds. Heavily reliant on rain-fed agriculture, the villagers here are exposed to the increased climate variability brought about by climate change.

While they have some capacity to adapt to these changes, villagers' coping strategies are reliant on climate-sensitive natural resources, as they have limited access to alternative livelihoods. Traditional gender roles exacerbate the risks for women in a changing climate, while minimal access to weather and climate forecasting hinders adaptive actions.

To what extent has the MAKAAAS project made a difference, and what can be learned from this experience? These are the two key questions that guided the present evaluation. Research was carried out in February/March 2015 and included data collection and analysis in Dili and Liquica town, and field visits and a household survey in eight villages. Findings are based on a mixed-method approach that included a survey amongst 291 households and a range of qualitative tools such as trend analysis, seasonal calendar, focus group discussions and key informant interviews.

This report is arranged in three sections: **Section A** (Background) reviews the background of the project and of this evaluation. **Section B** (Findings) include the key findings, relating to relevance, efficiency, effectiveness, impact and sustainability. **Section C** (Learning) presents the lessons that can be drawn from the project experience for future implementation.

The appendix provides additional information, including the comprehensive survey results, the trend analysis summary, and the survey questionnaire.



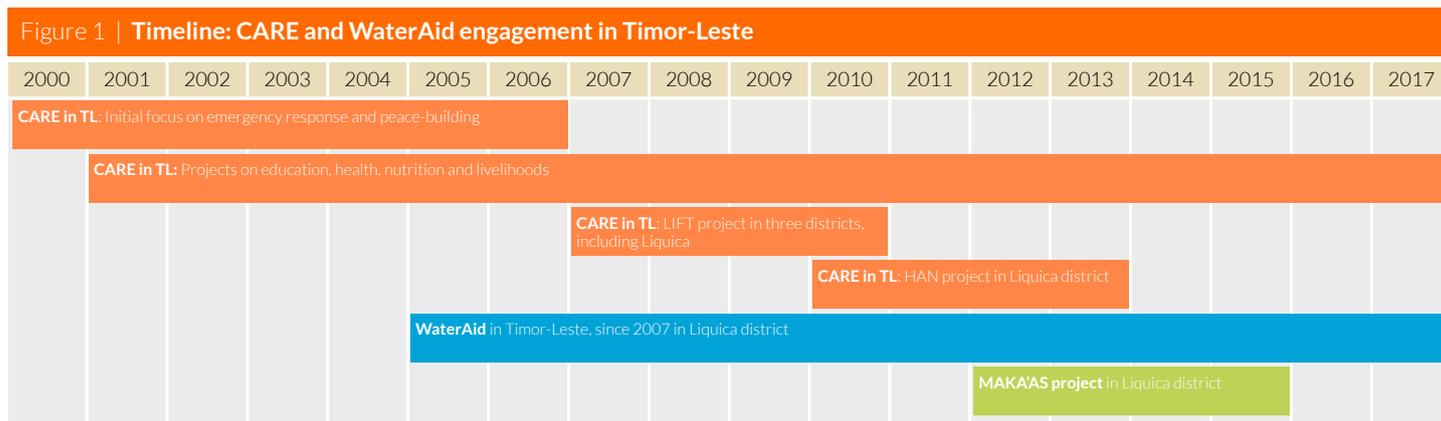
SECTION A | BACKGROUND

1. Project overview

Having operated in what is now Timor-Leste for more than 20 years, CARE initially focussed on emergency response and peace-building following the violence around Timor-Leste's path to independence. Over time, CARE shifted to supporting the broader development needs of the young and largely poor nation. It has been engaged in numerous long-term development projects, aiming to enhance health, education and livelihoods across the country. Gender equality as well as disaster risk reduction have been central concerns in these efforts.

Prior to the MAK'AAS project, CARE had been engaged in two livelihood/food security projects - LIFT (*Local Initiatives for Food Security Transformation*) from 2007 to 2010, and HAN (*Hadia Agrikultura no Nutrisiaun*) from 2010 to 2013 (see figure 1). With national figures indicating that over one-third of the population regularly experienced food shortages during the rainy season's "hunger months", the aim was to enhance food security - in the case of the HAN project, in Liquica as well as two other districts. The evaluation of the HAN project found that 95% of supported farmers attained higher yields from improved seed varieties.

Given the growing concern about climate change and its forecasted devastating impacts on Timor-Leste, CARE Australia submitted a proposal for a multi-country climate change adaptation program that included Timor-Leste. Under the Community-Based Climate Change Action Grants (CBCCAG), the Australian Department of Foreign Affairs and Trade (DFAT) awarded funding for this program that includes MAK'AAS, as well as projects in Vietnam, Papua New Guinea and Vanuatu.



The MAKAS project successfully built on previous experience: in line with a recommendation by the Ministry of Agriculture and Fishing (MAF), Liquica district was selected - an area in which both CARE and its new consortium partner WaterAid were already working. Furthermore, many of the staff members recruited for the HAN project were retained, and partnerships with local NGOs such as *Centro do Desenvolvimento da Economia Popular* (CDEP) and *Naroman Timor Foun* (NTF), and development cooperation initiatives financed by the Government of Australia, such as Seeds of Life and BESIK, extended.

MAKAS project goal and objectives

Geared to raise the adaptive capacity of women and men in vulnerable households, the project’s overall objective reads “increased resilience to the unavoidable impacts of climate change in Timor-Leste. As a project that was to test and demonstrate tools for community-based adaptation (CBA), it features specific objectives related to direct outcomes for the target population (specific objective 1) as well the development of an evidence base for CBA (specific objectives 2a and 2b).

Targeting Liquica district - specifically, 33 villages in six communities (with a total of 3,180 households) based in the two adjacent, highly degraded watersheds of the Laklo and Gularloa rivers, the MAKAS project interventions were arranged to achieve three main outcomes (*see figure 2*).



The *first outcome* focuses on water management: through greater water access and better management, target villages would have a stronger basis to grow and sustain agricultural livelihoods, enhance sanitation, and reduce disaster risks. The *second outcome* concerns agricultural adaptation: through more climate-resilient crops and practices as well as diversification, the overall livelihood situation and equitable food security would be enhanced. The *third outcome* targets the capacity of communities, local partners and government agencies to adopt gender-sensitive planning that integrates adaptation to climate change.

Activities

Implementation started with Climate Vulnerability and Capacity Assessments (CVCA) that served planning purposes for the livelihood- and water-related activities and also helped raise awareness towards sustainable agricultural techniques and use of water.

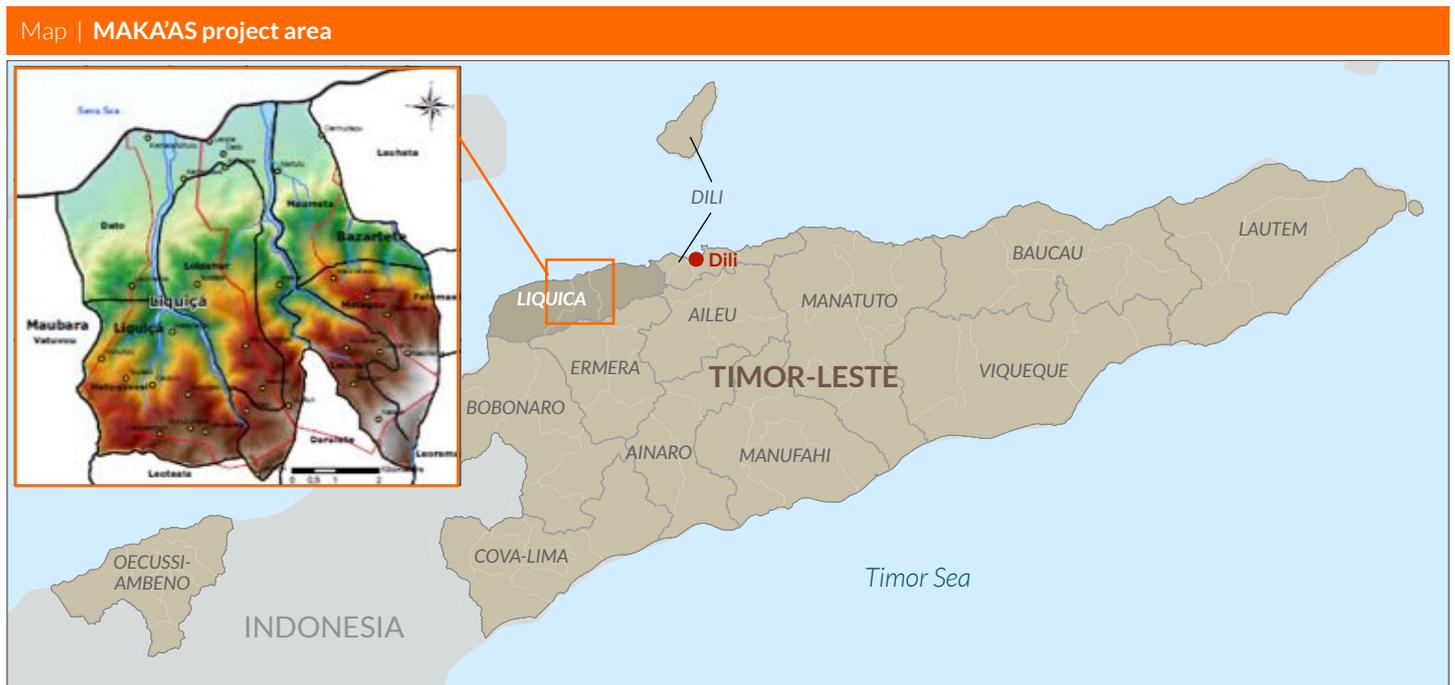
With regard to *outcome 1* on water and sanitation, activities included:

- the construction of 20 water distribution and sanitation systems on the sub-village level,
- the formation of Water Management Committees (GMF) to facilitate maintenance of these systems, and
- hygiene and sanitation training.

Working with 91 (31 new and 60 already existing) farmer groups over the course of the project, main activities in support of *outcome 2* comprised:

- the distribution of new varieties of seeds,
- trainings in sustainable agricultural techniques and home gardening,
- the construction of water ponds for irrigation,
- the distribution of air-tight drums to reduce post-harvest losses,
- the distribution of tree seedlings and construction of nurseries,
- selective risk mitigation projects to reduce risk of erosion and land slides, and
- distribution of efficient cooking stoves to reduce firewood usage.

In support of the *outcome 3*, activities comprised capacity-building on gender equality and planning for climate change adaptation on the local level, awareness-raising and training about climate change and adaptation on the local and the district levels, and workshops and conferences on climate change adaptation on the district and national levels.



2. Evaluation objectives and approach

It is worth recalling the general two-fold purpose of an evaluation: to deliver accountability to donors by assessing project achievements, and to identify lessons learnt. This identification enables the replication of what went well and the modification of what did not. This chapter discusses the 'what' and the 'how' of the present evaluation: it first looks at the concrete evaluation objectives and then proceeds with a brief look at the applied approach.

2.1 Objectives

The evaluation of the MAKAA'S project is part of a multi-country evaluation process to collate and synthesize experiences in community-based adaptation across the Asia-Pacific region. With a focus on both **accountability** and **learning**, CARE Australia commissioned the evaluation of three projects it has been implementing since 2012 with funding from the Australian Government's Community-Based Climate Change Action Grants (CBCCAG). Through these three projects¹, CARE and its partners have been aiming to a) promote climate-resilient livelihoods, b) reduce disaster risk, c) strengthen the capacity of communities as well as local civil society and governments, and d) address the underlying causes of vulnerability.² A fourth project in Vanuatu shares these objectives and has been evaluated separately.³

1. The three projects are:
 - **Papua New Guinea:** "Community-based adaptation to climate change in Nissan district";
 - **Timor-Leste:** "Climate change in a secure environment" (MAKAA'S),
 - **Vietnam:** "Integrated community-based adaptation in the Mekong (ICAM).
2. These objectives are in line with the four key elements (CBA framework themes) for successful adaptation recognized in CARE International's manual for Participatory Monitoring, Evaluation, Reflection and Learning for Community-Based Adaptation (PMERL).
3. Oxfam, lead organization behind the project in Vanuatu, commissioned this evaluation separately. The results will be integrated into the synthesis report that is envisaged as the final product of this consultancy.
4. Aside from these criteria, the ToR also stipulate that the evaluation should assess the role of the projects towards gender equality and women's empowerment, and analyze the monitoring and evaluation system used.
5. Note that in the evaluation framework, these two aspects are integrated in the analysis of effectiveness as well as, in the case of gender equality, impact.

The purpose of the evaluation consists of two aspects: *first*, it was to provide **accountability** by assessing the projects in terms of their relevance, effectiveness, efficiency, impact, and sustainability (see terms of reference, ToR).⁴ This was to include the provision of evidence of project outcomes and impact (intended or not) within the lives of women and men in target communities. The OECD's Glossary of Key Terms in Evaluation and Results Based Management defines the key criteria as follows:

- **Relevance:** "the extent to which the objectives of a development intervention are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donors' policies"
- **Effectiveness:** "the extent to which the development intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance"
- **Efficiency:** "how economically resources/inputs (funds, expertise, time, etc.) are converted to results"
- **Impact:** "Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended";
- **Sustainability:** "the continuation of benefits from a development intervention after major development assistance has been completed. The probability of continued long-term benefits. The resilience to risk of the net benefit flows over time".

Aside from these criteria, the evaluation would need to assess the role of the project towards a) gender equality and women's empowerment, and b) analyze the monitoring and evaluation system used.⁵

Second, the evaluation was to facilitate **evidence-based learning**. Based on the synthesis of project-level findings, the evaluation was to identify and map good practices and success factors as well as barriers and challenges, and make recommendations as to how effective and sustainable adaptation strategies for increased resilience can be further enhanced. In this context, the terms of reference provide a set of key research questions for each of the four CBA framework themes.

Thus tasked to provide a project-specific review as well as to generate insights for the synthesis report and future learning, the evaluation of the MAKAA'S project was planned in

two steps: *first*, an overall inception report was prepared that integrated the ToR's key evaluation questions into a meta-evaluation framework. To facilitate consistent approaches, generic research tools were also devised (see inception report). In a *second step*, a more specific evaluation plan for the MAKAAAS project was prepared and research tools adapted to take the project-specific factors into account. In particular, the meta-evaluation framework was transformed into project-specific frameworks for accountability and evidence-based learning (see evaluation plan Timor-Leste).

2.2 Approach

Aside from having been guided by the overall evaluation objectives and the project-specific context, the MAKAAAS evaluation plan also aimed to enable a longitudinal comparison with the baseline and mid-term review. A mixed-method approach was devised, with a household survey representing the quantitative part, and with community workshops, focus group discussions, key informant interviews and a management workshop forming the qualitative component.

Eight of the thirty-three target villages were selected for visits by the evaluation team. A stratified sampling approach was chosen: villages with a high concentration of project activities formed **strata A** and those with a low concentration **strata B** (see figure 3 below). This approach was based on the notion of dose-response analysis - the idea that a higher level of support and engagement (dose) correlates with a stronger outcome (response). Once villages had been assigned to either strata, selection was made randomly. However, checks were run to ensure that the sample reflected a) both watersheds and b) all three agro-ecological zones (AEZ), and that the sample included villages c) with WaterAid support and d) that had been part of the baseline and MTR samples.

For the household survey, sampling was based on the Probability-Proportional-to Size (PPS) technique, taking the two strata as separate sampling frames. The sample size was calculated on the basis of a confidence level of 95% and a margin of error of 5% for both strata. However, as the planned sample could not be fully attained during field research (291 of the planned 350 households were interviewed), the actual margin of error stands at 5.5%. The survey questionnaire covered all three MAKAAAS outcomes and included questions on perceived change and attribution of that change to the project, as well as questions required for dose-response analysis.

Data collection was carried out between February 16th and 27th in Dili, Liquica town and the eight sampled villages. Village visits incorporated two parallel streams: first, a team of enumerators conducted the household survey, collecting responses electronically with

Figure 3 | Overview of sampled villages

Village	Community	Watershed	# HH	# Activities	Activities per HH	WaterAid projects	Baseline sample	MTR sample	Sample size	Workshop
Strata A (villages with a high concentration of activities (<0.25 per HH))										
Tau Talo	Hatuquesi	Laklo	211	68	0.32	0	Yes		40	
Metiluli	Metagou	Gularloa	134	48	0.36	2			40	Yes
Lebuana	Lukulai	Gularloa	36	14	0.39	0	Yes	Yes	30	
Laklohema	Dato	Laklo	246	94	0.38	2		Yes	40	Yes
Strata B (villages with a low concentration of activities (<0.25 per HH))										
Kai To Letehou	Hatuquesi	Laklo	56	13	0.23	1			50	Yes
Kaileulema	Metagou	Gularloa	119	25	0.21	1	Yes		50	Yes
Kamalehohuru	Dato	Laklo	225	28	0.12	0			50	
Nartutu	Maumeta	Gularloa	348	18	0.05	0			50	Yes

hand-held devices. Second, the evaluation core team (consultant, facilitators, translator) carried out community workshops, focus group discussions, site visits and most significant change interviews. Community workshops included:

- Trend analysis - to identify changes in living conditions and underlying factors
- External support analysis - to help assess external support and project impact
- Livelihood analysis - to gather data on diversification
- Seasonal calendar - to assess food security and 'hunger months'
- Hazard losses and coping strategy analysis - to assess risk and coping mechanisms

All tools are described in the inception report as well as in the community workshop overview. Focus group discussions and interviews with villagers followed specific guides.

Aside from visiting the eight sampled villages, the evaluator also conducted a workshop with MAKAAAS project staff and stakeholders, and conducted interviews with key partners at the national and district levels (see figure 4).

Figure 4 | List of interviews and background talks

CARE:

- Country Director
- Assistant Country Director
- MAKAAAS Project Manager
- District Project Manager
- Bioengineering Coordinator
- Community Development Officer

WaterAid:

- Country Representative
- Program Manager
- MAKAAAS Project Assistant

**Ministry of Public Works,
National Directorate for Water and Quality Control**

- Head of Department of Water Quality
- BESIK Advisor

CDEP project staff

DAA:

- DAA Manager
- District Sanitation Officer
- Community Water Supply Development Officer

District MAF

- Head of Department Extension Services

Village level:

- Village Chief of Kai To Letehou
- Village Chief of Laklolema
- Head of Farmer Group of Laklolema
- Village Chief of Nartutu
- Village Chief of Kaileulema

2.3 Limitations

Due to sound preparation and excellent support by CARE and WaterAid, the evaluation experienced no major challenges. The only issue was the difficult access to the remote villages, which reduced the time that could be effectively spent on site and thus caused the number of survey respondents to be lower than planned (135 out of 150 respondents for strata A and 156 out of 200 for strata B). Aside from a slightly higher margin of error, this however bears no impact on the validity of findings.

Furthermore, it needs to be pointed out that with its small sample size, the baseline survey provided limited ability for a longitudinal comparison. Unless there are major differences in results between baseline and endline survey (which exceeds the overall margin of error), baseline survey results were therefore not taken into account.

In order to address this challenge, the questionnaire included retrograde assessments (how were conditions before the project, how are they now?), thus allowing for identification of change and indeed of impact (through questions on attribution; see the questionnaire attached as appendix C).



SECTION B | FINDINGS

3. Relevance

To what extent has the MAKAS been relevant? This chapter answers this question by looking at the national policy context (3.1), the planning at the district context (3.2) and the relevance to the beneficiaries in target communities (3.3).

3.1 The national context

During the conceptualization of the MAKAS project, CARE took several studies on climate change impact in the Asia Pacific region (such as those by the DFAT-funded 'Pacific-Australia Climate Change Science Adaptation Planning' (PACCSAP) program) and in Timor-Leste (particularly those studies related to the National Adaptation Programme of Action, NAPA) in to account. Providing information on climate trends and on existing levels of exposure and vulnerability, these studies represented a good starting point. Furthermore, CARE's and WaterAid's experience from previous projects contributed a sound understanding of the target area in Liquica district.

The project focussed on food and water security and was thereby deliberately aligned with two key aspects of the NAPA, which the government had published in 2012. NAPA's overarching vision is to make the Timorese people more resilient to climate change, recognizing their high vulnerability in an economy dominated by subsistence agriculture.

NAPA states that “adaptation measures will be focused on reducing the adverse effects of climate change and promote sustainable development. These measures will build on existing strategies and plans across all sectors within Timor-Leste, including the National Priorities process, while initiating six dynamic Sector Working Groups on food security, water, health, disasters, biodiversity and infrastructure.” While the government of Timor-Leste thus recognized the importance of responding to climate change in the NAPA, its capacity to plan and implement suitable adaptation activities was limited, in particular on sub-national levels.

With its general alignment to NAPA and its aim to enhance planning capacity (outcome 3), it is found that the MAKAS project was thus highly relevant to national policy. This is even more so the case as it also addressed other government concerns. Aside from supporting the country’s progress towards the Millennium Development Goals (MDGs) and Timor-Leste’s Vision 2020 (TSLDP), one principal orientation of MAKAS was to support the local government in achieving a higher support coverage of vulnerable households.

To this end, Liquica district was selected at the advice of the Ministry of Agriculture and Fisheries (MAF). Furthermore, the two watershed areas and the communities and villages therein were selected through consultations with the district government. Selection criteria included the existence of networks and working relations from earlier projects, as well as identified limitations in capacity in terms of public funds and human resources.

Over the course of the project, the appointment of key governmental institutions and relevant donor organizations and NGOs to a project steering committee, and the organization of the first national climate change adaptation workshop in Timor-Leste raised awareness of climate change, and resulted in the establishment of the Climate Change Working Group (CCWG). Throughout the preparatory process of the conference as well as in the CCWG, the national government took a lead role, with CARE and WaterAid being acknowledged as key partners.

In summary, the evaluation finds that MAKAS project was well-aligned to national priorities and highly relevant to the national policy context.

3.2 The district level

The implementation of the MAKAS project on the district level primarily depended on establishing and maintaining good working relationships with key partners from the district government. These were the District’s Department for Agriculture and Fisheries (DAF) and the District Services for Water Supply and Sanitation (DAA).

In Liquica, the district’s Department for Agriculture and Fisheries (DAF) and the District Services for Water Supply and Sanitation (DAA) were key partners for the MAKAS project. During interviews with department heads and technical staff, interviewees expressed the view that the project had been very relevant to them as well as to needs of the vulnerable local population. Both institutions perceived the project to be highly relevant in assisting in - and advising them on - achieving their sectoral goals defined by the national government (75% household coverage with water supply until 2020 for DAA and providing extension services to farmer groups for DAF). A DAA staff member said that he viewed the project as a helpful “extended arm”: with WaterAid’s eight officers supporting, DAA was able to reach more residents than it would have on its own - it having just six staff for the entire district.

Infrastructure in Liquica had been badly damaged during the war for independence, and although basic water supply services have been improved considerably since, many households are still left without such essentials as safe water or toilets. Country-wide, three in ten people still lack safe water, and over half the population lack a toilet. In Liquica, the mountainous terrain and poor road network makes service delivery and

upgrades difficult; remote communities are particularly hard to reach during the rainy season. The continued lack of safe water and basic toilets means that water-borne diseases are common. Prior to the project, water was mainly collected from unsafe sources.

Focussing on water management committees (GMF) is in line with government regulations and seen as the most suitable approach to ensure that water supply and sanitation systems improve the lives of local residents over the long term. The interviewed DAA officer supported the idea of putting women in leadership roles of GMFs - **first**, because women would benefit more directly from water supply systems (as it is mainly women who fetch the water for household needs) and **second**, because it is usually the women who contribute to village funds - it thus made sense that they would also be the GMF treasurers.

Of particular concern to the district government was the availability of groundwater. Although Liquica district sees considerable rainfall of around 1,500 mm per year, the water is not retained and quickly runs off. As a result, the Laklo and Gularloa rivers are dry for most of the year. Interview partners from DAA and DAF emphasized that an integrated approach for better storm water management was needed that included the water, agriculture and forestry sectors. In order to better retain water, actions had to include structural measures (small dams), forest conservation and tree planting, and the promotion of more appropriate agricultural practices.

While the extent of interventions differed between the villages, their mix is found to be fully consistent with the priorities of key governmental actors. The MAKAS project analyzed water flows in partnership with the National Directorate for Water Quality Control (DNCQA) before planning interventions, a process that was highly appreciated by district authorities.

In order to improve nutrition and food security, the DAF focuses on strategies that can enhance agricultural yields. Yet, with a serious shortage of staff - the department has a mere 23 extension workers (one per community) - as well as lack of transport to the remote villages, the DAF's ability to advise farmers on more appropriate farming techniques and crops is limited: in fact, some of the project villages had never seen an extension officer prior to MAKAS. The project approach to providing support to farmer groups and to assist them in the application of new farming techniques was therefore perceived as highly relevant.

In terms of planning, the interviewed DAF officer stated that he had not been involved in any project preparation on the community level, and that he had not heard of CVCA or Aldeia Resilience Action Plans (ARAP). However, the particular interviewee confirmed that the project was highly relevant for the target area and emphasized that his department was always supportive of project activities. In particular, he highlighted the importance of reducing post-harvest losses.

In sum, relevance on the district level will be highest when government partners take ownership in the project activities and results. While this should be a general concern of development projects, this is even more important in the 'new' and sometimes complex area of climate change adaptation. This requires ensuring that local government partners are involved and have the capacity to follow 'what is happening' in the project. In the project, and particular in WASH-related activities, district actors were always involved. Regarding food security-related activities, involvement of the district level could have been stronger.

3.3 The village level

With agricultural activities contributing more than two-thirds to livelihoods across the MAKAS target area,⁶ villagers are highly sensitive to the combined effects of climate change and local environmental degradation. With 69% of survey respondents saying that

6. Survey results show that in 2014, 68.4% of respondents' livelihood - defined as food production and income - was based on 'on-farm activities'. This figure is almost identical to the respective share in 2011, which stood at 68.5% (retrograde assessment through the household survey).

they have observed changes in weather patterns over the past ten years, interventions geared for adaptation must generally be seen as relevant - in particular as small field sizes, poor soil fertility, water shortages and unsustainable farming techniques render the food security of the growing population precarious over the long term. The degradation of upland forests - to a considerable part due to firewood collection - has led to reduced water and nutrient retention in the soil, greater erosion and to the more frequent occurrence of landslides (see figure 5).

To ensure that interventions would be appropriate, the MAKAA'S project deployed several tools for analysis and planning (such as those contained in the Climate Vulnerability and Capacity Analysis - CVCA kit). These involved mainly members of farmer groups and GMF (see figure 6). While planning was based on these groups, the broader population found the actual interventions in risk mitigation, agricultural adaptation and water management relevant.

At the same time, 81% of survey respondents noted however that project interventions had benefited a minority rather than all households in their community - namely farmer group members. This is in line with the project's indicators, especially those related to outcome 2, in which farmer group members are defined as the target group.⁷ With more time through an initially anticipated second project phase, it is likely that benefits would have reached a wider share of the villagers.

Considering the broader issue of climate change, the evaluation found that the level of awareness and understanding of underlying factors remains limited. Even though village and group leaders have begun to discuss climate change as a result of the MAKAA'S project, the fact that weather conditions have been favourable over the past two years did not add any sense of urgency: the finding that more than two-thirds of survey respondents see themselves as better off than in 2012 - where 69.5% of respondents quote 'any changes in the weather' as one of the contributing factors - supports this observation.

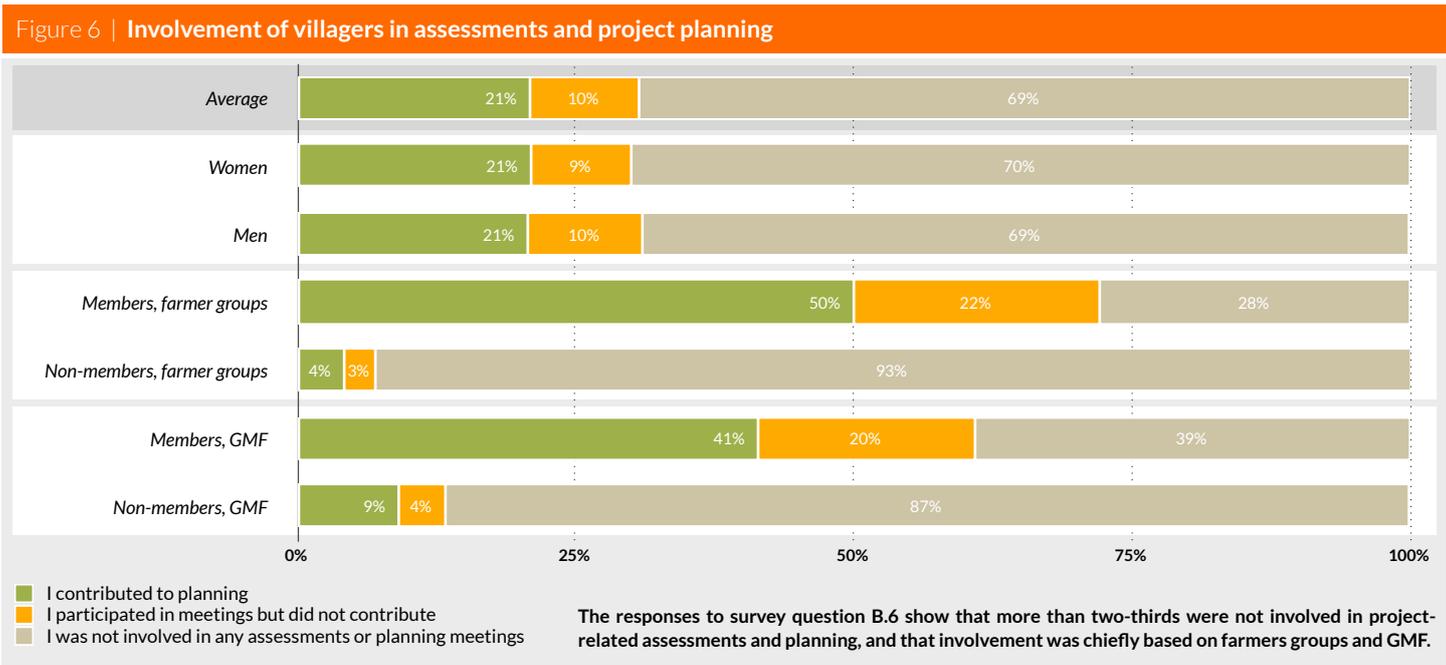
Given this context, it is perhaps little surprising that while villagers saw project interventions as very relevant, in the community workshops they did not identify food security as a particular concern. The seasonal calendar exercise showed that 'hunger months' did not exist in either 2011 or in 2014 - in fact, food supply was perceived to exceed food demand in every single month. Interventions supporting more appropriate farming techniques and diversification were therefore seen mainly as a way to raise income rather than increasing food security.

The implication of this perception is that broader development plans for adaptation were not seen as an issue of great concern. None of the participants of focus group discussions and community workshop mentioned these plans known as ARAP (Aldeia Resilience Action Plan) - a finding that was particularly interesting in the village of Metiluli, which had developed its ARAP only in recent months. Asked why he had not been mentioned the plan in the workshop, one villager pointed out that "so far, this plan has not had a relevance for my family."

7. At the same time, it should be noted that the overall objective lists 'communities' as the target group.

Figure 5 | List of recent landslides in sampled villages

Year	Village	% of HH affected	Casualties	Infrastructure damaged/ destroyed	Households affected by crop damage	Coping strategy	Recovery (months)
2015	Kaileulema	4.5%	none	6 houses	6	Mutual support	1
2014	Kaileulema	6.7%	none	7 houses	9	Mutual support	1
2013	Metiluli	7.5%	none	/	10	Individual strategies	n.a.
2013	Kaileulema	6.0%	none	7 houses	9	Mutual support	1
2012	Kaileulema	6.0%	none	6 houses	8	Mutual support	1
2012	Laklolema	4.5%	none	/	6	Mutual support	3
2011	Kai To Letehou	n/a	none	1 main road	10	Mutual support	3



In summary, the evaluation finds that the MAKAS project was developed in line with the priorities of the national and district-level stakeholders. At the village level however, interventions were planned with input largely restricted to farmer groups and water management committees. While generally being seen as relevant, interventions are viewed as increasing the income of group members rather than benefitting the wider communities. Planning for adaptation is seen as an area of low concern.

For future planning, and in particular in the agriculture-related component, a longer project would provide opportunities for a) working with and reaching the broader villages (not only specific groups), b) working in more villages on equal amounts, c) harmonizing activities in line with governmental development planning approaches, and d) consolidating results.

4. Efficiency

Grounded on the experience of previous projects such as LIFT and HAN, the MAKAS project involved a large number of stakeholders from authorities and local civil society, in part to maximize its potential leverage for capacity-building and awareness-raising. Despite the plethora of stakeholders, it is found that collaboration was efficient - the formation of and practices in the Climate Change Working Group (CCWG) being a case in point.

Concerning field implementation, the project incorporated the networks and experience that CARE and WaterAid had nurtured and gained through previous projects. This included the retention of staff, the selection of Liquica district (where both partners had been engaged), and the collaboration with local departments and NGOs. Given its relative proximity to the capital Dili, Liquica also proved a good choice for a demonstration project on climate change adaptation.

Thus fortunate to already have a robust foundation in experienced staff, partners and office structures, the project took off swiftly: following the awarding of DFAT funds, it began with a two-month inception phase in July 2012 and soon started the broader roll-out of activities across its 33 target villages.

Yet the retention of existing structures was not without drawbacks: although the collaboration between CARE and WaterAid, and their respective local implementation partners, was unanimously described as good by project staff, the existing structures led the implementation to evolve in two separate systems (see figure 7). The first system consisted of WaterAid and staff, partners and GMF members and beneficiaries as its target group, and was chiefly dedicated to the implementation of activities towards outcome 1. The second system, working chiefly towards attaining outcome 2, consisted of CARE, its set of partners, and farmer groups as its target group.

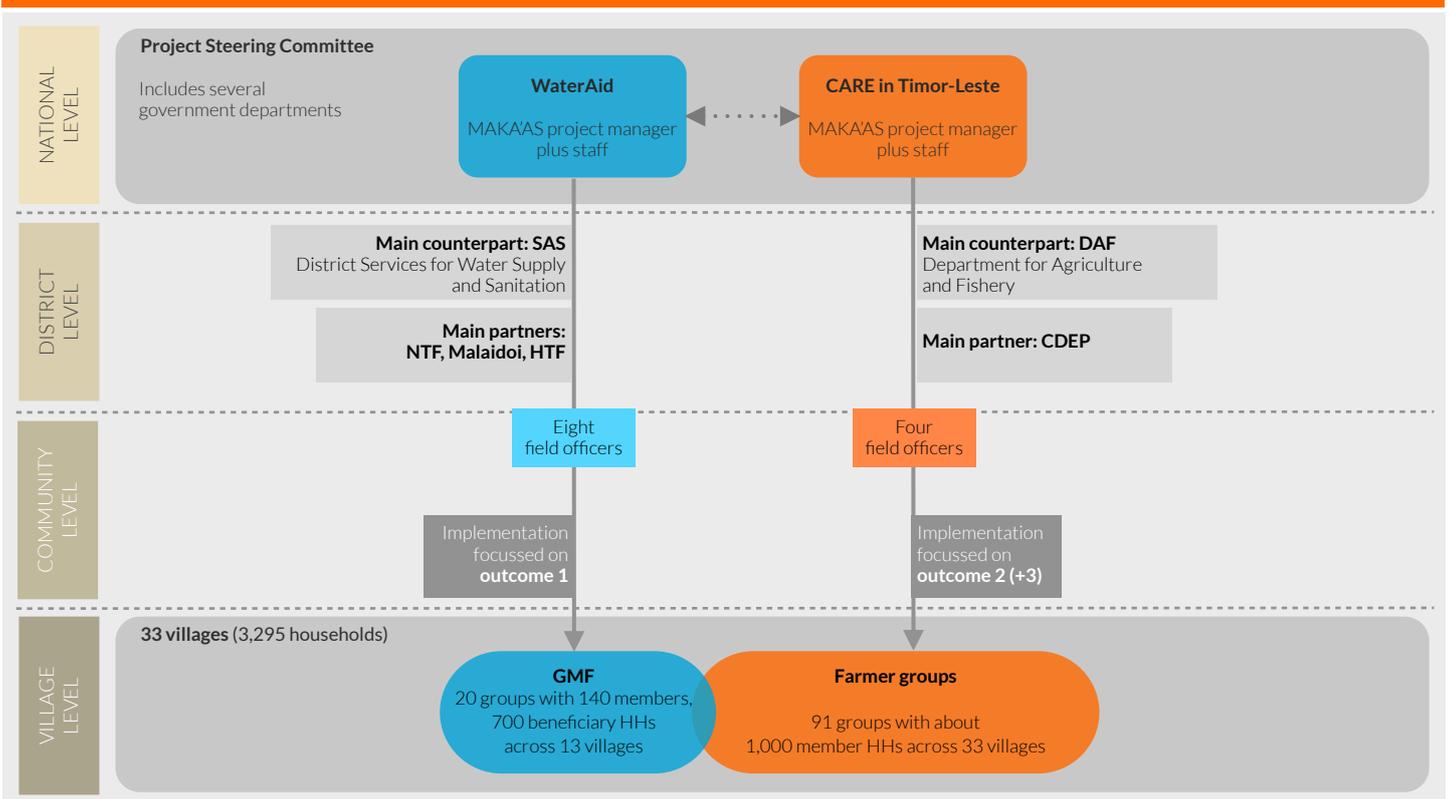
While both systems supported the overall objective of MAKAA'S, the usefulness of these separate systems must be questioned. Maintaining separate office structures (both in Dili and in Liquica town), separate budget and accounting systems, and separate management lines may not be the most efficient project management structure.⁸ CARE and WaterAid cooperated well, and financial and monitoring were mostly collated into single documents. Nonetheless, it is likely that the dual systems incurred higher costs (compared to a unified system), and that information flows were not as efficient as they could have been - for one, gathering of beneficiary and activity data for the evaluation proved difficult.

More importantly, the duality of systems is seen as having created or compounded four key challenges.

The **first** challenge concerns the definition of the project's target group: with WaterAid focussing on GMF and CARE on farmer groups, there were two parallel target groups (partially overlapping in those thirteen villages supported by both partners). Even when added together, the two target groups made up only about half of the target villages' population. There is also inconsistent language in MAKAA'S documents: while the overall

8. Arguably, this dual structure may be the price of combining the expertise of two independent organizations. As CARE points out, it may be indeed efficient to work in consortium for reasons of technical expertise, reach, and to overcome operational constraints. As CARE puts it, "when looking at delivering integrated programs across sectors - no one agency can or should attempt to have all the expertise needed to implement such a project - CARE brought food security and Water aid brought WASH expertise. Working in partnership is key. The real issue is around joint planning and coordinated implementation."

Figure 7 | The MAKAA'S project and its two implementation streams



objective simply lists 'communities' as the target group, outcome indicators refer to individuals, households, or farmer and water management groups. Conceptually, CARE based implementation on a broader notion of the 'village'. However, CARE staff and local implementation partners perceived the project's target group to just comprise farmer group members. As we will see in the following sections, this inconsistency often led to misperceptions on the village level, where residents understood that they all were to benefit from the project, at least to some extent.

Related to this, the **second** challenge is the absence of a village-wide approach: with each partner having its own target group and separate sets of field officers and implementation partners, the broader village as such found itself as the partnership's 'stepchild'. With the village and its envisaged role for adaptation planning thus marginalised, the ARAP process lacked the necessary foundation. This weakness is seen as one amongst several factors that contributed to the rather poor results in overall adaptation planning.

As a **third** challenge, it is found that the way key terms related to climate change adaptation are understood and used differed amongst project staff and partners. There was not always a shared and correct understanding of terms such as 'vulnerability' and 'resilience', 'coping strategies' and 'adaptive capacity', 'reactive' and 'proactive' practices, as well as 'sectoral' versus 'integrated' development approaches.

Given that there has been little experience with the concept of climate change adaptation in Timor-Leste, however, it may not come as a surprise that beneficiaries and project partners made incorrect use of the terms at times, or were confused about the relevance and importance of climate change adaptation.

Finally, consortium partners – while having been known in the target area from previous projects – were not acknowledged by the target population as being united under the flag of the MAKAS project, but rather seen as working as separate organizations in different sectors, i.e. agriculture and WASH. Some 59% of the interviewed households said they had never heard about the MAKAS project as such.

Seen in isolation, implementation of activities related to both outcome 1 and outcome 2 was both efficient and effective, given that three key factors of leadership, structures, and stakeholder commitment were present.

Meanwhile, none of these factors existed in relation to the third outcome: while the CARE project manager signed responsible for outcome 3 activities, the workload related to outcome 2 did not allow for the drive that may have been required. In effectively treating the farmer and water management groups as the target group, outcome 3 lacked the underpinning structure for adaptation planning.

Planning for climate change adaptation was in line with national policy, as presented in chapter 3. But in practice, interest from national and district government counterparts in developing activities under this outcome was considerably low. A central reason for this might be that the proposed NAPA projects remain unfunded thus far.

Furthermore, project staff pointed to three main challenges: the lack of time, knowledge and human resources for adequately dealing with this outcome, delays in setting up district and community development plans on behalf of the government, and a low to moderate interest in developing resilience action plans on behalf of the villages.

It is recognized that more progress towards outcome 3 could have been achieved during an anticipated second MAKAS phase. Even so, the set-up of MAKAS project is seen as a key reason behind the rather poor results towards outcome 3. A unified implementation structure with the village as its main anchor likely would have been better suited.

5. Effectiveness

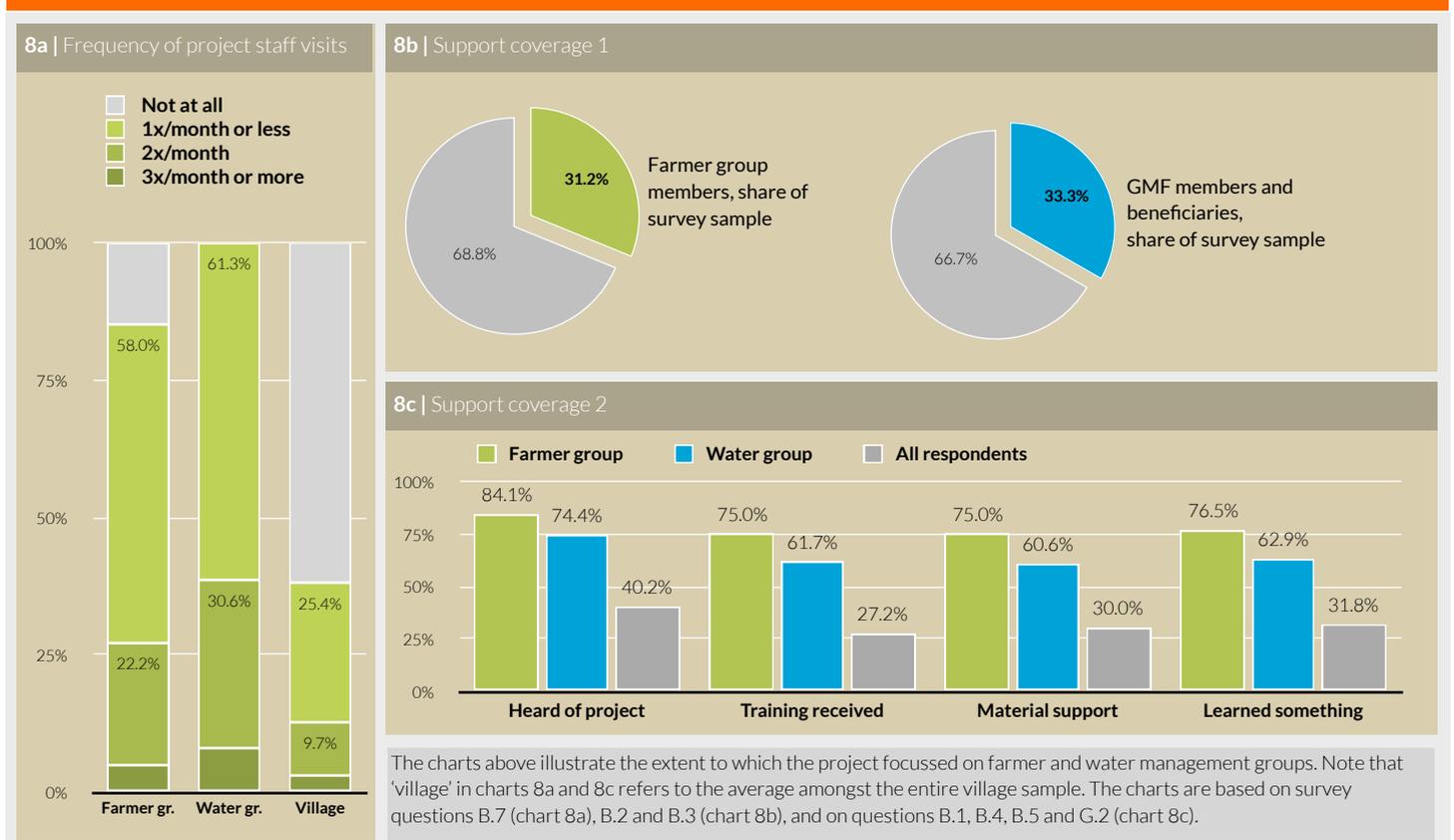
Having presented the findings related to relevance and efficiency, it is time to turn to the project’s effectiveness: to what extent was the MAKAAAS project effective? In particular, to what extent were its targets achieved? The chapter begins with general observations and then analyses the level of target achievement for each of the three indicators.

Overall, the MAKAAAS project design is found to be effective and based on a sound theory of change. It is found that the combined focus on food security and water/sanitation is sensible, with constructed water tanks and ponds enabling adapted agricultural practices. Furthermore, the implementation of activities towards outcomes 1 and outcome 2 is seen as effective when considering the respective target groups.

Assessing the effectiveness of the MAKAAAS project in terms of the extent to which it reached its targets is complicated by three factors: the different target groups for the various outcomes, an inconsistent use of frames for each indicator (village, household, farmer groups, GMF etc), and the limited ability to compare with baseline data.

It is observed that overall, the project did meet its ambition of supporting 4,000 residents in the target area. Project data show that the overall number of households in the 33 target villages is 3,180 (each household with an average of 5.6 members), about half of whom have been benefitting from activities centered around water management groups (700 households) and the 91 farmer groups (around 1,000 households). Since village-wide ARAPs were only established in very few villages (3 out of 33), the overall number of village households can however not be reasonably seen as beneficiaries. This is supported by survey results (see figure 8), which show that support has not much extended beyond direct target groups.

Figure 8 | Involvement of villagers in assessments and project planning



5.1 Outcome 1: level of achievement

Vulnerable households are implementing water management and water resource protection strategies that support livelihood, domestic consumption and DRR

“Resilient WASH will be implemented in the most vulnerable aldeias to provide more reliable access to water for domestic and livelihood use. By having a more consistent and reliable water supply and reducing damage from uncontrolled rainwater run-off, households will be less vulnerable to the impacts of variability and changes in rainfall. In addition, water resources will be protected through increased vegetation and sustainable water systems will be built and risks from water-borne disease will be reduced through use of latrines and improved hygiene practices.” (Project proposal)

WaterAid collaborated effectively with DAA and NGOs, and developed capable counterparts in the 20 water management groups. Entry points on the sub-village level were sub-district WASH facilitators, to which close working relationships have been held.

WaterAid provided support for the construction of water supply systems and storage, and introduced better water resource management practices. Findings from the community workshops and focus group discussions revealed that in those villages in which WaterAid projects were implemented, residents are now experiencing significant improvements in water access and availability. As previously shown by the mid-term review, progress in water access was achieved through the construction of water infrastructure including gravity-fed water systems, water tanks, community taps, household taps and water ponds.

Concerning GMF, WaterAid ensured that their formation was in line with governmental regulations. For example, each GMF is compiled of at least seven members. In order to ensure for women’s empowerment, water management groups under the project were composed of at least 30% women, and in half of these groups, women are in leadership positions. Most of the water management groups created under the MAKAS project have a woman as treasurer.

9. The following colour codes are used to visualize the level of target achievement (figures 9, 10, 11):
- Fully achieved
 - Likely achieved
 - Partially achieved
 - Likely not achieved
 - Not achieved
 - Not assessed

Figure 9 | Outcome 1: level of achievement⁹

No	Indicator	Achievement
1.1	% reduction in water-borne diseases	<ul style="list-style-type: none"> • 71.5% of survey respondents experience less water-borne diseases • Out of those, 67.2% attribute this reduction primarily to sanitation training and 27.1% to improved quality of drinking water • The reduction in water-borne diseases is greater amongst GMF members; 82.6% see an improvement compared to 66.6% amongst non-members. Amongst GMF members, 74.7% attribute this primarily to better sanitation practices and 20% to better water quality.
1.2	75% of households improved access to water supply, sanitation and hand-washing facilities in 20 bairros.	<ul style="list-style-type: none"> • 20 water supply/sanitation interventions were completed or approached completion by the time of the visit • In these WaterAid-supported villages, 64.7% saw water access improved, compared to 58.6% in other villages • Sanitary conditions are seen as improved by 42.8% in these villages (38.8% in others) • Hand washing facilities are seen as improved by 88.8% in these villages (72.7% in others)
1.3	20 functioning water management groups composed of at least 30% women.	All water management groups have at least seven members. Groups are composed of at least 43% women.
1.4	50% of water management groups have women in leadership roles.	50% of water management groups have women in leadership roles.
1.5	50% of households are implementing effective water resource protection strategies.	Out of the 3.180 households in the project area, more than 50% of households were benefitting from activities related to effective water resource protection strategies. Activities related to this indicator were the construction of water systems, tanks and ponds, as well as forest conservation, tree planting, and bioengineering. WaterAid, through its 20 projects, benefited around 700 households directly, while 931 households benefited from the CARE project in 2013 alone (with approximately the same amount covered in 2014). Moreover, all 91 farmer groups were engaged in afforestation activities.
1.6	75% of water management groups are implementing effective water resource management strategies.	Assuming that all GMF follow the activities assigned to them based on existing regulations, eventually 100% of water management groups are implementing effective water resource management strategies. Results from focus group discussions indicate that the 75% mark is has been attained.

Finally, in terms of promoting sanitation and hygiene practices, it is found that positive behavioural change on the household level is largely based on women's improved knowledge and changed attitudes. This supports the effectiveness of project activities, in which community members on the sub-village level were supported to construct 220 household latrines, using concrete and traditional materials. The construction of latrines supported positive behavioural change.

Provided with sanitation training, water management committees disseminated five key sanitation aspects regarding a) latrine use, b) hand-washing, c) water storage, d) fencing of animals, and e) reducing mosquito breeding sites across 20 sub-villages.

In sum, it is found that the interventions have been highly effective, and that five of the six indicators have been achieved or are likely to have been achieved (*see figure 9*). Concerning indicator 1.1, “% reduction in water-borne diseases”, a strong positive trend is observed – however, the project did not set an actual target. With regard to indicator 1.2, two of the four sub-targets were achieved. Most of the indicators' achievement was analyzed based on the results from the household survey. In two cases, however, WaterAid's GMF monitoring matrix was consulted (indicators 1.3 and 1.4).

As indicators refer either to all households or the households of supported barrios only, both percentages are listed where possible. It is noted that respondents who were supported by water management groups - each of which consisted of seven members (140 in total) counted themselves as members. Thus, the term ‘GMF members’ is being interpreted as beneficiaries of water management committees.

5.2 Outcome 2: level of achievement

Vulnerable households are implementing integrated climate-resilient land management practices which support sustainable livelihoods and equitable household food security

“Men and vulnerable groups including people with disability to improve livelihood resilience and household food security through climate resilient land management practices. (...) In addition, post-harvest handling and seed management will be improved through the provision of seed storage containers and training in appropriate seed storage techniques to ensure an ongoing, sustainable supply of seed.” (Project proposal)

Activities related to outcome 2 were centered on working with existing or new farmer groups. CARE and their local partner, CDEP, worked with 91 farmer groups in total - 31 new and 60 pre-existing groups. Under this outcome, activities were based on an integrated approach in which emphasis was put on the overall sustainability of farming, water and land use practices, and improved risk mitigation.

Activities included the distribution of new varieties of seeds, such as improved maize and cassava in order to enhance food security and raising yields for farmer group members. The introduction of new and adapted farming techniques comprised the construction of water harvesting ponds connected to vegetable home gardens, the promotion of enhanced planting techniques such as intercropping, covering of crops as well as terracing on sloping fields, the introduction of composting and organic fertilizer, and distribution of air-tight drums to reduce post-harvest losses.

The approach was widely regarded as ‘good’ by workshop participants, but a number of comments also revealed that at least in some groups there was a lack of ‘self-mobilization’ – in other words, groups became active as a whole only when MAKAAAS project staff visited. Some of the underlying factors were suggested by the mid-term review, including the observation that the head of a farmer group a) is the one to attend the majority of trainings and therefore is also the one to make the majority of decisions relating to the home-gardens, and b) tends to own the land on which they are farming.

A *second* strand of activities was the distribution of tree seedlings and the construction of nurseries. Through these activities, the project aimed at reforestation of highly degraded and landslide-prone areas that pose an increasing threat to some of the villages, and that is particularly caused by non-sustainable land use practices and ongoing deforestation due to firewood collection.

The protection of water sources was another concern under these activities. Through establishing twelve nurseries in which more than 170,000 seedlings were produced until the end of the project (including fruit trees, industrial tree species, and common tree species such as the 'rain tree'), the propagation and distribution of these contributed to the replenishment of aquifers through reforestation activities.

However, as already noted in the MTR, it is likely that impacts on soil integrity and groundwater recharge are likely to emerge fully only after the project conclusion. Moreover, it is uncertain a) how many of the seedlings will survive after the end of the project (there are limited capacities and incentives for local groups to managing the seedlings effectively) and b) how many of the nurseries that were established under the project will still be run in the future. While the seedlings were bought by the project and then distributed to the communities, there is no viable option yet to ensure that seedlings will be bought by other institutions, local residents, or the private sector.

A *third* strand of activities included small-scale mitigation measures to reduce the risk of erosion and land slides. Technologies to prevent erosion, repair soil structure and enhance water soil retention included bio-engineering and the construction of live check dams, specifically around small upstream riverbeds. This was done through multiple steps that included an analysis of soil structures, design, awareness raising to and mobilization of local residents to participate in the activities, and eventual dam construction. This strand of activities was seen as highly important by village residents. Since erosion remains a

Figure 10 | Outcome 2: level of achievement

No	Indicator	Achievement																											
2.1	At least 75% of farmer groups working with the project are growing crops that are resilient to climate hazards affecting the local area.	The project provided climate-resilient maize seeds to 87 of the 91 farmer groups (95.6%) as well as cassava seeds to 32 and sweet potato seeds to 25 groups. Considering these figures alone, it is safe to assume that the 75% threshold was reached. In fact, 76.3% of the overall sample, and 85.0% of farmer group members, plant improved-type maize.																											
2.2	At least 75% of farmer groups working with the project are producing at least seven key crops in an annual cycle.	<ul style="list-style-type: none"> While it cannot be assessed what percentage of groups plant at least seven crops, it is found that the average number of crops among the overall population has increased from 5.66 to 6.61 between 2011 and 2014 (mean up from 5 to 6). The increase is twice as high amongst strata A (5.85 to 7.11 (+1.36)) compared to strata B (5.49 to 6.18 (+0.69)), and with farmer group members representing just a part of strata A sample, it is highly likely that the threshold has been attained. 																											
2.3	At least 75% of farmer groups working with the project have adopted and are practicing conservation agricultural practices.	<p>Percentage of farmer group members applying conservation practices</p> <table border="1"> <caption>Data for Figure 10: Percentage of farmer group members applying conservation practices</caption> <thead> <tr> <th>Stratum</th> <th>2011 (%)</th> <th>2014 (%)</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>60</td> <td>45</td> </tr> <tr> <td>B</td> <td>36</td> <td>25</td> </tr> <tr> <td>C</td> <td>97</td> <td>97</td> </tr> <tr> <td>D</td> <td>39</td> <td>42</td> </tr> <tr> <td>E</td> <td>31</td> <td>38</td> </tr> <tr> <td>F</td> <td>26</td> <td>28</td> </tr> <tr> <td>G</td> <td>25</td> <td>31</td> </tr> <tr> <td>H</td> <td>70</td> <td>78</td> </tr> </tbody> </table> <p>Technically, the indicator threshold has been achieved. However, the gain in uptake of these techniques is rather minor (negative with regard to tillage)</p> <p>Key to letters</p> <ul style="list-style-type: none"> A Zero tillage B Minimum tillage C Crop rotation D Agro-forestry E Contour farming F Mulching G Integrated pest management H Covering of crops 	Stratum	2011 (%)	2014 (%)	A	60	45	B	36	25	C	97	97	D	39	42	E	31	38	F	26	28	G	25	31	H	70	78
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H	70	78																											
2.4	At least 75% of farmer groups receiving air-tight drums reporting reductions in post-harvest losses of maize.	<p>The project distributed 239 air-tight drums to 78 out of 91 farmer groups. While these drums were described as having a positive effect, the share of farmer group households is too small to draw a valid conclusion.</p> <p>Thus, it is with limited confidence that this target is seen as likely to have been achieved.</p>																											
2.5	60% of farmer groups storing water/fodder for livestock.	Amongst farmer group members, 71.6% store water and 83.0% fodder for livestock - the target threshold has thus been exceeded. Intriguingly, most of these farmers applying the practice say that they introduced it over the past three years (73.0 and 80.8% respectively) - thus indicating a very strong impact of the project.																											

Figure 10 | Outcome 2: level of achievement (continued)

No	Indicator	Achievement
2.6	30% increase in household access and use of climate information (including seasonal forecasts) to plan their livelihood/water management strategies.	<ul style="list-style-type: none"> • 27.8% of households have access to climate information, compared to 14.2% in the baseline • Out of those with access, 74.3% use it for planning - that is almost twice the figure of the baseline (43.7%) • The respective increases by 30% have been achieved
2.7	At least 75% of households participating in project activities report higher yields in key crops compared with baseline and district average.	<ul style="list-style-type: none"> • Amongst farmer group members, 85.2% say that they are better off than they were in 2011 (in terms of income and food security). • For water management group members, this figure stands at 74.7%. • Both figures are higher than the respective average (68.8%), indicating an effect of the project. This is supported by the fact that amongst the overall sample, 69.6% see positive role of new agricultural techniques, 82.6% of better water management, and 47.4% of other project-related factors.
2.8	# of households with non-agricultural or non-climate sensitive income sources.	<ul style="list-style-type: none"> • In the target area, probably the only three non-agricultural, non-climate sensitive income sources are skilled labour (carpentry, metal work etc.), employment in the public sector, and remittances. Currently, 36.3% of respondents can rely on one of these income sources. • On average, on-farm activities have contributed 69.3% to the livelihood of respondents in 2014 (70.1% in 2011). • Without a target, a qualification about the level of attainment cannot be made.
2.9	Increase % of men who identify reproductive, domestic and livelihood tasks when constructing 24 hours clocks.	This indicator was not assessed.
2.10	Increase of % of men who feel that family income belongs to both partners (disaggregated by type of activity).	<ul style="list-style-type: none"> • The percentage of male respondents who state that men and women decide equally what to do with the family income is 72.2% • 36.9% of men perceive that women have gained more influence in household decisions over the past three years. Out of them, 18% attribute these changes to the MAKAAAS project.
2.11	Increase % of households where men and women share control over family income or over the income they make themselves.	66.7% of male respondents state that decisions are taken equally on agricultural investments. This represents a slight increase compared to the 2012 Gender power analysis, in which 60% of men said that these decisions were made jointly (GPA report p. 19). However, the sample size of the GPA survey implied a margin of error of 8.8% - combined with the evaluation survey's margin of error of 5.5%, the chance that the 2014 figure represents an actual improvement is 82.7%.
2.12	% increase in joint decision making over productive assets.	This indicator was not assessed.
2.13	Reduction in number of hunger months.	Contrary to the observation presented in the baseline report, the evaluation team found that no hunger months existed in either 2014 or 2011. Based on the results of the seasonal calendar exercise, it is found that food supply exceeded food needs in every month, and that there has been no significant difference between 2011 and 2014.

constant challenge that continuously degrades soils and the environment, future projects should extend activities for reducing erosion-risks through these advanced techniques.

A *final* activity was the distribution of improved cooking stoves to reduce firewood usage. This activity, however, commenced relatively late in the implementation of the project, and must therefore be considered as being promotive and of a model character to introduce local residents to alternative and more sustainable ways of using firewood for cooking purposes. Once again, a longer project implementation would have created more opportunity for a greater effect.

In sum, implementation has been largely effective: all but one of the assessed indicator targets was found to be achieved or likely to have been achieved. Diversification of crops and the uptake of climate-resilient crops has been particularly significant, while the adoption of conservation farming techniques has not changed as much for the project period.

While the share of those who say they are better off in terms of food and income security than in 2011 is greater amongst group members than amongst other villagers - with most group members attributing this improvement to the project (amongst other factors), it is also observed that overall, much room for further improvement in terms of climate change adaptation remains. For instance, while the share of villagers with access to climate information has doubled, three out of four villagers remain without such access. This challenge affects not only individual households, but also many of the farmer groups that are yet to develop the capacity to anticipate changes in weather and climate.

5.3 Outcome 3: level of achievement

Communities, partners and local government have enhanced understanding of and capacity in (gender-transformative) climate change adaptation that inform local planning processes

"This activity will contribute to the evidence base that supports CBA in Timor-Leste. This will include strengthening the capacity of communities, local authorities and civil society partners to monitor the local climate, manage local climate and environmental information and integrate this information into planning. (...) In addition, relevant stakeholders will have strengthened capacity to initiate and lead dialogue and planning processes to sustainably manage local resources, and reduce the vulnerability of watershed residents and users to the impacts of climate change. Women will be empowered to take leadership roles and contribute to participatory planning meetings and discussions within their communities regarding appropriate CBA options." (Project proposal)

The implementation of activities under this outcome involved engagement with adaptation policy and planning at the national level as well as growing the evidence base through drawing on local experiences such as in community-based natural resource management and ecosystem-based adaptation.

Activities were supported by a knowledge and capacity building strategy for project staff, partners at village and district level, and on the national level. Using various tools, including participatory climate change scenarios and visioning exercises, the project aimed at developing Resilience Action Plans at the village level.

Figure 11 | Outcome 3: level of achievement

No	Indicator	Achievement																														
3.1	% of women reporting that they feel confident to put forward their opinions in local level planning.	<ul style="list-style-type: none"> No statement can be made about the achievement of the indicator (no target). 66.1% of women state that both men and women speak during village meetings. But 20.3% say that it is mostly men (8.5% express that it is only men). 																														
3.2	% of women who report that they were listened to in local level planning.	<ul style="list-style-type: none"> No statement can be made about the achievement of the indicator (no target). However, 65.5% of women state that both men and women influence decisions about village affairs. However, 33.6% state that processes are mostly, or only, influenced by men. 32.5% of women state that it will be mostly or always men who take a final decision. 																														
3.3	Priorities in the Village Resilience Action Plan are reflected in the Community Development Plan.	Only three ARAPs were developed. However, linkages between village and community levels have improved throughout the project.																														
3.4	% of target population understands the impacts of climate change and adaptation options appropriate to their context.	<table border="1"> <caption>Data for Figure 11-3.4: Household adaptation to climate change</caption> <thead> <tr> <th>Group</th> <th>Better adapted/prepared</th> <th>No change</th> <th>Less adapted/prepared</th> <th>I don't know</th> </tr> </thead> <tbody> <tr> <td>Average</td> <td>54%</td> <td>17%</td> <td>7%</td> <td>22%</td> </tr> <tr> <td>Members, farmer gr.</td> <td>89%</td> <td>6%</td> <td>5%</td> <td>0%</td> </tr> <tr> <td>Non-members, farmer gr.</td> <td>39%</td> <td>23%</td> <td>8%</td> <td>30%</td> </tr> <tr> <td>Members, GMF</td> <td>76%</td> <td>14%</td> <td>4%</td> <td>6%</td> </tr> <tr> <td>Non-members, GMF</td> <td>44%</td> <td>19%</td> <td>9%</td> <td>28%</td> </tr> </tbody> </table> <p>As the chart on the left shows, the share of respondents who feel that their households are now better prepared and adapted to climate change than in 2011 is significantly higher amongst farmer and water management group members. Most of these group members attribute the change to the MAKAAAS project.</p>	Group	Better adapted/prepared	No change	Less adapted/prepared	I don't know	Average	54%	17%	7%	22%	Members, farmer gr.	89%	6%	5%	0%	Non-members, farmer gr.	39%	23%	8%	30%	Members, GMF	76%	14%	4%	6%	Non-members, GMF	44%	19%	9%	28%
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3.5	20 villages have developed Resilience Action Plans which address women and men priorities.	Resilience Action Plans were developed for three villages. The level of interest and ownership to become engaged in this process is low, and there is no underpinning structure that encapsulates the broader village. 20.8% of the local population participated in planning meetings. Following the mid-term review, it was decided to reduce the number of envisaged ARAPs to ten.																														
3.6	At least five of the six representatives have capacity to recognize the impacts of climate change and incorporate them into planning processes.	All six community leaders were sensitized. They felt confident and able to integrate climate change into future planning processes at the local level. Community chiefs were actively engaged in project implementation in the field, and in planning and coordination activities via the organizational committee. Yet, there is great uncertainty as to whether the capacity itself will lead to adjusted planning, given low levels of interest across several levels.																														
3.7	Inclusion of climate change adaptation and watershed management into the district development plan.	This indicator could not be assessed due to the fact that by the end of the MAKAAAS project, updated district development plans did not exist.																														
3.8	# of extension workers and sub-district facilitators promoting climate change adaptation and gender equity in their work.	Extension workers participated in the project planning and in the inception workshop. But it remains unclear how many of them are really able to integrate climate change adaptation into their daily work: At the district level, no regulation or guideline exists that would assign extension workers with topics they have to integrate into their work and to proactively promote them. Concerning gender, while female farmers are usually also assisted by extension workers, it is unlikely that they actively promote gender-sensitive climate change adaptation (extension workers did not participate in gender training).																														

Since district and community-level development plans did not exist by the end of the project, indicators 3.3 and 3.7 were not achieved - an aspect over which the project management had very limited leverage. In fact, the respective government-driven processes (Programa de Desenvolvimento Descentralizado, PDD; and Programa Nacional de Desenvolvimento do Suco, PNDS) to this end were only launched in 2013. For indicators 3.1 and 3.2, no actual statements can be made about their achievement, as they lack specific targets.

The most significant achievement concerning outcome 3 relates to the extent to which members of farmer and water management groups say that they are now better prepared for and adapted to climate change: more than three out of four members (89% and 76% respectively) see themselves better adapted, figures that stand substantially higher than amongst non-members (39% and 44% respectively). This positive trend and high rates of attribution to the project is encouraging, as well as the extent to which community leaders and extension officers have gained awareness and experience.

These achievements are yet to transcend to more action and coherent planning at the village, community and district levels. With a missing village-level structure for ARAPs, a comparatively low sense of urgency amongst villagers and many officials on the need for climate change adaptation, as well as time and resource constraints, it may not be surprising that the objectives related to village- and community-level planning are yet to be achieved. Nonetheless, the experience of the MAKAAAS project contributed to the evidence base for climate change adaptation and produced valuable lessons for future implementation - lessons that are provided throughout section C of this report.

6. Impact

Overall, the MAKAAAS project created a positive impact and achieved its overall objective – to increase the resilience of vulnerable communities to the unavoidable impacts of climate change. According to those survey respondents who perceived an improved level of household preparedness to climate risks over the past four years (76.3%), the MAKAAAS project played the main positive role for 69.2% of all respondents (Strata A: 79%, Strata B: 64.5%).

Results from the impact analysis provide five key findings:

- **First**, that in villages with a comparatively high concentration of activities (dose), the impact was higher in terms of perceived improvements of agricultural; and livelihood conditions;
- **Second**, that WASH-related impacts were rather to be found on the sub-village level due to the scope of WaterAid interventions;
- **Third**, that those villages with a higher intervention dose recovered more quickly and more positively from the prolonged drought in 2011-2012;
- **Fourth**, that villages with a higher intervention dose are becoming more resilient to climate-related hazards: based on improved levels of preparedness to, and reduction of, drought-related risk, they are more capable to cope with minor hazards - such as the 2011–2012 dry period that was described by all workshop participant throughout all villages.
- **Fifth**, while positive changes in the villages are apparent, it needs to be emphasized that they remain highly vulnerable to climate change. While traditional ways of coping capacity can be found, with climate variability and extremes becoming more fierce under climate change, traditional coping strategies may not longer be sufficient.

In the following, three aspects will be analyzed in greater detail: the impact on agriculture, livelihoods, drinking water and sanitation (6.1), on food security and livelihood diversity (6.2), on community capacity (6.3), and on gender and women's empowerment (6.4).

6.1 Impacts on agriculture, livelihoods, drinking water and sanitation

Figure 13 shows the results of the five workshops held on the village level concerning perceived changes in agriculture, livelihoods, access to drinking water and sanitation.¹⁰ The figure illustrates that on the average, impacts related to agriculture and livelihoods were higher in those villages in which a higher amount of activities was implemented (comparison Strata A / Strata B).



For agriculture, there is a clear dip between 2011 and 2012, when the area was affected by a prolonged drought period. After this, the situation improved to a greater extent for strata A than for strata B villages. The reason for this can be seen in more activities that were implemented in these villages by the MAKAA'S project.

For livelihoods, the situation for both Strata villages is a 'little bit less than good', but slightly better for Strata A villages. This is the impact from increased production in those villages that have benefited to a higher extent from CARE-related activities in farming and vegetable gardening.

Both for access to drinking water and sanitation, the improvement and positive impact from the WaterAid projects is evident. The reason why the situation for the overall village levels remains between 'bad' and 'normal', though, is that WASH-related activities in most cases were implemented on the sub-village level - hence many workshop participants did not benefit from them.¹¹

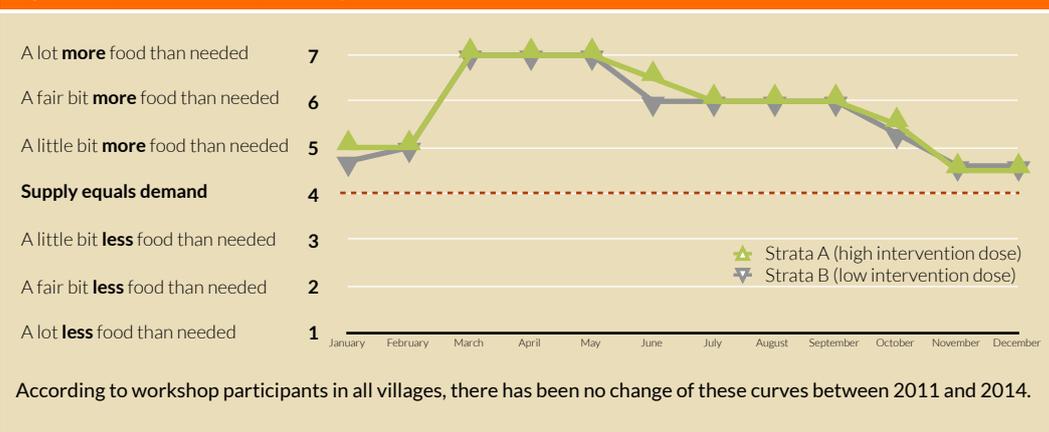
6.2 Impacts on food security and livelihood diversity

One focus of the MAKAA'S project was the reduction in the number of 'food hungry months' (indicator 2.13). From the community workshops it however emerged that food

10. Workshop participants were asked to rate their living conditions for each year between 2011 and 2014; their responses are shown as numerical values between 5 (very good) and 1 (very bad).

11. Perceived impacts concerning drinking water and sanitation would have arguably been greater if only representatives from beneficiary sub-villages had been invited to the workshops.

Figure 14 | Food security throughout the seasons



security was reported to already been rather high prior to the project launch by workshop participants – thus, no impact was generated in increasing the level of food security (see figure 14). One central reason for this is that people during the pre-harvest period mostly rely on other, small-scale sources of livelihoods, such as selling livestock. In this context, the term ‘hunger months’ remained misleading for workshop participants, since the main challenge for the broader population concerns poor food variety during these months, rather than an actual food shortage.

While therefore not being relevant to reduce the number of ‘hunger months’, the impact of MAKAAAS was rather in providing farmer groups’ households with an increase in food availability and food variety around the immediate post-harvest period (see figure 15). In this vein, it needs to be stressed out that livelihood sources shifted slightly towards a higher diversification of food sources – which is an important aspect of resilience.

6.3 Impacts on community capacity

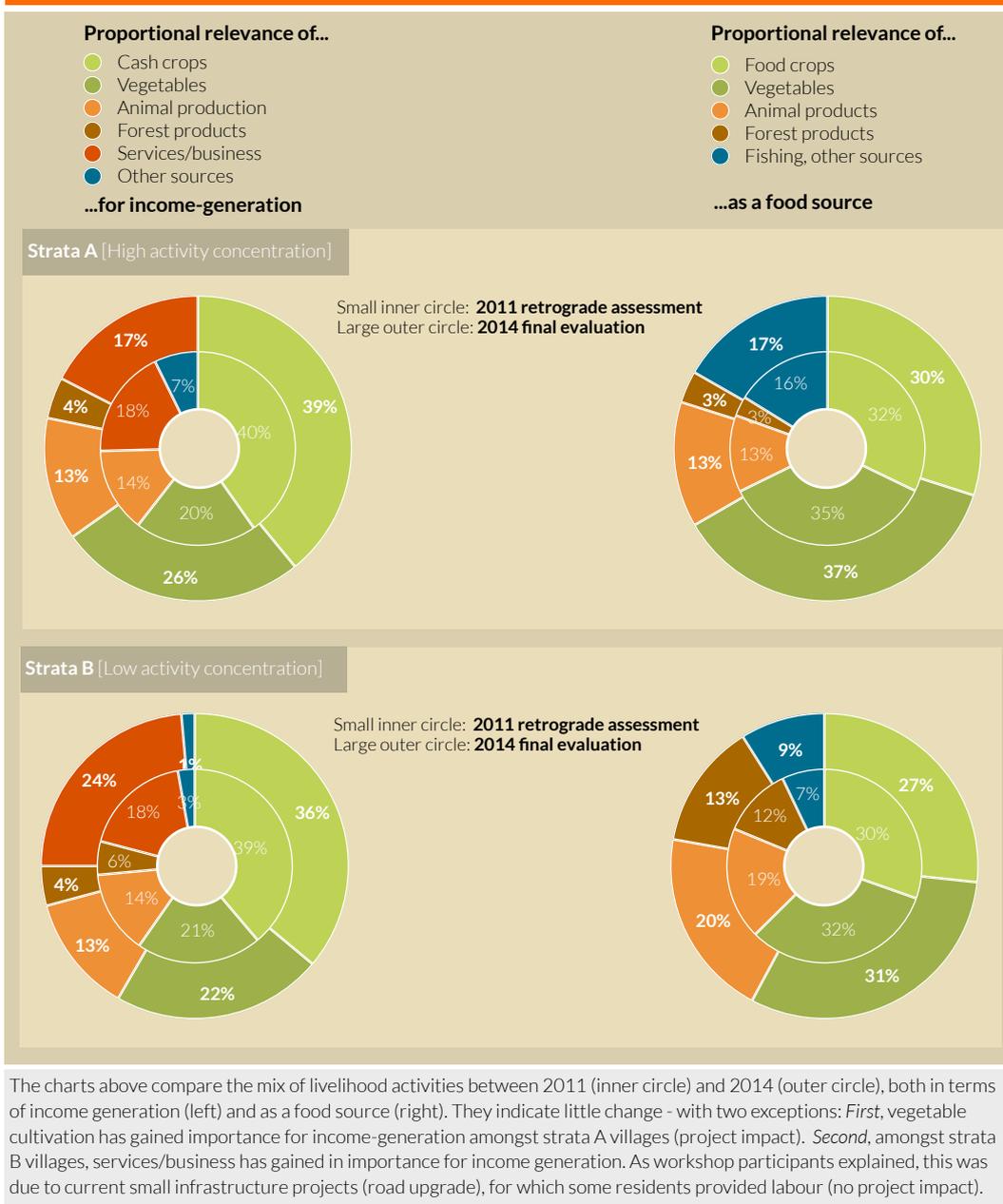
Even though not a direct objective of the project per se, it is relevant to ask to what extent the project has impacted on community capacity - which can be understood as a precondition for the success of any (climate change adaptation) project. If being positively tapped, enhanced and translated into collective action, community capacity provides an important basis for adaptive actions and collective resilience. Hence it is reasonable to analyze at least two key approaches of the project, which was a) to work with farmer groups and water management committees, and b) to support local planning processes, and to assess how these have impacted on social capital.

Before taking collective measures, consent needs to be built around what actually is the area of concern. In fact, without a proper understanding as to how climate change affects the lives of residents, it would be impossible for communities to develop strategies to address the factors that are making them vulnerable. As one background brief to the project puts it aptly, “rural communities in Liquiça district have never had the chance to analyze the issues around climate change in a systematic manner” before the start of the project.¹²

Therefore, consortium partners introduced participatory, gender-balanced methodologies, adapted to local contexts, to help communities collectively analyze the current and potential future impacts of climate change on their lives and livelihoods. This participatory Climate Vulnerability and Capacity Analysis (CVCA) was applied in three villages. With the main objectives a) to analyze vulnerability to climate change and adaptive capacity at the village level and b) to combine local knowledge and scientific data to yield greater understanding about local impacts of climate change, the CVCA provided a platform for joint understanding and consensus-building on the challenges and opportunities to dealing

12. CARE (2014): Improving Climate Resilience: Integrating Vulnerability and Capacity Analysis into Local Planning Processes, Dili: MAKAAAS project.

Figure 15 | Diversity of incomes and food sources



with climate change, and to adapting to it. Principally, CVCAs can thus be of great importance in proper planning to reduce vulnerability to climate change related threats.

Considering the particular issue of climate change, the evaluation found a) that the level of awareness and understanding of underlying factors remains limited and b) that planning for adaptation is seen as an area of rather low concern. Although village and group leaders have begun to discuss climate change as a result of the MAKAA's project, the fact that weather conditions have been favourable over the past two years did not add any sense of urgency. None of the participants of focus group discussions and community workshop participants specifically mentioned CVCAs to have brought changes to their lives.

This observation can also be extended to the local plans known as ARAPs – as one workshop participant in Metiluli village stated: “so far, this plan has not had a relevance for my family.” The finding from the survey that more than two-thirds of survey respondents see themselves as better off than in 2012, and that 69.5% of respondents quote ‘any changes in the weather’ as one of the contributing factors, supports this interpretation.

Meanwhile, a vast majority of households in the target area have experienced changes in the climate over the past ten years – most recently between 2011 and 2012, when villages were affected by a prolonged drought. Concerning this matter, the combined outcome measures across WASH, sustainable farming technologies and small-scale risk mitigation measures yielded a positive impact. The most significant achievement relates to the extent to which members of farmer groups and GMF say that they are now better prepared for and adapted to climate change: more than three out of four members (89% and 76% respectively) see themselves better adapted, figures that stand substantially higher than amongst non-members (39% and 44% respectively).

This positive trend and high rates of attribution to the project is encouraging. Again, a longer project might have good chances to build on what can be called a ‘good start’. In fact, the project already had a positive impact on community capacity: 73.2% of respondents said that village residents were now working together more than they had three years ago. Amongst those, 36.8% attributed this improvement to the MAKAAAS project.

Against this background, in any future project, planning should be regarded as an iterative process in which CVCAs are an important initial point. Working actively and continuously with village groups – such as farmer groups and water management committees – should remain the backbone of any initiative dealing with community capacity. However, these groups should be viewed more as a means to an end than an end in themselves: Rather than being treated as target groups, they should be deployed to spread key messages and practices to the wider villages. Such wider spread could then help facilitate the basis for village-level adaptation planning.

6.4 Impacts on gender and women’s empowerment

In the MAKAAAS project, indicators related to gender and women’s empowerment were defined across three aspects: a) institutional affairs (indicators 1.3, 1.4), b) household affairs (2.9, 2.10, 2.11), and c) local planning and decision-making processes (3.1, 3.2).

It needs to be stressed that for those indicators where an actual ‘improvement’ or ‘increase’ was defined, no valid baseline data was available. This affects five of the seven indicators. This makes it difficult to define the actual impact of the project. Moreover, some of the indicators as expressed in the project indicators are difficult to measure (taking both qualitative and quantitative approaches into consideration), even where comparative baseline data was available (indicators 2.9, 3.1, 3.2). Therefore, future projects should take the topic of impact assessment of gender and women’s empowerment into account from the planning phase on. The following provides an overview of results from this analysis.

Concerning institutional affairs, the MAKAAAS project had a direct influence on achieving the objectives, i.e. through warranting membership of at least 30% women in water management committees, with 50% of the groups having women in leadership positions. In both cases, the objective was achieved. Based on information provided through the focus group discussions, both men and women agreed that the groups were well-organized and worked effectively. Mixed gender groups are seen as sensible, and women play an important role in ensuring for improving sanitation conditions on the village level. Moreover, women are taking the treasurer position in many groups, which demands for a high sense of responsibility.

The reasoning for having a significant amount of women as members of water management committees is also culturally sensitive. In most of the households in the project area, women play an important role in deciding about the use of money for social (in contrast to productive) purposes such as contributing to village funds. Moreover, it is generally women who manage household finances – including payment of monthly water fees to the GMF (that enable the maintenance of water supply systems; between USD 0.25-0.50 per month). In terms of improved sanitary conditions, it is found that positive

behavioural change is largely based on women's improved knowledge and changed attitudes - in turn, this led a positive development on the household and on the broader village level. Most importantly, it was reported in the MTR that female water management committee members noted that the use of the latrines had improved family health, with children suffering diarrhea less frequently.

Related to household affairs, the percentage of male respondents who stated that men and women decided jointly on the use of family income is 72.2% (75.4 Strata A, 68.4% Strata B). This coincides with the finding that women mostly take decisions on 'social' aspects of household spending, e.g. for food, school books, and community funds. The percentage of men who stated that decisions are also taken equally on agricultural investments is slightly lower and stands at 66.7%. Workshop participants however said that in those villages in which gender training were conducted, training had led to positive changes in the way women and men now share daily work and activities. At least, participants confirmed, the inputs received incentivized many villagers to reflect on existing gender relations and the role of women.

Finally, concerning local planning and decision-making processes, 69.7% of respondents say that both men and women take part in village meetings (72.2% Strata A, 67.5% Strata B). 66.1% of women state that during these meetings, both men and women will speak (63.3 Strata A, 66.1% Strata B). 65.5% of women state that both men and women influence decisions about village affairs (68.1% Strata A, 64.8% Strata B). However, 33.6% expressed the view that processes are mostly, or only, influenced by men. Finally, some 32.5% of women stated that it would be mostly or always the men who made final decisions.

In sum, across all three aspects of women's empowerment, it emerged that institutional conditions were effectively enhanced through the project intervention - mainly through the introduction of a 'gender quota' and gender training. Here, positive impacts can be generated not only on women's representation, but also on broader village affairs.

However, impacting on the underlying power balances - when it comes to influencing village affairs - is a process that needs to change underlying sociocultural relations between men and women, and thus needs a much longer timeframe.

In the case of the MAKAAAS project, the slightly higher representation of women both in taking decisions about the household income, as well as the slightly higher degree of women's participation in village affairs (in strata A, compared to strata B) shows that combined and strong efforts can lead to positive effects indeed.

More vegetables, more food

Manuel, father of five children, lives in the farming village of Kaileulema, in the upstream area of Gularloa river. With more than 100 households, the village faces serious challenges in access to water - including for irrigation of their fields. This is especially the case for the lower-lying parts of the village that Manuel moved to with his wife twenty years ago. Since then, the family's livelihood basis was mainly based on subsistence farming. Over the years, Manuel realized that water resources became increasingly scarce, while the dry period apparently became longer.

When the news came in 2012 that the MAKAAAS project would support activities around livelihood improvement through advanced farming techniques, Manuel volunteered to participate as Head of a newly created local farmer group. He and six other farmers worked with the project from the very beginning and actively brought in their voices into planning and preparation of activities.

In cooperation with MAKAAAS project staff, they received new varieties of seeds such as improved maize. Manuel and his wife were also advised in the expansion of home gardening activities through applying advanced production techniques. Out of the seven farmers of his group, three were supported in the construction of multiple-use water ponds, including Manuel.

Through the project, Manuel and his wife were able to increase their maize harvest. At the same time, their livelihood focus somewhat shifted from farming to home gardening: with the training received from the project and the construction of the new water pond, he proudly stated that his produce of vegetables had tripled compared to 2011.

Representatives from the local government and other NGOs had visited him several times since, in order to learn how he had been able to improve production levels in his garden.

7. Sustainability

CARE and WaterAid devised an explicit exit strategy six months before the conclusion of the MAKAAAS project. The strategy drew on lessons captured through project monitoring, evaluation and learning processes, including recommendations from the MTR.

The exit strategy incorporated several crucial sustainability aspects, such as (a) alignment with government policy and planning systems; (b) building ownership amongst stakeholders and communities; (c) reinforcing partnerships and relationships established over the project; (d) capacity-building of local actors to take forward project outcomes; and (e) integrating work into regular activities.

On the local level, results from survey and focus group discussions show that members of farmer groups and GMF recognized the benefits of most interventions and displayed a strong willingness to sustain new practices and outcomes.

Overall, 79.8% of survey respondents said that they currently applied all techniques they had learned through the project (a further 13.9% said they apply some of them). Asked whether it was worth to apply these techniques in future, 49.3% said that all and 32.4% that some techniques were worth pursuing into the future. Most felt able to do so on their own (*see figure 16*). Amongst those respondents who do not currently apply everything they have learned, the lack of resources was seen as the major inhibiting factor, listed by 52.2% of those respondents.

Outcome 1

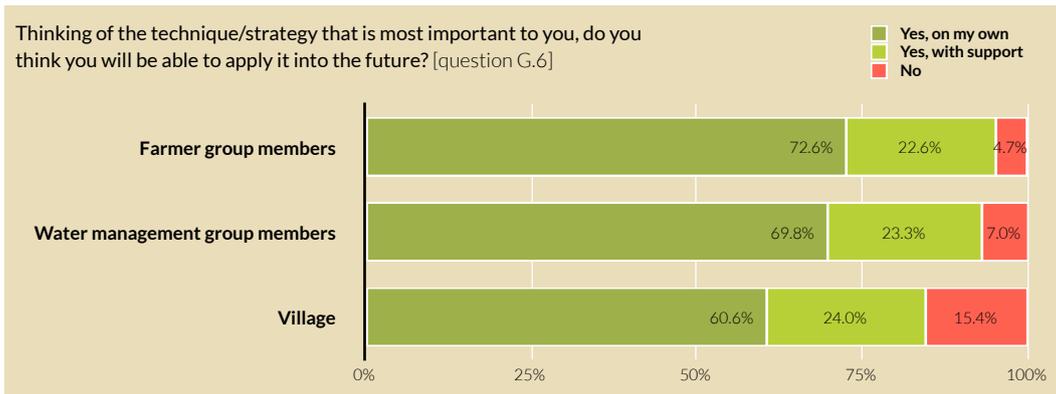
The project outcomes' sustainability is found to be generally high. Outcomes achieved in water supply and sanitation are strongly embedded in, and in line with, district and local government priorities. The sustainability of outcomes is supported through community water management committees, who are able and willing to maintain new systems. In 2013, these groups became members of the Association of GMF on the district level, which is seen to reinforce sustainability. WaterAid has worked closely with local government authorities (DNCQA and the District Administration) on joint monitoring of water systems and declaring open defecation free (ODF) status in communities. This joint monitoring will be continued for two years by WaterAid after the conclusion of the MAKAAAS project, in order to further consolidate outcomes.

Outcome 2

As farmer group members recognized the advantages of the promoted techniques, they are eager to continue their application in the future. Yet they also stated that they would individually in the future rather than in an organized farmer group. Here, the future support of extension workers will be crucial for maintaining cooperation and support. At present, however, DAF's extension department cannot ensure for taking over the support of all farmer groups created under MAKAAAS, due to the limited number of extension workers. When discussing this apparent challenge with a DAF officer, the evaluation team was told that the approach of working with an ever-increasing amount of farmer groups can only be sustainably maintained if support from NGOs and development organizations continued at least for several years.

In terms of the building up of nurseries for reforestation, interventions have to be understood as a temporary undertaking that supports environmental sustainability and

Figure 16 | Ability to sustain new techniques



risk mitigation. There is little sign of sustainability, as group members show no interest in continuing with nursery activities unless being paid (or able to make an income by selling seedlings) to do so.

Given that it remains unclear how many of the planted seedlings will survive in the future, and given the ongoing process of deforestation in the project area, producing more seedlings for reforestation purposes remains an urgent task. Hence collective long-term benefits from afforestation could only be sustained if community funds will be established in the future for maintaining the nurseries. The most promising approach to make nurseries sustainable is to ensure marketability of seedlings.

Outcome 3

Overall, the continued efforts and success in networking and bringing different institutions and stakeholders together resulted in greater awareness of climate change on all levels. Particularly at the national level, the creation of a climate change adaptation working group (CCWG) - that will continue beyond the lifespan of the MAKAAAS project - and the presentation of results and lessons learned through the celebration of a first national workshop on climate change adaptation, supports the sustainability of project outcomes.

The CVCA approach has raised considerable interest of other international development organizations working in Timor-Leste, such as UNDP. In 2014, UNDP already applied this approach when planning its Smaller-Scale Rural Infrastructure (SSRI) project.

However, while the project made commendable efforts to align its actions with national policy, it is found that thorough planning for climate change adaptation is not seen as a priority yet by most villagers and stakeholders on the district level. This observation calls for even more effective awareness-raising - by showing the benefits that can be obtained through planning and proactive action.

Continuous ownership and support from the central government to embed climate change into planning processes is also an important aspect for warranting the sustainability of results on sub-national levels. Further advocacy and support on the national level is therefore required.



SECTION C | LEARNING

8. Evidence-based learning

MAKA'AS project staff went through an inspiring learning process during all steps of preparation and implementation of activities across the project's three outcomes. The evaluation included a systematization of key lessons learned during a one-day management workshop with the project teams from CARE and WaterAid, and with their implementation partners (CDEP, NTF, Malaedoi, HTL). Results were then complemented with other field-based findings.

The following sections on evidence-based learning identifies and maps good practices and success factors from the project, and shows how sustainable adaptation strategies lead to increased resilience on the community level. It includes a set of **key recommendations (set in bold)**; key aspects are highlighted in *italics*. In line with the envisaged three project outcomes, the chapter discusses “climate-resilient livelihoods” (8.1), “water, sanitation and hygiene” (8.2) as well as “local and organizational capacity” (8.3), and then continues with “addressing underlying causes of vulnerability” (8.4) and “influencing the enabling policy environment” (8.5).

The following table provides a summary of the findings according to the sub-chapters.

Figure 17 | Summary: evidence-based learning

8.1	<ul style="list-style-type: none"> • The project successfully implemented integrated climate-resilient land management practices that support sustainable livelihoods and equitable food security. • The vast majority of people in the project area are farmers, with on-farm activities contributing 69.3% to local livelihoods in 2015. • The approach of working with farmer groups was widely regarded as 'good' by villagers. • Weather forecasts, climate information and awareness of climate change represent crucial information required to inform decision-making on livelihoods and adaptation. • Traditional gender roles exacerbate the risks for women in a changing climate, rendering the development of adaptation options for them particularly important. • Ongoing support from NGOs and development organizations for at least a couple of years will remain crucial to make livelihoods more resilient in the face of climate change.
8.2	<ul style="list-style-type: none"> • The project successfully supported vulnerable households in the target area to improve their water access and to improve water management strategies for the sake of better livelihoods and domestic consumption. • The project collaborated effectively with the local government at the district level and with NGOs. • The evaluation identified a high degree of ownership of WASH-related activities by local governmental partners.
8.3	<ul style="list-style-type: none"> • Strongly based on the experience of previous projects, the project involved a large number of stakeholders, in part to maximize its potential leverage for capacity-building and awareness-raising. • It was found that the way key climate change adaptation terms were understood and used differed amongst project staff and partners. • The level of ownership amongst communities and the local government- and the willingness and ability to take adaptive action - varied significantly between the three outcomes. • The project made sure to apply participatory planning techniques on the district- down to the village level, ranging between district workshops and village-based CVCAs.
8.4	<ul style="list-style-type: none"> • The project area suffers from water shortage during most of the year. This is exacerbated by pressure on the natural resource base, including unsustainable land use practices and population growth. • Marginalized population groups (women, people with disabilities) are affected by idiosyncratic characteristics of vulnerability. • The project identified its target group across three outcomes: farmer groups, sub-villages, and communities in a broader sense. • Women played an important role, and indicators were developed to promote gender equality and women's empowerment. • People with disabilities were identified at the stage of the baseline survey and became supported to participate in household and community decision-making processes and in the design of accessible latrines. • Across the project area, the elaboration of solutions for responding to collective vulnerability included small-scale risk mitigation projects to reduce erosion and landslide risk. • Consortium partners were actively engaged in reforestation measures through the distribution of tree seedling and construction of nurseries.
8.5	<ul style="list-style-type: none"> • The project made commendable efforts to align its actions with national policy, but thorough planning for climate change adaptation was not a priority by most villagers and stakeholders on the district level. • The project fell short in the process for climate change adaptation planning and has yet to impact on adaptation governance - despite bringing in relevant climate (change) information into project and community planning processes. • Against this background, more effective strategies for influencing the enabling policy environment need to be developed. Ways to communicate these messages to government levels from the national down to the local level need to be established and maintained. Finally, the relationship between communities and the local government needs to be addressed for supporting adaptive action over the long term.

8.1 Climate-resilient livelihoods

Focusing on vulnerable households, the project successfully implemented integrated climate-resilient land management practices which support sustainable livelihoods and equitable food security (outcome 2). In order to achieve its outcome indicators, the project worked with 91 farmer groups. Main activities in support of this outcome comprised the distribution of new varieties of seeds, trainings in sustainable agricultural techniques and home gardening, the construction of water ponds for irrigation, and the distribution of air-tight drums to reduce post-harvest losses.

In the project area of Liquiça district, the vast majority of people are farmers. With 85% of households producing crops for household consumption and 55% generating an income from agriculture, it is obvious that a) access to alternative livelihoods is limited and that b) any strategy focusing on climate-resilient livelihoods should be planned around farming. In fact, interventions supporting more appropriate farming techniques and diversification were seen as the most important way to *make livelihoods resilient in the face of climate*

change. As a result of the project, then, the uptake of climate-resilient crops has been particularly significant – livelihood sources shifted slightly towards a higher diversification of food sources – while the adoption of conservation farming techniques has not changed as much for the project period (see section 5.2).

On average, on-farm activities contributed 69.3% to local livelihoods by the end of the project. *Non-agricultural livelihood options contributing to increased resilience* were widely considered to be bear little relevance. The only three non-agricultural, non-climate sensitive income sources in the project area are skilled labour (carpentry, metal work etc.), employment in the public sector, and remittances. Currently, 36.3% of the local population can rely on one of these livelihood sources, at least to some part. Since the MAKAAAS project did not have a focus on employment and/or improvement of household income, questions about the *interaction between on-farm and off-farm livelihoods and the degree to which CARE can support both* therefore have to remain unanswered.

The approach of working with farmer groups was widely regarded as ‘good’ by workshop participants. Overall, 79.8% of survey respondents said that they currently apply all techniques they have learned through the project (a further 13.9% said they apply some of them). Asked whether it was worth to apply these techniques in future, 49.3% said that all and 32.4% that some techniques were worth pursuing into the future. Most felt able to do so on their own (see figure 16). Amongst those respondents who do not currently apply everything they have learned, the lack of resources for adoption was seen as the major inhibiting factor, listed by 52.2% of those respondents.

At the same time, 81% of survey respondents noted that project interventions had benefited only a share of households in the community – namely farmer group members. It is therefore suggested that **while the group-based approach should be maintained, groups should become a lever to promote adapted farming practices amongst the wider community**. Farmer groups should be viewed as a means to an end rather than an end in themselves: rather than being treated as target groups, they should be deployed to spread key messages and practice to the wider villages. Such wider spread could then help facilitate the basis for village-level adaptation planning.

However, a number of comments also revealed that at least in some groups there was a lack of ‘self-mobilization’, meaning that groups only became active as a whole when MAKAAAS project staff visited. Yet most farmer group members recognized the advantages of the techniques promoted by the project, and are committed to continue their application in the future. However, most of them will work individually in the future rather than in an organized farmer group.

Weather forecasts, climate information and awareness of climate change represent important *information required to inform decision-making on livelihoods*, and to enhance the resilience of the target population. Amongst survey respondents, 27.8% had access to climate information by the end of the project – with almost 80% of them making use of the information for planning their livelihood activities. While the number of people having access to such forecasts and information can be considered as a ‘good start’, almost three out of four households remain without any source of reliable climate information. Therefore, **support to foster local climate change awareness, weather forecasts and information should be strengthened**. This also includes forecasts on the El Niño and the La Niña phenomena.

In terms of livelihoods, moreover, traditional gender roles exacerbate the risks for women in a changing climate, which renders the development of adaptation options for them particularly important (*see also section 8.4*). At the same time, women can make important contributions to enhance the resilience of the whole community. In the MAKAAAS project, despite a range of cultural constraints placed on women, women are now more involved in the institutional environment (through introducing a women’s quota in water management

committees) and in village meetings. Coming with new tasks, *traditional gender roles are changing*. On the household level, 37% of male respondents said that women have gained more influence in taking decisions over recent years, with 18% attributing these changes to the MAKAS project. This trend has to be seen as a success, even though changes are rather incremental: decisions at village meetings are still made mainly by men, and decisions on the household level still fall into traditional 'domains'. For this reason, **the focus on gender and women's empowerment should be maintained** in future projects.

Ongoing support from NGOs and development organizations for at least several years will remain crucial to make livelihoods more climate-resilient. Evidence from the evaluation shows that farming households will need continuous support to *inform their decisions on changing to new and more adapted livelihood strategies*. This means that the support from extension workers is crucial for maintaining information on livelihoods. At present, however, the local government cannot ensure continued support of all farmer groups created under the MAKAS project, due to the limited number and resources of extension workers.

8.2 Water, sanitation and hygiene

Through its outcome 1, the project successfully supported vulnerable households in the target area to improve their water access, and to improve water management strategies. Activities comprised the construction of 20 water distribution and sanitation systems on the sub-village level, the formation of water management committees (GMFs) to facilitate maintenance of these systems, and the support in designing and building latrines.

To ensure that *activities related to WASH reduce the vulnerability of community households*, the project collaborated effectively with the local government at the district level and with NGOs. Entry points on the sub-village level were sub-district WASH facilitators, with whom close working relationships were maintained. Findings from the community workshops and focus group discussions revealed that in those villages in which WaterAid projects were implemented, residents saw significant improvements in water access and availability. As already identified in the MTR, positive progress in water access was achieved through the construction of water infrastructure that included gravity-fed water systems, water holding tanks, community taps, household taps and water ponds.

The evaluation found a high level of appreciation and ownership of activities by local governmental partners. In fact, these partners were consistently involved and had the capacity to follow 'what was happening' in the project.

To ensure the *community's active contribution to an enabling environment for better water access and improved sanitary and hygiene conditions*, the project facilitated the formation of 20 community-based water management groups (GMF). In line with government regulations, each GMF consists of at least seven members. To facilitate women's empowerment, water management groups included 30% women or more; and in half of these groups, women are in leadership positions. Moreover, community members on the sub-village level were supported to construct 220 household latrines using concrete and traditional materials. The underlying approach to sanitation has been 'collective behaviour change triggering' through a Community-Led Total Sanitation approach, with follow-up and support to build on other targeted hygiene behaviors in the national Basic Sanitation Policy. The construction of latrines led to positive behaviour change and improved family health.

8.3 Local and organizational capacity

To effectively achieve its objectives and to strengthen local and organizational capacity, the MAKAS project was based on a partnership approach. *Partnerships that proved to be*

working in terms of building capacity for increased resilience from the household level through to local government were generally characterized by three key factors, i.e. leadership, structures, and stakeholder commitment. These characteristics were present related to both outcome 1 and outcome 2, which resulted in an efficient and effective implementation of activities. Meanwhile, none of these factors existed in relation to the third outcome (*see section 4*).

Strongly based on the experience of previous projects such as LIFT and HAN, the project involved a large number of stakeholders from authorities and local civil society, in part to maximize its potential leverage for capacity-building and awareness-raising.

Concerning field implementation, the project incorporated the networks and experience that CARE and WaterAid had nurtured and gained through previous projects. With regard to outcome 1, this consisted of WaterAid and staff, partners and GMF members and beneficiaries as its target group. With regard to outcome 2, this included CARE and its set of partners, and farmer groups as the target group. As a result, the project was implemented under the absence of a village-wide approach.

Consequently, this often led to misperceptions on the local level, where consortium partners were rather seen as working as separate organizations in different sectors, i.e. agriculture and WASH, than as one project based on an integrated approach. In order to avoid this, **future projects need to be based on a more solid definition of the target group**.

It was also found that the way key terms related to climate change adaptation were understood and used differed amongst project staff and partners. There was not always a shared understanding of terms such as ‘vulnerability’ and ‘resilience’, ‘coping strategies’ and ‘adaptive capacity’. Given that there has been little experience with the concept of climate change adaptation in Timor-Leste, it does not come as a surprise that terms were at times used incorrectly. In future projects, however, **a common understanding of key terms related to climate change adaptation should be built**, also in order to *communicate climate change with communities* and to provide stronger support to the development of local and organizational capacity.

Meanwhile, the level of *ownership taken by communities and the local government* varied significantly between the three outcomes, same as the willingness and ability to make adaptive decisions and to take adaptive action. **The level of ownership and required capacity of local government partners needs to be secured and continuously reviewed**. While this should be a general concern of any development project, this is even more important in the ‘new’ and sometimes complex area of climate change adaptation. In WASH-related activities, local government was always involved - while involvement of the district level in livelihood-related activities could have been stronger (see section 3.2).

Despite the given constraints, the project made sure to apply participatory planning techniques on district to the village levels (that included district workshops and village-based CVCAs). CVCAs were initially conducted to sensitize the local population about challenges related to climate change and adaptation, and to use their experience for project planning purposes.¹³

13. The evaluation team was told that several village and community chiefs had been trained in the monitoring of weather patterns to collect local data on climatic patterns and changes, and to provide this information to the local population. However, whether this information reaches local residents remains to be seen.

Based on existing climate forecasts for Timor-Leste and on local experience, the analysis showed that the vast majority of households had experienced changes in the climate over the past ten years. Long-term planning based on ‘uncertainty’ was not conducted though; the focus concentrated on current climate variability and extremes.

This approach showed merits: More than three out of four farmer and water management group members (89% and 76% respectively) see themselves better adapted, figures that stand substantially higher than amongst non-members (39% and 44% respectively).

8.4 Addressing underlying causes of vulnerability

Liquiça district suffers from water shortage during most of the year. This is exacerbated by an increasing pressures on the natural resource base, including unsustainable land use practices (farming practices, deforestation) and population growth. Almost all of the local population is exposed to these challenges. Amongst marginalized population groups, this is compounded by idiosyncratic characteristics of vulnerability, including women and people with disabilities.

Generally, the MAKAAAS project identified its target group across three outcomes: farmer groups, sub-villages, and communities in a broader sense. Activities related to address the underlying causes of vulnerability of women and people with disabilities were cross-cutting issues. In other words, women and people with disabilities were not target groups per se.

Under all three outcomes, women played an important role, and indicators were developed to promote gender equality and women's empowerment. Approaches included the introduction of a women's quota amongst GMF, awareness-raising, the creation of female farmer groups, and a gender balance in all workshops and planning meetings.

Experience from the community workshops showed that men and women have different perceptions about climate change. While men rate climate conditions by the way they impact on (farming) production levels, women tend to include other factors such as social life and access to public services. These sociocultural context conditions were indirectly addressed by the project through successfully empowering women to participate more often in village meetings and in decision-making both in village and household affairs.

Since a main challenge for achieving gender equality has been the apparent lack of time of women to participate in broader village affairs, activities aiming at long-term gender-transformative results focused – successfully, as already recognized in the MTR – on the reduction of time women spend each day for collecting water. However, achieving results that are of a more gender-transformative nature must include more fundamental shifts in gender relations; while both men and women participate in village meetings, it is mainly the men who decide.

In the attempt to *reaching and engaging people with disabilities*, this group was identified at the stage of the baseline survey and supported by the project to participate in household and community decision-making processes on water point locations and in the design of accessible latrines. In livelihood-related activities, however, people with disabilities did not play a significant role.

Across the project area, the elaboration of solutions for responding to collective vulnerability included small-scale risk mitigation projects to reduce risk of erosion and landslides through appropriate technologies, such as bio-engineering and the construction of live check dams. The specific objective of this activity was to repair soil structure and enhance water soil retention. This was done through multiple steps that included analysis of soil structure, design, mobilization of local residents to participate in the activities, and finally the construction.

Through the results of these activities, benefits of advanced techniques were demonstrated. However, erosion remains a constant challenge that continues to degrade soils in mountain areas. Future projects should put a stronger focus on extending activities for reducing erosion risks through such techniques, and **add more live check dams**.

Finally, consortium partners engaged in reforestation measures through the distribution of tree seedling and construction of nurseries. Having distributed more than 170,000 seedlings across the project area, however, this intervention has to be understood as a temporary intervention that supports environmental sustainability and risk mitigation. There was

little sign of sustainability of such interventions in the project context. While tree-cutting for firewood production remains a challenge, group members showed little interest in continuing with nursery activities unless being able to make an income by selling seedlings. In future projects, **the nursery approach should be replicated and opportunities for marketability should be aimed at.**

8.5 Influencing the enabling policy environment

The project made commendable efforts to align its actions with national policy, but it was found that thorough planning for climate change adaptation was not seen as a priority yet by most villagers and stakeholders on the district level. The lack of a responsive counterpart at the government level (mostly due to the lack of clearly defined responsibilities among line institutions), the lack of time and human resources for adequately dealing with this objective and for constantly warranting for cooperation and communication on climate change adaptation resulted in a low level of efficiency.

In fact, the project fell short in the *process for climate change adaptation planning and did not impact on adaptation governance - despite bringing in relevant climate (change) information into project (CVCA) and community planning (ARAP) processes*, even when taking participation of most vulnerable groups in planning processes into account. In combination with existing delays in setting up district and community development plans on behalf of the government, and a considerably low interest from national and district government counterparts, activities for influencing the policy environment resulted in a low level of outcomes, and has yet to allow for concrete measures to *encourage institutionalization and scale-up*.

This observation calls for more **effective advocacy and awareness-raising for planning for climate change adaptation – particularly on the national level** – by demonstrating the benefits of planning and proactive action.

While weather conditions in the target area have been favourable over the final two years of the project period, the country already experiences damaging droughts and floods - which, over time, are likely to lead to lower agricultural outputs and damage to infrastructure. The most serious implications of climate change for Timor-Leste are likely to be changing rainfall patterns, higher temperatures and more frequent extreme weather events that are predicted to increasingly affect the country.

Against this background, effective strategies for influencing the enabling policy environment need to be developed. A sensible entry point is to demonstrate that **climate change adaptation initiatives on the local level successfully address deeper constraints to adaptive capacity**. Results from this evaluation show that overall, the MAKAAAS project increased the resilience of vulnerable communities to the unavoidable impacts of climate change. According to those survey respondents who perceived an improved level of household preparedness to climate risks over the past four years (76.3%), the MAKAAAS project played the main positive role for 69.2% of all respondents.

The following key message should be emphasized:

- **First**, that in villages with a comparatively high concentration of activities (dose), the impact was higher in terms of perceived improvements of agricultural and livelihood conditions;
- **second**, that those villages with a higher intervention dose recovered more quickly and more positively from the prolonged drought in 2011-2012;
- **third**, that villages with a higher intervention dose are becoming more resilient to climate-related hazards and more capable to cope with minor hazards; and

- *fourth*, while positive changes in the villages are apparent, it needs to be emphasized that the project provided only a 'good start', as they still remain highly vulnerable to climate change.

Channels to communicate these messages to government levels from the national down to the local level need to be maintained and reinforced. At the national level, the appointment of key governmental institutions and relevant donor organizations and NGOs to a project steering committee, and the organization of a first conference on climate change in the country raised awareness and understanding of climate change. The project did also play a decisive role in the establishment of a working group on climate change adaptation that will *promote integration of CBA planning tools, methodologies and results into socio-economic and other sectoral planning and programs*.

Subsequently, the *relationship between communities and the local government needs to be addressed for supporting adaptive action* over the long term. In the project area, villagers organize meetings regularly to jointly request government officials or political leaders with requests for action. 44% of survey respondents state that these meetings take part at least once per month. While 73% state that they are working now together more than before the MAKAAAS project started, 37% express their view that the project was the main reason for this change.

However, there are still 58% who believe that the success of villagers' engagement in terms of getting the government to take the desired action is rather 'moderate' (with 25% stating that the success is 'low'). Here, entry points for facilitating this relationship were village-level institutions, through the creation of 20 water management groups and 31 (new) farmer groups. Water management committees were supported to become members of a district-wide association of water management groups for linking them with the district government level and to make communication and coordination easier between the district and the local level. Farmer groups, meanwhile, stay 'local', with the only connection to the district level being the extension workers employed by the district government.

9. Conclusion

Adaptation to climate change has become a pressing issue, especially in vulnerable and remote rural areas in developing countries like Timor-Leste. Developing the necessary preconditions for a secure environment in which adaptive capacity for the consequences of climate change can be gradually enhanced is however a challenging endeavour.

Launched in July 2012, the MAKAAAS project was set up as one of the first projects in Timor-Leste aiming at climate change adaptation of vulnerable population groups and at increasing the evidence base to support the local and national level in gender-sensitive adaptation planning and policy. The project can be seen as a 'good start' for climate change adaptation.

While it impacted positively on the livelihoods, water and sanitary conditions of households across 33 villages in rural Liquiça district, lessons learned show that climate change adaptation demands for more than the continuation of established practices for rural development. Results from this project evaluation show that sector-based rural development approaches turn out to be a necessary, but not sufficient on their own to adapt to climate change. Under a changing climate, existing coping strategies of households will become increasingly challenged, which calls for an effective and pro-active intervention of the government at all levels.

Results from the MAKAAAS project show that nine out of ten target group members (89%) in those villages where the project was highly active see themselves better adapted, figures that stand substantially higher than amongst non-target group members (44%). This positive trend is encouraging, as well as the extent to which community leaders and extension officers have gained awareness and experience.

At the same time, target communities increasingly suffer from water shortages during most of the year. This is exacerbated by an ever-increasing pressure on the natural resource base, including unsustainable land use practices and population growth. The NAPA strategy of Timor-Leste provides important approaches in this regard. Without replication and/or upscaling of project interventions, results achieved by MAKAAAS will remain a demonstration of approaches for confronting climate change in a secure environment.

The key question is: how can the project's success be enhanced, sustained, replicated, extended and finally upgraded - as outlined in the summary of recommendations? In sum, the three key considerations provide the answer:

First, by documenting and sharing experiences and lessons with relevant institutions and organizations relevant for climate change adaptation in Timor-Leste, other actors - especially those in the climate change working group - may be inspired to learn, adapt, and apply key lessons.

Second, by devising a second project phase that builds upon the results from this evaluation and from evidence-based learning, conditions in the target area could be further improved.

Third, a stronger link between the local project level and the national government level needs to be established, and a proper strategy for advocacy and communication needs to be developed, to further increase the ownership and capacity of higher government levels to deal more effectively with climate change adaptation planning, and to take greater ownership of project results.



APPENDIX

Final evaluation of the MAKAA'S project in Timor-Leste	Strata A (high activity concentration)						Strata B (low activity concentration)						Both strata					
	Male		Female		All		Male		Female		All		Male		Female		All	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Descriptive statistics																		
PART A BASIC INFORMATION																		
A.2 How many people live in your household?																		
Mean	6.72		6.37		6.57		7.28		7.18		7.24		7.02		6.8		6.93	
Median	6		6		6		7		7		7		6		7		6	
A.3 What is the gender of the head of the household?																		
1) Female	4	5.13	7	12.28	11	8.15	3	3.33	8	12.12	11	7.05	7	4.17	15	12.20	22	7.56
2) Male	74	94.87	50	87.72	124	91.85	87	96.67	58	87.88	145	92.95	161	95.83	108	87.80	269	92.44
PART B INVOLVEMENT IN THE PROJECT																		
B.1 Have you ever heard of the MAKAA'S (mudansa Klimatika iha Ambiente Seguru) project?																		
1) Yes	26	33.33	24	42.11	50	37.04	43	47.78	24	36.36	67	42.95	69	41.07	48	39.02	117	40.21
2) No	52	66.67	33	57.89	85	62.96	47	52.22	42	63.64	89	57.05	99	58.93	75	60.98	174	59.79
B.2 Are you, or is any member of your household, a member of a farmers' group supported by CARE?																		
1) Yes	22	28.21	20	35.71	42	31.34	28	32.18	18	29.51	46	31.08	50	30.30	38	32.48	88	31.21
2) No	56	71.79	36	64.29	92	68.66	59	67.82	43	70.49	102	68.92	115	69.70	79	67.52	194	68.79
99) I don't know	0		1		1		3		5		8		3		6		9	
B.3 Are you, or is any member of your household, a member of your aldeia's GMF (Grupo Maneja Fasilidade)?																		
1) Yes	26	33.77	18	32.14	44	33.08	33	38.37	17	26.98	50	33.56	59	36.20	35	29.41	94	33.33
2) No	51	66.23	38	67.86	89	66.92	67	76.63	46	73.02	99	66.44	104	63.80	84	70.59	188	66.67
99) I don't know	1		1		2		4		3		7		5		4		9	
B.4 Over the past three years, have you received any training from the MAKAA'S project?																		
1) Yes	19	24.68	15	27.27	34	25.76	26	30.23	16	26.23	42	28.57	45	27.61	31	26.72	76	27.24
2) No	58	75.32	40	72.73	98	74.24	60	69.77	45	73.77	105	71.43	118	72.39	85	73.28	203	72.76
99) I don't know	1		2		3		4		5		9		5		7		12	
B.5 Over the past three years, have you received any material support from the MAKAA'S project?																		
1) Yes	24	31.17	23	42.59	47	35.88	23	26.14	15	23.44	38	25.00	47	28.48	38	32.20	85	30.04
2) No	53	68.83	31	57.41	84	64.12	65	73.86	49	76.56	114	75.00	118	71.52	80	67.80	198	69.96
99) I don't know	1		3		4		2		2		4		3		5		8	
B.6 Considering the beginning of the MAKAA'S project, which of the following statements best describes your involvement?																		
1) I have not been involved in any assessments or planning meetings	39	66.10	31	67.39	70	66.67	54	71.05	39	72.22	93	71.54	93	68.89	70	70.00	163	69.36
2) I participated in meetings but did not contribute	7	11.86	4	8.70	11	10.48	7	9.21	5	9.26	12	9.23	14	10.37	9	9.00	23	9.79
3) I participated in meetings and contributed to planning	13	22.03	11	23.91	24	22.86	15	19.74	10	18.52	25	19.23	28	20.74	21	21.00	49	20.85
99) I don't know	19		11		30		14		12		26		33		23		56	
B.7 On average, how often in the past year have you met MAKAA'S project staff?																		
1) Once a month or less often	16	27.12	13	27.66	29	27.36	18	24.66	13	22.81	31	23.85	34	25.76	26	25.00	60	25.42
2) About twice a month	6	10.17	6	12.77	12	11.32	7	9.59	4	7.02	11	8.46	13	9.85	10	9.62	23	9.75
3) Three times a month or more often	3	5.08	0	0.00	3	2.83	3	4.11	1	1.75	4	3.08	6	4.55	1	0.96	7	2.97
4) Not at all	34	57.63	28	59.57	62	58.49	45	61.64	39	68.42	84	64.62	79	59.85	67	64.42	146	61.86
99) I don't know	19		10		29		17		9		26		36		19		55	
PART C CLIMATE-RESILIENT LIVELIHOODS																		
Q17. 1) Crop production for household consumption																		
C.1 Applied strategy in 2014'																		
Selected	71	91.03	51	89.47	122	90.37	72	80.00	55	83.33	127	81.41	143	85.12	106	86.18	249	85.57
C.2 Applied strategy in 2011'																		
Selected	61	78.21	47	82.46	108	80.00	66	73.33	51	77.27	117	75.00	127	75.60	98	79.67	225	77.32
Q18. 2) Crop production for sales/income-generation																		
C.1 Applied strategy in 2014'																		
Selected	51	65.38	28	49.12	79	58.52	50	55.56	32	48.48	82	52.56	101	60.12	60	48.78	161	55.33
C.2 Applied strategy in 2011'																		
Selected	42	53.85	28	49.12	70	51.85	45	50.00	30	45.45	75	48.08	87	51.79	58	47.15	145	49.83
Q19. 3) Production of animals and animal products																		
C.1 Applied strategy in 2014'																		
Selected	70	89.74	48	84.21	118	87.41	64	71.11	54	81.82	118	75.64	134	79.76	102	82.93	236	81.10
C.2 Applied strategy in 2011'																		
Selected	63	80.77	48	84.21	111	82.22	64	71.11	54	81.82	118	75.64	127	75.60	102	82.93	229	78.69
Q20. 4) Agricultural labour																		
C.1 Applied strategy in 2014'																		
Selected	73	93.59	54	94.74	127	94.07	83	92.22	53	80.30	136	87.18	156	92.86	107	86.99	263	90.38
C.2 Applied strategy in 2011'																		
Selected	72	92.31	53	92.98	125	92.59	85	94.44	54	81.82	139	89.10	157	93.45	107	86.99	264	90.72
Q21. 5) Other on-farm work																		
C.1 Applied strategy in 2014'																		
Selected	20	25.64	12	21.05	32	23.70	31	34.44	27	40.91	58	37.18	51	30.36	39	31.71	90	30.93
C.2 Applied strategy in 2011'																		
Selected	34	43.59	12	21.05	46	34.07	37	41.11	35	53.03	72	46.15	71	42.26	47	38.21	118	40.55
Q22. 6) Skilled labour (carpentry, metal work etc)																		
C.1 Applied strategy in 2014'																		
Selected	17	21.79	10	17.54	27	20.00	18	20.00	8	12.12	26	16.67	35	20.83	18	14.63	53	18.21
C.2 Applied strategy in 2011'																		
Selected	19	24.36	11	19.30	30	22.22	20	22.22	9	13.64	29	18.59	39	23.21	20	16.26	59	20.27
Q23. 7) Small business activities (street vending, shop keeping)																		
C.1 Applied strategy in 2014'																		
Selected	19	24.36	8	14.04	27	20.00	29	32.22	25	37.88	54	34.62	48	28.57	33	26.83	81	27.84
C.2 Applied strategy in 2011'																		
Selected	17	21.79	10	17.54	27	20.00	20	22.22	20	30.30	40	25.64	37	22.02	30	24.39	67	23.02
Q24. 8) Formal employee (government, NGO, private sector)																		
C.1 Applied strategy in 2014'																		
Selected	6	7.69	7	12.28	13	9.63	14	15.56	12	18.18	26	16.67	20	11.90	19	15.45	39	13.40
C.2 Applied strategy in 2011'																		
Selected	10	12.82	8	14.04	18	13.33	14	15.56	10	15.15	24	15.38	24	14.29	18	14.63	42	14.43
Q25. 9) Handicraft production																		
C.1 Applied strategy in 2014'																		
Selected	7	8.97	7	12.28	14	10.37	4	4.44	9	13.64	13	8.33	11	6.55	16	13.01	27	9.28
C.2 Applied strategy in 2011'																		
Selected	7	8.97	8	14.04	15	11.11	4	4.44	9	13.64	13	8.33	11	6.55	17	13.82	28	9.62
Q26. 10) Remittances (foreign, domestic)																		
C.1 Applied strategy in 2014'																		
Selected	2	2.56	7	12.28	9	6.67	11	12.22	13	19.70	24	15.38	13	7.74	20	16.26	33	11.34
C.2 Applied strategy in 2011'																		
Selected	6	7.69	5	8.77	11	8.15	13	14.44	9	13.64	22	14.10	19	11.31	14	11.38	33	11.34
Q27. 11) Wood/charcoal sales																		
C.1 Applied strategy in 2014'																		
Selected	5	6.41	1	1.75	6	4.44	12	13.33	4	6.06	16	10.26	17	10.12	5	4.07	22	7.56
C.2 Applied strategy in 2011'																		
Selected	7	8.97	5	8.77	12	8.89	11	12.22	7	10.61	18	11.54	18	10.71	12	9.76	30	10.31
Q28. 12) Non-timber forest products																		
C.1 Applied strategy in 2014'																		
Selected	31	39.74	16	28.07	47	34.81	18	20.00	10	15.15	28	17.95	49	29.17	26	21.14	75	25.77
C.2 Applied strategy in 2011'																		
Selected	31	39.74	16	28.07	47	34.81	21	23.33	11	16.67	32	20.51	52	30.95	27	21.95	79	27.15
Q29. 13) Fishing/hunting																		
C.1 Applied strategy in 2014'																		
Selected	1	1.28	0	0.00	1	0.74	19	21.11	16	24.24	35	22.44	20	11.90	16	13.01	36	12.37
C.2 Applied strategy in 2011'																		
Selected	6	7.69	2	3.51	8	5.93	21	23.33	17	25.76	38	24.36	27	16.07	19	15.45	46	15.81
Q30. 14) Other off-farm work																		
C.1 Applied strategy in 2014'																		
Selected	20	25.64	14	24.56	34	25.19	32	35.56	26	39.39	58	37.18	52	30.95	40	32.52	92	31.62
C.2 Applied strategy in 2011'																		
Selected	31	39.74	20	35.09	51	37.78	29	32.22	31	46.97	60	38.46	60	35.71	51	41.46	111	38.14
C.3 In 2014, how much did on-farm and off-farm work contribute to your livelihood (food and income)?																		
Mean	70.67		67.2		69.31		67.79		67.56		67.7		69.08		67.4		68.42	
Median	73		66		70		70.5		69.5		70		72		68		70	

C.3a Back in 2011, was this mix different?																		
1) Yes	56	73.68	46	82.14	102	77.27	71	79.78	56	84.85	127	81.94	127	76.97	102	83.61	229	79.79
2) No	20	26.32	10	17.86	30	22.73	18	20.22	10	15.15	28	18.06	38	23.03	20	16.39	58	20.21
99) I don't know	2		1		3		1		0		1		3		1		4	
C.3b In 2011, how much did on-farm and off-farm work contribute to your livelihood (food and income)?																		
Mean	74.89		66.12		70.89		68.48		64.86		66.9		71.13		65.41		68.58	
Median	75		64		70		72		66		69		73.5		64		69	
C.3c Has the MAKAAAS project played any role behind this change?																		
1) No, it did not play a role	8	25.00	9	32.14	17	28.33	11	26.83	12	38.71	23	31.94	19	26.03	21	35.59	40	30.30
2) Yes, it played a positive role amongst others	11	34.38	6	21.43	17	28.33	6	14.63	9	29.03	15	20.83	17	23.29	15	25.42	32	24.24
3) Yes, it played the main role	13	40.62	13	46.43	26	43.33	24	58.54	10	32.26	34	47.22	37	50.68	23	38.98	60	45.45
99) I don't know	46		29		75		49		35		84		95		64		159	
C.4 Does your household have access to climate information (seasonal/monthly/weekly forecasts)?																		
1) Yes	20	27.78	15	27.78	35	27.78	36	43.90	23	37.70	59	41.26	56	36.36	38	33.04	94	34.94
2) No	52	72.22	39	72.22	91	72.22	46	56.10	38	62.30	84	58.74	98	63.64	77	66.96	175	65.06
99) I don't know	6		3		9		8		5		13		14		8		22	
C.4a Does your household use this climate information?																		
1) Yes	17	85.00	9	60.00	26	74.29	29	82.86	15	65.22	44	75.86	46	83.64	24	63.16	70	75.27
2) No	3	15.00	6	40.00	9	25.71	6	17.14	8	34.78	14	24.14	9	16.36	14	36.84	23	24.73
99) I don't know	58		42		100		55		43		98		113		85		198	
C.5 Over the past ten years, have you experienced any changes in the climate, such as different times of rain, changes in temperature, drought etc)																		
1) Yes	45	60.00	32	61.54	77	60.63	57	75.00	51	80.95	108	77.70	102	67.55	83	72.17	185	69.55
2) No	30	40.00	20	38.46	50	39.37	19	25.00	12	19.05	31	22.30	49	32.45	32	27.83	81	30.45
99) I don't know	3		5		8		14		3		17		17		8		25	
Q39. 1. Crop diversification																		
C.6 Applied strategy in 2014																		
Selected	67	85.90	53	92.98	120	88.89	72	80.00	58	87.88	130	83.33	139	82.74	111	90.24	250	85.91
C.7 Introduced this strategy in the past 3 years																		
Selected	66	84.62	50	87.72	116	85.93	69	76.67	53	80.30	122	78.21	135	80.36	103	83.74	238	81.79
Q40. 2. Adoption of climate-resilient crops																		
C.6 Applied strategy in 2014																		
Selected	56	71.79	39	68.42	95	70.37	65	72.22	50	75.76	115	73.72	121	72.02	89	72.36	210	72.16
C.7 Introduced this strategy in the past 3 years																		
Selected	49	62.82	29	50.88	78	57.78	48	53.33	43	65.15	91	58.33	97	57.74	72	58.54	169	58.08
Q41. 3. Adjustment of planting times																		
C.6 Applied strategy in 2014																		
Selected	65	83.33	49	85.96	114	84.44	71	78.89	53	80.30	124	79.49	136	80.95	102	82.93	238	81.79
C.7 Introduced this strategy in the past 3 years																		
Selected	57	73.08	48	84.21	105	77.78	59	65.56	52	78.79	111	71.15	116	69.05	100	81.30	216	74.23
Q42. 4. Income diversification																		
C.6 Applied strategy in 2014																		
Selected	65	83.33	48	84.21	113	83.70	67	74.44	52	78.79	119	76.28	132	78.57	100	81.30	232	79.73
C.7 Introduced this strategy in the past 3 years																		
Selected	50	64.10	38	66.67	88	65.19	53	58.89	48	72.73	101	64.74	103	61.31	86	69.92	189	64.95
Q43. 5. Seed saving and storage																		
C.6 Applied strategy in 2014																		
Selected	70	89.74	52	91.23	122	90.37	77	85.56	56	84.85	133	85.26	147	87.50	108	87.80	255	87.63
C.7 Introduced this strategy in the past 3 years																		
Selected	66	84.62	50	87.72	116	85.93	66	73.33	54	81.82	120	76.92	132	78.57	104	84.55	236	81.10
Q44. 6. Casual labour																		
C.6 Applied strategy in 2014																		
Selected	13	16.67	8	14.04	21	15.56	13	14.44	8	12.12	21	13.46	26	15.48	16	13.01	42	14.43
C.7 Introduced this strategy in the past 3 years																		
Selected	15	19.23	7	12.28	22	16.30	7	7.78	8	12.12	15	9.62	22	13.10	15	12.20	37	12.71
Q45. 7. Home-gardening																		
C.6 Applied strategy in 2014																		
Selected	73	93.59	53	92.98	126	93.33	79	87.78	61	92.42	140	89.74	152	90.48	114	92.68	266	91.41
C.7 Introduced this strategy in the past 3 years																		
Selected	70	89.74	55	96.49	125	92.59	75	83.33	62	93.94	137	87.82	145	86.31	117	95.12	262	90.03
Q46. 8. Irrigation																		
C.6 Applied strategy in 2014																		
Selected	10	12.82	10	17.54	20	14.81	6	6.67	6	9.09	12	7.69	16	9.52	16	13.01	32	11.00
C.7 Introduced this strategy in the past 3 years																		
Selected	11	14.10	3	5.26	14	10.37	6	6.67	8	12.12	14	8.97	17	10.12	11	8.94	28	9.62
Q47. 9. New agricultural practices																		
C.6 Applied strategy in 2014																		
Selected	17	21.79	18	31.58	35	25.93	28	31.11	22	33.33	50	32.05	45	26.79	40	32.52	85	29.21
C.7 Introduced this strategy in the past 3 years																		
Selected	23	29.49	16	28.07	39	28.89	16	17.78	14	21.21	30	19.23	39	23.21	30	24.39	69	23.71
Q48. 10. Tree replanting																		
C.6 Applied strategy in 2014																		
Selected	56	71.79	42	73.68	98	72.59	62	68.89	41	62.12	103	66.03	118	70.24	83	67.48	201	69.07
C.7 Introduced this strategy in the past 3 years																		
Selected	49	62.82	35	61.40	84	62.22	43	47.78	33	50.00	76	48.72	92	54.76	68	55.28	160	54.98
Q49. 11. Rainwater harvesting																		
C.6 Applied strategy in 2014																		
Selected	37	47.44	27	47.37	64	47.41	42	46.67	27	40.91	69	44.23	79	47.02	54	43.90	133	45.70
C.7 Introduced this strategy in the past 3 years																		
Selected	26	33.33	18	31.58	44	32.59	31	34.44	22	33.33	53	33.97	57	33.93	40	32.52	97	33.33
Q50. 12. Selling of livestock																		
C.6 Applied strategy in 2014																		
Selected	63	80.77	41	71.93	104	77.04	58	64.44	45	68.18	103	66.03	121	72.02	86	69.92	207	71.13
C.7 Introduced this strategy in the past 3 years																		
Selected	56	71.79	39	68.42	95	70.37	57	63.33	47	71.21	104	66.67	113	67.26	86	69.92	199	68.38
Q51. 13. Storing water for plants																		
C.6 Applied strategy in 2014																		
Selected	43	55.13	31	54.39	74	54.81	42	46.67	40	60.61	82	52.56	85	50.60	71	57.72	156	53.61
C.7 Introduced this strategy in the past 3 years																		
Selected	38	48.72	28	49.12	66	48.89	32	35.56	37	56.06	69	44.23	70	41.67	65	52.85	135	46.39
Q52. 14. Storing water for livestock																		
C.6 Applied strategy in 2014																		
Selected	53	67.95	37	64.91	90	66.67	51	56.67	43	65.15	94	60.26	104	61.90	80	65.04	184	63.23
C.7 Introduced this strategy in the past 3 years																		
Selected	46	58.97	30	52.63	76	56.30	39	43.33	41	62.12	80	51.28	85	50.60	71	57.72	156	53.61
Q53. 15. Storing fodder for livestock																		
C.6 Applied strategy in 2014																		
Selected	64	82.05	47	82.46	111	82.22	63	70.00	51	77.27	114	73.08	127	75.60	98	79.67	225	77.32
C.7 Introduced this strategy in the past 3 years																		
Selected	59	75.64	41	71.93	100	74.07	55	61.11	51	77.27	106	67.95	114	67.86	92	74.80	206	70.79
Q54. 16. Removing children from school																		
C.6 Applied strategy in 2014																		
Selected	7	8.97	4	7.02	11	8.15	10	11.11	3	4.55	13	8.33	17	10.12	7	5.69	24	8.25
C.7 Introduced this strategy in the past 3 years																		
Selected	10	12.82	5	8.77	15	11.11	10	11.11	4	6.06	14	8.97	20	11.90	9	7.32	29	9.97
Q55. 17. Eating wild food																		
C.6 Applied strategy in 2014																		
Selected	66	84.62	48	84.21	114	84.44	64	71.11	50	75.76	114	73.08	130	77.38	98	79.67	228	78.35
C.7 Introduced this strategy in the past 3 years																		
Selected	70	89.74	50	87.72	120	88.89	72	80.00	59	89.39	131	83.97	142	84.52	109	88.62	251	86.25
Q56. 18. Selling land																		
C.6 Applied strategy in 2014																		
Selected	0	0.00	1	1.75	1	0.74	1	1.11	1	1.52	2	1.28	1	0.60	2	1.63	3	1.03
C.7 Introduced this strategy in the past 3 years																		
Selected	0	0.00	2	3.51	2	1.48	1	1.11	3	4.55	4	2.56	1	0.60	5	4.07	6	2.06
Q57. 19. Rationing food																		
C.6 Applied strategy in 2014																		

3) Negative effect	0	0.00	1	2.86	1	1.25	0	0.00	3	7.50	3	3.30	0	0.00	4	5.33	4	2.34
4) Not applicable	6	13.33	6	17.14	12	15.00	16	31.37	10	25.00	26	28.57	22	22.92	16	21.33	38	22.22
C17a_A.6 Any other factors (unrelated to the project)																		
1) Positive effect	25	55.56	21	60.00	46	57.50	27	52.94	12	30.77	39	43.33	52	54.17	33	44.59	85	50.00
2) No effect	18	40.00	11	31.43	29	36.25	7	13.73	17	43.59	24	26.67	25	26.04	28	37.84	53	31.18
3) Negative effect	0	0.00	0	0.00	0	0.00	2	3.92	1	2.56	3	3.33	2	2.08	1	1.35	3	1.76
4) Not applicable	2	4.44	3	8.57	5	6.25	15	29.41	9	23.08	24	26.67	17	17.71	12	16.22	29	17.06
PART D WATER MANAGEMENT & HYGIENE																		
D.1 What is your household's main source of drinking water?																		
1) Pipe or pump	3	3.85	1	1.75	4	2.96	21	23.33	7	10.61	28	17.95	24	14.29	8	6.50	32	11.00
2) Public tap	69	88.46	48	84.21	117	86.67	48	53.33	37	56.06	85	54.49	117	69.64	85	69.11	202	69.42
3) Tube well/bore hole	0	0.00	0	0.00	0	0.00	2	2.22	10	15.15	12	7.69	2	1.19	10	8.13	12	4.12
4) Protected well or spring	2	2.56	1	1.75	3	2.22	7	7.78	8	12.12	15	9.62	9	5.36	9	7.32	18	6.19
5) Unprotected well or spring	0	0.00	1	1.75	1	0.74	5	5.56	1	1.52	6	3.85	5	2.98	2	1.63	7	2.41
6) Rainwater collection	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
7) Bottled water	0	0.00	1	1.75	1	0.74	0	0.00	0	0.00	0	0.00	0	0.00	1	0.81	1	0.34
8) Water vendors, tank	2	2.56	2	3.51	4	2.96	1	1.11	2	3.03	3	1.92	3	1.79	4	3.25	7	2.41
9) River, lake or stream	2	2.56	2	3.51	4	2.96	1	1.11	0	0.00	1	0.64	3	1.79	2	1.63	5	1.72
10) Bamboo piped system from protected spring	0	0.00	1	1.75	1	0.74	1	1.11	1	1.52	2	1.28	1	0.60	2	1.63	3	1.03
11) Bamboo piped system from unprotected spring	0	0.00	0	0.00	0	0.00	3	3.33	0	0.00	3	1.92	3	1.79	0	0.00	3	1.03
12) Other	0	0.00	0	0.00	0	0.00	1	1.11	0	0.00	1	0.64	1	0.60	0	0.00	1	0.34
D.2 Over the past year, has water from your main source been unavailable for a day or longer?																		
1) Yes	59	78.67	44	78.57	103	78.63	63	70.00	49	76.56	112	72.73	122	73.94	93	77.50	215	75.44
2) No	16	21.33	12	21.43	28	21.37	27	30.00	15	23.44	42	27.27	43	26.06	27	22.50	70	24.56
99) I don't know	3	1	1	4	0	0	2	2	2	2	3	3	3	3	3	6	6	6
D.3 How much time does your household spend each day to collect water?																		
1) Up to 30min	38	53.52	22	43.14	60	49.18	53	63.10	30	46.15	83	55.70	91	58.71	52	44.83	143	52.77
2) 30-60 min	23	32.39	19	37.25	42	34.43	14	16.67	15	23.08	29	19.46	37	23.87	34	29.31	71	26.20
3) More than 60 min	10	14.08	10	19.61	20	16.39	17	20.24	20	30.77	37	24.83	27	17.42	30	25.86	57	21.03
99) I don't know	7	6	6	13	16	17	21	21	7	7	13	13	13	7	7	20	20	7
D.4 Over the past three years, has access to water changed for your household? (DO NOT READ OPTIONS)																		
1) Yes, water access is now better	46	64.79	35	68.63	81	66.39	49	56.32	36	60.00	85	57.82	95	60.13	71	63.96	166	61.71
2) No, there has been no change	23	32.39	15	29.41	38	31.15	36	41.38	18	30.00	54	36.73	59	37.34	33	29.73	92	34.20
3) Yes, water access is now worse	2	2.82	1	1.96	3	2.46	2	2.30	6	10.00	8	5.44	4	2.53	7	6.31	11	4.09
99) I don't know	7	6	6	13	3	3	6	6	9	9	10	10	10	12	12	22	22	7
D.5 What is the main reason for this change? (DO NOT READ OPTIONS)																		
1) Factors related to the MAKAAAS project	10	23.81	10	30.30	20	26.67	18	40.91	9	24.32	27	33.33	28	32.56	19	27.14	47	30.13
2) Other factors	32	76.19	23	69.70	55	73.33	26	59.09	28	75.68	54	66.67	58	67.44	51	72.86	109	69.87
99) I don't know	36	24	24	60	46	46	29	29	75	75	82	82	82	53	53	135	135	36
D.6 Did you or any of your household members have any of the following diseases in the last three months...?																		
1) Yes	37	50.68	27	47.37	64	49.23	32	35.56	30	46.15	62	40.00	69	42.33	57	46.72	126	44.21
2) No	36	49.32	30	52.63	66	50.77	58	64.44	35	53.85	93	60.00	94	57.67	65	53.28	159	55.79
99) I don't know	5	0	0	5	0	0	1	1	1	1	5	5	5	5	5	6	6	5
D.7 Over the past three years, has there been a change in the extent to which your household is affected by these water-borne diseases?																		
1) Yes, we are now less affected than in the past	53	76.81	42	79.25	95	77.87	54	68.35	34	61.82	88	65.67	107	72.30	76	70.37	183	71.48
2) No, there has been no change	15	21.74	11	20.75	26	21.31	25	31.65	20	36.36	45	33.58	40	27.03	31	28.70	71	27.73
3) Yes, we are now more affected than in the past	1	1.45	0	0.00	1	0.82	0	0.00	1	1.82	1	0.75	1	0.68	1	0.93	2	0.78
99) I don't know	9	4	4	13	11	11	11	11	22	22	20	20	20	15	15	35	35	9
D.7a What might be the reasons as to why your household is less affected by these water-borne diseases?																		
1) Because we were trained how to keep our household surroundings cleaner	31	60.78	28	71.79	59	65.56	35	64.81	25	75.76	60	68.97	66	62.86	53	73.61	119	67.23
2) Because drinking water quality has improved	17	33.33	9	23.08	26	28.89	16	29.63	6	18.18	22	25.29	33	31.43	15	20.83	48	27.12
3) Because there was less rain	2	3.92	1	2.56	3	3.33	1	1.85	1	3.03	2	2.30	3	2.86	2	2.78	5	2.82
4) Because we had luck	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
5) Other	1	1.96	1	2.56	2	2.22	2	3.70	1	3.03	3	3.45	3	2.86	2	2.78	5	2.82
99) I don't know	27	18	18	45	36	36	33	33	69	69	63	63	63	51	51	114	114	27
Q95. D.8 Concerning sanitary conditions, hand washing facilities and practices, is there anything that improved over the past three years																		
1) Yes, sanitary conditions																		
Not Selected	46	58.97	37	64.91	83	61.48	53	58.89	36	54.55	89	57.05	99	58.93	73	59.35	172	59.11
Selected	32	41.03	20	35.09	52	38.52	37	41.11	30	45.45	67	42.95	69	41.07	50	40.65	119	40.89
2) Yes, hand washing facilities																		
Not Selected	64	82.05	44	77.19	108	80.00	75	83.33	53	80.30	128	82.05	139	82.74	97	78.86	236	81.10
Selected	14	17.95	13	22.81	27	20.00	15	16.67	13	19.70	28	17.95	29	17.26	26	21.14	55	18.90
3) Yes, hand washing practices																		
Not Selected	56	71.79	41	71.93	97	71.85	67	74.44	55	83.33	122	78.21	123	73.21	96	78.05	219	75.26
Selected	22	28.21	16	28.07	38	28.15	23	25.56	11	16.67	34	21.79	45	26.79	27	21.95	72	24.74
99) I don't know																		
Not Selected	61	78.21	45	78.95	106	78.52	74	82.22	51	77.27	125	80.13	135	80.36	96	78.05	231	79.38
Selected	17	21.79	12	21.05	29	21.48	16	17.78	15	22.73	31	19.87	33	19.64	27	21.95	60	20.62
PART E GENDER																		
E.0 What is your civil status?																		
1) Married	73	93.59	50	87.72	123	91.11	81	90.00	52	78.79	133	85.26	154	91.67	102	82.93	256	87.97
2) Single, widowed or divorced	5	6.41	7	12.28	12	8.89	9	10.00	14	21.21	23	14.74	14	8.33	21	17.07	35	12.03
E.1.1 ...decides what to do with family income?																		
1) Only men	11	15.28	4	8.00	15	12.30	14	17.28	11	21.15	25	18.80	25	16.34	15	14.71	40	15.69
2) Mostly men	9	12.50	3	6.00	12	9.84	11	13.58	5	9.62	16	12.03	20	13.07	8	7.84	28	10.98
3) Men and women equally	52	72.22	40	80.00	92	75.41	56	69.14	35	67.31	91	68.42	108	70.59	75	73.53	183	71.76
4) Mostly women	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
5) Only women	0	0.00	3	6.00	3	2.46	0	0.00	1	1.92	1	0.75	0	0.00	4	3.92	4	1.57
99) I don't know	6	7	7	13	9	9	14	14	23	23	15	15	15	21	21	36	36	6
E.1.2...attends meetings or activities in the village?																		
1) Only men	12	17.14	5	10.64	17	14.53	12	14.81	7	13.46	19	14.29	24	15.89	12	12.12	36	14.40
2) Mostly men	12	17.14	5	10.64	17	14.53	10	12.35	5	9.62	15	11.28	22	14.57	10	10.10	32	12.80
3) Men and women equally	45	64.29	35	74.47	80	68.38	59	72.84	37	71.15	96	72.18	104	68.87	72	72.73	176	70.40
4) Mostly women	1	1.43	0	0.00	1	0.85	0	0.00	0	0.								

2) Mostly men	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	
3) Men and women equally	36	50.00	20	40.00	56	45.90	35	43.21	14	27.45	49	37.12	71	46.41	34	33.66	105	41.34	
4) Mostly women	21	29.17	14	28.00	35	28.69	22	27.16	20	39.22	42	31.82	43	28.10	34	33.66	77	30.31	
5) Only women	14	19.44	16	32.00	30	24.59	23	28.40	17	33.33	40	30.30	37	24.18	33	32.67	70	27.56	
99) I don't know	6		7		13		9		15		24		15		22		37		
E.2 Which of the following statements best applies to your household?																			
1) Over the past three years, men have gained more influence in household decisions.																			
1)	38	58.46	26	65.00	64	60.95	43	59.72	20	44.44	63	53.85	81	59.12	46	54.12	127	57.21	
2) Over the past three years, there has been no change in the way men and women make household decisions																			
2)	24	36.92	12	30.00	36	34.29	27	37.50	21	46.67	48	41.03	51	37.23	33	38.82	84	37.84	
3) Over the past three years, women have gained more influence in household decisions.																			
3)	3	4.62	2	5.00	5	4.76	2	2.78	4	8.89	6	5.13	5	3.65	6	7.06	11	4.95	
99) I don't know	13		17		30		18		21		39		31		38		69		
E.3 What is the main reason for this change? (DO NOT READ OPTIONS)																			
1) Factors related to the MAKAA'S project																			
1)	7	17.95	8	30.77	15	23.08	17	37.78	6	25.00	23	33.33	24	28.57	14	28.00	38	28.36	
2) Other factors																			
2)	32	82.05	18	69.23	50	76.92	28	62.22	18	75.00	46	66.67	60	71.43	36	72.00	96	71.64	
99) I don't know	39		31		70		45		42		87		84		73		157		
E.4.1...takes part in village meetings?																			
1) Only men																			
1)	6	8.33	5	9.26	11	8.73	8	9.09	8	12.70	16	10.60	14	8.75	13	11.11	27	9.75	
2) Mostly men																			
2)	14	19.44	8	14.81	22	17.46	16	18.18	6	9.52	22	14.57	30	18.75	14	11.97	44	15.88	
3) Men and women equally																			
3)	52	72.22	39	72.22	91	72.22	59	67.05	43	68.25	102	67.55	111	69.38	82	70.09	193	69.68	
4) Mostly women																			
4)	0	0.00	0	0.00	0	0.00	4	4.55	4	6.35	8	5.30	4	2.50	4	3.42	8	2.89	
5) Only women																			
5)	0	0.00	2	3.70	2	1.59	1	1.14	2	3.17	3	1.99	1	0.62	4	3.42	5	1.81	
99) I don't know	6		3		9		2		3		5		8		6		14		
E.4.2 ...speaks during village meetings?																			
1) Only men																			
1)	8	10.96	5	9.09	13	10.16	6	6.82	5	7.94	11	7.28	14	8.70	10	8.47	24	8.60	
2) Mostly men																			
2)	20	27.40	12	21.82	32	25.00	18	20.45	12	19.05	30	19.87	38	23.60	24	20.34	62	22.22	
3) Men and women equally																			
3)	44	60.27	37	67.27	81	63.28	63	71.59	41	65.08	104	68.87	107	66.46	78	66.10	185	66.31	
4) Mostly women																			
4)	1	1.37	0	0.00	1	0.78	0	0.00	4	6.35	4	2.65	1	0.62	4	3.39	5	1.79	
5) Only women																			
5)	0	0.00	1	1.82	1	0.78	1	1.14	1	1.59	2	1.32	1	0.62	2	1.69	3	1.08	
99) I don't know	5		2		7		2		3		5		7		5		12		
E.4.3...influences decisions about village affairs?																			
1) Only men																			
1)	8	11.11	4	7.41	12	9.52	7	7.95	8	12.90	15	10.00	15	9.38	12	10.34	27	9.78	
2) Mostly men																			
2)	14	19.44	12	22.22	26	20.63	22	25.00	15	24.19	37	24.67	36	22.50	27	23.28	62	22.83	
3) Men and women equally																			
3)	49	68.06	37	68.52	86	68.25	57	64.77	39	62.90	96	64.00	106	66.25	76	65.52	182	65.94	
4) Mostly women																			
4)	1	1.39	0	0.00	1	0.79	1	1.14	0	0.00	1	0.67	2	1.25	0	0.00	2	0.72	
5) Only women																			
5)	0	0.00	1	1.85	1	0.79	1	1.14	0	0.00	1	0.67	1	0.62	1	0.86	2	0.72	
99) I don't know	6		3		9		2		4		6		8		7		15		
E.4.4 ...makes decisions about village affairs?																			
1) Only men																			
1)	8	10.96	3	5.56	11	8.66	6	6.82	11	17.46	17	11.26	14	8.70	14	11.97	28	10.07	
2) Mostly men																			
2)	14	19.18	12	22.22	26	20.47	24	27.27	12	19.05	36	23.84	38	23.60	24	20.51	62	22.30	
3) Men and women equally																			
3)	49	67.12	36	66.67	85	66.93	58	65.91	40	63.49	98	64.90	107	66.46	76	64.96	183	65.83	
4) Mostly women																			
4)	1	1.37	1	1.85	2	1.57	0	0.00	0	0.00	0	0.00	1	0.62	1	0.85	2	0.72	
5) Only women																			
5)	1	1.37	2	3.70	3	2.36	0	0.00	0	0.00	0	0.00	1	0.62	2	1.71	3	1.08	
99) I don't know	5		3		8		2		3		5		7		6		13		
E.4.5 ...represents the village vis-à-vis the government?																			
1) Only men																			
1)	8	11.11	9	16.98	17	13.60	7	7.95	10	16.39	17	11.41	15	9.38	19	16.67	34	12.41	
2) Mostly men																			
2)	35	48.61	24	45.28	59	47.20	31	35.23	16	26.23	47	31.54	66	41.25	40	35.09	106	38.69	
3) Men and women equally																			
3)	28	38.89	18	33.96	46	36.80	49	55.68	35	57.38	84	56.38	77	48.12	53	46.49	130	47.45	
4) Mostly women																			
4)	1	1.39	1	1.89	2	1.60	1	1.14	0	0.00	1	0.67	2	1.25	1	0.88	3	1.09	
5) Only women																			
5)	0	0.00	1	1.89	1	0.80	0	0.00	0	0.00	0	0.00	0	0.00	1	0.88	1	0.36	
99) I don't know	6		4		10		2		5		7		8		9		17		
E.4.6...controls village funds?																			
1) Only men																			
1)	6	8.33	3	5.66	9	7.20	6	6.90	4	6.56	10	6.76	12	7.55	7	6.14	19	6.96	
2) Mostly men																			
2)	4	5.56	4	7.55	8	6.40	9	10.34	3	4.92	12	8.11	13	8.18	7	6.14	20	7.33	
3) Men and women equally																			
3)	48	66.67	41	77.36	89	71.20	61	70.11	42	68.85	103	69.59	109	68.55	83	72.81	192	70.33	
4) Mostly women																			
4)	6	8.33	1	1.89	7	5.60	4	4.60	6	9.84	10	6.76	10	6.29	7	6.14	17	6.23	
5) Only women																			
5)	8	11.11	4	7.55	12	9.60	7	8.05	6	9.84	13	8.78	15	9.43	10	8.77	25	9.16	
99) I don't know	6		4		10		3		5		8		9		9		18		
E.4.7 ...conducts volunteer work?																			
1) Only men																			
1)	3	4.17	5	9.09	8	6.30	5	5.68	2	3.08	7	4.58	8	5.00	7	5.83	15	5.36	
2) Mostly men																			
2)	4	5.56	6	10.91	10	7.87	10	11.36	9	13.85	19	12.42	14	8.75	15	12.50	29	10.36	
3) Men and women equally																			
3)	63	87.50	43	78.18	106	83.46	72	81.82	53	81.54	125	81.70	135	84.38	96	80.00	231	82.50	
4) Mostly women																			
4)	2	2.78	0	0.00	2	1.57	1	1.14	0	0.00	1	0.65	3	1.88	0	0.00	3	1.07	
5) Only women																			
5)	0	0.00	1	1.82	1	0.79	0	0.00	1	1.54	1	0.65	0	0.00	2	1.67	2	0.71	
99) I don't know	6		2		8		2		1		3		8		3		11		
E.4.8 ...is involved in village-based organisations?																			
1) Only men																			
1)	4	5.56	6	11.11	10	7.94	6	6.90	4	7.27	10	7.04	10	6.29	10	9.17	20	7.46	
2) Mostly men																			
2)	18	25.00	9	16.67	27	21.43	16	18.39	8	14.55	24	16.90	34	21.38	17	15.60	51	19.03	
3) Men and women equally																			
3)	49	68.06	38	70.37	87	69.05	64	73.56	43	78.18	107	75.35	113	71.07	81	74.31	194	72.39	
4) Mostly women																			
4)	1	1.39	0	0.00	1	0.79	1	1.15	0	0.00	1	0.70	2	1.26	0	0.00	2	0.75	
5) Only women																			
5)	0	0.00	1	1.85	1	0.79	0	0.00	0	0.00	0	0.00	0	0.00	1	0.92	1	0.37	
99) I don't know	6		3		9		3		11		14		9		14		23		
E.5 Which of the following statements best applies to your community?																			
1) Over the past three years, men have gained more influence in community decisions.																			
1)	36	56.25	31	75.61	67	63.81	51	64.56	31	58.49	82	62.12	87	60.84	62	65.96	149	62.87	
2) Over the past three years, there has been no change in the way men and women make community decisions																			
2)	26	40.62	10	24.39	36	34.29	25	31.65	21	39.62	46	34.85	51	35.66	31	32.98	82	34.60	
3) Over the past three years, women have gained more influence in community decisions.																			
3)	2	3.12	0	0.00	2	1.90	3	3.80	1	1.89	4	3.03	5	3.50	1	1.06	6	2.53	
99) I don't know	14		16		30		11		13		24		25		29		54		
E.6 What is the main reason for this change? (DO NOT READ OPTIONS)																			

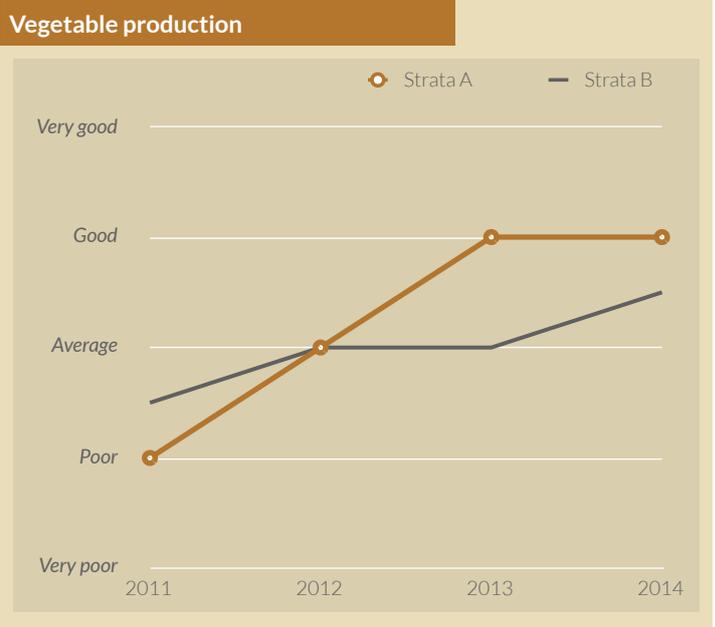
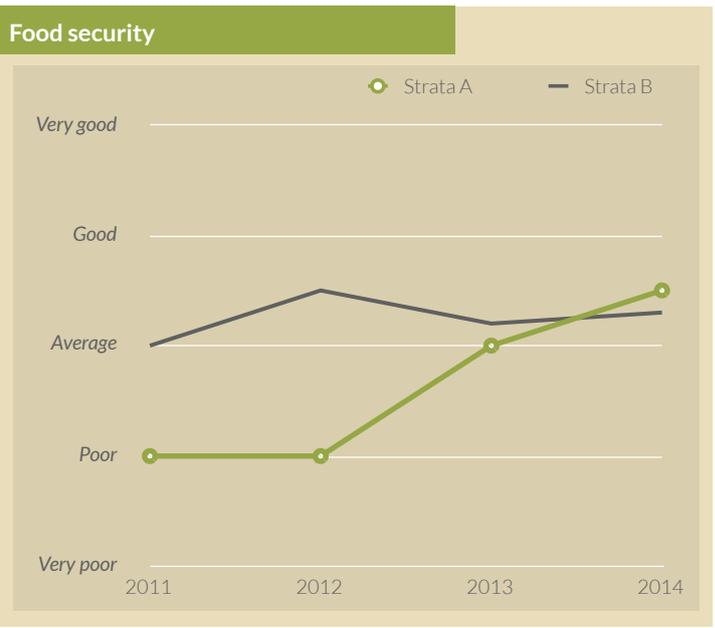
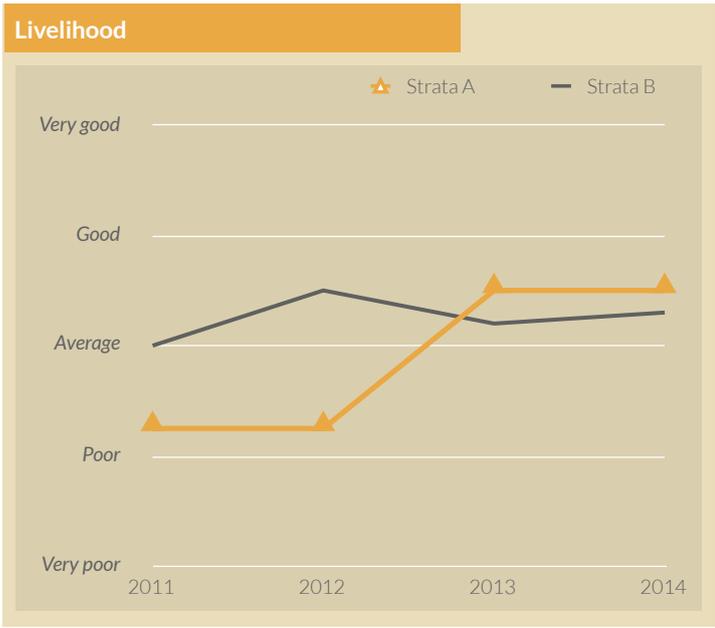
3) A few households in the village	59	81.94	45	88.24	104	84.55	63	78.75	44	77.19	107	78.10	122	80.26	89	82.41	211	81.15
4) Nobody in the village	0	0.00	2	3.92	2	1.63	0	0.00	0	0.00	0	0.00	0	0.00	2	1.85	2	0.77
99) I don't know	6		6		12		10		9		19		16		15		31	
G.1a Do you know the criteria on which beneficiaries were selected?																		
1) Yes	23	36.51	17	36.96	40	36.70	20	28.57	13	27.08	33	27.97	43	32.33	30	31.91	73	32.16
2) No	40	63.49	29	63.04	69	63.30	50	71.43	35	72.92	85	72.03	90	67.67	64	68.09	154	67.84
G.1b Do you think that these criteria were fair?																		
1) Yes	14	60.87	10	58.82	24	60.00	12	60.00	7	58.33	19	59.38	26	60.47	17	58.62	43	59.72
2) No	9	39.13	7	41.18	16	40.00	8	40.00	5	41.67	13	40.62	17	39.53	12	41.38	29	40.28
99) I don't know	55		40		95		70		54		124		125		94		219	
G.2 Over past three years, have you learned anything new from the MAKAAAS project?																		
1) Yes	21	31.82	15	29.41	36	30.77	25	33.33	19	31.67	44	32.59	46	32.62	34	30.63	80	31.75
2) No	45	68.18	36	70.59	81	69.23	50	66.67	41	68.33	91	67.41	95	67.38	77	69.37	172	68.25
99) I don't know	12		6		18		15		6		21		27		12		39	
G.3 To what extent do you currently apply what you have learned?																		
1) I apply everything I have learned	18	90.00	12	80.00	30	85.71	17	68.00	16	84.21	33	75.00	35	77.78	28	82.35	63	79.75
2) I apply most of what I have learned	2	10.00	3	20.00	5	14.29	6	24.00	0	0.00	6	13.64	8	17.78	3	8.82	11	13.92
3) I do not yet apply what I have learned, but plan to do so in the future	0	0.00	0	0.00	0	0.00	2	8.00	2	10.53	4	9.09	2	4.44	2	5.88	4	5.06
4) I do not apply anything I have learned	0	0.00	0	0.00	0	0.00	0	0.00	1	5.26	1	2.27	0	0.00	1	2.94	1	1.27
99) I don't know	58		42		100		65		47		112		123		89		212	
Q132. G.4 What are the reasons why you did not apply some of the things you have learned? (DO NOT READ OPTIONS)																		
1) I do not have the resources to implement the changes																		
Not Selected	35	44.87	26	45.61	61	45.19	39	43.33	39	59.09	78	50.00	74	44.05	65	52.85	139	47.77
Selected	43	55.13	31	54.39	74	54.81	51	56.67	27	40.91	78	50.00	94	55.95	58	47.15	152	52.23
2) I do not feel confident in applying new techniques																		
Not Selected	74	94.87	51	89.47	125	92.59	80	88.89	58	87.88	138	88.46	154	91.67	109	88.62	263	90.38
Selected	4	5.13	6	10.53	10	7.41	10	11.11	8	12.12	18	11.54	14	8.33	14	11.38	28	9.62
3) I do not want to put my livelihood at risk																		
Not Selected	71	91.03	52	91.23	123	91.11	84	93.33	61	92.42	145	92.95	155	92.26	113	91.87	268	92.10
Selected	7	8.97	5	8.77	12	8.89	6	6.67	5	7.58	11	7.05	13	7.74	10	8.13	23	7.90
4) I do not know who to contact if I have problems with the new technique																		
Not Selected	74	94.87	52	91.23	126	93.33	88	97.78	60	90.91	148	94.87	162	96.43	112	91.06	274	94.16
Selected	4	5.13	5	8.77	9	6.67	2	2.22	6	9.09	8	5.13	6	3.57	11	8.94	17	5.84
5) I see no advantage in the new technique(s)																		
Not Selected	78	100.00	57	100.00	135	100.00	88	97.78	62	93.94	150	96.15	166	98.81	119	96.75	285	97.94
Selected	0	0.00	0	0.00	0	0.00	2	2.22	4	6.06	6	3.85	2	1.19	4	3.25	6	2.06
G.5 Do you think that the new techniques/strategies that you have learned are worth applying into the future?																		
1) Yes, all of them	28	49.12	16	44.44	44	47.31	31	50.00	27	51.92	58	50.88	59	49.58	43	48.86	102	49.28
2) Yes, some of them	16	28.07	13	36.11	29	31.18	21	33.87	17	32.69	38	33.33	37	31.09	30	34.09	67	32.37
3) No	13	22.81	7	19.44	20	21.51	10	16.13	8	15.38	18	15.79	23	19.33	15	17.05	38	18.36
99) I don't know	21		21		42		28		14		42		49		35		84	
G.6 Thinking of the most technique/strategy that is most important to you, do you think you will be able to apply it into the future?																		
1) Yes, on my own	34	60.71	25	58.14	59	59.60	43	63.24	32	59.26	75	61.48	77	62.10	57	58.76	134	60.63
2) Yes, with support from others	10	17.86	10	23.26	20	20.20	19	27.94	14	25.93	33	27.05	29	23.39	24	24.74	53	23.98
3) No	12	21.43	8	18.60	20	20.20	6	8.82	8	14.81	14	11.48	18	14.52	16	16.49	34	15.38
99) I don't know	22		14		36		22		12		34		44		26		70	

B. Trend analysis summary

Appendix B: Change of perceived living conditions in the project villages (Strata A/ Strata B)

Area	Strata A (high activity concentration)						Strata B (low activity concentration)						Principal factor for change	Project impact?					
	Year				Change	Principal factor for change	Year				Change								
	2011	2012	2013	2014			2011	2012	2013	2014									
Livelihood & Food security																			
Livelihood	2.25	2.25	3.5	3.5	+1.25	Level of food production	3	3.5	3.2	3.3	+0.3	Level of food production	+						
Food security	2	2	3	3.5	+1.5	Weather conditions	3	3.5	3.2	3.3	+0.3	Weather conditions	(+)						
Agriculture																			
Crop production	2	2	3	3.5	+1.5	Timely start of rainy season	3	3	3	3	0	/	(+)						
Vegetable production	2	3	4	4	+2.0	Water and soil conditions	2.5	3	3	3.5	+1	Weather conditions	+						
WASH																			
Sanitation	2	2.25	3	3.25	+1.25	Toilets & hygiene trainings, weather conditions	2.5	2.8	3	2.5	0	Toilets and hygiene trainings, weather conditions	+						
Drinking water	2.5	2.5	2.8	2.8	+0.3	Water supply system, weather conditions	2.5	2.5	2.8	2.8	+0.3	Water supply system, weather conditions	+						
Disaster risk preparedness																			
Disaster risk preparedness	2.5	2.5	3.5	3.5	+1.0	Trainings and reforestation	3	3	3	3.5		Trainings and reforestation	+						
Community capacity																			
Community cohesion	3.0	3.5	3.5	3.5	+0.5	Mutual support	2.0	2.0	3.0	3.0	+1.0	Finding consensus							
Participation	3.5	3.5	3.5	3.5	0	/	3.5	3.0	3.5	3.5	0	/							
Connection to local government	3.0	3.0	3.0	3.0		/	4.0	3.5	4.0	4.0		/							

Source: Results from five workshops, during which participants were asked to rate their living conditions across five thematic areas for each year between 2011 and 2014. The table shows the average results from those villages with high project activity concentration (Strata A) and from those where activity concentration was low (Strata B). Results show where the project was among the principal factors for bringing positive change (marked as +) and where it contributed to a positive change as a secondary factor (marked as (+)).



Disaster preparedness



Community cohesion



Public participation



Links to local government



KUESIONARIO SURVEY UMA KAIN	NUMBER (NOT TO BE FILLED OUT BY ENUMERATOR) : _____
FINAL EVALUATION OF THE MAKAA'S PROJECT/AVALIASAUN FINAL HOSI PROJETO MAKAA'S	Note: Questions marked by <i>italics/underlined</i> allow for multiple answers/perguntas nebe marka ho italic/ga lina okos permite resposta barak

PARTE O | IDENTIFIKASAUN**0.1 Ita bot nia kode enumerador saida?**

What is your enumerator code?

A <input type="checkbox"/>	D <input type="checkbox"/>	G <input type="checkbox"/>
B <input type="checkbox"/>	E <input type="checkbox"/>	H <input type="checkbox"/>
C <input type="checkbox"/>	F <input type="checkbox"/>	J <input type="checkbox"/>

A.1	Iha aldeia nebe halao entrevista nee?	In which aldeia is this interview being conducted?
1)		Laklolema <input type="checkbox"/>
2)		Tau Talo <input type="checkbox"/>
3)		Metiluli <input type="checkbox"/>
4)		Lebuana <input type="checkbox"/>
5)		Kamalehohoru <input type="checkbox"/>
6)		Kai to letehou <input type="checkbox"/>
7)		Kaileulema <input type="checkbox"/>
8)		Nartutu <input type="checkbox"/>
9)		Test run A <input type="checkbox"/>
10)		Test run B <input type="checkbox"/>

PARTE A | BASIC INFORMATION (Informasaun Basiku)

<p>Lee statementu ba Resposta nain nebe potensial. <i>Hallo, hau nia naran=-----, hau servisu ho Projeto MAKAA'S atu aprende barak liu kona ba kondisaun moris iha ita bot nia comunidade. Parte nee revijaun nee hosi Projeto MAKAA'S nebe implementa iha nee. Hau hakarak husu ita bot perguntas kona ba ita bot nia familia, ita bot nia vid amoris, preparasaun be desastre, no assuntu suco. Survey nee sei halao durante minutu 30 to40 atu kompleta no anonimous-signigika katak ita bot nia naran no diresaun sei record. Karik ita bot participa, ita bot bele decide atu la resposta perguntas ou atu hapara entrevista iha kualker tempo. Ita bot konkorda atu halo entrevista</i> <u> </u> Sim <u> </u> Lae</p>	<p>STATEMENT TO BE READ TO POTENTIAL RESPONDENTS. Hello, my name is ----- . I am working with the MAKAA'S project to learn more about the conditions in your community. This is part of a review of the MAKAA'S project that was implemented here. I would like to ask you questions about your family, your livelihoods, disaster preparedness, and village affairs. The survey will take 30 to 40 minutes to complete and is anonymous - which means that your name and address will not be recorded. If you participate, you can decide not to answer a question or to stop the interview at any time. Do you agree to be interviewed? <u> </u> Yes <u> </u> No (→TERMINATE INTERVIEW)</p>
---	---

A.1	Respondente nia generu?	What is the gender of the respondent?
1)		Feto <input type="checkbox"/>
2)		mane <input type="checkbox"/>

A.2	Emas hira hela iha ita bot nia uma kain?	How many people live in your household?
1)	Hakerek numero	Write number <u> </u>

A.3	Se mak chefi de familia iha uma kain nia laran?	What is the gender of the head of the household?
1)	Feto	Female <input type="checkbox"/>
2)	Mane	Male <input type="checkbox"/>

PART B | INVOLVEMENT IN THE PROJECT (Involvementu iha Projeto)

B.1	Ita bot rona ona kona ba projeto MAKAA'S (Mudansa Klimatika iha ambiente seguru)	Have you ever heard of the MAKAA'S (mudansaKlimatikaihaAmbienteSeguru) project?
1)	Sim	Yes <input type="checkbox"/>
2)	Lae	No <input type="checkbox"/>

B.2	Ita bot ou membro hosi ita bot nia uma kain, membro hosi grupo toos nain nebe supporta hosi CARE?	Are you, or is any member of your household, a member of a farmers' group supported by CARE?
1)	Sim	Yes <input type="checkbox"/>
2)	lae	No <input type="checkbox"/>
99)	Hau lahatene	I don't know <input type="checkbox"/>

B.3	Ita bot, ou membro hosi ita bot nia uma kain, membro hosi GMF iha aldeia (Grupo Maneja facilidade)	Are you, or is any member of your household, a member of your aldeia's GMF (GrupoManejaFacilidade)?
1)	Sim	Yes <input type="checkbox"/>
2)	Lae	No <input type="checkbox"/>
99)	Hau Lahatene	I don't know <input type="checkbox"/>

B.4	Iha tinan tolu liu ba, ita bot simu ona treinamentu hosi Projeto MAKAA'S	Over the past three years, have you received any training from the MAKAA'S project?
1)	Sim	Yes <input type="checkbox"/>
2)	Lae	No <input type="checkbox"/>
99)	Hau la hatene	I don't know <input type="checkbox"/>

B.5	Iha tinan tolu liu ba, ita bot simu ona material supporta hosi Projeto MAKAS?	<i>Over the past three years, have you received any material support from the MAKAS project?</i>	
1)	Sim	Yes	<input type="checkbox"/>
2)	Lae	No	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>

B.6	Konsidera iha inisiu hosi projeto MAKAS, statementu tuir mai ida nebe mak esplika ita bot nia involvimentu	<i>Considering the beginning of the MAKAS project, which of the following statements best describes your involvement?</i>	
1)	Hau sidauk involve iha assesmentu ou enkonro planiamentu	I have not been involved in any assessments or planning meetings	<input type="checkbox"/>
2)	Hau participa iha enkonro maibe la kontribui	I participated in meetings but did not contribute	<input type="checkbox"/>
3)	Hau participa iha enkonro no kontribui iha planiamentu	I participated in meetings and contributed to planning	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>

B.7	Pelmenus, durante ita tolu nia laran oinsa ita bot hetan malu ho staff projeto MAKAS nian?	<i>On average, how often in the past year have you met MAKAS project staff?</i>	
1)	Fulan ida dala ida ou mneus	Once a month or less often	<input type="checkbox"/>
2)	Dala rua iha fulan ida	About twice a month	<input type="checkbox"/>
3)	Fulan ida dala tolu ou liu hosi nee	Three times a month or more often	<input type="checkbox"/>
4)	Nunka	Not at all	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>

PART C | CLIMATE-RESILIENT LIVELIHOODS (IKLIMA VIDA MORIS RESILIENS.....)

Livelihood diversification (SO1-2) Diversifikasaun vida moris

C.1/2 Block	Hau hakarak husu ita bot kona ba ita bot nia stratejia vida moris. Hau lista stratejia varidade no de pois husu ita bot applika stratejia iha tinan 2014, no iha tinan 2011	<i>I would like to ask you about your livelihood strategies. I will list various strategies and then ask whether you applied the strategy in 2014, and in 2011.</i>	C.1 Did your household practice this work in 2014? (Ita bot nia uma kain pratika servisu nee iha tinan 2014?)	C.2 Did your household practice this work in 2011? (Ita bot nia uma kain pratika servisu nee iha 2011?)
On-farm work (servisu iha toos)				
1)	Produsaun ai han ba konsumu uma kain	Crop production for household consumption	<input type="checkbox"/>	<input type="checkbox"/>
2)	Produsaun ai han ba faan/hasae rendementu	Crop production for sales/income-generation	<input type="checkbox"/>	<input type="checkbox"/>
3)	Produsaun animal no produto animal	Production of animals and animal products	<input type="checkbox"/>	<input type="checkbox"/>
4)	Servisu agrikultura	Agricultural labour	<input type="checkbox"/>	<input type="checkbox"/>
5)	Seluk servisu iha toos	Other on-farm work	<input type="checkbox"/>	<input type="checkbox"/>
Off-farm work (la servisu iha toos)				
6)	Iha abilidade servisu(karpintaria, servisu badae)	Skilled labour (carpentry, metal work etc)	<input type="checkbox"/>	<input type="checkbox"/>
7)	Aktividade negosio kiik (faan iha strada ninin, hein loja)	Small business activities (street vending, shop keeping)	<input type="checkbox"/>	<input type="checkbox"/>
8)	Servisu formal (governo, NGO, Seitor privada)	Formal employee (government, NGO, private sector)	<input type="checkbox"/>	<input type="checkbox"/>
9)	Produsaun handicraft	Handicraft production	<input type="checkbox"/>	<input type="checkbox"/>
10)	Osan mai hosi ema seluk (rai liur, domestiku)	Remittances (foreign, domestic)	<input type="checkbox"/>	<input type="checkbox"/>
11)	Faan ai/karakol	Wood/charcoal sales	<input type="checkbox"/>	<input type="checkbox"/>
12)	Produitu floresta laos ai	Non-timber forest products	<input type="checkbox"/>	<input type="checkbox"/>
13)	Peska/kasa	Fishing/hunting	<input type="checkbox"/>	<input type="checkbox"/>
14)	Servisu seluk nebe laos toos nian	Other off-farm work	<input type="checkbox"/>	<input type="checkbox"/>

C.3	Iha 2014, servisu iha toos no laos iha toos nee hirak mak kontribui ba ita bot nia vida moris (hahan no rendementu)	<i>In 2014, how much did on-farm and off-farm work contribute to your livelihood (food and income)?</i>	
1)	Uja funsaun slider iha survey, nebe mak iha parte karuk indika 100% iha toos no iha parte los 100% la servisu iha toos	Use slider function in iSurvey, where the left side indicates 100% on-farm and the right 100% off-farm work.	

C.3a	Fila ba 2011, kahur nee diferente	<i>Back in 2011, was this mix different?</i>		FLOW/lalaok
1)	Sim	Yes/	<input type="checkbox"/>	→ C.3b
2)	lae	No/	<input type="checkbox"/>	→ C.4
99)	/hau lahatene	I don't know	<input type="checkbox"/>	→ C.4

C.3b	Oinsa servisu iha toos no laos iha toos kontribui ba ita bot nia vida moris (han no rendementu)	<i>In 2011, how much did on-farm and off-farm work contribute to your livelihood (food and income)?</i>	
1)	uja funsaun slider iha survey, nebe parte los indika 100% hosi toos no 100% laos hosi toos	Use slider function in iSurvey, where the left side indicates 100% on-farm and the right 100% off-farm work (

C.3c	Projeto MAKAS iha funsaun halo mudansa nee	<i>Has the MAKAS project played any role behind this change?</i>		FLOW. Lalaok
1)	Lae, laiha funsaun	No, it did not play a role.	<input type="checkbox"/>	→ C.4
2)	Sim, iha funsaun posetivu entre sira seluk	Yes, it played a positive role amongst others.	<input type="checkbox"/>	
3)	Sim iha funsaun importante	Yes, it played the main role.	<input type="checkbox"/>	
99)	Hau lahatene	I don't know.	<input type="checkbox"/>	

Climate information (SO1-3) Informasaun klimatika

C.4	Ita bot nia uma kain iha assesu ba informasaun klimatika (sessaun/mensal/seminal)?	BL: C2 <i>Does your household have access to climate information (seasonal/monthly/weekly forecasts)?</i>		FLOW/Lalaok
1)	sim	Yes/	<input type="checkbox"/>	→ C.4a
2)	lae	No/	<input type="checkbox"/>	→ C.5
99)	Hau la hatene	I don't know/	<input type="checkbox"/>	→ C.5

C.4a	<i>Ita bot nia uma kain uja informasaun klimatika ne</i>	<i>BL: C3</i> Does your household use this climate information?	FLOW/lalaok
1)	Sim	Yes/	<input type="checkbox"/>
2)	Lae	No/	<input type="checkbox"/>
99)	hau lahatene	I don't know/	<input type="checkbox"/>

Climate-resilient practices (SO1-1)-Pratika klimatika resliens

C.5	<i>Iha tinan sanulu liu ba, ita bot esperiencia ona mudansa ruma iha iklima, hanesan udan tau iha tempo diferente, mudansa iha temperature, bai loron etc)</i>	<i>BL: C4</i> Over the past ten years, have you experienced any changes in the climate, such as different times of rain, changes in temperature, drought etc)	
1)	Sim	Yes/	<input type="checkbox"/>
2)	/lae	No	<input type="checkbox"/>
99)	hau lahatene	I don't know/	<input type="checkbox"/>

C.6/7 Block	<i>Hau hakarak husu ita bot nia stratejia adaptasaun. Hau sei lista stratejia varidade. Hau sei husu ita bot applika stratejia iha tinan 2014, no ita bot introdus iha tinan tolu liu ba.</i>	<i>BL: C5</i> I would like to ask you about your adaptation strategies. I will list various strategies. I will then ask whether you applied the strategy in 2014, and whether you introduced it over the past three years.	<i>C.6</i> Did your household apply this strategy in 2014? Ita bot nia uma kain applika stratejia iha tinan 2014	<i>C.2</i> Did you introduce this strategy over the past three years? Ita bot introdus stratejia iha tinan tolu liu ba
Climate adaptation				
1)	diverfikasaun ai han	Crop diversification/	<input type="checkbox"/>	<input type="checkbox"/>
2)	daptasaun klimatika-resliens ai han	Adoption of climate-resilient crops/a	<input type="checkbox"/>	<input type="checkbox"/>
3)	ajustamentu tempo kuda	Adjustment of planting times/	<input type="checkbox"/>	<input type="checkbox"/>
4)	diversifikasaun rendementu	Income diversification/	<input type="checkbox"/>	<input type="checkbox"/>
5)	/rai ai han	Seed saving and storage	<input type="checkbox"/>	<input type="checkbox"/>
6)	servisu kasual	Casual labour/	<input type="checkbox"/>	<input type="checkbox"/>
7)	halo toos besik uma	Home gardening/	<input type="checkbox"/>	<input type="checkbox"/>
8)	irigasaun	Irrigation/	<input type="checkbox"/>	<input type="checkbox"/>
9)	pratika agrikultura foun	New agricultural practices/	<input type="checkbox"/>	<input type="checkbox"/>
10)	kuda fali a	Tree replanting/ i	<input type="checkbox"/>	<input type="checkbox"/>
11)	impounding/koileta udan been	Rainwater harvesting/	<input type="checkbox"/>	<input type="checkbox"/>
12)	faan animal	Selling of livestock/	<input type="checkbox"/>	<input type="checkbox"/>
13)	rai bee hodi rega	Storing water for plants/	<input type="checkbox"/>	<input type="checkbox"/>
14)	rai bee ba animal	Storing water for livestock/	<input type="checkbox"/>	<input type="checkbox"/>
15)	rai han animal	Storing fodder for livestock/	<input type="checkbox"/>	<input type="checkbox"/>
16)	/hasai labarik hosi eskola	Removing children from school	<input type="checkbox"/>	<input type="checkbox"/>
17)	/han hahan fuik	Eating wild food	<input type="checkbox"/>	<input type="checkbox"/>
18)	faan rai	Selling land/	<input type="checkbox"/>	<input type="checkbox"/>
19)	fahe ai han	Rationing food/	<input type="checkbox"/>	<input type="checkbox"/>

C.8/9 Block	<i>Hau hakarak husu ita bot kona ba ita bot nia stratejia vida moris. Hau sei lista varidade stratejia no husu karik ita bot applika stratejia iha tinan 2014, no iha tinan 2011</i>	<i>I would like to ask you about your livelihood strategies. I will list various strategies and then ask whether you applied the strategy in 2014, and in 2011.</i>	<i>C.8</i> Did your household apply this strategy in 2014? Ita bot nia uma kain applika stratejia iha tinan 2014	<i>C.9</i> Did your household apply this strategy in 2011? Ita bot nia uma kain applika stratejia iha tinan 2011
Conservation farming				
1)	Kultivasaun minimu	Minimum tillage	<input type="checkbox"/>	<input type="checkbox"/>
2)	Zero kultivasaun	Zero tillage	<input type="checkbox"/>	<input type="checkbox"/>
3)	Ai han rotasaun	Crop rotation	<input type="checkbox"/>	<input type="checkbox"/>
4)	Agro floresta	Agro-forestry	<input type="checkbox"/>	<input type="checkbox"/>
5)	Toos kontur	Contour farming	<input type="checkbox"/>	<input type="checkbox"/>
6)	mulsa	Mulching	<input type="checkbox"/>	<input type="checkbox"/>
7)	Jestaun peste nebe integrado	Integrated pest management	<input type="checkbox"/>	<input type="checkbox"/>
8)	Kobre ai han	Covering of crops	<input type="checkbox"/>	<input type="checkbox"/>

C.10/11 Block	<i>Hau hakarak husu ba ita bot kona ba ita bot nia batar no aifarina. Hau sei lista varidade stratejia no husu ita bot karik applika stratejia iha tinan 2014, no iha tinan 2011</i>	<i>I would like to ask you about your maize and cassava. I will list various strategies and then ask whether you applied the strategy in 2014, and in 2011.</i>	<i>C.10</i> Did your household plant this crop in 2014? Ita bot nia uma kain kuda ai han nee iha tinan 2014	<i>C.11</i> Did your household plant this crop in 2011? Ita bot nia umakain kuda ai han nee iha tinan 2011
Climate-resilient crops/ klimatika-ai han resliens				
1)	Batar, varidade diak	Maize, improved variety	<input type="checkbox"/>	<input type="checkbox"/>
2)	Batar, varidade standar	Maize, standard variety	<input type="checkbox"/>	<input type="checkbox"/>
3)	aifarina	Cassava	<input type="checkbox"/>	<input type="checkbox"/>

C.12/13 Block	<i>Ai han diferente hira no modo ita bot nia uma kain kuda</i>	<i>How many different crops and vegetables did your household plant...</i>	<i>C.12</i> ... in 2014? Iha tinan 2014	<i>C.2</i> ... in 2011? Iha tinan 2011
Crop diversification/diversifikasaun ai han				
1)	Numero ai han/modo nebe diferente	Number of different crops/vegetables	_____	_____

C.14	<i>Ita bot nia uma kain ou grupo toos nain simu bidon ruma hosi Projeto MAKAAAS</i>	<i>Has your household or farmer group received any airtight drums by the MAKAAAS project?</i>	FLOW
1)	sim	Yes	<input type="checkbox"/> → C.14a
2)	lae	No	<input type="checkbox"/> → C.15
99)	Hau lahatene	I don't know	<input type="checkbox"/> → C.15

C.14 a	Desde ita bot simu bidon, ita bot nivel post koileta batar iha mudansa kona ba lakon	<i>Since you received these drums, has your level of post-harvest maize losses changed?</i>	FLOW
1)	Sim, post koileta lakon aumenta	Yes, post-harvest losses have increased	<input type="checkbox"/>
2)	Lae, la iha mudansa	No, there has been no change	<input type="checkbox"/>
3)	Sim, post koileta lakon menus	Yes, post-harvest losses have decreased	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>

→ C.15

C.15	Oinsa ita bot esplika ita bot nia uma kain nia abilidade atu direiji ba risku klimatika hanesan irregular no buat nebe labele prediksi ou udan monu rai nebe makas	<i>How would you describe your household's ability to address climate risks such as irregular and unpredictable or extreme rainfall?</i>	FLOW
1)	ass	High	<input type="checkbox"/>
2)	moderado	Moderate	<input type="checkbox"/>
3)	menus	Low	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>

→ C.16

C.16	Statementu nebe mak esplika diak liu ita bot nia uma kain	<i>Which of the following statements best describes your household?</i>	FLOW
1)	Ami agora diak liu-adapta no prepara ba risku klimatika duke tinan hat liu ba	We are now better-adapted and more prepared for climate risks than four years ago.	<input type="checkbox"/>
2)	Iha tinan hat liu ba, la iha mudansa iha ami nia abilidade atu infrenta risku klimatika	Over the past four years, there has been no change in our ability to face climate risks.	<input type="checkbox"/>
3)	Ami agora ladun prepara ba risku klimatika duke tinan hat liu ba	We are now less prepared for climate risks than we were four years ago.	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>

→ C.16a

→ C.17

→ C.17

→ C.17

C.16 a	Tuir ita bot nia vijaun, too iha nebe Projeto MAKAAAS nia funsaun hodi hadia nee	<i>In your view, to what extent has the MAKAAAS project played a role behind this improvement?</i>	FLOW /lalaok
1)	Iha funsaun posetivu importante	Main positive role	<input type="checkbox"/>
2)	Iha posetivu importane entre sira seluk	Positive role amongst others	<input type="checkbox"/>
3)	La iha funsaun	No role	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>

→ C.17

C.17	Em jeral, ita bot nia sitasaun in termus hosi seguransa ai han no rendementu muda ona iha tinan tolu liu ba	<i>Overall, has your situation in terms of food and income security changed over the past three years?</i>	FLOW
1)	Sim, ami agora diak liu duke tinan tolu liu ba	Yes, we are now better off than three years ago	<input type="checkbox"/>
2)	Lae, sidauk iha mudansa	No, it has not changed	<input type="checkbox"/>
3)	Sim, ami agora att liu duke tinan tolu liu ba	Yes, we are now worse off than three years ago	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>

→ C.17a

→ D.1

→ C.17a

→ D.1

C.17 a	Iha maneira saida hosi fator tuir mai nebe iha funsaun ba iha mudansa nee? Marka, 'la aplikabel' karik fator nee la esiste iha ita bot nia kontestu.	<i>In what way did any of the following factors play a role behind this change? Mark "not applicable" if this factor does not exist in your context.</i>	1) Positive effect/efetu posetivu	2) No effect/la iha efektu	3) Negative effect/efetu negawitu	4) Not applicable/la aplikabel
A1	Mudansa ruma iha klimatika	Any changes in the weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A2	Mudansa ruma iha merkado (asesu/presu)	Any changes in the market (access/prices)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A3	Mudansa ruma iha tekniku kultivasaun	Any changes in cultivation techniques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A4	Mudansa ruma iha jestaun bee	Changes in water management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A5	Fator seluk (relasiona ba projet)	Any other factors (related to the project)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A6	Fator seluk (la relasiona ba projet)	Any other factors (unrelated to the project)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PART D | WATER MANAGEMENT & HYGIENE (Jestaun BEE no HIJINE.....)

D.1	Ita bot nia uma kain hetan bee hemu hosi nee.	BL:E.1 What is your household's main source of drinking water?
1)	kanu ou motabomba	Pipe or pump/
2)	torneira publiku	Public tap/
3)	be kee	Tube well/borehole/
4)	be matan nebe proteje	Protected well or spring/
5)	be matan nebe la proteje	Unprotected well or spring/
6)	koleksaun udan been	Rainwater collection/
7)	bee butir	Bottled water/
8)	tanki	Water vendors/tank/
9)	mota, lagua	River, lake or stream/
10)	sistema uja au hosi be matan nebe proteje	Bamboo piped system from protected spring/
11)	sistema uja au hosi be matan nebe la proteje	Bamboo piped system from unprotected spring/
12)	seluk	Other/

D.2	Iha tinan kotuk, bee nebe ita bot uja karik la dispoivel ba loron ida ou ba tempo naruk?	BL:E.2 Over the past year, has water from your main source been unavailable for a day or longer?	
1)	Sim	Yes/	<input type="checkbox"/>
2)	/Lae	No	<input type="checkbox"/>
99)	/hau lahatene	I don't know	<input type="checkbox"/>
D.3	Ita bot gasta nia uma kain gasta tempo hira kada loron hodi kolekta bee	BL:E.6 How much time does your household spend each day to collect water?	
1)	liu minu 30	Up to 30 minutes/	<input type="checkbox"/>
2)	minutu 30-60	30-60 minutes/	<input type="checkbox"/>
3)	/liu minu 60	More than 60 minutes	<input type="checkbox"/>
99)	/hau lahatene	I don't know	<input type="checkbox"/>
D.4	Iha tinan tolu liu ba assesu ba bee nee muda ona ba ita bot nia uma kain	Over the past three years, has access to water changed for your household? (DO NOT READ OPTIONS).	FLOW/lalaok
1)	im, assesu ba bee agora diak liu	Yes, water access is now better. S	<input type="checkbox"/> → D.5
2)	Lae, la iha mudansa	No, there has been no change.	<input type="checkbox"/> → D.6
3)	Sim, assesu ba bee agora att liu	Yes, water access is now worse.	<input type="checkbox"/> → D.5
99)	Hau lahatene	I don't know.	<input type="checkbox"/> → D.6
D.5	rasaun imporante saida ba mudansa nee (keta lee opsau)	What is the main reason for this change? (DO NOT READ OPTIONS)	FLOW, lalaok
1)	Fator relasiona ba projeto MAKAAAS	Factors related to the MAKAAAS project.	<input type="checkbox"/>
2)	Fator seluk	Other factors.	<input type="checkbox"/> → D.6
99)	Hau lahatene	I don't know.	<input type="checkbox"/>
D.6	Ita bot ou membro ruma hosi uma kain iha moras ruma iha fulan tolu liu ba:Diarehea, disenti, lumbriga, tifoid, infesaun matan (trakoma.	BL: E.24 Did you or any of your household members have any of the following diseases in the last three months: Diarrhoea, dysentery, worms, typhoid, eye infection (trachoma)? Translated as: Diarrhoea, diarrhoea with fever, eye infection.	
1)	Sim	Yes	<input type="checkbox"/>
2)	Lae	No/	<input type="checkbox"/>
99)	hau lahatene	I don't know/	<input type="checkbox"/>
D.7	iha tina tinan tolu kotuk ba, iha ona mudansa ruma ba iha ita bot nia uma kain nebe affeta hosi moras hirak nee (lalika lee opsau)	Over the past three years, has there been a change in the extent to which your household is affected by these diseases (DO NOT READ OPTIONS)	FLOW
1)	Sim, ami agora affeta menus duke iha passadu	Yes, we are now less affected than in the past.	<input type="checkbox"/> → D.7a
2)	Lae, la iha mudansa	No, there has been no change .	<input type="checkbox"/> → D.8
3)	Sim, ita agora mais affeta liu duke iha passadu	Yes, we are now more affected than in the past.	<input type="checkbox"/> → D.8
99)	Hau labatene	I don't know.	<input type="checkbox"/> → D.8
D.7a	karik rajaun saida tamba sa ita bot nia uma kain ladun hetan moras hosi bee	What might be the reasons as to why your household is less affected by these water-borne diseases?(DO NOT READ OPTIONS)	
1)	Tamba ita treina ona oinsa atu mantein no hamos ita nia fatin	Because we were trained how to keep our household surroundings cleaner.	<input type="checkbox"/>
2)	Tamba kualidade bee hemu aumenta tan	Because drinking water quality has improved.	<input type="checkbox"/>
3)	Tamba la dun iha udan	Because there was less rain.	<input type="checkbox"/>
4)	Tamba ita iha beneficiu	Because we had luck.	<input type="checkbox"/>
5)	seluk	Other.	<input type="checkbox"/>
99)	Hau lahatene	I don't know.	<input type="checkbox"/>
D.8	hare ba kondisaun sanimaentu, facilidade fase liman no pratika, karik iha buat balun nebe aumenta iha tinan tolu liu ba	Concerning sanitary conditions, hand washing facilities and practices, is there anything that improved over the past three years? (DO NOT READ OPTIONS)	
1)	Sim, kondisaun saniaementu	Yes, sanitary conditions.	<input type="checkbox"/>
2)	Sim, facilidade fase liman	Yes, hand washing facilities.	<input type="checkbox"/>
3)	Sim pratika fase liman	Yes, hand washing practices.	<input type="checkbox"/>
99)	Hau lahatene	I don't know.	<input type="checkbox"/>

PART E | GENDER (PARTE E JENERU.....)

E.0	Ita bot nia status civil saida	What is your civil status?	FLOW/lalaok
1)	Kabenain	Married	<input type="checkbox"/> → E.1
2)	Mesak, faluk ou divorsa	Single, widowed or divorced	<input type="checkbox"/> → E.4

E.1 Block	Se mak iha ita bot nia uma kain...	Who in your household...	1) Only men/made	2) Mostly men/mayoria mane	3) Men and women equally/ mane no feto hanesan	4) Mostly women/mayoria feto	5) Only women/feto det	99) I don't know/hau lahatene
E.1.1	...decide atu halo saida ho rendementu familia	...decides what to do with family income?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.1.2	...atende enkonro ou aktividade iha suco	...attends meetings or activities in the village?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.1.3	...decide kuda saida, banhira no iha nebe (ai han)	...decides what to plant, when and where (food crops)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.1.4	...decide kuda siada, banhira no iha nebe (ai han buka osan nian)	...decides what to plant, when and where (cash crops)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.1.5	...decide kona ba investementu agrikultura	...decides on agricultural investments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.1.6	Prepara ai han?	...prepares food?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.1.7	Hare labarik sira?	...cares for children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E.2	Statementu ida nebe mak diak liu applika ba ita bot nia uma kain	Which of the following statements best applies to your household?	FLOW
1)	Iha tinan tolu liu ba, mane mak iha influencia barak liu iha halo decisaun ba uma kain	Over the past three years, men have gained more influence in household decisions.	<input type="checkbox"/> → E.3
2)	Iha tinan tolu liu ba, la iha mudansa oinsa maneira mane no feto halo decisaun iha uma kain	Over the past three years, there has been no change in the way men and women make household decisions	<input type="checkbox"/> → E.4
3)	Iha tinan tolu liu ba, feto hetan influencia liu iha decisaun uma kain nian	Over the past three years, women have gained more influence in household decisions.	<input type="checkbox"/> → E.3
99)	Hau lahatene	I don't know	<input type="checkbox"/> → E.4

E.3	Rajaun importante saida ba mudansa nee (Labele lee Opsaun)	What is the main reason for this change? (DO NOT READ OPTIONS)	FLOW
1)	Fator relasiona ba Projeto MAKAS	Factors related to the MAKAS project	<input type="checkbox"/>
2)	Fator seluk	Other factors	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/> → E.4

E.4 Block	Se mak iha ita bot nia komunidadade...	Who in your community...	1) Only men/made	2) Mostly men/mayoria mane	3) Men and women equally/ mane no mane hanesan	4) Mostly women/mayoria feto	5) Only women/feto det	99) I don't know/hau lahatene
E.4.1	Hola parte iha enkonro suco	...takes part in village meetings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.4.2	Koalia durante enkonro iha suco	...speaks during village meetings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.4.3	Influencia iha decisaun kona ba assunto suco	...influences decisions about village affairs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.4.4	Halo decisaun kona ba assunto suco	...makes decisions about village affairs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.4.5	Representa suco iha governo	...represents the village vis-à-vis the government?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.4.6	Kontrola fundu suco	...controls village funds?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.4.7	Halao servisu voluntario	...conducts volunteer work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E.4.8	Involve iha organijasaun nebe nia base iha suco	...is involved in village-based organisations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E.5	Statementu ida nebe mak applika diak liu ba ita bot nia komunidadade?	Which of the following statements best applies to your community?	FLOW
1)	Iha tinan tolu liu ba, mane mak hetan influencia makas liu iha decisaun komunidadade.	Over the past three years, men have gained more influence in community decisions.	<input type="checkbox"/> → E.6
2)	Iha tinan tolu liu ba, la iha mudansa iha maneira feto no mane halo decisaun iha komunidadade	Over the past three years, there has been no change in the way men and women make community decisions	<input type="checkbox"/> → F.1
3)	Iha tinan tolu liu ba, feto mak hetan influencia liu iha halo decisaun komunidadade	Over the past three years, women have gained more influence in community decisions.	<input type="checkbox"/> → E.6
99)	Hau lahatene	I don't know	<input type="checkbox"/> → F.1

E.6	Rajaun importante saida ba mudansa nee (labelLee Opsaun)	What is the main reason for this change? (DO NOT READ OPTIONS)	FLOW/lalaok
1)	Fator nebe relasiona ba Projeto MAKAS	Factors related to the MAKAS project	<input type="checkbox"/>
2)	Fator seluk	Other factors	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/> → F.1

PART F | COMMUNITY CAPACITY, Kapacidade Komunitade.....

F.1	Ita bot nia suco nee implementa aktividade nebe beneficia ba interese hotu no kondisaun iha suco-maibe sei la lori beneficia direta ba ita bot nia uma kain. Oinsa mak ita bot bele supporta aktividade nee	<i>Suppose your village were to implement an activity that would benefit the overall welfare and conditions of the village - but that would not bring direct benefits to your household. How likely is it that you would support this activity?</i>	
1)	Hakarak tebes	Very likely	<input type="checkbox"/>
2)	hakarak	Likely	<input type="checkbox"/>
3)	duvida	Unlikely	<input type="checkbox"/>
4)	Duvida liu	Very unlikely	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>
F.2	Too iha nebe ema iha suco kontribui ba halo suco nee diak liu hodi moris?	<i>To what extent do people in this village contribute towards making the village a better place to live?</i>	
1)	To iha montante nebe diak liu	To a great amount	<input type="checkbox"/>
2)	Too iha montante nebe bele konsidera	To a considerable amount	<input type="checkbox"/>
3)	Too iha montante nebe kiik	To a small amount	<input type="checkbox"/>
4)	La iha liu	Not at all	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>
F.3	Dala ruma ema suco tur hamutuk husu ba officias governo ou lider politika ba assaun ruma?	<i>How often do villagers get together to jointly request government officials or political leaders with requests for action?</i>	
1)	Fulan ida dala ida ou liu	Once a month or more often	<input type="checkbox"/>
2)	Dala barak iha tinan ida nia laran	Several times a year	<input type="checkbox"/>
3)	Tinan ida dala ida	About once every year	<input type="checkbox"/>
4)	Menus hosi tinan ida dala ida ou nunka	Less than once a year or never	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>
F.4	Em jeral, effektivu oinsa tuir ita bot nia hanoin katak involumentu hosi ema iha suco in termus hosi governo foti assaun ruma nebe precisa	<i>Overall, how effective do you feel that engagement of villagers has been in terms of getting the government to take the desired action?</i>	
1)	ass	High	<input type="checkbox"/>
2)	moderado	Moderate	<input type="checkbox"/>
3)	menus	Low	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>
F.5	Statementu nebe mak diak liu applika ba ita bot nia komunitade	<i>Which of the following statements best applies to your community?</i>	FLOW/lalaok
1)	Ema iha suco servisu hamutuk liu hosi tinan tolu liu ba	Villagers here are now working together more than three years ago.	<input type="checkbox"/> → F.6
2)	Ema iha suco agora servisu hamutuk menus hosi tinan tolu liu ba	Villagers here are now working together less than three years ago	<input type="checkbox"/> → F.6
3)	Iha tinan tolu liu ba, ema iha suco servisu hamutuk sidauk iha mudansa	Over the past three years, the extent to which villagers work together has not changed	<input type="checkbox"/> → G.1
99)	Hau lahatene	I don't know	<input type="checkbox"/> → G.1
F.6	Rajaun importante saida ba iha mudansa nee (keta lee opsau)	<i>What is the main reason for this change? (DO NOT READ OPTIONS)</i>	FLOW
1)	Fator relasiona ba Projeto MAKAA'S	Factors related to the MAKAA'S project	<input type="checkbox"/>
2)	Fator seluk	Other factors	<input type="checkbox"/> → G.1
99)	Hau lahatene	I don't know	<input type="checkbox"/>

PART G | PROJECT REVIEW...(Parte G Reve Projeto).....

G.1	Tuir ita bot nia vijaun, semak beneficiu hosi projeto nee?	<i>In your view, who benefitted from the project?</i>	FLOW
1)	Uma kaoin hotu iha suco	All households in the village	<input type="checkbox"/> → G.2
2)	Mayoría uma kain iha suco	Most households in the village	<input type="checkbox"/> → G.1a
3)	Uma kain balun iha suco	A few households in the village	<input type="checkbox"/> → G.1a
4)	La iha ema ida suco	Nobody in the village	<input type="checkbox"/> → G.2
99)	Hau lahatene	I don't know	<input type="checkbox"/> → G.2
G.1a	Ita bot hatene criteria kona ba hili beneficiario sira	<i>Do you know the criteria on which beneficiaries were selected?</i>	FLOW
1)	Sim	Yes	<input type="checkbox"/> → G.1b
2)	Lae	No	<input type="checkbox"/> → G.2
99)	Hau latene	I don't know	<input type="checkbox"/> → G.2
G.1b	Ita bot hare criteria nee justu	<i>Do you think that these criteria were fair?</i>	FLOW
1)	Sim	Yes	<input type="checkbox"/>
2)	lae	No	<input type="checkbox"/> → G.2
99)	Hau lahatene	I don't know	<input type="checkbox"/>

G.2	Iha tinan tolu liu ba, ita bot aprende ona buat foun ruma hosi Projeto MAKAS	<i>Over past three years, have you learned anything new from the MAKAS project?</i>	FLOW
1)	Sim	Yes	<input type="checkbox"/> →G.3
2)	lae	No	<input type="checkbox"/> →G.4
99)	Hau lahatene	I don't know	<input type="checkbox"/> →G.4
G.3	Too iha nebe ita bot applika saida mak ita bot aprende ona	<i>To what extent do you currently apply what you have learned?</i>	FLOW
1)	Hau applika buat hotu nebe hau aprende	I apply everything I have learned	<input type="checkbox"/> → G.5
2)	Hau applika mayoria saida mak hau aprende	I apply most of what I have learned	<input type="checkbox"/> →G.4
3)	Hau la applika saida mak hau aprende ona, maibe planu atu halo iha futuru	I do not yet apply what I have learned, but plan to do so in the future	<input type="checkbox"/> →G.4
4)	Hau la applika buat ida hosi saida mak hau aprende ona	I do not apply anything I have learned	<input type="checkbox"/> →G.4
99)	Hau lahatene	I don't know	<input type="checkbox"/> →G.4
G.4	Rajaun saida mak ita bot la applika buat nebe ita bot aprenden ona (keta lee opsau)	<i>What are the reasons why you did not apply some of the things you have learned? (DO NOT READ OPTIONS)</i>	
1)	Hau la iha rekursu atu implementa mudansa	I do not have the resources to implement the changes	<input type="checkbox"/>
2)	Hau la sente konfiden/fiar ann applika tekniku foun	I do not feel confident in applying new techniques	<input type="checkbox"/>
3)	Hau lakohi tau hau nia vida moris iha risiko	I do not want to put my livelihood at risk	<input type="checkbox"/>
4)	Hau lahatene atu kontaktu see karik hau iha problema ho tekniku foun	I do not know who to contact if I have problems with the new technique	<input type="checkbox"/>
5)	Hau hare la iha vantajen ba iha tekniku foun	I see no advantage in the new technique(s)	<input type="checkbox"/>
6)	Seluk	Other: _____	<input type="checkbox"/>
G.5	Ita bot hare katak tekniku/stratejia foun nebe ita bot aprende nee diak applika iha futuru	<i>Do you think that the new techniques/strategies that you have learned are worth applying into the future?</i>	FLOW
1)	Sim, sira hotu	Yes, all of them	<input type="checkbox"/> → G.5b
2)	Sim, balun hosi nee	Yes, some of them	<input type="checkbox"/> →G.5a
3)	Lae	No	<input type="checkbox"/> →G.5a
99)	Hau lahatene	I don't know	<input type="checkbox"/> →G.6
G.5a	Opsional: ita bot bele foo esemplu hosi stratejia/aplika la diak? Tamba sa la diak atu applika	<i>OPTIONAL: Can you give me an example of a strategy not worth applying? Why is it not worth to be applied?</i>	
1)	Hakerek iha nee	Write here:	<input type="checkbox"/>
G.5b	Opsional: ita bot bele foo esemplu hosi stratejia/aplika diak? Tamba sa diak atu applika?	<i>OPTIONAL: Can you give me an example of a strategy worth applying? Why is it worth to be applied?</i>	
1)	Hakerek iha nee:	Write here:	<input type="checkbox"/>
G.6	Hare ba iha tekniku/stratejia nebe importante liu ba ita bot, tuir ita bot katak bele applika iha futuru?	<i>Thinking of the most technique/strategy that is most important to you, do you think you will be able to apply it into the future?</i>	
1)	Sim, halo applika rasik	Yes, on my own	<input type="checkbox"/>
2)	Sim, ho supporta hosi ema seluk	Yes, with support from others	<input type="checkbox"/>
3)	lae	No	<input type="checkbox"/>
99)	Hau lahatene	I don't know	<input type="checkbox"/>
G.7	Iha feedback ruma konaba projeto nebe ita bot hakarak fahe-esemplu, saida mak em particular lao diak, ou maneira oinsa projeto hanesan bele halao diak liu?	<i>Is there any feedback on the project that you would like to share – for instance, what went particularly well, or ways how similar projects could be carried out better?</i>	
1)		Write here:	

Obrigado ba ita bot nia participasaun iha survey nee / Thank you for your participation in this survey.

Food, water, rain, risk: these four aspects are at the heart of MAKAAAS project that CARE and WaterAid implemented with funding from the Australian Department of Foreign Affairs and Trade (DFAT).

Launched in July 2012, the project set out to facilitate community-based adaptation to climate change amongst 33 villages in Timor-Leste's Liquica district. This included **promoting** of climate-resilient livelihoods (e.g. through crop diversification and conservation farming), **enhancing** the access to safe drinking water and improved sanitation, **reducing** the risk from erosion and landslides, and **enabling** broader village plans for climate change adaptation.

This evaluation finds that the project led to better yields and reduced crop losses amongst farmer group members. It also generated significant improvements in water and sanitation, and raised climate change awareness amongst villagers and government partners.

Yet, the project's broader effect towards greater climate resilience and adaptive planning was constrained by multiple factors - these include a) insufficient overall funding for national-level policies and plans in adaptation, b) the fact that the focus on farmer and water management groups did not provide a village-wide basis for adaptive planning, and c) the observation that weather patterns have been conducive over the past two years, and did thus not provide any sense of urgency for adaptation.

A slightly amended focus and a longer breath, this report argues, are therefore required for even more effective community-based adaptation.

