Taking a catchment approach to enhancing community resilience in Timor-Leste

Australian Aid

WaterAid

care

Improving access to safe drinking water and livelihoods supports resilient communities in Timor-Leste.

Introduction

Increasingly irregular rainfall, higher temperatures and longer dry periods conspire with already highly variable microclimates to create a patchwork of exposure to climate hazards in Liquiça. The high dependence on rain-fed agriculture of rural households, marginal sloping land and ongoing degradation across the Laklo and Gularloa river catchments contribute to making this one of the most food insecure areas in the country.

CARE and WaterAid recognised these challenges and took a catchment approach when designing the MAKA'AS project[1] to enhance access to safe drinking water, deliver improved sanitation, promote climate-resilient livelihoods and reduce landslide risks and erosion. The MAKA'AS project, which was funded by Australian Aid, also worked with government to enable broader village plans for climate change adaptation. From July 2012 to March 2015, the MAKA'AS project increased the resilience of 4,057 beneficiaries (2,125 women and 1,932 men) in 1,525 rural households in Timor-Leste's Liquiça district.

The MAKA'AS project successfully built on existing partnerships through the project with local non-government organisations (NGOs) such as Centro do Desenvolvimento da Economia Popular (CDEP), Hafoun Timor Lorosa'e (HTL), Maladoi, and Naroman Timor Foun (NTF), and development cooperation initiatives financed by the Government of Australia, such as Seeds of Life, and the Rural Water Supply and Sanitation Program (BESIK).

This Learning Brief reflects on the catchment approach and how it contributed to project achievements. This Learning Brief draws from the findings of the evaluation[2] (February 2015) and draws together program lessons and recommendations, for CARE Timor-Leste, partners and the broader sector.

[1] Mudansa Klimatica iha Ambiente Seguru / *Climate Change in a Secure Environment*

[2] An end-of-project evaluation was completed in February 2015, which included visits to eight of the 33 target hamlets in Liquiça district and a survey of 292 households, community workshops, and key informant interviews were completed. The findings can be found in full in Food, Water Rain, Risk: The Uphill Struggle to Adapt *(Final Evaluation of the MAKA'AS project on community-based adaptation in Timor-Leste) which is available on CARE Australia's website: https://www.care.org.au/wp-content/uploads/2015/07/CBA-Portfolio-Evaluation_MAKAAS_Evaluation-Report_FINAL1.pdf .*

Project Achievements and Lessons

The project led to increased agricultural production and higher incomes amongst farmer group members. It also generated significant improvements in access and availability of safe drinking water, reducing open defecation rates, and increasing hand-washing practices, which together can lead to reduced health risks, particularly to children. Furthermore, it raised climate change awareness amongst villagers and government partners, built linkages to government and reinforced community capacity – all of which are important aspects of adaptive capacity. Significantly, most project outcomes were seen as sustainable given the willingness and capacity of villagers to continue pursuing critical project activities.

The project has some specific lessons which were learned from approaching and implementing the project from a catchment wide perspective.

Taking a catchment approach drew ecosystem thinking into the community-based adaptation (CBA) model, brought short and long-term risks together, and led to improved implementation

Working across the three agro-ecological zones within the two catchments highlighted the varying impacts that climate variability and climate change can have at the micro scale. Interventions in natural resources management (bio-engineering, reforestation, live check dams) were delivered within the CBA approach that also sought gender equality and disability inclusion. Combining natural resource management and CBA interventions mean that immediate and locally driven catchment degradation was addressed whilst the less obvious climate change impacts were also considered. This was an effective approach to CBA, as the risks from climate change are more easily understood when linked to changing local conditions.

Catchment approach made short and long-term risks relevant to communities

Through this, individuals were motivated to act in part because they had a direct opportunity to act to reduce the risks they could see which built momentum for addressing longer term risks. It allowed short-term risks to be seen alongside long-term risks so individuals and communities could combine short-term gains from reduced risks with long-term benefits of enhanced resilience. As a result, project impacts included improving immediate income, food variety, water access and health, while also reducing sensitivity to long-term climate risks. For example, conservation farming, the adoption of drought-tolerant crops, water ponds and distribution of air-tight drums for seed storage brought immediate and rapid benefits (higher income, greater food variety) and also reduced sensitivity to long-term risks from irregular rain and rising temperatures. Water resource management practices improved water security for agricultural use during dry months. Household access to safe water for drinking and domestic use also improved, as did household latrine coverage which, when combined with good hand-washing practice, has the potential to reduce poor health outcomes, particularly among children.

Local action leads to community gains.

Catchment approach demanded that scientific and community information were considered in the project

Climate change poses a diversity of challenges for the people across Liquiça and exposure to climate hazards is not uniform due to diverse microclimates and geography. Further, factors that shape vulnerability to climate change and capacity to adapt are, to a large degree, determined by socio-economic rather than environmental factors and these vary greatly between different groups in a community or household. In order to ensure that those with less capacity are not being left behind, these disparities must be carefully assessed – and then addressed in a CBA project. At the same time, interventions needed to be technically rigorous.

At its outset the project conducted a baseline, a gender and power analysis, an environmental impact assessment, and Climate Vulnerability and Capacity Assessments (CVCAs)[3] to refine the relevance of its activities. The CVCA combines local and scientific knowledge, which is a powerful and useful approach to generate local information and build motivation for local action. MAKA'AS made efforts to link scientific approaches such as by mapping hazards, soil types and slopes. Using this information effective erosion, landslide and flood initiatives were implemented. Bioengineering and live check dams addressed present concern of landslides and flash floods, while reforestation will increase long-term water retention and help to reduce erosion. The CVCAs also served as part of the planning process for the livelihood and water related activities and helped raise awareness towards sustainable agricultural techniques and water use.

Build on project partnerships to leverage the available technical expertise

The project has sought to draw on the technical expertise of different partners and institutions where relevant and needed. The project brought together consortium partners with different technical expertise to address interlinked and diverse local challenges facing communities in Liquiça. The full integration of expertise in a consortium is ambitious and challenging but critical to ensure the food and water security challenges can be addressed at a catchment level. The end-of-project evaluation found that the collaboration between the two main partners of the consortium was an efficient and effective mechanism to share skills and knowledge, and that the collaboration was close and strong at the national level.

Critical to fully understand the underlying causes of environmental degradation and impacts at the catchment level

Fully understanding the underlying causes for landslides including soil, climate, environmental conditions and human interventions is vital in order to identify the most appropriate mix of mechanical, biological and ecological techniques in developing a solution. It is also important to contextualise the bioengineering work as part of broader catchment management strategies and to consider the various agro-ecological zones (uplands, midlands and lowlands). For example, in the long-term, it is expected that bioengineering work in the uplands will reduce disaster risk in terms of land slippage but

[3] Tool available at CARE's Climate Change Information Centre, http://careclimatechange.org/tool-kits/cvca/"

it will also help reduce disaster risk in the midlands and lowlands where sediment from the upland settles increasing the risk of flooding. It is also expected that efforts to increase water infiltration will support communities across the catchment. However, this could not be verified in the project period. Projects of longer timeframes (6 to 7 years) are needed to implement, monitor and refine a catchment approach.

Conclusion

The experience from the MAKA'AS project provides numerous lessons as to how CBA programming can be further enhanced through incorporating natural resource management approaches. CARE, WaterAid and local partners took a catchment approach to increasing the resilience of households in Liquiça district through the MAKA'AS project. The project led to increased agricultural production and higher incomes amongst farmer group members. It also generated significant improvements in access and availability of safe drinking water with many associated benefits. There was raised climate change awareness amongst villagers and government partners and built linkages to government and collective action has been reinforced - important aspects of adaptive capacity.

Taking a catchment approach drew ecosystem thinking into the CBA model. It allowed short-term risks to be seen alongside long-term risks so individuals and communities could combine short-term gains from reduced risks with long-term benefits of enhanced resilience. The approach demanded that scientific and community information were considered in the project, and that technical expertise was needed to ensure the viability of interventions. The project brought together consortium partners with different technical expertise to address interlinked and diverse local challenges facing communities in Liquiça. Focusing at the catchment level rather than more traditional administrative borders is innovative but challenging. Therefore, project timeframes of 6 to 7 years are needed.

Whilst climatic conditions were relatively favourable for agricultural production over the specific years of the project, an El Niño in 2015 will make these achievements even more critical to lives and livelihoods in Liquiça.

Lives and livelihoods are better in Liquica through incorporation of natural resource management approaches.

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ABOUT CARE

CARE works with poor communities in developing countries to end extreme poverty and injustice.

Our long-term aid programs provide food, clean water, basic healthcare and education and create opportunities for people to build a better future for themselves.

We also deliver emergency aid to survivors of natural disasters and conflict, and help people rebuild their lives.

We have 70 years' experience in successfully fighting poverty, and last year we helped change the lives of 72 million people around the world.

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