

Socially-inclusive Responses to Climate Change Impacts on WASH

Asumanu, Liquiçá,
Timor-Leste

CASE STUDY

December 2020

Acknowledgements

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WaterAid Timor-Leste's mission is to transform the lives of the poorest and most marginalised people by improving access to safe water, sanitation and hygiene. WaterAid Timor-Leste supports WASH service delivery projects in over 180 communities in Liquiçá and Manufahi municipalities, providing services to over 25,000 rural Timorese to date.

For further information visit: <https://www.wateraid.org/au/where-we-work/timor-leste>

About the project

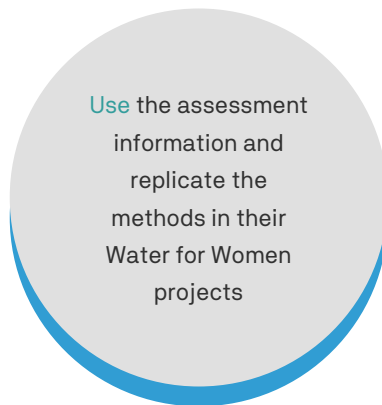
The Institute for Sustainable Futures at the University of Technology Sydney (ISF-UTS) is partnering with civil society organisations (CSOs) Plan International in Indonesia (YPII), Plan International Australia (PIA), WaterAidTimor-Leste and WaterAid Australia to conduct research to inform how the CSOs address the impacts of climate change on their Water for Women projects.

The research project draws from a range of climate change adaptation, water, sanitation and hygiene (WASH) and gender and social inclusion concepts and on recent research approaches for assessing climate change.

The Water for Women (WfW) Fund

This project is supported by a Water for Women Research Award, funded by the Australian Department of Foreign Affairs and Trade. The Water for Women Fund supports civil society organisations to implement gender and socially inclusive WASH projects in Asia and the Pacific. WASH Research Awards are for high-quality, policy-relevant research that is available, accessible and communicated to the policy development and program design community in Australia, Asia, the Pacific and the global WASH sector.

This project provides a means by which CSOs can:



waterforwomen.uts.edu.au/climate-change-response

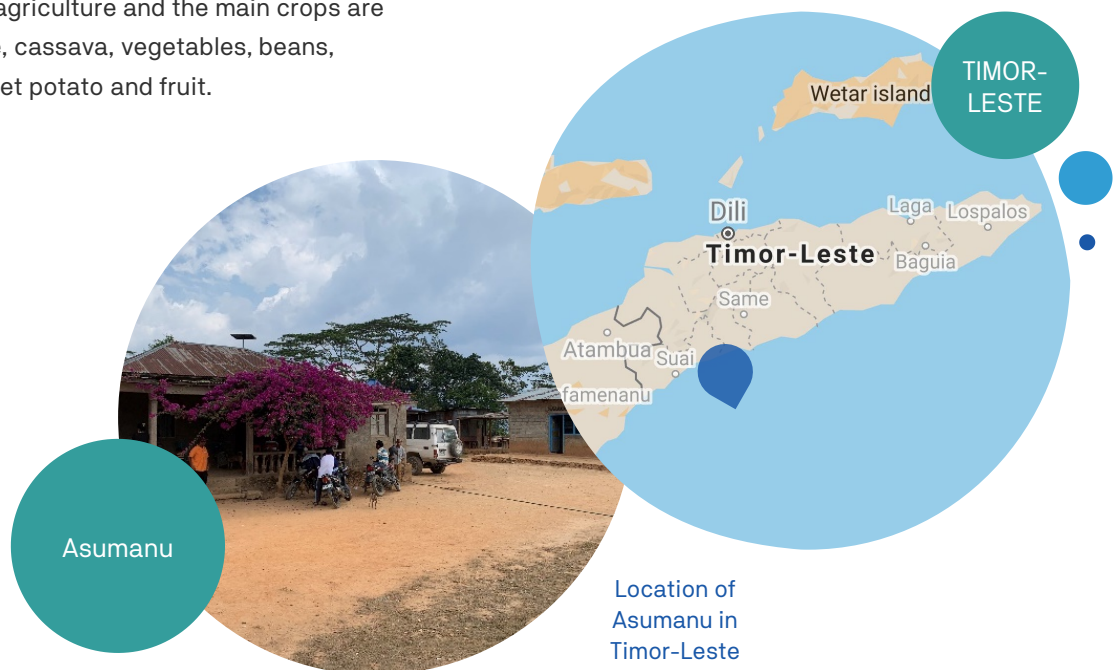
Context

This case study is based on applied research carried out by ISF-UTS, WaterAid Timor-Leste and Fundasaun Hafoun Timor-Lorosa'e (FHTL) in Timor-Leste for four weeks in October 2019, with research activities carried out over two weeks in Asumanu Suku, Liquiçá Municipality. Asumanu is a one location where WaterAid Timor-Leste is carrying out its Water for Women program Beyond Inclusion: Realising gender transformational change and sustainable wash systems.

Asumanu is a rural village located in the mountainous area of Liquiçá Municipality, in Liquiçá Administrative Post. WaterAid's program area has an estimated population of 500 people living in 79 households across three sub-villages within Asumanu (Siscolema, Hatumatelu and Kaikasico). The primary livelihood is rain-fed subsistence agriculture and the main crops are maize, coffee, cassava, vegetables, beans, coconut, sweet potato and fruit.

The primary water supply in Asumanu is a piped scheme with 27 tapstands on plots. The water source for the scheme is a spring. Liquiçá municipality was declared open defecation free (ODF) in 2019 and pour flush toilets are the main type of latrine found in Asumanu Village.

Liquiçá is experiencing increasingly irregular rainfall, higher temperatures and longer dry periods¹. The World Bank has suggested that climate change impacts on water resources in Timor-Leste are generally not well understood at the local scale², however, an assessment of the impacts of El Niño on Timor-Leste in 2016 found that water scarcity was leading to people needing to change their primary water source (often switching to unsafe sources), less water for gardens and crops and some conflict arising over water resources.³



- 1 Care & WaterAid (2015) Enhancing resilience in Timor-Leste: Achievements and lessons from the CARE and WaterAid MAKAS project, available online at <https://www.care.org.au/wp-content/uploads/2015/08/MAKAAS-Brief-Achievements-and-Lessons.pdf> (last accessed 18/12/19)
- 2 World Bank (2018), 'Timor-Leste Water Sector Assessment and Roadmap', Water Global Practice, p.9.
- 3 CARE, Oxfam, Plan International, Word Vision (2016), 'Humanitarian Partnership Agreement (HPA) Agency Assessment on El Nino Impacts in Timor-Leste', p.3

Our research approach

Collaborative design

ISF-UTS led a process of collaborative design through a four-day workshop to learn about WaterAid Timor-Leste and FHTL's current practice of providing WASH systems and services in Timor-Leste and then to agree on and design adjustments to specific program activities in order to assess how climate change affects WASH service, gender and social inclusion outcomes.

It was important to ensure that climate change assessment tools were realistic and in line with current practice, not overloading the existing WASH program cycle.

Testing and refinement

Over two weeks, ISF-UTS, WATL and FHTL tested the four newly-designed activities with around fifty people in Asumanu village in Liquiçá municipality, West of Dili. Testing was a way to see how well the activity resonated with the community and was fit for context, how well it fit into the broader WASH program and how confident staff felt implementing the activity.

Following the testing, the team conducted an analysis and reflection process to examine the data that emerged from the activities, the value of activities and the refinements that could be made for future use. ISF-UTS has prepared a Guidance Note for use by WATL and partners, which outlines the step by step process for implementing these four activities:

Field activity descriptions



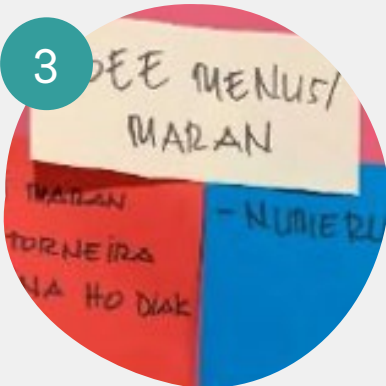
Climate impact diagram

This is a version of systems mapping in which the community uses picture cards to create a map of the key climate change risks that may be faced in this area. They then identify the direct and indirect impacts of these risks on water, sanitation and hygiene in the community. Finally, they identify the differential impacts on people in the community, highlighting those most disadvantaged when WASH systems and services are impacted by climate change.



Who Does Who Decides in Climate Change Scenarios

This is an adaptation of one activity from WaterAid Timor-Leste's manual; 'Exploring Gender Aspects of Community Water, Sanitation and Hygiene; A Manual for Facilitating Dialogue between Women and Men in Communities'. The community identifies different ways that women and men are involved in and affected by WASH issues, workload and decision-making and anticipates changes that may occur during extreme climate scenarios such as prolonged dry seasons or very heavy wet seasons.



Feedback session to community

This is an opportunity to provide a summary of results back to the community from the two previous climate change activities (Impact Diagram and Who Does, Who Decides in Climate Change Scenarios) so they can learn from the analysis and validate these results, ensuring that analysis is accurate.



Five Resources

This draws on the Sustainable Livelihoods Framework to look at human; physical; natural; social and financial resources that constrain or enhance sustainable livelihoods.

This strengths-based activity supports residents to identify resources that they already have in the community that can be used to address climate impacts and then to come up with examples of how these resources might be used to cope with or adapt to climate change events.

Case study findings

Climate change related hazards identified in Asumanu

Risks identified by the Asumanu community during a prolonged and hotter dry season included prolonged dry periods, drying up of water sources, fires and strong winds (Men's and Women's groups, Impact Diagram Activity, 7 October 2019).

Risks identified during a very heavy wet season included erosion and landslides; flooding of rivers and water sources; trees falling; strong winds and lightning (Men's and Women's groups, Impact Diagram Activity, 7 October 2019).

How climate change affects WASH access and roles

Strong winds, heavy rain and landslides damage WASH infrastructure

Erosion and landslides can destroy the water source and damage pipes or block pipe connections (soil and rocks entering pipe). This affects the physical water infrastructure which in turn reduces quantity and quality of water.

At the community level, men may take on more responsibility for public clean up and fixing infrastructure in dangerous conditions such as strong winds and heavy rain (Men's group, Who Does Who Decides activity, 8 October, 2019). This also applies to attending village level meetings, which both men and women attend in normal conditions. Men may attend more meetings than women in dangerous conditions (Men's group, Who Does Who Decides activity, 8 October, 2019). This extreme rain and wind can destroy water and toilet facilities which has a particular impact on people with disabilities who may no longer be able to access these facilities, leading to them depend on others (Women's group, Impact Diagram Activity, 8 October, 2019).

In terms of changes in gender roles, men and boys may take over water collection (usually women's duty), due to the dangerous conditions that can arise during extreme rain and wind, for example slippery surfaces and falling trees conditions (Men's group, Who Does Who Decides activity, 8 October, 2019).

Dangerous conditions may also lead to men fixing water systems and building toilets alone in dangerous conditions rather than with help from boys (Men's group, Who Does Who Decides activity, 8 October, 2019). Men may also take more responsibility for ensuring that children can go to school in the dangerous conditions (Men's group, Who Does Who Decides activity, 8 October, 2019). In regard to washing clothes and bathing children in dangerous conditions, men and women may start making decisions together about when and how to do this, as opposed to in normal conditions when women mostly make these decisions (Men's group, Who Does Who Decides activity, 8 October, 2019).

Extreme wet seasons result in poor water quality

Extreme heavy rain can lead to flooding, landslides and falling trees which can result in contamination of water sources. Poor quality water (colour and smell) increases the need to boil water before drinking (Women's group, Impact Diagram Activity, 7 October, 2019).

The health impacts of poor quality water affect everybody, but pregnant women and people with disabilities are particularly affected because they are more reliant on others to prepare and manage clean water (Men's group, Impact Diagram activity, 7 October, 2019).

Long dry seasons reduce water availability

Long dry periods diminish water sources, affecting quantity of water. Lack of water for pour flush toilets (main toilet type in Asumanu) leads to open defecation. Children are especially affected because they play in the dust (now increasingly contaminated with faeces) and have less water for showering and hand washing, resulting in illnesses such as diarrhoea (Women's group, Impact Diagram activity, 7 October, 2019).

Prolonged dry periods may also require people to travel longer distances to collect water. In terms of gender roles and relations, men may assist women and girls more with washing clothes due to the heavy loads and security issues associated with walking longer distances to a water source (Men's group, Who Does Who Decides activity, 8 October, 2019). Women also expect that men will assist more with collecting water in this scenario (Women's group, Who Does Who Decides activity, 8 October, 2019), however, men mentioned that they may be occupied with increased work in the fields including sourcing feed for animals (which has become scarcer) so may not be able to assist women (Men's group, Who Does Who Decides activity). This suggests some potential for conflict arising during prolonged dry periods.

Lack of water may mean that women take on sole responsibility for managing scarce water in the household (Women's group, Who Does

Who Decides activity, 8 October, 2019).

Women may seek assistance from girls and elderly women for increased workloads at home while men and boys handle increased workload outside the home (Women's group, Who Does Who Decides activity). Women's work may be increasingly restricted to the home.

At the community level, men may end up attending community meetings and taking part in community activities more than women whose domestic workloads are increasing (Men's group, Who Does Who Decides activity). At the same time, women recognised that important community decisions about design and construction of the water system in extreme conditions require input from the whole community, rather than leaders and technical experts. This is because accessibility of vulnerable groups can be affected during extreme climate scenarios (Women's group, Who Does Who Decides activity, 8 October, 2019).

Overall, it seems that men's work outside the home will increase and women's work inside the home will increase during periods of water scarcity. In both extreme wet and extreme dry scenarios, it is more important for decisions about WASH infrastructure to be made by everyone, but women may have less opportunity to participate in community activities and decision-making, which includes having an active role in the Facilities Management Group (GMF).

Ideas for using local resources to prepare for and respond to climate change

The participants in Asumanu identified their human, physical, natural, social and financial resources and ideas for ways these can be mobilised to prevent some of the climate change related risks on the community; to prepare the community to confront climate change impacts and to respond to the impacts of climate change. These ideas are outlined below:

Artists, teachers and cultural leaders can make use of local facilities and resources to lead community preparation for climate change.

Artists can use their work to advocate for addressing climate change issues facing Asumanu. Teachers can educate students about climate change and prevention strategies and schools can be used as sites to share information about climate change and health issues. Community meeting places can also be used for similar information sharing activities (Five Resources activity, 16 October, 2019).

Cultural leaders can use cultural laws (Tara Bandu) to ban activities such as tree cutting that exposes spring water sources to contamination from flooding. Ceremonies and meetings required for developing and enacting these laws can be paid for through local income streams (those named include farmers' cooperatives, veterans subsidies, livelihoods, horticulture, recycling materials) (Five Resources activity, 16 October, 2019).

The risk of landslide can be reduced through changed land management.

Farmers themselves can change their behaviour to reduce tree cutting and crop burning. Local natural resources such as coffee and other trees can be planted near water sources to protect springs and as part of reforestation efforts to prevent erosion and landslides. Farmers can also source seeds from Ministry of Agriculture to plant trees for preventing erosion and landslides. Funds to buy these seeds can come from local income sources such as farmers' cooperatives. (Five Resources activity, 16 October, 2019).

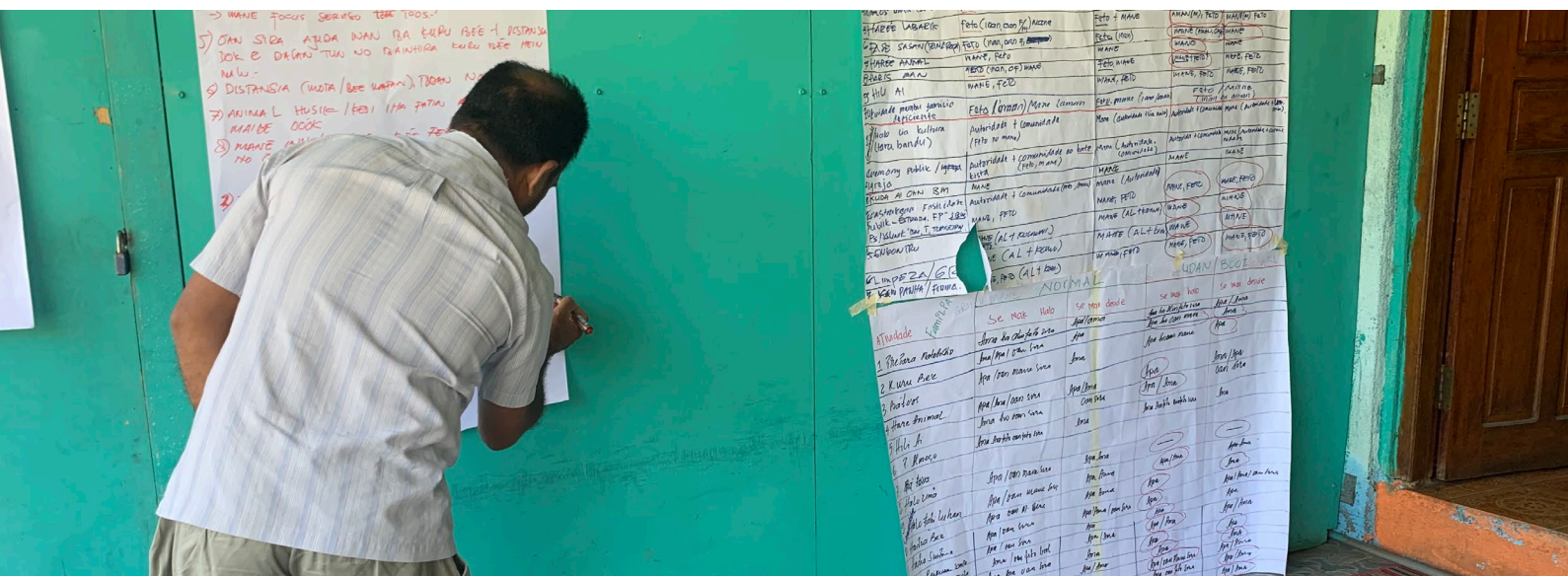
The Facilities Management Group (GMF) can lead operation and maintenance of water sources in the face of climate risks, based on local resources and cultural processes.

Local trades' people can help with repairs when infrastructure is damaged by disasters and can use local sand and stone in re-building efforts. Income from sources such as farmers' cooperatives, veterans' subsidies, livelihoods, horticulture, recycling materials, can be used to pay for repairs to pipes, tanks for water sources. Alternative water sources exist and may be used if primary water sources are damaged or dry (Five Resources activity, 16 October, 2019).

The GMF can also manage the water source to prevent conflict in times of scarce water. Cultural relationships forged through marriage ties (fetosan umane) can facilitate sharing of information about climate change issues, particularly around land management. These cultural ties are also a foundation for good relationships needed to manage water sources peacefully (Five Resources activity, 16 October, 2019).

Locally based responders and resources can be mobilised in the case of disasters.

In the case of natural disasters such as landslides or fires, local journalists can bring attention to these events and the needs of people affected. Local drivers can help to relocate people and local doctors can do check-ups on people displaced or injured through natural disasters or suffering ill health due to other climate change related hazards. The local health post can also treat increased numbers of people suffering illness due to water scarcity or poor water quality. Local income sources can be drawn on to bring in water if needed and to source food for people and livestock (Five Resources activity, 16 October, 2019).



Implications for WASH Programming and Practice

Communities should be supported to identify their own resources to respond to climate change and ensure inclusive access to WASH services.

The 'Ideas for using local resources to prepare for and respond to climate change' section shows that Asumanu community members have strong capacity to address climate impacts locally, such as through cultural laws (Tara bandu) and land management. Government and NGOs should assist communities in identifying local resources and using them to ensure that water access is maintained for everyone. Government and NGOs need to complement this by providing services such as funding for construction of infrastructure, early warnings of extreme weather, and water resource monitoring.

Climate change does not affect everyone equally, and solutions need to be designed to meet diverse needs of varied social groups.

Gender roles affect how people respond to climate change impacts to meet water needs for themselves and their family. During climate extremes in Asumanu, women may take on increased workloads related to water within the house, such as treating dirty water. Meanwhile men may take on increased workloads related to water outside the house, such as repairing damage to water supplies. Young girls and boys may also be asked to help their parents handle these increased workloads. Understanding how people are affected by climate change differently helps to design solutions that provide equal benefits for everyone.

Use of participatory methods for climate

change assessment by WASH practitioners to design and implement programs can support gender equality and social inclusion.

Using methods that allowed community members to learn from each other and design solutions drawing on local knowledge and resources, we emphasized community strengths and ensured responses were appropriate to the local context. Women's and men's groups talked about how they each experience climate change impacts, and they developed solutions together to address everyone's needs. Supporting female and male community members to design their own solutions to climate impacts will support WASH practitioners to implement interventions that fit the specific needs of women and men in the community.

Implications for Government Policy and Programming

Fulfilment of government commitments to support climate resilience for water is needed to support communities.

The Government of Timor-Leste identifies climate change as a serious environmental challenge in its [2011-2030 Strategic Development Plan](#). The [National Adaptation Programme of Action \(NAPA\) on Climate Change](#), developed through the Ministry for Economic Development and Secretary of State for Environment, seeks to build community awareness, increase monitoring and risk forecasting and support the adaptation of government policies and strategies to improve climate change resilience among vulnerable groups. The NAPA identifies water resources as a priority area for action.

Rural communities in Timor-Leste have capacity and resources to adapt to climate change impacts on their water resources. However, government must fill its mandate to raise community awareness on climate change and provide communities with information on present and future climate risks to their water sources. Development of government policies and strategies specifically for supporting women and men to maintain water access under climate change will contribute the NAPA vision and principles.

Gender and social inclusion must be integrated into government guidelines on building climate resilience for water services.

Climate change does not affect everyone in the same way and all people can make valuable contributions to responding to climate impacts

on water services. Government guidelines on developing rural water services should include activities for assessing how women, men, children, people with disabilities and other groups might be impacted by climate change differently. The guidelines should also provide instructions for gaining the participation of different groups of people in identifying their water access needs when climate extremes are experienced so appropriate solutions can be designed. This is supported by the gender equality principle of the NAPA.

Climate change is an issue that cuts across different development sectors, hence there is a need for enhanced coordination between government departments at local levels.

This case study shows the importance of the connections between water services, land management, economic activity and other sectors when building climate resilience. When supporting climate resilience in communities, local government authorities at the municipal level should have a unified approach. This involves different local government departments, such as those from water and sanitation, agriculture, and environment, jointly identifying development priorities and developing processes for community engagement. A unified approach also potentially strengthens the availability of resources available to each government department and contribute to the cost-effectiveness principle of the NAPA.

Water for Women is Australia's flagship water, sanitation and hygiene (WASH) program supporting improved health, equality and wellbeing in Asian and Pacific communities through socially inclusive and sustainable WASH projects. Water for Women is delivering 18 WASH projects in 15 countries together with 11 research projects over five years (2018-2022).

For more
information:
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