

dan akses air bersih
... kamu lakukan
... sama (kondisi)
... berbeda

Socially -inclusive Responses to Climate Change Impacts on WASH Manggarai, Flores, Indonesia

CASE STUDY
DECEMBER 2020



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Research Partners

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ISF acknowledges and respects the Aboriginal and Torres Strait Islander custodians of Australia and the Gadigal peoples upon which the UTS City Campus now stands. We continue to value the generations of knowledge Aboriginal and Torres Strait Islander Peoples embedded within our University and we pay our respect to their Elders past, present and emerging.

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Plan International has been operating in Indonesia since 1969. Its early work was based in Yogyakarta and now works in South Sulawesi, Nusa Tenggara and Java. Plan International Indonesia became Plan International Indonesia Foundation in 2017 to reach more children, especially girls, in Indonesia and create long-term change through partnerships and local fundraising. Key areas of work include: youth economic empowerment; child and youth participation; disaster risk management; sexual and reproductive health; early childhood care and development; and water, sanitation, and hygiene.

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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), WaterAid Timor-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:

Assess how climate change affects WASH service, gender and inclusion outcomes

Use the assessment information and replicate the methods in their Water for Women projects

Encourage adoption of climate change assessment findings and methods by other WASH practitioners and CSO partners

Context

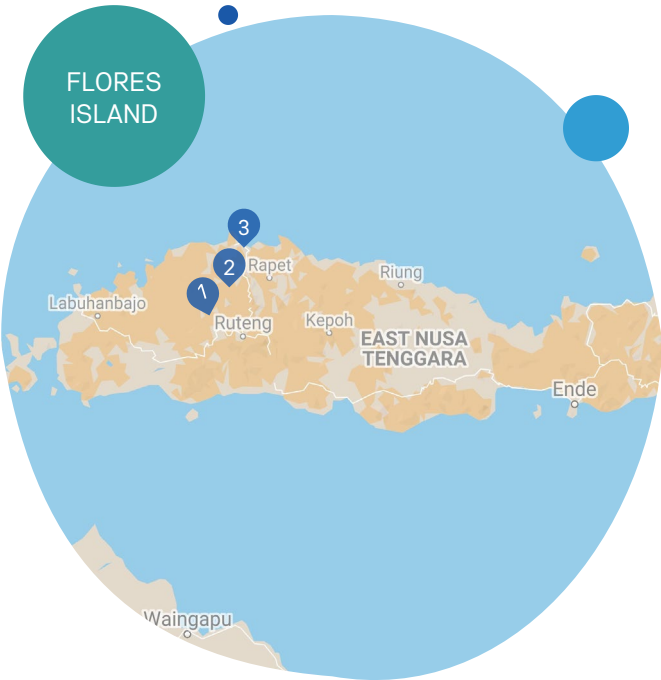
This case study is based on applied research carried out in August 2019 by ISF-UTS and YPII in Manggarai district, Flores Island, Indonesia. Manggarai is one of the two regions where YPII is working to deliver the WASH and Beyond – Transforming Lives in Eastern Indonesia project to improve the health, gender equality and wellbeing of Indonesian communities through inclusive and sustainable WASH. Approximately 88% of the population in Manggarai has sanitation access: one-third of the population with access shares sanitation facilities, one-third has semi-permanent improved toilets and one-third has permanent improved toilets in their homes, while 7583 (12%) is without sanitation access and households practise open defecation.¹

ISF-UTS and YPII selected three villages in different subdistricts for the case study research based on their different geographies, climatic/environmental conditions, WASH coverage and livelihoods sources. The first village we visited, Golo Langkok in Rahong Utara, has 677 households and 100% sanitation access and access to water (piped supply to houses and public standpipes) through a local water company.¹ It is in a mountainous region with high rainfall and community members grow cloves and other food crops.

The second village, Wae Codi in Cibal Barat, has 405 households and 100% sanitation access and a water supply (mostly public standpipes) managed by PAMSIMAS (a Government of Indonesia water and sanitation initiative).¹ It is in a mountainous area, often dry, and community members largely rely on subsistence farming.

The third village, Kelurahan Baru in Reok, has 456 households and 52% sanitation access and a water supply (mostly piped supply to houses) from PAMSIMAS.¹ It receives high rainfall, and is a rural port town. Livelihoods include small retail businesses, trade and farm labouring.

Across all three of these villages, it is also common for people to receive remittances from family members who have migrated for work to other cities in Indonesia, Asia or the Middle East.



¹ STBM data (2017) in Prasetyo, D. et al (2018) SMERU Research Report: Gender and Social Inclusion (GESI) Contextual Analysis/Formative Research for the Plan's Water for Women Project in Indonesia, p.27.

CLIMATE CHANGE HAZARDS

Projected changes in Indonesian climate include:



A 0.8 – 2.0°C increase in average temperature by 2050²



150–450 mm rise in sea levels by 2056²



Increased frequency and intensity of heavy rainfall event²



Southern Indonesia, in which Manggarai is located, is projected to experience a 15% decline in annual precipitation by 2100³

Climate change impacts on the environment experienced by research participants were reported as:



Increasing intensity of rainfall, causing landslides in Golo Langkok and Wae Codi and flooding of the river in Reok



Seasonal variability and longer dry spells in Golo Langkok, Wae Codi and Reok



More extreme weather events such as strong winds



2 USAID (2017) Climate Risk Profile: Indonesia. Available at https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID_ATLAS_Climate%20Risk%20Profile_Indonesia.pdf

3 World Bank (2011) Vulnerability, Risk Reduction, and Adaptation to Climate Change: Indonesia. Available at: https://climateknowledgeportal.worldbank.org/sites/default/files/2018-10/wb_gfdr_climate_change_country_profile_for_IDN.pdf

Our research approach

Collaborative design

ISF-UTS led a process of collaborative design with YPII to develop participatory methods/activities to assess how climate change affects livelihoods, WASH services, and gender and social inclusion outcomes. ISF-UTS, YPII and PIA held several preparatory meetings to gain a shared understanding of the WASH and Beyond project goals and approaches, so that design of methods/activities would build on existing project approaches where it made sense to. ISF-UTS and YPII then met in Manggarai, Indonesia for a four-day workshop aimed at generating two-way learning about climate change and WASH program delivery in Indonesia and group input to methods/activities. The co-design team planned to align the climate change assessment methods with existing YPII program activities through which they support the Indonesian government Sanitasi Total Berbasis Masyarakat (STBM) program (a program adapted from the Community-Led Total Sanitation approach).

Testing and cycles of reflection

ISF-UTS and YPII carried out seven types of activities in the field: climate-sensitive community mapping, climate impact diagram, assessment of climate impacts on sanitation accessibility, five resources, futures visioning interviews and focus group discussions (see activity descriptions that follow).

The activities were applied with a strengths-based approach, aiming to shift the focus from vulnerability to climate change impacts to an empowering approach that identified community strengths to respond and adapt to climate change. A feminist research approach was also taken, prioritising the involvement and perspectives of women and marginalised groups in the research because their voices are often not heard. A 'do no harm' approach was applied carefully when working with people with disabilities and other marginalised groups, drawing on the existing protocols used by YPII and the Water for Women project team.

The research design was inspired by a ‘Participatory Action Research’ approach,⁴ with collaborative decision-making between field practitioners and researchers during testing of climate change assessment activities in the three villages visited. The ISF-UTS/YPII team conducted reflections throughout and after each village visit, assessing whether the activities were enjoyable for participants and elicited useful information about climate change impacts on WASH services and gender and social inclusion outcomes. We also compared their usefulness in different contexts and reflected on potential uptake of the activities by YPII and local government.

A Guidance Note was prepared for use by YPII and their local partners which outlined the step-by-step process for implementing the climate change assessment activities described above. The guidance for each activity was then piloted by YPII in the field, and ISF-UTS and YPII held reflections about its implementation which informed refinements for future use.

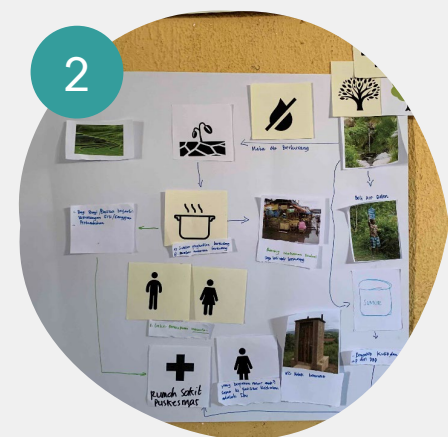
4 Woolf, L. and Leong, L. (2020) Participatory Action Research (PAR) in Practice – WASH for Women and People with Disabilities. Available at: https://ic9.esolc.ca/11140390-WaterForWomen/en/learning-and-resources/resources/KL/200306-WfW-Plan-International-PAR-in-Practice_FINAL.pdf.

Field activity descriptions



Climate-sensitive community mapping

This activity facilitates women and men to identify the locations where climate-related hazards affect the community (e.g. where it floods, where landslides occur, etc.) by drawing a map of where they live. They then discuss how these climate impacts affect women, men and people with disabilities in different ways. The results of the mapping activity can provide insights on building sustainable and inclusive toilets.



Climate impact diagram

This is a version of systems mapping which facilitates women and men to understand the multiple and intersecting impacts of climate change on access to water and sanitation, health, livelihoods and gender equality. Starting from a climate change hazard such as long dry spells or flooding, participants use picture cards and writing or drawing to explore relationships with other parts of the biophysical and social system.



Assessment of climate impacts on sanitation accessibility

Adapted from the WaterAid “How to conduct a WASH accessibility and safety audit” guide, this activity identifies: barriers that currently affect sanitation accessibility; how climate can potentially worsen those barriers; how climate change can create new barriers; how the community and local government can build toilets that help people overcome barriers.



Futures visioning

This activity facilitates community members to reflect on the major changes that might occur in the next 20 years. They are asked to imagine a positive future scenario for their community with good sanitation coverage, where climate change is still an issue but the community has adapted effectively. Then participants are asked to identify specific actions needed to reach their preferred future.



Five resources

This draws on the Sustainable Livelihoods Framework⁵ to identify human, physical, natural, social, and financial resources, that constrain or enhance sustainable livelihoods. This strengths-based activity supports women and men to identify resources that their community has that can be used to address climate impacts, and then develop an action plan to use these resources to maintain sanitation access in the face of climate change events.



Interviews and Focus Group Discussions

Interviews and focus group discussions (FGDs) were carried out to add depth of learning to support the researchers to develop strong climate change assessment tools appropriate to the Manggarai context.

5 Scoones, I. (1998), Sustainable Rural Livelihoods: A Framework for Analysis, IDS Working Paper, Issue 72.

Case study findings

Climate change impacts on livelihoods

Climate change impacts on agrarian livelihoods are affecting food security as well as income. As a result of men migrating outside the village to find alternative jobs women are bearing a greater share of household WASH responsibilities.

Climate change and climate variability are adversely affecting agricultural production, potentially endangering food security and the main source of income of rural men and women in Manggarai. Community members reported that the dry season has become extended in recent years, forcing farmers to reduce their crop planting frequency. Previously, farmers could plant rice paddies 2-3 times in a year, but now they can only plant rice once per year. Farmers also experienced crop failure due to weather variability or lack of rain. This affects crops such as cloves and coffee trees which do not flower when it is too dry (Golo Langkok FGD). When pandan leaves dry out the leaves are no longer able to be used to make traditional mats. Mangrove areas in coastal areas (in Reok) had been affected by soil erosion as a result of increased storms and flooding, having an impact on coastal livelihoods.

This decline in agricultural production has resulted

in reduced income for farmers. This in turn, leads to the migration of men to find alternative jobs outside of the village. This has increased the burden on women for caring for their household, including sole responsibility for their household's WASH needs in some cases. With some men moving away in search of paid work there was less support for physical labour available in general and sometimes women needed to pay men for construction of infrastructure or heavy farming tasks (Wae Codi Women's FGD).

Climate Change impacts on WASH access and roles

In each of the communities, women's traditional roles involved managing water for their households. This meant women bore a greater burden of response to climate change impacts on WASH in terms of collection, treatment and storage of water. Limited physical accessibility to WASH services was identified as a barrier for people with disabilities which could be exacerbated by climate change impacts. Lack of reliable water supply had implications for continued functionality of pour flush toilets.

For some people who did not have piped water to their houses their main source of clean water was privately-built boreholes used by a single household or wells shared by the community.

During heavy rain the water becomes muddy and turbid. If climate change increases the number of intense rainfall events that contaminate drinking water women and girls will usually be tasked with treating water to make it clean for their family to drink.

Community members further explained that if the dry season becomes longer, they will need to walk longer distances to collect water for their family because the wells or water springs closest to their house dry up.

During the dry season in Wae Codi a large effort was required to collect water for the household. Water taps designed to control the flow of spring water were broken and water ran onto the ground instead of being stored in tanks, so in drier periods the water flow was very slow. Women and children reportedly queued for long periods to be able to fill up their jerry cans.

Poor households are less likely to have safe tanks for storing water, so they walk to collect water frequently and are more vulnerable to running out of water in severe weather events. Some households resorted to spending cash to buy water in a plastic container which diminished the budget they had to buy other items.

With impacts of climate change pregnant women, elderly and people with physical disabilities are likely to face additional barriers in accessing WASH facilities. An assessment of physical accessibility to public WASH facilities was completed in each of the three villages. This activity revealed the difficulty of accessing sanitation facilities in challenging weather conditions, such as heavy rain.

For example, in Wae Codi it was found that the path to a public spring was steep and dangerous to walk on when slippery from rain. Younger people have more strength to carry water up and down the hill, but elderly people, pregnant women, and people with disabilities were more likely to slip and fall. Climate change is predicted to increase the number of times per year that there is intense rainfall and in this community this will affect the access to water for people with limited physical abilities.

Reduced annual average rainfall in southern Indonesia is likely to continue over the coming decades,⁶ which has implications for use of pour flush toilets commonly used in Manggarai. In villages we visited many community members had access to a toilet and some households had pour flush toilets installed in their houses. However, community members reported that when there were water shortages in the dry season they did not have enough water to flush the toilet. In some cases people would turn to

open defecation. Community members expressed worry that if open defecation increases in the future women will be particularly vulnerable to be harassed or sexually assaulted while defecating outdoors (Wae Codi Men's FGD; Golo Langkok WASH Physical Accessibility Analysis). This also has greater consequences for small children who are more likely to catch diarrheal diseases when human faeces are spread by open defecation. Climate change is predicted to increase the duration of dry spells in Indonesia⁶ which would lead to a greater impact on women and children because of these reasons.

⁶ USAID (2017) Climate Risk Profile: Indonesia. Available at https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID_ATLAS_Climate%20Risk%20Profile_Indonesia.pdf

Empowerment and social inclusion for maintaining access to WASH

More equitable WASH outcomes may occur when all community members are empowered and included in decision-making. This is particularly important in dealing with climate change impacts, which have the potential to exacerbate existing inequalities.

Community members reported that whereas in the past village leaders made decisions without consultation, in recent years Indonesia's democratisation is influencing local government and community members are being invited for consultations on the development of the village. However, because of gendered social norms, when the household is invited to attend village meetings usually the male head-of-household will go and females will stay in the home to take care of domestic responsibilities. In Golo Langkok 9 out of 10 women FGD participants had never been invited to or participated in a community meeting. However, in Wae Codi many of the women participated in community meetings and felt they were listened to on decisions about WASH. There were more examples of female leadership in the Wae Codi community, such as two women being elected as heads of sub-villages.

In all three sub-districts people with disabilities were found to usually not be invited to participate in meetings. But when they were invited to attend our discussions they were enthusiastic and made valuable contributions. For example, they shared challenges they faced in accessing water and public sanitation services. Climate hazards can increase the workload for people with disabilities or their carers. For example, more frequent dry spells decrease water supply and increase individual time spent collecting water from water sources further from their homes. Learning about experiences of people with disabilities and their carers could then be used to help identify solutions that could be implemented by the community or government.

Separate FGDs with women and men of younger and older age groups were carried out as this was a common way of working within YPII based on use of the Gender WASH Monitoring Tool⁷. Due to their experience older people were able to contribute local knowledge about customs of planting, land use and changing weather and climate patterns. These insights would have been missed if we only held discussions with younger people.

Perceptions about decision-making roles about WASH varied both between men and women and between villages. For example, in Kelurahan Baru men thought that they did most of the household decision-making, while women thought that decision-making was equally shared. At the community level, when there was an extreme climate event such as flooding, men thought they took on most of the decision-making roles in the community response. Women thought that in a flooding event they would usually not be consulted about community decisions, despite being involved in caring for their families and houses. This inequality in decision-making is linked to the perception of men's role in physical response, such as building back infrastructure, being more vital to decisions than women's role in caring for the house, family possessions and the wellbeing of household members. If severe climate events happen more frequently in the future it will be important for women to participate in decision-making so their perspectives and needs are also considered.

⁷ Plan International Australia (2018) Gender WASH Monitoring Tool. Available at <https://www.plan.org.au/publications/gender-and-wash-monitoring-tool/>

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

In each of the three villages the ISF-UTS/YPII team facilitated reflections on local resources and ideas for ways these can be mobilised in the future to maintain WASH access in extreme climate events, such as drought or flooding. Drawing on the Sustainable Livelihoods Framework the five resource types (also referred to as capitals, or assets) of financial, social, physical, natural and human were used as a tool to engage the community to identify their strengths in responding to climate change. Drawing on these local resources the community members were encouraged to identify actions both the community and the local government could make to maintain WASH access in extreme climate events.



Sustainable Livelihoods Framework⁸



⁸ Scoones, I. (1998), Sustainable Rural Livelihoods: A Framework for Analysis, IDS Working Paper, Issue 72.

Local resources and how the community could use these to maintain WASH access, in extreme climate events

	Workshop 1 - Golo Langkok (21 Aug 2019)	Workshop 2- Wae Codi (24 Aug 2019)	Workshop 3 - Kelurahan Baru (29 Aug 2019)
PHYSICAL	<ul style="list-style-type: none"> Reservoirs and pipes for household water supply, controlled by OPAM Schedule for taking water for households Good maintenance of public toilets, which are used only by those living nearby 	<ul style="list-style-type: none"> OPAM managing WASH infrastructure such as pipes, water tank and taps Turning water system off during times of low use to allow tanks to recharge Build a rubbish container near the spring source Build steps on steep hills to improve access to water taps 	<ul style="list-style-type: none"> Dry season: some people have own boreholes or can use water supplied by PDAM (government water utilities); households have containers to store water in their homes; mineral water is sold in containers To prevent landslides: retaining walls built to prevent erosion; drainage is designed to control runoff Households control own waste management Health post helps under all weather conditions
SOCIAL	<ul style="list-style-type: none"> Spirit of helping each other (“campe cama tau”) to build toilets, plant trees or respond when disasters occur Practice of giving food supplies to families which are victims of disasters Girls go in groups together to the spring when collecting water, to increase safety Strong social fabric makes decision-making easier Good cooperation between stakeholders, government and church leaders to maintain and fix public facilities 	<ul style="list-style-type: none"> Community cooperation to build toilets for each household Neighbours/relatives provide support to help people with disabilities to access WASH services Women included on the STBM team 	<ul style="list-style-type: none"> Mutual cooperation for the purpose of collecting money and donations for people in need Good community and government relations in caring for the environment Support from health agency Good networks with politicians to influence decisions Community funds that can be used for people with disabilities, elderly etc. Organisations for girls, boys and youth

Workshop 1 - Golo Langkok
(21 Aug 2019)

Workshop 2- Wae Codi
(24 Aug 2019)

Workshop 3 - Kelurahan Baru
(29 Aug 2019)

FINANCIAL

- Pay water fees regularly for OPAM (community infrastructure committee) to fix broken pipes and maintain cleanliness of spring
- Subvillages collect money to buy access to springs
- Village funds to build household toilets
- Collective budget (approx. 10,000,000 Rp) to respond to disasters

- Village funds used for buying materials
- Opportunity for a weaving collective and microloans
- Increase collection of household contribution to village funds

- Access to bank to get loans
- Corporations which can give assistance to the community
- Funds from the health agency

HUMAN

- Dry season: build reservoirs to store water
- Rainy season: actions to protect water from contamination
- Terracing made to prevent erosion/ landslides.
- Make water safe to drink by filtering it twice and removing calcium.

- Weaving skills
- Agricultural and livestock skills
- Some community members are educated with university degrees

- People are a mix of indigenous and newcomers
- Varied livelihoods including fishing, baking cakes, construction, business as alternatives to farming
- Access to support from government for training
- People (men) who know how to fix pipes, taps and other infrastructure related to WASH

NATURAL

- Adaptation of types of food in longer dry season (e.g. rice, bananas)
- Grow trees around water springs to prevent erosion
- The water from the spring can be used for daily needs
- Animals faeces are used for compost

- Local water source – need to organise schedule for fair sharing of water resources
- Organic fertiliser
- Bamboo which could be used for building toilets
- Reforestation around spring source

- Aside from negative impact of flooding, a positive impact is it brings rocks and sand which can be used for building infrastructure
- Use rocks and sand to fix drainage
- Cut wood and use to cover the well and protect water from mosquitos

Implications for WASH programming and practice

The information and analysis of findings generated from this Case Study have been used to identify implications for programming and practice to be considered by WASH practitioners. Specifically, the Case Study offers recommendations which can inform YPII how to address the impacts of climate change on WASH services in their WASH and Beyond – Transforming Lives in Eastern Indonesia project.

Communities should be supported to identify their own resources to respond to climate change and ensure inclusive access to WASH services. Rural communities in Manggarai demonstrated strong collective social capital, such as relationships and traditional processes (such as *campe cama tau*) for helping each other when they face difficult times. Government and NGOs can help communities draw on this capital and mobilise their own resources to construct new toilets to ensure everyone has sanitation access and to help marginalised households safely access water. To support sanitation access under all climate conditions issues with water supply need to be considered. For example, community members could be supported to build and maintain communal dry toilets available for all to use. This would prevent reversion to open defecation when the community experiences water shortages that cause flush toilets to become unusable.

Climate change does not affect everyone equally, and solutions need to be designed to meet diverse needs of varied social groups. Due to women's roles in managing family water and sanitation they may be disproportionately affected with additional burdens in responding to climate change impacts. In some parts of rural Manggarai households have

access to piped water and have good quality household toilets. These high quality water and sanitation services support equitable access to water and sanitation. However, if climate change causes these services to fail families may need to use public water points or toilets that are far from home and this would put more stress on women and people with disabilities. In each context women, men, girls, boys, people with disabilities and other marginalised groups will have different experiences with climate change, so the solutions need to be designed to meet their different needs.

Participatory methods for climate change assessment to inform the design and implementation of WASH 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 emphasised community strengths and ensured responses were appropriate to the local context. People with disabilities involved in the research reported it was the first time they were invited to such community events, which promoted their inclusion. Similarly, women involved in the research were able to share their perspectives directly with community leaders, whereas previously they had relied on male family members to share their ideas and concerns. The Guidance Note that has been co-developed with YPII and their partners to support the WASH and Beyond – Transforming Lives in Eastern Indonesia project has potential for other WASH practitioners to draw inspiration from the approaches and methods to integrate climate change considerations into their programs.

Implications for government policy and programming

The findings from, and materials produced by, this research may serve as an entry point for government to consider the integration of climate change assessment into inclusive rural WASH services. Creating broader awareness about climate change and mobilising government resources is one way to enhance the sustainability of YPII's work, and WASH services more broadly, in Manggarai.

There is a need for greater awareness-raising about climate change and multi-faceted impacts it may have on rural water supply, sanitation, livelihoods and health outcomes. While the regional disaster mitigation agency (Badan Penanggulangan Bencana Daerah) has some limited awareness of climate change there is insufficient support at district level to guide adaptation to, or provide education on, climate change across other sectors (interview with health agency, 30 Aug 2019). Greater awareness amongst government officials and community leaders and a coordinated government response is needed so that resilience to climate change is considered in design and implementation of policies (a common challenge for many governments across the world).

Gender and social inclusion approaches in WASH programming can be strengthened in Manggarai. The district government cross-sectoral WASH working group (Pokja AMPL) that focuses on drinking water and environmental health has started considering gender and social inclusion in its policies. YPII conducted advocacy activities with district government in the first year implementing their Water for Women project, which resulted in the governor's regulation on STBM in Manggarai that accounts for gender and social inclusion (2019). However, at village level most health and

sanitation programs generally have gender-blind implementation. According to the health agency gender training needs to be mandated for government sanitarians as there are different health needs for women and men who seek treatment at community health centres (interview with health agency, 30 Aug 2019). Some sanitarians have a role promoting community sanitation related to STBM. Therefore, increased awareness of gender and social inclusion among sanitarians would support inclusive consultation, decision-making and prioritisation of the sanitation needs of marginalised groups.

Greater coordination between government agencies is needed for an effective response to climate change in maintaining inclusive WASH services. Regional Development Planning Agency (BAPPEDA), health, environment and disaster management agencies all have a role to play in addressing issues related to ensuring quantity and quality of water supply and sanitation facilities in the current environment and in future climate scenarios.

When government agencies design programs to improve water and sanitation access in rural communities it is important to consult with different members of the community including women, men, youth and people with disabilities. Participatory methods can be used to elicit responses from community members about how climate change affects their water and sanitation access in different ways. Considering their different perspectives in the design of water and sanitation facilities will promote social inclusion, with the aim to design facilities that equally benefit all community members, and increase the sustainability of WASH services.

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:
waterforwomen.uts.edu.au