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ODF SUSTAINABILITY IN TIMOR-LESTE

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Liquica	Aileu	Ermera
Baiquenulau	Acumata	Aiurlala
Caibolimo	Aimerahun	Borhei
Caimegohou	Bereliurai**	Coracao_de_Jesus
Caleulema***	Beremanuleu	Culau Haburas
Fatuneso	Caitaso	Eraulo
Lebuana	Deruhati	Leborema**
Lebuhei	Fahiria	Lihmo
Leopa	Fatumanaro	Malitada
Mau_Luto***	Fucuculau	Poeana**
Metagou	Lerolica**	Railacan***
Mota_Ikun	Leruleten	Saramata***
Nunhou*	Manulete	Sinai
Pandevou	Mautoba***	Sorati*
Pucelara	Quelae***	Tajaquina
Quirilelo	Quiriquei	Hautoho* Tapomia*
Vatu_vei*	Raimerhei*	
	Saboria	
	Samalete	
	Sarin	

Table 1: List of all participating aldeias. (*Phase 2 Strong ODF aldeias, ** Medium ODF aldeias, *Weak ODF aldeias)**

Executive Summary

Background: CLTS has been implemented in Timor-Leste since 2007 by a range of government and nongovernment actors. All implementers have conducted evaluations of their programs with sustainability included as an evaluation criteria, but without the scope to more fully explore the drivers of the household behaviour change. This study aimed to identify the extent to which the ODF behaviours are sustained by communities and households at least two years after the triggering and ODF declaration, and the motivators and factors which influence the behaviour change. The three research questions are:

1. What percentage of HHs are still ODF at least two years following ODF declaration?
2. What motivates and enables households to remain ODF?
3. What are the primary causes of HHs reverting to OD?

The study was initiated and managed by the Australian government funded Rural Water Supply and Sanitation Program (BESIK) and the Government of Timor-Leste Ministry of Health and implemented in collaboration with Plan International, UNICEF and WaterAid in their respective program areas in Aileu, Ermera and Liquica Municipalities. This report was finalised under the Australian government funded Partnership for Human Development.

Methodology: The study methodology was based on that of the Plan International/FHDesigns study of four African countries conducted in 2012. The study was conducted in two phases:

A re-verification phase where 2,518 households in 45 hamlets (aldeias) across three municipalities that had been declared ODF at least two years prior to the study were re-verified. This answered the first research question. In Timor-Leste, the National Basic Sanitation Policy defines an ODF community as one that is excreta free (open spaces, drains, water bodies, institutional buildings). This was verified by checking that a random sample of houses had access to a toilet (may be shared) and there is no excreta in the environment.

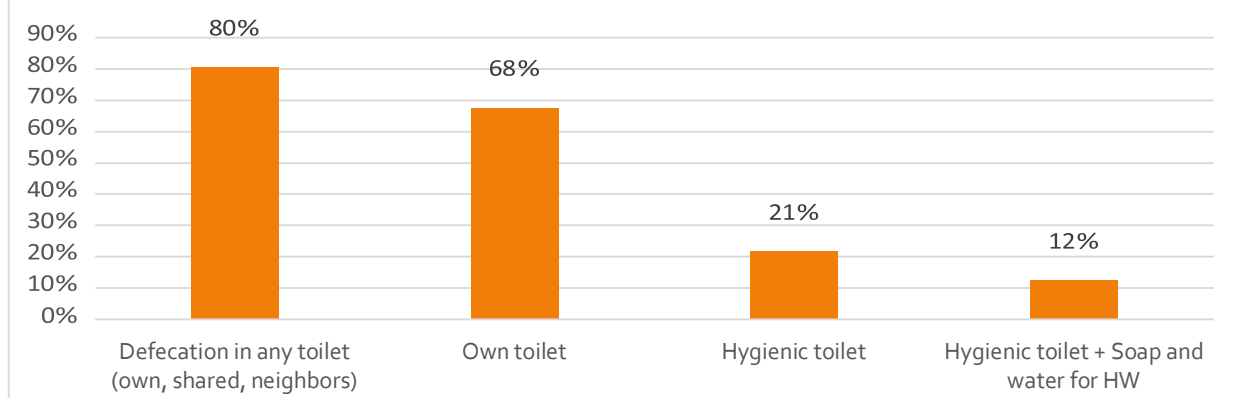
A qualitative phase purposively selected 290 households (200 ODF and 90 OD) across 18 aldeias from the results of the first phase. These households were re-visited and interviewed to determine the main motivators and challenges influencing the household to maintain their latrine and ODF status or abandon their latrine and revert to open defecation (OD). Once they had discussed the factors that had influenced their behaviour, respondents were asked to prioritise the top three factors as most important influencers.

Results

Q1: What percentage of HHs are still ODF at least two years following ODF declaration?

The re-verification of 2,518 HH across 45 aldeias showed that 68% of households maintained their own toilet with 13% using a neighbour's or shared facility for defecation. There was a 20% slippage to open defecation. 47% of those who had reverted to OD reported that their toilet had fallen into disrepair. Figure 2 below shows that while the achievement of the first step of an open defecation free environment is largely sustainable, there is still considerable effort required to break the oral-faecal transmission route to improve health outcomes.

Figure 1 : Summary of sanitation behaviours



Q2: What motivates and enables households to remain ODF?

200 HHs (84 women, 116 men) who had sustained their ODF practise nominated the factors that influenced their behaviour. The top ten responses to the key question for each category of respondent is given in Table 1 below. Respondents were also asked to prioritise the top three motivators or enabling factors that they had talked about. The top five factors that were prioritised by most respondents are also given in Table 1 below.

Table 1: Top ten responses and top five priorities to why did you build your toilet and why do you maintain/repair your toilet? (n=200)			
Response / factor	# respondents mentioned	% respondents mentioned	% respondents mentioned
Health	194	97%	22%
Shame, Disgust, Pride or Fear	191	96%	13%
Privacy and Security	161	81%	19%
Availability of water	158	79%	13%
Accessibiliity for all household members	139	70%	12%
Sanitation of hygiene promotion campaign	93	47%	
Improving things for the family	78	39%	
Convenience, comfort (location)	72	36%	
Follow up visits, advice and external support	70	35%	
Subsidies	57	29%	

Health was mentioned 654 times by respondents, accounting for 25% of all factors mentioned. Health was ranked as the most important motivator for maintaining their ODF status by 22% of all interviewees. There was no significant difference between men (21%) and women (23%). These ODF respondents had a good understanding of the oral-faecal route of disease transmission and in terms of disease prevention linked toilet use with hand washing.

Privacy and Security are strongly linked with the motivator of Shame and Pride and considered together are the most important reason why toilet use is sustained. There are two aspects of tis. One is the shame of being seen in the act of open defecation. Having a toilet for defecation in a private place removes this source of embarrassment. The other is the shame of having guests visit, or children returning from the city and not being able to offer them the use of a toilet. Families that had built a toilet and were ODF expressed pride in having a toilet for guests and family visitors.

Q3: What are the primary causes of HHs reverting to OD?

90 HHs who had reverted to OD nominated the factors that influenced their behaviour. The top ten responses to the key question for each category of respondent is given in Table 1 below. Respondents were also asked to prioritise the top three de-motivators or barriers that they had talked about. The top five factors that were prioritised by most respondents are also given in Table 2 below.

Table 2: The top ten responses and top five priorities to “why did you stop using and maintaining your toilet and what has made it hard to re-build or maintain your toilet?”			
Response / factor	# respondents mentioned	% respondents mentioned	% respondents mentioned
Competing priorities	71	79%	20%
Quality of initial construction	61	68%	
Inconvenience & lack of comfort/privacy	53	59%	
Availability of water	45	50%	13%
Maintenance/repairs/pit emptying too difficult/costly	44	49%	13%
No capability to build toilets	43	48%	12%

Unaffordable & lack of credit to rebuild	36	40%	12%
No more support	35	39%	
Local soil and ground conditions	33	37%	
Fear of harm – slab collapsing, falling in	32	36%	

There are multiple reasons why households fail to repair their toilets and maintain their ODF status – mostly related to them only having the resources to build a traditional pit latrine rather than an improved toilet – either with or without water.

While the financial burden of building a traditional latrine is advantageous to cash poor households, there is the additional time burden of regularly needing to repair or rebuild a pit toilet. Pit toilets are seen to be of poor quality (DF4), limited durability (DM5) and not comfortable (DM1) or safe (DM3) and so respondents prioritized their time to income or resource generating activities rather than building a toilet that they perceived as being of poor quality.

Lack of capacity to build or repair their toilet was mentioned as a factor in the interviews by 49% of all respondents with more women than men (56% vs 43%) citing this as a reason they were open defecating. Respondents used words like 'old' (36%), 'alone' (29%), being 'sick' (16%) a 'widow' (7%) or having a 'disabled' person at home (3%). These circumstances limited the 'strength' and 'force' required to build or repair their toilets, indicating that lack of physical strength was a barrier to repairing their toilet and maintaining ODF practices.

Availability of water as an enabler and barrier

In a country where the aspiration is to have a pour flush toilet, it is perhaps not surprising that there is a relation between **access to water**, in particular the location of the water point, and household defecation practises and type of toilet built.

Water is considered essential to toilet use and hygiene by the majority of respondents, from both the ODF and OD sample populations. 79% of respondents from ODF households mentioned water availability as an enabling factor at least once (more women than men, 85% to 74%). A number of HH mentioned building an improved toilet when the water system was installed and after receiving advice and/or support from external sources, mainly health centre personnel and from NGOs.

Access to water is linked to the construction and maintenance of the desired pour flush toilet, and lack of water to the undesirable traditional pit latrine. At least 50% of OD respondents in Phase 2 mentioned lack of water as a reason for not having rebuilt or repaired their toilet. The Phase 1 survey showed that 75% of HHs that were still ODF have improved toilets, 50% of these with a flushing water mechanism.

The Phase 2 survey of 90 OD households showed that 84% of them had originally built traditional pit latrines, all of which were broken and unusable at the time of the survey. When water was available in the house or yard, less than 15% of households had built a traditional toilet. 46% of those who accessed water from a public tap and 58% of those who did not have access to an improved water supply had built the traditional unimproved toilet.

Progressing towards hygienic sucos

As achieving ODF status is just the first step in the process towards achieving a hygienic home and village, it is important to understand sanitation behaviours beyond merely defecation practises. In Timor-Leste, toilets are required to be hygienic and have nearby hand washing facilities with soap and water in order for a community (sucu) to be declared hygienic. Figure 2 below shows that 32% (n=540) of all toilets met all criteria as hygienic and 18% has hand washing facilities with both soap and water.

Figure 2: Hygienic and HWF with soap and water by toilet type

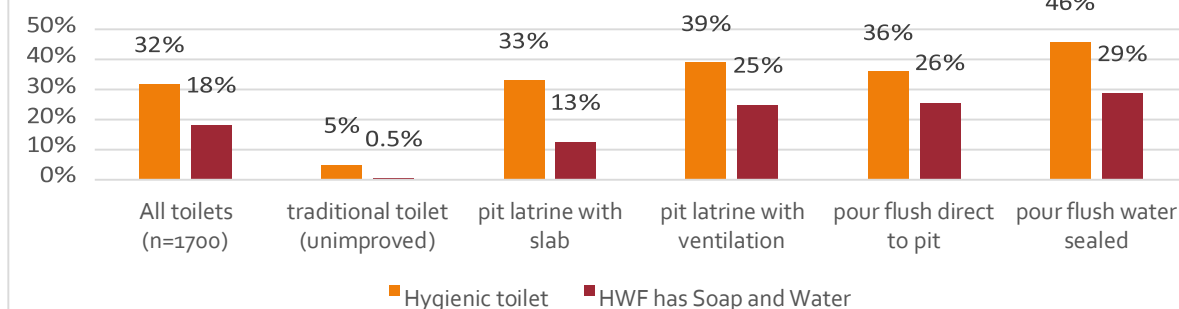


Figure 2 also shows that it is more difficult to maintain a traditional toilet as hygienic (5%) compared with a pour flush toilet (46%). There were also significant differences between unimproved and improved toilets and the presence of handwashing facilities. Only 0.5% of the unimproved traditional toilets had a handwashing facility with soap and water, while that rose to 46% for pour flush toilets. Again, accessibility of water was also a key determinant for the presence of both a handwashing facility and both soap and water at the facility.

Implications for practise

There is usually not a single reason why a household either maintains its ODF status or reverts to OD. There is actually a combination of factors which interconnect and reinforce each other. These factors make it 'easy' for the person or household to maintain the positive behaviour change and make a 'habit' of that behaviour. Conversely, they can create multiple barriers and difficulties, and it is easier to revert to the old behaviour.

There are a few key findings from this research that have major implications for practise.

Health is a major driver for sustainability: Even though it may not be a driver for the initial defecation behavior change and toilet construction, people continue to make the effort to maintain and use a toilet because the health of themselves and their family are important to them. Ongoing and consistent hygiene promotion messaging from the Ministry of Health and Community Authorities is essential to habitualise hygienic practices as well as improving the sanitary environment of the household. The hygiene promotion appears to be reaching those who are already ODF and more likely to have good access to water for hand washing and an improved toilet. The challenge is in delivering supportive and encouraging hygiene promotion to the more vulnerable households who are still open defecating and are unable to muster the energy to rebuild a traditional pit toilet for the nth time, because of multiple other de-motivating factors in their lives.

- Phase ongoing hygiene promotion for the higher levels of the Basic Sanitation Policy to reinforce the health benefits of toilet use, hand washing, breaking the oral-faecal route
- Put together a collection of participatory educational and BCC materials that promote the health benefit of sustained toilet use, hand washing and other hygienic behaviours (eg: revisit PHAST)
- Ministry of Health outreach programs (Family Health Program, SISCa) continue to promote the health benefits of toilet use, maintaining a hygienic toilet and hand washing through their house-to-house and group activities. The messaging can be targeted to the needs of the individual household and SISCa target groups.

Hygienic and healthy communities are the goal – hygiene promotion for improved health

outcomes. The ultimate objective of CLTS is not just open defecation free communities but hygienic and healthy individuals, families and communities. ODF is just one step in the journey to maintain a clean and hygienic toilet and washing hands at critical times, especially after defecation. The evidence from this study suggests that it is almost impossible to maintain a hygienic toilet and hand washing facility with both soap and water if you do not have access to water in your yard or home and have a traditional pit toilet. Water and an improved toilet facilitates hygienic practices, beyond just ODF sustainability.

Pit toilets are not valued or desired – but there are contexts where a pit toilet is the only appropriate toilet technology option (far or unreliable water source), so it cannot be totally

discounted and neglected – improve the image of the pit toilet. The formative research that informed the Sanitation BCC campaign identified 'pride' as a key motivator to change defecation practices. While it spares people the embarrassment of being seen defecating in the open, a traditional pit toilet is not seen by many as an improvement on open defecation. They are not proud of this toilet and there is no sense of pride offering it to visitors. It requires constant maintenance and repair and householders do not feel the benefit from this level of effort. This is reflected in the lack of prioritizing time to repair or rebuild the toilet. A pit toilet is seen as a temporary or provisional facility until the household has access to water and 'finds' the resources to build an improved toilet.

- Further data analysis and/or research to better understand the drivers for sustainability of traditional toilets and the improved toilet models that do not require water
- Sound and timely technical advice to improve the quality of a pit toilet (eg: pit size and lining, compacted earth platform, sturdy superstructure)
- Test the market for lightweight, attractive sanitation products that do not require water
- Promote the use of ash to reduce the smell from pit toilets.
- Promote an outside, pit toilet (further from the house) as a dignified and pleasant sanitation option for times when water is scarce.

Equity for vulnerable households (improved toilets for everyone as quickly as possible) while building both household responsibility for sanitation and social cohesion within the community -

financing improved sanitation and hygiene facilities: Lacking the financial resources to either initially build an improved toilet, or to upgrade their traditional pit latrine is a major barrier to ODF sustainability. Having to constantly build and repair and re-build a traditional pit latrine because of lack of resources to buy the materials for an improved toilet is degrading, and households get tired of investing and reinvesting the time and effort for little perceived benefit.

- Introduce a voucher or credit system for improved toilet construction as early as possible in the sanitation improvement process
- Promote a “simpan pinjam” (rotating savings/loans) among small groups to build an improved toilet
- Promote community support for vulnerable households to physically construct a dignified toilet option
- Timely promotion of household investment in improving sanitation at times where cash is more available (harvest time, pension days, pay days)

Access to water- A reliable, sustainable water supply to the house or yard (pipe system, hose from public tap, hand dug well, rainwater tank) will improve hygiene and sanitation related health

outcomes : With the growth of CLTS and demand creation at scale, sanitation improvement programs have become delinked from water supply improvements. This study clearly demonstrates that in TimorLeste, when water is close to or inside the house, people are building and using and maintaining not just toilets, but their own washing (esp. handwashing) facilities. For the households and communities, water and sanitation improvements are intrinsically linked and cannot be separated. This provides the opportunity to mutually reinforce the motivations to sustain both the sanitation practices and the management of the water supply services.

- Advocate for water to the yard and home for toilet and bathroom use. This could be through piped systems or household wells where groundwater is plentiful.
- Advocate for sustainability of water management systems to ensure sustainability of sanitation and hygiene behaviour change.
- Focus on water service areas with sustainable, high-levels of service to test/pilot higher levels of the Basic Sanitation Policy

Glossary

Aldeia	Hamlet
BCC	Behaviour Change Communication
BESIK	<i>Bee, Saneamentu no Ijiene iha Komunidade</i> program (Aurecon)
CLTS	Community Led Total Sanitation
DFAT	Department of Foreign Affairs and Trade
FGD	Focus Group Discussion
FR	Factor ranking
GoA	Government of Australia
GoTL	Government of Timor-Leste
GMF	Water Management Group (<i>Grupo Manajamento Facilidade</i>)
HH	Household
HHH	Head of Household
INS	National Health Institute (<i>Instituto Nasional de Saude</i>)
M&E	Monitoring and Evaluation
MoH	Ministry of Health
NGO	Non-Government Organisation
OD	Open Defecation
ODF	Open Defecation Free
ODK	Open Data Kit
PAKSI	Community Action Planning for Sanitation and Hygiene (<i>Planu Asaun Komunidade Saneamentu no Ijiene</i>)
PHD	Partnership for Human Development
Suco	Village
UNICEF	United Nations Childrens Fund
WASH	Water, Sanitation and Hygiene

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1. Introduction

Community Led Total Sanitation (CLTS) was developed by Kamal Kar and Robert Chambers in Bangladesh in 2000. Since then, CLTS has formed the basis of sanitation improvement programs in more than 60 countries across the globe with many governments adopting CLTS as national policy and taking the lead in scaling up the approach¹. As implementation processes have evolved and improved, there is now considerable interest in better understanding the factors (beyond the initial implementation phase) which enable the sustainability of the sanitation and hygiene behaviours that will secure long-term positive impacts on health. This is particularly important as there is an emerging body of evidence that there is no discernible difference in health outcomes between open defecation and the utilisation of simple pit latrines².

CLTS takes a community development approach to changing the behaviour of individuals from defecating in the open (Open Defecation – OD) to defecating in a fixed place. The criteria for a declaration of Open Defecation Free (ODF) vary from country to country. Some of them require the faecal-oral chain to be completely cut (fly proof hygienic toilets and hand washing with soap or ash) while others require only the elimination of faeces in the open environment. When all households in a community are verified as meeting all criteria, the whole community is declared Open Defecation Free (ODF).

Regardless of the criteria for an ODF declaration, it is now understood that the declaration is not an end in itself³. The achievement of sustainable hygienic behaviour change in individuals and community is not a linear process and there will be “two steps forward and one step back”. Slippage which can be defined as: *“a return to previous unhygienic behaviour or the inability of some or all community members to continue to meet all ODF criteria.”*⁴ is an inevitable part of the journey to a sanitary or hygienic community. Understanding the reasons why some households and communities sustain their hygienic behaviours and invest in improving their toilets and washing facilities, while others revert to open defecation is essential to developing a range of context specific strategies and interventions for the “Post-ODF” phase to habitualise the behaviour change and create new social norms.

CLTS has been implemented in Timor-Leste since 2007 by a range of government and non-government actors. All implementers have conducted evaluations of their programs with sustainability included as an evaluation criteria, but without the scope to more fully explore the drivers of the household behaviour change. This study aimed to identify the extent to which the ODF behaviours are sustained by communities and households at least two years after the triggering and ODF declaration, and the motivators and factors which influence the behaviour change. The three research questions are:

4. What percentage of HHs are still ODF at least two years following ODF declaration?
5. What motivates and enables households to remain ODF?
6. What are the primary causes of HHs reverting to OD?

The study was initiated and managed by the Australian government funded Rural Water Supply and Sanitation Program (BESIK) and the Government of Timor-Leste Ministry of Health and implemented in collaboration with Plan International, UNICEF and WaterAid in their respective program areas in Aileu, Ermera and Liquica Municipalities. This report was finalised under the Australian government funded Partnership for Human Development.

1.1. Sustainability of ODF globally

The Plan International study (Tyndale-Biscoe et al, 2013) of CLTS sustainability in four African countries found that 87% of households still had a functioning toilet (mostly simple pit toilets) at least two years after the initial ODF declaration, however if the broader range of criteria for sanitation behaviours were applied (incl. absence of excreta near the house, water seal or lid, hand washing with soap and water) then the

¹ ¹ Institute of Development Studies The CLTS Approach [WWW Document] (2016) <http://www.communityledtotalsanitation.org/page/clts-approach>

² Cavill et al, p6 ³

UNICEF (2015) CATS Evaluation ⁴ Jerneck et al (2016)

ODF rates were reduced to below 10%. The overall conclusion was that while the programs had been very **Introduction** successful in improving the practise of defecating in toilets, other hygienic behaviours important to improved health outcomes had not been sustained.

The Plan study further explores the intrinsic motivations of the household to sustain its ODF status. Despite the low rate of households that meet all of the ODF criteria at the time of reverification, 22% of households that had remained ODF prioritised the perceived benefits to the family health by using a toilet for defecation and the shame of open defecation or conversely pride in being able to defecate without being observed by others (18%).

The de-motivators for HHs that had reverted to OD were the financial constraints of building and maintaining a latrine (18%) and the lack of support from their family or community to maintain the toilet (18%).

Other external factors that were identified by the householders in the Plan study and confirmed by implementers through other studies include:

Durability of toilet construction: The Plan study (Tyndale-Biscoe et al, 2013) found that poor construction and materials were a significant factor in the decision to abandon toilets. Higher quality toilets were more likely to last and be maintained, and that households with access to technical support were more likely to maintain their toilets. Another study of Plan International CLTS interventions in Ethiopia and Ghana by Crocker et al (2017) found that three of four interventions had maintained their ODF status one year following the triggering (8% slippage in the other). These toilets were mostly simple pits and in Ethiopia where the quality of construction was inferior, 45% had required repair or reconstruction in the year since the intervention. These latrines were still simple pits, not improved models. The researchers questioned the sustainability of this repair rate in the longer term.

Post-ODF follow up: The Plan study (Tyndale-Biscoe, 2013) found that almost none of the households had moved up the sanitation ladder from the basic pit latrine as well as very few reports by householders and community leaders of external follow-up support post-ODF. Cavill (2015) reported a Bangladesh study finding that households that received post-ODF follow-up visits were 1.4 times more likely to have improved toilets. There is a growing body of evidence that ODF is more likely to be sustained when households and communities have access to ongoing external support and encouragement.

Local leadership: An analysis of slippage in programs supported by the Global Sanitation Fund (Jelnick, 2016) noted that the ongoing consolidation and maturing of the behaviour change as a personal 'habit' and the changing of social norm in the household and community needs to be locally led rather than led by outside implementers. Crocker (2017) found that villages with higher latrine use were more likely to sustain latrine use, and together with the high repair rates, indicative of a developing social norm around defecation practises. The study confirmed previous studies in Africa that demonstrated that CLTS is most successful in areas where there is strong social cohesion. Cavill (2015) identified the importance of committed local leadership through the initial triggering process and in reinforcing new social norms in the long-term.

"Passionate, committed champion, whether government officials, elected representatives, or other natural leaders, again and again stand out for their significant contributions to sustainability." (Cavill et al, p10)

1.2. National Basic Sanitation Policy in Timor-Leste

Timor-Leste has a strong policy framework for a CLTS approach to sanitation improvement through the National Basic Sanitation Policy that was approved by the Council of Ministers in 2012. The policy has established a staged process to achieve its policy vision of *"Healthy East Timorese living in a clean and hygienic environment"*. The government has adopted a largely subsidy-free approach with households responsible for financing the construction and maintenance of their own toilet and washing facilities, while implementing subsidies for those who are disadvantaged by extreme poverty, severe disability or disaster or conflict.

The policy monitoring framework recognises that ODF is only the first step in the process of improving household and public sanitation and hygiene with the excreta-free village (ODF) followed by hygienic, solid waste free and foul water free villages. See Figure 1 below.



Figure 1: National Basic Sanitation Policy Monitoring Framework

The National Basic Sanitation Policy defines a community ODF if it achieves the following:

- Excreta free open spaces • Excreta free drains
- Excreta free water bodies
- Excreta free institutional buildings

The current verification guideline defines ODF as:

- Everyone has access to a toilet (two houses can share a toilet)
- Everyone except for children under five years don't open defecate
- Communities have a monitoring system for ODF

The request for verification from the Suco Chief must include an approved list of all households in the suco marked as having access to a toilet. The observation and survey re-verification process randomly samples households from the list and checks that:

- Every house has access to a toilet and there is evidence that it is being used and
- There is no excreta in the environment

The next level is a hygienic suco and the national policy defines this as a suco which has:

- 100% Coverage of hygienic toilets
- 100% Coverage of hand washing stations with soap
- Universal safe disposal of infant and child faeces
- Verification of continued ODF Status

The minimum requirements of a hygienic toilet are that it:

- Prevents human contact with human excreta;
- Prevents the discharge of human excreta into open spaces, drains and water bodies;
- Prevents fly, other insect vector, and animal contact with human excreta;
- Includes a solid, raised, platform with a smooth and easy-to-sweep finish
- Prevents the emission of bad smells.

In Timor-Leste, the ODF declaration requires toilet use and an excreta-free environment, so the focus of the promotion is on changing the defecation habit and the construction and use of a toilet. While the promotion and technical advice recommends that households build and maintain a toilet that breaks the oral-faecal chain, this is only a criterion of the official verification for the achievement of hygienic status.

1.3. Sanitation improvement in Timor-Leste

Access to sanitation and reduction of open defecation have been steadily improving in Timor-Leste since 2005. Census data from 2005, 2010 and 2015 in Table 2 below show that the utilisation of improved toilets has been increasing, and the rates of open defecation steadily decreasing. However the improvement will have to accelerate if Timor-Leste is to achieve the targets of its Strategic Development Plan and the 2030 Sustainable Development Goals (SDGs).

Census year	Improved	Unimproved	Open Defecation
2005	30%	23%	47%
2010	39%	25%	36%
2015	49%	18%	32%

Table 2: Census data on sanitation improvement in Timor-Leste

Formative research has shown that the pour flush toilet is the preferred technological option of the population in Timor-Leste, regardless of access to water and socio-economic status.² Given these preferences and the high rates of open defecation, the National Basic Sanitation Policy recognised the importance of integrating the supply of affordable, appropriate (and acceptable) technological options and evidence-based behaviour change communication (BCC) campaigns with the CLTS triggering and followup strategies. Implementers generally incorporated elements of all three strategies into their local level programs.

In mid-2015 the strategy of 'institutional triggering' was added to the sanitation improvement 'package' in order to put the local level authorities in the driver's seat of sanitation improvement in their areas of influence. This was tested in Bobonaro Municipality and raised the coverage and use of toilets from 47% to 94% in 12 months. An evaluation of the *ODF Bobonaro Initiative* in May 2016 found that the inspirational local leadership and commitment that was systematised through the institutional triggering was a key factor to the success of the program. The key motivators for households to build a toilet were embarrassment, health, privacy and security for women, and being good citizens for men (Clark, 2016).

² BESIK (2010) p9-12

2. Study Methodology

The methodology for this study has drawn heavily on the approach and tools of the Plan International Study that is cited above. The BESIK team met with the FHDesigns researcher Paul Tyndale Biscoe during the study design process and adapted the tools to the Timor-Leste context, as well as simplifying the analysis, based on lessons learnt from the implementation of that study in Africa.

The study design and piloting of the data collection tools was conducted from July-September 2015, and the Institute of Health Services (INS) approved the study in December 2015. Fieldwork was conducted in Liquica, Aileu and Ermera municipalities between December 2015 and March 2016.

2.1. Research questions

This study aimed to provide insight from the perspective of the householders into the various factors influencing the sustainability of sanitation and hygiene behaviour change that has been triggered by CLTS. There has been significant effort and investment to date in motivating the initial change in defecation behaviour and gradually improving the program implementation approaches. Recognising that slippage is a part of the long-term development process to achieve healthy and hygienic communities, this study will inform future programming, particularly for the post-ODF declaration period where the maintenance of ODF status and the other hygiene behaviours will be the focus. In order to explore this, the study investigated three research questions:

1. What percentage of households (HH) maintained ODF status two or more years after being verified and what percentage have reverted back to OD?
 - What percentage of the treated HH do not have toilets anymore?
 - What percentage of HH have achieved 'hygienic toilets' already?
2. What motivates HH to remain ODF?
3. What are the primary causes of HH reverting to OD?

2.2. Stakeholder engagement

There were a series of meetings with key sanitation sector government and implementing partners throughout the study to feedback learnings from the research process and preliminary findings and take key decisions re: methodology and resourcing. An initial workshop was facilitated by the BESIK BCC Adviser and Colombia University intern in order to:

- Determine the scope of the evaluation and roles of each stakeholder
- Finalise the criteria for the ODF re-verification processes
- Confirm the factors relevant to Timor-Leste for Phase 2 analysis

The Ministry of Health, through the Environmental Health and M&E Departments were involved in the study design and implementation. The Head of Environmental Health Department chaired meetings with partners to determine the scope of the study, the definitions of household and community ODF and hygienic status, and systematise the reverification methodology. The National Health Institute (INS) approved the study design on 15th December 2015 and its staff were involved in data collection.

The Municipal Health Services of Liquica, Aileu and Ermera coordinated the data collection in their respective municipalities. The Municipal Public Health Officer made contact with the village leadership to coordinate their participation in the study.

UNICEF, WaterAid and Plan International were partners in the study. They engaged in the planning and identification of factors and provided enumerators and logistical support to data collection. The main management and logistical burden was assumed by the Australian government funded BESIK program which provided enumerators, transport, materials and managed the data collection platform.

A final workshop was held in June 2016 with the Sanitation Working Group and members of INS to present and discuss initial findings. A series of recommendations made during the workshop have been incorporated into the "Implications for Practice" section of this report.

2.3. PHASE 1: Re-verification of ODF aldeias

Purpose: The re-verification aimed to answer the first question “*What percentage of households (HH) maintained ODF status two or more years after being verified and what percentage have reverted back to OD?*”

Design: In Timor-Leste, the ODF criteria were defined as households either having their own toilet or clearly using a neighbour’s or shared toilet, and there being no excreta in the environment. The instrument was designed as an observation and survey tool, with data also collected on basic demographics, access to water and for other criteria such as those required for a hygienic toilet and handwashing facilities.

Sampling: Sampling of aldeias was partially purposive. Each of the implementing agencies developed a list of aldeias that had been declared ODF at least two years earlier and considered by previous evaluations to be ‘successful’ implementation sites. Along with a list of households in the aldeia, these were submitted to the BESIK M&E Coordinator who randomly selected a total of 15 aldeias from each target municipality for Phase 1 re-verification. The participating aldeias are listed in Table 1 in the Acknowledgements section of this report. The households were numbered and 25% of the households were randomly selected for re-verification.

Data collection was coordinated with the village leadership through the Municipal Health Services and the NGO partner. The re-verification was completed with an Observation/Survey Tool (Annex C.1) that had been newly developed as a standard operating procedure for ODF verification by local government actors. The data collection tool was field tested by the BESIK M&E team in July 2015 and they trained the NGO enumerators prior to the fieldwork being carried out. Tablets using the ODK platform were used to complete the re-verification and the data quality was monitored in ‘real time’ with daily feedback to enumerators.

Data Analysis: The data was exported from ODK as an Excel file, cleaned by the Colombia University intern and analysed using Excel pivot tables and selected statistical analysis. Further data analysis using Excel pivot tables was conducted when this report was prepared in June 2017.

2.4. PHASE 2: Motivators and factors influencing ODF status

Purpose: Phase 2 was designed to answer the following questions:

- *What motivates HH to remain ODF?*
- *What are the primary causes of HH reverting to OD?*

Design: In the initial meeting, stakeholders confirmed that the list of factors used in the Plan study were also highly relevant to the Timor-Leste context and agreed that they would utilise the same list for this study.

Table 3 below is the list of factors for the phase 2 interviews and analysis of factors influencing ODF status. The motivating and demotivating factors are those intrinsic to the respondents and the enabling factors and barriers are the external factors that either enabled or were barriers to change. They are largely the same factors, and are a positive influence when present, and a barrier when they are not felt or present. Annex B provides the list of factors and the additional probing questions that were asked by the enumerators depending on the factors identified by the respondents.

Motivating Factors (positive)	
Why did you build your toilet in the first place? / Why do you maintain/repair your toilet?	
M1	Accessibility for all household members
M2	Wanting to be like others (Competition/avoiding stigma)
M3	Convenience, comfort (location)
M4	Privacy & Security (location)
M5	Cultural, religious, moral beliefs
M6	Shame, Disgust, Pride, or Fear
M7	Health
M8	Improving things for the family
M9	Force (by-laws, penalties/fines, deadlines and threats)
M10	Rewards and Incentives
M11	Follow-up Visits, Advice, & External Support

M12	Sanitation or hygiene promotion campaigns
Enabling Factors (Positive)	
What has made it easy to build and maintain your toilet?	
F1	Local soil and ground conditions
F2	Availability of land, materials, labour
F3	Availability of water
F4	Quality of initial construction
F5	Technical Advice or Knowledge
F6	Subsidies
F7	Affordability/Cost
F8	Support from others in the community with construction, maintenance or repair
Demotivating factors (negative)	
Why did you stop using and maintaining your toilet?	
DM1	Inconvenience & lack of comfort or privacy
DM2	Location too far away or hard to reach
DM3	Fear of harm - slab collapsing, falling in
DM4	Regular cleaning too much effort and very smelly toilet
DM5	Maintenance-repairs and pit emptying too difficult/costly
DM6	Unaffordable & lack of credit to rebuild
DM7	Shared with others
DM8	Cultural, religious, moral beliefs
DM9	No more support
DM10	Peer pressure/being like others
DM11	Competing priorities
DM12	No capability to build toilets
Barriers (negative)	
What has made it hard to re-build or maintain your toilet?	
DF1	Local soil and ground conditions
DF2	Availability of land, materials, labour
DF3	Availability of water
DF4	Quality of initial construction
DF5	Technical Advice or Knowledge

Table 3: Motivating and enabling factors

The Plan study also included a layer of analysis to explore the extent to which the 'social norm' of toilet use in a community influenced its members to either maintain their toilet, or abandon it and return to open defecation. The data from Phase 1 was used to classify the 45 aldeias according to the criteria below:

- Practicing ODF (in which <10% of HH have reverted to OD)
- Medium ODF (10-30% of households have returned to OD)
- Weak ODF (>30% of households have returned to OD)

Of the 45 aldeias re-verified, 14 were classified as Practicing ODF, 18 as Medium ODF and 13 were Weak ODF.

Sampling: The Phase 1 re-verification data was cleaned and analysed and the aldeias categorised as low ODF, Medium ODF and Practising ODF. For each category in the 3 municipalities, 2 aldeias were randomly selected, giving an 18 aldeia sample for factor analysis. From each of these aldeias 18 households were selected through stratified random sampling based on their status as ODF or OD in Phase 1. There was purposive targeting of female respondents to obtain a balanced sub-sample for factor analysis. A total of 290 people were interviewed (41% female). 200 from ODF households (42% female) and 90 who were practising OD (40% female). A list of the aldeias selected is included in Table 1 in the Acknowledgement section and Annex J provides background briefing for the WASH interventions in these aldeias.

Annex A provides a visual representation of the sampling structure and the methodology of the qualitative analysis.

Data Collection: Data collection in Phase 2 used a highly participatory interview process at the HH and village level. The interview process consists of 2 components. All interviews and FGDs were recorded.

- **Toilet survey:** A short android-based toilet survey was conducted to provide in-depth analysis of demographics, toilet building and use by the HH members, and the use of public toilets by the community. Specific questions were asked based on whether HH were categorized as OD or ODF.
- **Factor Ranking (FR):** Semi-structured and open-ended interviews were held with HH participants and FGDs with village leaders probing the factors influencing their sanitation behavior from the time of CLTS triggering up until now. Enumerators were trained to facilitate such discussions and provided with relevant interview questions and placards.

Data Analysis: The interviews and FGDs were transcribed in Tetun and translated to English for analysis. The qualitative analysis for both instruments was undertaken in four phases and used the NVivo software package (v10 for Windows). • Thematic analysis was applied by coding the responses according to the Factor sheet.

- Content analysis identified recurring themes by identifying the key topics within each factor and association between factors. This was done for the factors that emerged through the Factor Ranking as well as spoken about most often during the interviews and FDGs.
- Word frequency analysis and other text search methods were applied to identify key words and concepts, followed by queries by gender, ODF status and municipality.
- Microsoft Excel was used to identify factors, attributes and words prevalence among sources and comments.

The analysis plan is attached as Annex E.

2.5. Limitations

There are a number of important limitations to the study design and implementation that need to be taken into account, in particular when considering the veracity of the statistical analyses.

Original verification: This study depends on the veracity of the original ODF verification that was done by the implementing partner. It assumes a 'true' ODF declaration and that all households were using a toilet at that point in time. An attempt was made to use the lists of households that were used for verification to randomly select the households for re-verification however this was not always possible. NGO partners and local government did not have these lists, or they were quite different to current lists provided by the community authorities. Of the households that were found to be OD upon re-verification, 50% of them gave the reason that they did not have a toilet. These 247 households make up approximately 10% of the total sample size. The 'story' behind this is not known from the survey data. There is a risk that they never had a toilet and were never ODF.

Variety of implementation approaches in Timor-Leste. It is difficult to determine the influence of a CLTS process on the presence and utilisation of a household toilet. The Annex J information provided for the 18 aldeias where the factor analysis was applied shows that at least three of the six aldeias that were High ODF and two of the medium ODF aldeias had received a subsidised toilet program in the past ten years. In Timor-Leste there are few 'green field' locations for the application of CLTS and the reasons why people build a toilet will vary.

The Phase 2 interview did include a question about CLTS attendance (or attended a meeting about sanitation), however many respondents could not recall having attended such an event. This in itself may not be reliable because it may be challenging for respondents to remember a two-hour meeting that took place two years previously and there was no provision of follow-up question regarding CLTS attendance for enumerators to cross-check and verify the response of the interviewee.

This all adds to the complexity of using this data to 'prove' the sustainability of a CLTS based program compared with other approaches to sanitation improvement. In Timor-Leste the approaches have evolved over the past 10-15 years and some communities will have been 'treated' with different programs.

Aldeia sample size: Limiting the selection of aldeias to 15 per municipality for the re-verification was a result of constraints in budget, human resources, logistical capacity and the overall feasibility to conduct the study within the proposed timeframe. This was also the case in limiting the sample to two aldeias for

ODF Sustainability IN

each of the strata in Phase 2 (ODF Classification, Municipality). The study was designed for statistical validity for household level behaviours rather than for aldeia level analysis.

Phase 2 Sampling: Although the study design aimed for 50% OD HH and 50% ODF HH in Phase 2 factor analysis. Due to the categorization of Medium ODF status (10-29.99% of slippage rate), in many cases there were less than 50% of OD HH in a Medium ODF aldeia, leading to oversampling of ODF HH (200 HH) and under sampling of OD HH (90 HH). For this aldeia ODF category, the study recorded a total of 570 ODF HH and 217 OD HH.

Analysis for Disability and Female headed households: Data was collected on female headed households as well as households with a person with a disability. Analysis showed that there were no significant differences in sanitation practises between these households and those that were headed by a male, or did not have a family member with a disability. Further analysis would have to be conducted on the data to determine if there are differences depending on the type of disability and which family member has a disability. The employment type and income status of female headed households could also yield differences, but this level of analysis was beyond the scope of this report.

Complexity of factor analysis: The structure of the FGD and long list of factors complicated the coding process, with limited standardization of coding. It would have been better to have consolidated factors based on the testing of the tools, and the meanings ascribed to the factors when translated into Tetun.

3. RESULTS PHASE 1: Re-verification of ODF aldeias

The question that was answered by the re-verification is:

- *What percentage of households (HH) maintained ODF status two or more years after being verified and what percentage have reverted back to OD?*

Aldeias for re-verification were selected by implementing partners who had been responsible for the CLTS triggering and program implementation. This study therefore assumes that at least at the time of that initial verification and declaration of ODF status, all households in the aldeia were using a toilet for defecation. The difference between 100% and the % of households that are using a toilet is considered to be the 'slippage rate' for ODF to OD.

It is important to look at the various definitions of ODF and hygienic toilets to determine the slippage from ODF but also to provide guidance as to the next steps in sanitation programing. There are now few 'green field' communities that have never had access to a sanitation program, either a traditional subsidised approach or CLT triggering, so this study can inform the future programing in not just maintaining a community as ODF, but improving the level of sanitation so that the health benefits are secured for generations.

3.1. What is the sustainability of ODF?

While there is hygiene promotion by the NGO implementers about the need to maintain hygienic toilets and the importance of hand washing with soap at critical times, most importantly after defecation, the focus of the CLTS triggering phase is on the change in behaviour from open defecation through the construction and use of toilets. As the verification criteria in Timor-Leste allows for the sharing of a toilet facility between neighbours, households have maintained a rate of 80% defecation in a toilet (20% slippage) however that drops to 68% when more rigorous criteria of each house having their own toilet is applied. As the maintenance of a hygienic toilet and regular hand washing after defecation are important behaviours to maximise health benefits those have also been measured. Only 21% of toilets were hygienic and only 12% of toilets had a handwashing facility nearby that had both soap and water (Figure 2 below).

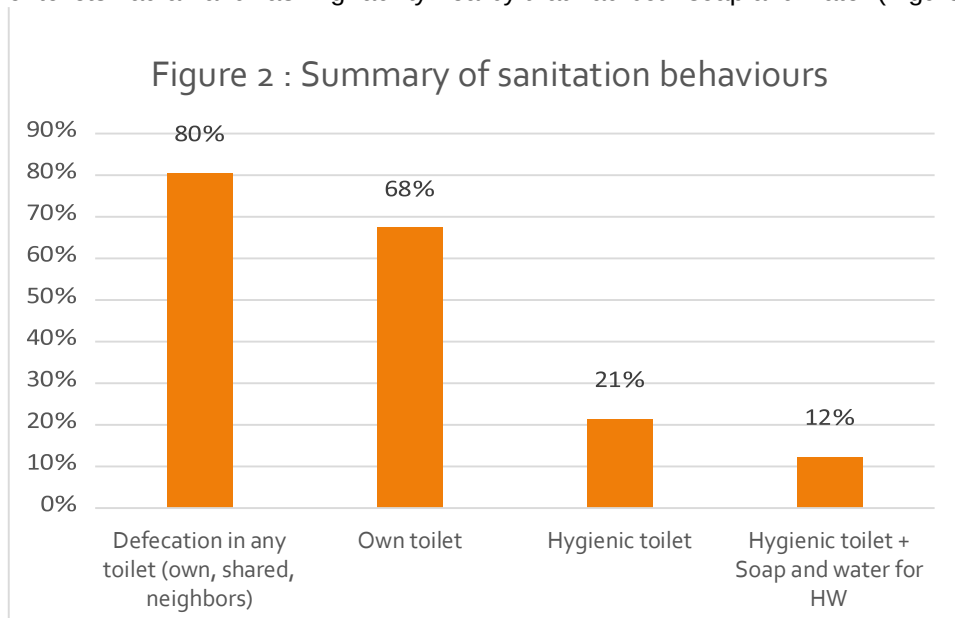


Table 4 shows the defecation location of the 2518 families whose sanitation practises were re-verified as part of this research. Approximately 80% of people are defecating in a toilet, either their own (67.5%), a neighbour's (5%) or in a shared toilet (8%). 19.5% are open defecating.

Table 4: Defecation location

Defecation location		#	%
Neighbour's	toilet	130	5%
Open defecation		492	19.5%
Own	toilet	1700	67.5%
Shared	toilet	196	8%
Grand	Total	2518	

In reality, a shared toilet is sometimes the first step towards fixed place defecation for poor households, while they gather the resources to construct their own toilet.

We continue using the toilet because people from Ministry of Health came and told us that every household must have their own toilet. However, we are having shared toilet because we don't have enough money to buy construction materials to build toilet (ODF HH, Liquica) The verification criteria for ODF in Timor-Leste is that:

- Every house has access to a toilet and there is evidence that it is being used AND
- There is no excreta in the environment

If these criteria are applied with the understanding that every house has its OWN toilet and no excreta in the yard (n=1692), then the slippage rate is even higher at 33%. This is mostly from houses that were sharing a toilet, however there were eight houses that had their own toilet but there was excreta in the yard.

Table 5 shows that 47% of those who had reverted to OD reported that their toilet had fallen into disrepair. Most of these were due to the walls breaking down or the pit collapsing. There was not further exploration of the reason why households "Do not have a toilet" – whether or not they are new households that had not yet built one, or that they had never built one and that it was a false declaration. Four aldeias each had more than 20 households that had responded that they had never had a toilet.

Table 5: Reasons why open defecate

Reason why open defecate					n	%
Has	toilet	but	do	not	3	1%
	use					
Do	not	have	toilet		247	50%
Toilet is		broken			233	47%
Do	not	know			9	2%
Grand Total					492	

3.2. From Phase 1 data: What is needed for sustainable defecation behaviour change?

Analysis of Phase 1 data showed some interesting relationships between the type of toilet and water source to ODF status. This section presents the data from Phase 1 and both of these factors will be further explored in the discussion of householders priorities in Phase 2.

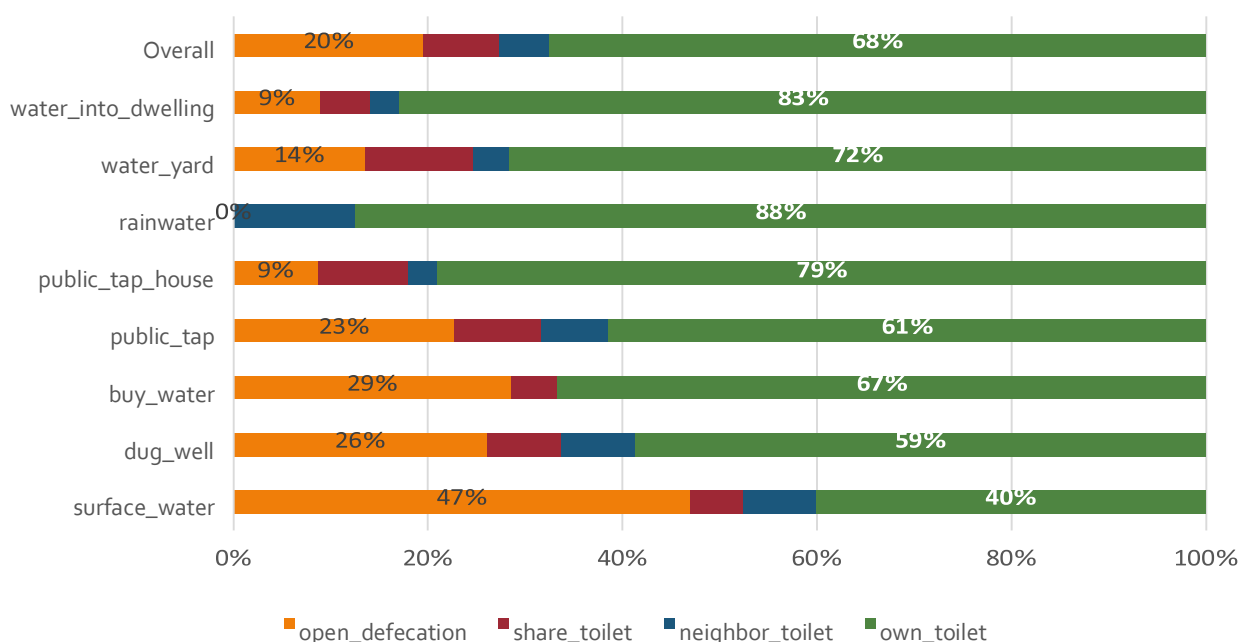
Improved toilet: With 47% of those who had reverted to OD reporting that their toilet had fallen into disrepair, the durability of the toilet pit and construction is key to the sustainability of the desired behaviour of defecating in a toilet. Table 6 below shows that the 75% of the 1700 toilets that were observed as functioning and being used were improved, 50% of them with a flushing water mechanism. The phase 1 data showed that the type of toilet has proven to be an important factor for the sustainability of the infrastructure (and subsequent behaviour change).

Table 6: Type of toilet in verified ODF houses

Type of toilet	N	%
traditional toilet (unimproved)	428	25%
pit latrine with slab	287	17%
pit latrine with ventilation	133	8%
pour flush direct to pit	191	11%
pour flush water sealed	661	39%
TOTAL	1700	100%

Access to water: In a country where the aspiration is to have a pour flush toilet, it is perhaps not surprising that there is a relation between access to water, in particular the location of the water point, and household defecation practises. As stated earlier, overall 68% of households use their own toilet for defecation. This rises considerably when water is accessible either in the house (83%) or in the yard (72%), or when a hose is used to bring water into the house or yard from a public tap (79%). Conversely, when a household uses an unimproved source (40%) or has to carry water from a public tap (61%), there are lower rates of toilet ownership and higher rates of open defecation (47% and 23% respectively).

Figure 3: Relation between water source and defecation practises.



A new social norm in the community: As has been identified in the literature on CLTS sustainability the creation of a new social norm around defecation practises is a key driver to sustaining the behaviour change that is triggered by CLTS. As such, the degree to which the entire community has maintained its ODF status may be an important determinant of an individual household maintaining its fixed place defecation practises. Of the 45 aldeias sampled for Phase 1 of this study, Table 7 below shows that 14(31%) maintained their ODF status with 46% of the ODF HH surveyed belonging to these aldeias. Based

RESULTS PHASE 1: Re-verification of ODF aldeias

on slippage rate calculation, 45 aldeias were categorized into 3 aldeia ODF status (Practicing, Medium and Weak ODF).

Table 7: # and % of aldeias categorised as High, Medium and Weak ODF with % of total HHs in this aldeia

	# aldeias (n=45)		% HH
Practising ODF	14	31%	46%
Medium ODF	18	40%	31%
Weak ODF	13	29%	22%

In order to understand the characteristics of these aldeia that may have impacted on their ODF status, the Chi-square test was conducted to explore correlation between two categorical variables. The ODF status of the aldeia was compared against income source, access to water, type of toilet and Reason for OD.

Income source: With reference to Annex G, agriculture and fishing came across as the major source of income amongst all 3 aldeia ODF status. However, reliance on agriculture and fishing was higher for Medium ODF aldeias (62%). For all 3 ODF status categories, 90% of the total income of the aldeia came from 4 key sectors namely agriculture/fishing, government/NGO salary, household business and subsidy/pension from the government. Reliance on each of these sectors varied across aldeia ODF status. In addition, the average income reported by the respondents among Practising ODF aldeias was USD 1805, which was higher than Medium ODF aldeias (USD 1315) and Weak ODF aldeias (USD 1078), indicating a linear relationship between income and aldeia ODF status.

Access to water: In Practising ODF aldeias, 59% of the HH had access to water in their yard or home. In Medium ODF aldeias, this is only 42% of HH and in Weak ODF aldeias 35% of HH. In order to understand

an association between water source and aldeias ODF status, significance test was undertaken³. Annex H details the hypothesis testing and suggests that aldeia ODF status is statistically dependent on type of water source.

It may be more difficult to establish a 'social norm' for defecating in a toilet when access to water is an issue. Table 8 below shows how the average time to the water source is higher for Weak ODF aldeias. This also confirms the hypothesis that the sustainability of aldeia ODF status is related to access to water.

Table 8: Average time to water source by Aldeia ODF Status

(n=920 HH)		Practicing	Medium	Weak
Average time to water source		8.9mins	8.8 mins	12.2 mins

Figure 4: Average water collection time by aldeia

Type of toilet: About 49% of the HH from Practicing ODF aldeias used pour-flush water sealed toilets, while the most common type of toilet for Medium and Weak ODF aldeias is traditional toilet, 37% and 35% respectively. Significance test validates the assertion that an association between type of toilet and aldeia ODF status does exist, and that is reasonable to assume that type of toilet affects the ODF status of the aldeia (see Annex I for calculations).

Reason for OD: 55% and 52% of the HH that have reverted back to OD from Practicing and Weak ODF aldeias reported not having a toilet anymore respectively. However, the major reason for abandoning use of toilet among HHs from Medium ODF aldeias was reported as broken toilet. Most common reason for broken toilet among all 3 categories was suggested to be 'toilet wall damaged' followed by 'pit collapse'.

3.3. Comparison across Municipalities

There were differences in the use of toilets across the municipalities. Liquica had the highest rate of households that use their own toilet (74%) followed by Aileu (67%) and Ermera (58%) (Table 9).

Table 9: Use of own toilet by Municipality

Municipality	surveyed	use own toilet	% use toilet
liquica	876	647	74%
aileu	855	577	67%
ermera	787	455	58%
Overall	2518	1679	67%

If the previous section finding that the type of toilet impacts on the sustainability of the toilet infrastructure and therefore of ODF, then the hypothesis would be that Liquica would have the highest rate of improved toilet. Table 10 below shows that 85% of households in Liquica have an improved toilet, followed by 80% of households in Aileu and only 54% of those re-verified in Ermera are improved models.

Table 10: Type of toilet by Municipality

type of toilet	Liquica	Aileu	Ermera
traditional_toilet	15%	20%	46%
pit_latrine_with_slab	6%	26%	21%
pit_latrine_with_ventilation	6%	6%	13%
pour_flush_directed_pit	14%	14%	3%
pour_flush_water_sealed	59%	34%	17%
Overall	655	588	457

³ Chi-square test was undertaken for exploring a correlation between two categorical variables.

The aldeias re-verified in Liquica also have the highest rate of access to water in the yard or house, either by hose from a public tap, dug well, or water into the dwelling (Table 11). Table 11: Source of water by Municipality

Source of water	N	Overall	Liquica	Aileu	Ermera
Surface water	334	13%	6%	19%	15%
public_tap	858	34%	21%	38%	43%
dug_well	92	4%	9%	1%	0%
water_yard	81	3%	1%	3%	6%
public_tap_hose	663	26%	26%	28%	24%
water_into_dwelling	461	18%	34%	9%	11%
rainwater	8	0.3%	0%	1%	0%
buy_water	21	0.7%	2%	0%	0%

While there are potentially other factors that would contribute to the differences in ODF rates across the municipalities, this data supports to hypothesis of a positive relationship between accessibility of water, type of toilet and the sustainability of defecation behaviour change.

4. RESULTS Phase 2: Motivators and factors affecting ODF sustainability

This section presents the results of the Phase 2 interviews which will answer research questions 2 and 3. The information is presented in three sections. The first two summarise the motivators and de-motivators to sustain ODF. Availability of water was both an important enabler and barrier for those who had slipped back to OD and is considered separately.

4.1. Question 2: Motivators to sustain ODF

This section summarises the results relating to research question 2: *What motivates households to remain ODF?* There were 200 persons (84 women, 116 men) interviewed in Phase 2 who had maintained their ODF status. They identified a total of 2643 factors. The factors that were mentioned by most respondents during the interviews are shown in Table 12 below, along with the number (and %) of respondents who mentioned this factor at least once. Further analysis of the priority motivators and enablers follow in the next section.

Table 12: Top ten responses to why did you build your toilet and why do you maintain/repair your toilet?

Response / factor	Factor Code	# respondents mentioned	% respondents mentioned
Health	M07	194	97%
Shame, Disgust, Pride or Fear	M06	191	96%
Privacy and Security	M04	161	81%
Availability of water	F3	158	79%
Accessibility for all household members	M01	139	70%
Sanitation of hygiene promotion campaign	M12	93	47%
Improving things for the family	M08	78	39%
Convenience, comfort (location)	M03	72	36%
Follow up visits, advice and external support	M11	70	35%
Subsidies	F6	57	29%

When households were asked to rank the three most important motivators or enablers for maintaining ODF, 85% could be classified in five areas. They were:

- **Health** nominated by 22% of interviewees
- **Privacy and Security (location)** nominated by 19% of interviewees
- **Availability of water** nominated by 19% of interviewees.
- **Shame, Disgust, Pride or Fear** nominated by 13% of interviewees
- **Accessibility for all Household Members** nominated by 12% of interviewees

4.1.1. Health (M7)

Health was mentioned 654 times by respondents, accounting for 25% of all factors mentioned. Health was ranked as the most important motivator for maintaining their ODF status by 22% of all interviewees. There was no significant difference between men (21%) and women (23%).

"Because nowadays people want to live in a healthier and clean environment. Before we did not have a toilet because we did not know the importance of it." ODF HH, Ermera

"Even though we didn't receive materials from the health centre, we will still built the toilet because we are conscious that using a toilet is very important to our health" ODF HH, Aileu

One third of interviewees made reference to the improvements brought to 'families' and 'children' because of toilet utilization [M1]. As can be seen in Table 13 below, ODF HH related higher health

benefits for their family with toilet usage (94%) compared to OD HH (66%). A statistical correlation exists between HH ODF status and their perception about the health benefits.

RESULTS Phase 2: Motivators and factors affecting ODF sustainability

Table 13: Perception of 'feeling healthy' in ODF and OD HH

Having and using a latrine made family healthier? (n=285)

	ODF		OD	
		%		%
Less healthy	7	4%	20	22%
Much healthier	184	94%	59	66%
No change in	4	2%	11	12%
Grand Total	195		90	

A majority of ODF HH linked toilet usage with a reduction in the prevalence of disease and with supporting health outcomes, motivating the sustainability of ODF practices and toilet maintenance. The words 'prevention' and 'health' were mentioned in 27% and 25% of the comments, together with specific conditions such as diarrhoea (13%) and stomach ache (8%).

35% of ODF respondents mentioned 'diarrhoea' as the leading disease related to OD, while 56% mentioned 'flies' indicating an understanding of the faecal-oral route of disease transmission. Among OD respondents, only 10% mentioned flies as a vector for spreading diseases, suggesting that awareness of this pathway is a good predictor for sustained ODF behaviour and that OD respondents have limited knowledge of the orofaecal route.

"I built a toilet to prevent any illnesses which are carried by flies that land on food. Those illnesses might be stomach-ache and diarrhea" ODF HH, Liquiça

"If there is no toilet, the children will defecate wherever they want and mosquitos and flies might bring it back to our food. They eat the food and it will cause diarrhea and vomiting. If we use toilet and feces is kept in its proper place then we feel much better, no more diarrhea, although we still get diarrhea but infrequently." ODF HH, Aileu

The relationship between hand washing and toilet use as a proxy for hygienic behaviour was also more prevalent between ODF HH (55%) compared than OD HH (8%), who mentioned 'hands' during the interview. Among HH who spoke about hand washing, 48% were from Aileu, 26% from Ermera and 26% from Liquiça, suggesting that stronger links between handwashing and toilet use had been made in Aileu. In Aileu in 2013, BESIK and the Ministry of Health implemented an intensive hand washing with soap behaviour change campaign that would have supported this behaviour change.

47% of ODF HH mentioned receiving information about hygienic practices and adequate sanitation [M12]. 71% of these were from Government health personnel followed by NGOs (17%), local authorities (8%) and media (3%), indicating that health personnel are key and trusted sources of information.

The awareness of the faecal-oral route, hand washing and perceived health benefits of toilet use was considerably higher for ODF respondents. A causal link between health knowledge and toilet use cannot be inferred, as causal direction is unclear (first comes toilet use then health outcomes, or the opposite?), yet statistical testing does suggest toilet use is dependent on the perception of feeling healthy. See Annex K for statistical testing.

4.1.2. Privacy and Security (M4)

Privacy and Security (location) [M4] was ranked as one of their top three priority factors by 19% ODF HH - with an even distribution among women and men.

"If we already have toilet, it is clear that people no longer see us as it has a superstructure, the toilet has its door – once the door is closed that means somebody is in there. However, when we defecate in the open and people find us it is clear that it's embarrassing" ODF HH, Liquiça

'Privacy and Security (location)' was mentioned 303 times (11% of all factors) with no differences between men and women's responses, and by 81% of ODF HH at least once, with more women than men (85% versus 78%).

Avoiding being seen by others was a key motivator to use toilets, mentioned in 43% of comments relating to this factor, with use of reference words such as 'seen' and 'hide'. Privacy and safety are strongly intermeshed with the emotion of 'embarrassment' (15%) [M6], specifically the embarrassment at being seen defecating and exposing body parts because they are not able to provide a toilet for their home.

Feeling 'secure' and 'safe' while using a toilet was mentioned in 38% of comments, opposite to the risky experience of defecating in the bush particularly at 'night' time or when it 'rains' (20%). Interestingly, only one comment made explicit reference to the potential harassment females might be exposed to during OD and none to the impact of OD for female hygiene.

"Protect us for our own good, take care of our health and prevent us from insulting our mothers and daughters when they feel want to defecate and they have to go to the bush. We feel fear that a naughty boy or man can't control his thinking and harasses them." Male HHH, ODF HH, Aileu

4.1.3. Shame, Disgust, Pride or Fear (M6)

The motivators that have been classified as Shame, Disgust, Pride or Fear (M6) was nominated as one of their priority motivators by 13% of interviewees. It is strongly linked with the Privacy and Security motivation (M4) described above. Many people value the privacy of defecating in a toilet to avoid the embarrassment of people seeing them defecate in the open.

Words that related to this motivator was the most commonly mentioned of all words. 25% of all words were related to the motivator of shame, disgust, pride or fear. Respondents often related the privacy aspect of M4 (above) with the embarrassment of M6. If these two motivating factors are considered together then 36% of all comments related to privacy and security and embarrassment and pride. Men and women equally mentioned this factor.

"Defecating in the woods will cause various diseases. Besides that, people might see you while you're defecating and it is very embarrassing especially for the girls" ODF HH, Liquiça

"If people happen to see us they will say, these people don't have a toilet so they just defecate in the bush, and that will really embarrass us. So, we don't feel safe." ODF HH, Ermera

"We feel good and no longer feel embarrassed. I saw my children in Dili and they have a toilet so I decided to build my own." ODF HH, Liquiça

"We must build toilet because when guest visit our house and if they need to use toilet we can't ask them to go in the open. We have to have our own so that we can show them where the toilet is." ODF HH, Aileu

"They said we are lucky to use a toilet. If our parents didn't build a toilet, we defecate by the roadside but it smells stinks. If guests come and see we don't have a toilet they won't drink the coffee that we offer them." ODF HH, Aileu

Formative research on sanitation behaviours in Timor-Leste found that embarrassment, shame and pride were important motivators to households building a toilet in the first place. This ongoing pride appears to be a major factor in families maintaining their toilet and even repairing it.

"It has broken already but we bought material for construction to build our own toilet. Because we get used to use toilet and if our relative or guest come and ask to use toilet and we didn't have one, where we show them to go? That's why we build toilet." ODF HH, Aileu

4.2. De-motivators affecting slippage to OD

This section summarises the results relating to research question 3: *What are the primary causes of HH reverting to OD?* There were 90 persons (36 women, 54 men) interviewed in Phase 2 who had reverted to open defecation. They identified a total of 1032 factors, 853 of which were de-motivating or barriers. The factors that were mentioned by most respondents during the interviews are shown in Table 14 below:

Table 14: The top ten responses to "why did you stop using and maintaining your toilet and what has made it hard to re-build or maintain your toilet?"

Response / factor	Factor Code	# respondents mentioned	% respondents mentioned
Competing priorities	DM11	71	79%
Quality of initial construction	DF4	61	68%

Inconvenience & lack of comfort/privacy	DM1	53	59%
Availability of water	DF3	45	50%
Maintenance/repairs/pit emptying too difficult/costly	DM5	44	49%
No capability to build toilets	DM12	43	48%
Unaffordable & lack of credit to rebuild	DM6	36	40%

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No more support	DM9	35	39%
Local soil and ground conditions	DF1	33	37%
Fear of harm – slab collapsing, falling in	DM3	32	36%

89% of toilets that had been built by currently OD households were a traditional simple pit toilet. This would directly contribute to many of the feelings expressed above that demotivate households to repair or rebuild the same type of toilet. They see the traditional toilet as temporary or provisional and have expressed dissatisfaction with this basic model of toilet, but don't have the resources to build an improved toilet. There are multiple reasons why households fail to repair their toilets and maintain their ODF status – mostly related to them only having the resources to build a traditional pit latrine rather than an improved toilet-either with or without water.

When households were asked to rank the three most important motivators or enablers for maintaining ODF, 85% of which could be classified in five areas. They were:

- **Competing priorities (DM11)** nominated as 20% of priority factors (n=52)
- **No capacity to build (DM12)** nominated as 12% of priority factors (n=34)
- **Availability of water (DF3)** nominated as 13% of priority factors (n=36)
- **Maintenance/repairs/pit emptying too difficult/costly (DM5)** as 13% of priority factors (n=28)
- **Unaffordable and lack of credit to rebuild (DM6)** as 12% of priority factors (n=25)

4.2.1. Competing Priorities (DM11)

Competing Priorities [DM11] was mentioned 122 times by 79% of OD HH with more men stating it than women (85% vs 78%). It was prioritised as one of the top de-motivators by 20% of OD interviewees. The majority of these OD HH mentioned lack of time (70%) as the main de-motivating factor to 'build' (55%) or 'fix' (51%) their toilet. The other competing priorities mentioned are mostly related to the 'work' (51%) domain, including at the 'farm' (39%) in their 'plantations' (31%) and other types of employment. Attending religious ceremonies and taking care of family were also mentioned, highlighting that interviewees have very busy lives (48%) and some are fatigued.

"We didn't build it. We feel lazy or tired." OD HH, Aileu

"We have been exhausted building the toilet because it is easily damaged, and we have difficulties finding building materials. Also, the toilet is too far from the house." OD HH, Aileu

"We were thinking to re-dig the hole but we were busy with the farm and animals as well the religion ceremony, therefore we don't have time to fix the toilet" OD HH, Aileu

"Yes there is a problem with time because right now time to clean grass in corn field, plant tree and also looked after animal that's why we didn't have time to build it." OD HH, Aileu

94% of respondents who mentioned this factor had a simple pit latrine. While the financial burden of building a traditional latrine is advantageous to cash poor households, there is the additional time burden of regularly needing to repair or rebuild a pit toilet. Pit toilets are seen to be of poor quality (DF4), limited durability (DM5) and not comfortable (DM1) or safe (DM3) and so respondents prioritized their time to income or resource generating activities rather than building a toilet that they perceived as being of poor quality.

"Between my work and building a toilet I think both are important, but working as a carpenter, we also we gain money to buy our food and there is no time to re-build or fix our toilet." OD HH, Aileu

In general, this factor of competing priorities related directly to time rather than financial resources, though it was often linked with lack of finances to buy materials or waiting for a subsidy or materials from an external source. Building a better quality toilet was preferred but clearly limited by affordability. The lack of funds to re-build (DM6) or repair (DM5) the toilet was mentioned by about 90% of respondents whose toilets had fallen into disrepair and who had not done anything about it. 12% of OD households also made reference to waiting for subsidies of materials from the government or an NGO.

“[Our job is to] plant the vegetable and beans, we make less money just for our daily necessity and is not enough to build our toilet.” OD HH, Ermera

"we had repair our toilets many times. But the materials to build toilets are expensive so we cannot afford them due to our financial problem and my husband still busy with work." OD HH, Ermera

"No time to build it. We want to rebuild our toilet but the woods were always getting rotten. And before we were promised that we will get subsidy." OD HH, Ermera

4.2.2. No Capacity to Build (DM12)

Lack of capacity to build or repair their toilet was mentioned as a factor in the interviews by 49% of all respondents with more women than men (56% vs 43%) citing this as a reason they were open defecating. It was a priority reason for 12% of OD interviewees - with a larger proportion of women than men (15% vs 12%). Perhaps more importantly, amongst these 33 respondents, 21% of them (n=7) were from female headed households. This is higher than the percentage of female HHH in the OD population (Table 15 below).

Table 15: % Female HHH who selected DM12 as a priority de-motivating factor

	% Respondent prioritizing DM12 (n=34)	% OD HH (n=90)
Female HHH	21%	9%
Male HHH	79%	91%

Most of the interviewees that mentioned this factor explained their lack of capacity to construct or repair their toilet due to their advanced age, poor health or disability or with responsibility for looking after children while their husband is away working.

Respondents used words like 'old' (36%), 'alone' (29%), being 'sick' (16%) a 'widow' (7%) or having a 'disabled' person at home (3%). These circumstances limited the 'strength' and 'force' required to build or repair their toilets, mentioned in 19% of remarks, indicating that lack of physical strength was a barrier to repairing their toilet and maintaining ODF practices.

"Because our toilet was damaged and to build a new one we need man to dig the hole. I have no capability to dig the hole and my husband works in Dili and there is no time" OD HH, female, Ermera

"Most of the family members are girls and one old man so we do not have the strength to build a toilet. Moreover, we would like to build a durable toilet but we do not have money to buy materials." OD HH, female, Liquiça

"Because the soil is muddy it is hard to dig the hole. I'm getting old and my daughter is asthmatic and we are widows." OD HH, female, Aileu

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4.3. Availability of water as an enabler (F3) and barrier (DF3)

Water is considered essential to toilet use and hygiene by the majority of respondents, from both the ODF and OD sample populations. Lack of water is linked to the undesirable traditional pit latrine and access to water to the construction and maintenance of the desired pour flush toilet.

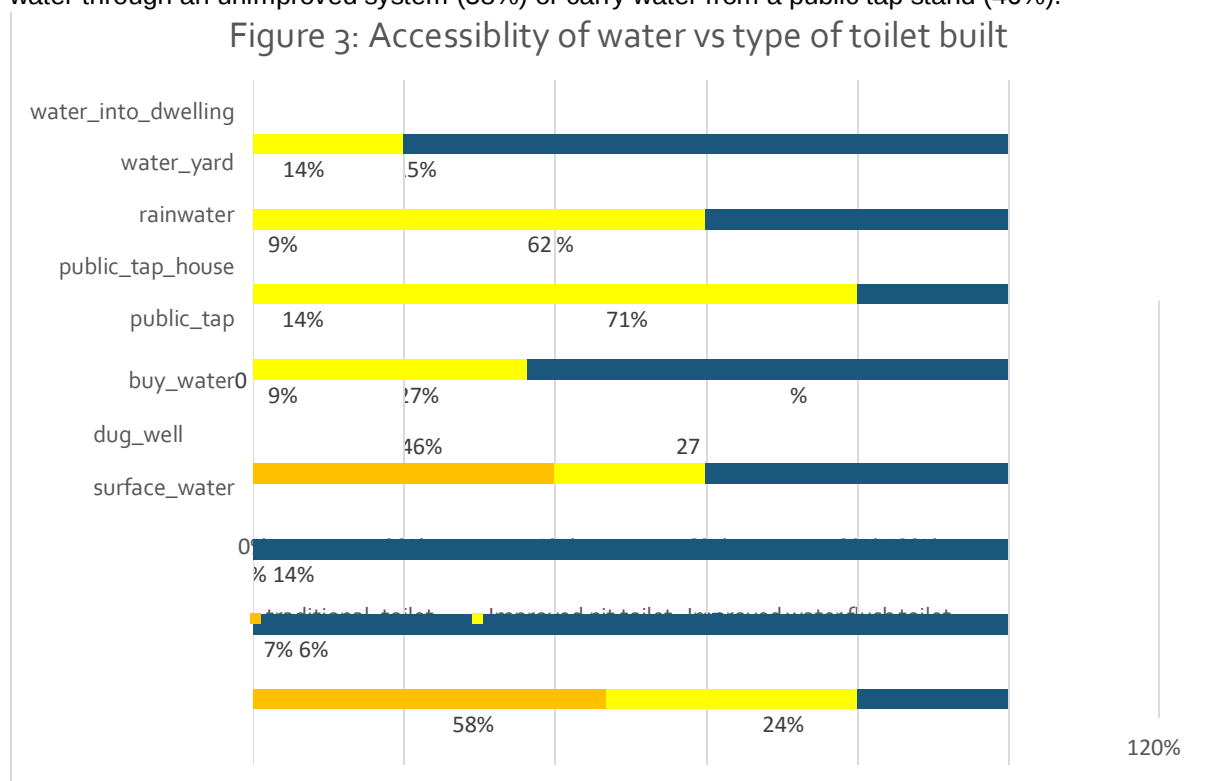
"Previously we used a dry pit toilet because there was no water supply and now we use an improved toilet because we have water. (...) Even though we used a very traditional toilet we still used water to clean ourselves." ODF Household, Aileu

"Here we have access to local materials but myself I don't like the traditional toilet. I prefer the improved toilet because it uses water. When we use the traditional toilet we feel disgust." OD HH, Ermera

Analysis of the Phase 1 re-verification observation/survey found that accessibility of water, in particular in the house or yard was a significant difference between ODF and OD households (Section 3.2, page 12). The Phase 1 survey also showed that 75% of HHs that were still ODF have improved toilets with only 25% of them with traditional pit latrines (Section 3.2, page 12). There was no data from Phase 1 on the type of toilet that OD households had built. The Phase 2 survey of 90 OD households showed that 84% of them had originally built traditional pit latrines, all of which were broken and unusable at the time of the survey.

Phase 1 data also demonstrated a link between accessibility of water and the type of toilet built by households. Figure 3 below shows that the majority of households who access water through a dug well (n=92), piped into the dwelling (n=461) or use a hose from a public system (n=663) have built the more valued and desirable water-based toilets, as do those who buy water (n=21), though this sample size is too small to draw conclusions. Those who have the highest rate of traditional latrines are those who access water through an unimproved system (58%) or carry water from a public tap stand (46%).

Figure 3: Accessibility of water vs type of toilet built



Of those who were ODF, 79% of respondents mentioned availability of water at least once. There was considerable difference between the sexes with more women mentioning it than men (86% to 74%). It was chosen as a priority factor by 19% of ODF interviewees, with an even distribution between men and women (19%, 20%).

Almost half of ODF HH who mentioned this factor framed 'water availability' as necessary in order to use toilets (47%), expressing a clear preference for water-based toilets, which aligns with the prevalence of the water-based improved toilets amongst ODF households. A number of HH mentioned building an improved toilet when the water system was installed and after receiving advice and/or support from external sources, mainly health centre personnel and from NGOs.

"Yes, after building the water system, there are no more water issues, so we built and used the toilet. Besides that, we also got information from the Ministry of Health official about the importance for every family to have a toilet" ODF Household, Aileu

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"It was because NGO members came and told us that now that we have better access to water, we need to have a toilet as well." ODF HH, Ermera

Although there is the clear preference for pour flush toilets, 32% (n=62) of ODF households surveyed in Phase 2 had traditional pit toilets. 18% (n= 11) of these toilets had required some repair to maintain their functionality, however 85% (n=53) of these respondents felt that there had been a significant benefit for the health of their family by using even a traditional toilet.

'Water availability' was widely associated by ODF HH with being able to 'wash' and 'clean' (69%). Most comments stated the importance of water for 'cleaning' the toilet, body and 'hand washing' after defecation (60%), while essential for other daily domestic tasks (27%). 43% of ODF interviewees plainly linked hand washing with the availability of water and 18% reiterated the importance of its access for a healthy life and disease prevention [M7].

“We need the water when we use the toilet, because the water is very important for our health and to wash away the faeces and clean our hands after defecating” ODF HH, Aileu

For the interviewees who had slipped to open defecation, the lack of access to water was mentioned at least once by 50% of respondents, with no difference between men and women. Water Unavailability [DF3] was chosen in Factor Ranking by 13% of OD interviewees - with a higher proportion of men than women (16% versus 11%). The focus of the interview with OD households was on the repair and re-build of the toilets, a traditional role of the men rather than the women.

In the absence of water, some OD respondents were more inclined to defecate in the bush than in a dry pit toilet because open areas were less smelly (9%).

“Because there is no water, if we build toilet and there is no water, what should we use for clean our feces and if we keep continue to defecate in the toilet and there is no water to clean I think it's better we go to bush.” OD HH, Aileu

“We didn't build toilet yet because there is no water and I don't like the traditional toilet because it very smelly and gives me a headache.” OD HH, Ermera

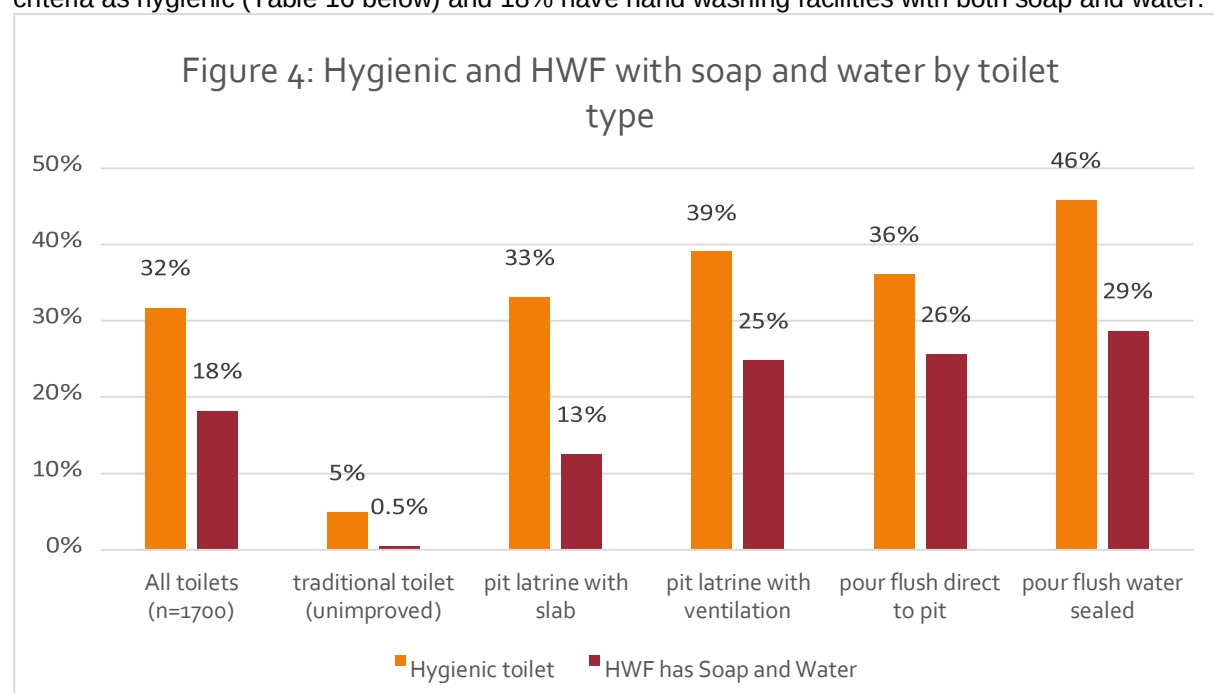
Difficulty to access water was the main barrier reported by OD HH and an important factor to explain the reason for neither building nor maintaining their toilet, mainly due to the water source being too 'far' and 'seasonal' (27%), not having a 'water system' (20%) or its 'irregular' supply (11%). Also, 13% of OD interviewees stated preference for improved toilets –implying the pour flush types, as these are considered more 'durable' and 'permanent'.

“If in the future, we can access water, of course we will build our own toilet” OD HH, Ermera

Progress towards hygienic sucos

5. Progress towards hygienic sucos

As achieving ODF status is just the first step in the process towards achieving a hygienic home and village, it is important to understand sanitation behaviours beyond merely defecation practises. In Timor-Leste, toilets are required to be hygienic and have nearby hand washing facilities with soap and water in order for a community (suco) to be declared hygienic. Figure 4 below shows that 32% (n=540) of all toilets met all criteria as hygienic (Table 16 below) and 18% have hand washing facilities with both soap and water.



5.1. Improved and Hygienic toilets

Many countries require both a hygienic toilet and handwashing facilities as criteria for an ODF declaration. Though an 'improved' or 'hygienic toilet' is not necessary for ODF declaration in Timor-Leste, it is required as "Stage 2" of sanitation improvements – hygienic suco. Figure 4 above also shows that there are significant differences between the type of toilet built by a family and the likelihood that it is hygienic.

Table 16 below shows that there are quite specific reasons for each toilet type as to why they are not hygienic. Some may be related to the technical specifications of the construction of the toilet (eg: a packed mud platform can be made for a traditional toilet), and others about the ongoing cleanliness and maintenance. (eg: lids for traditional toilets and pour flush direct to pit.) The promotion of throwing ash into a pit toilet after defecation will reduce the smell of a pit latrine, and all types of toilets require more frequent cleaning to ensure that there are no exposed faeces in the toilet bowl. Analysis of the reasons why a toilet is not hygienic informs the communications messaging and strategy for the behaviour change.

Table 16: % toilets that meet criteria for hygienic toilets by type of toilet

Type of toilet	Fly screen	Fly proof	No faeces in the bowl	Raised cleanable platform	No strong smell	No faeces around	Water sealed
Traditional		35%	49%	14%	50%	84%	
pit latrine with slab		69%	53%	84%	54%	95%	
pit latrine with ventilation	50%	75%	73%	91%	77%	98%	
pour flush direct to pit		57%	68%	88%	67%	97%	
pour flush sealed			63%	94%	59%	98%	99%

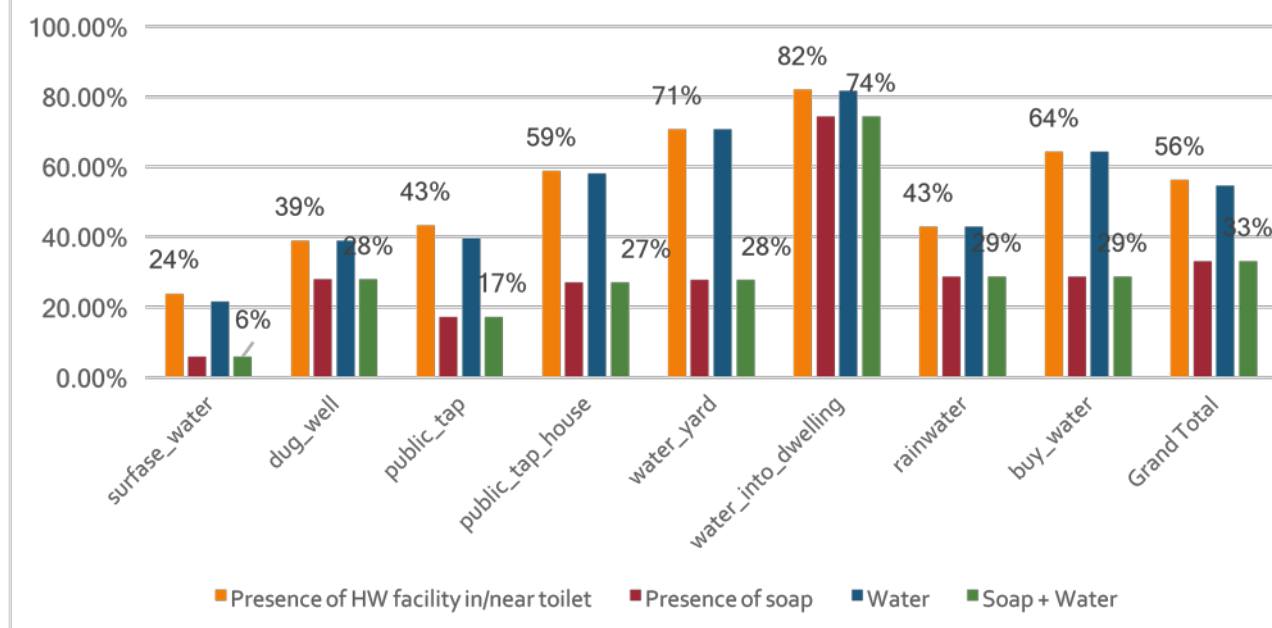
Progress towards hygienic sucos

5.2. Hand washing facilities with soap and water

Handwashing facilities that had both soap and water were rare. Only 12% of all households had a hygienic toilet AND hand washing facilities with soap and water. Again, there were significant differences between unimproved and improved toilets. Only 0.5% of the unimproved traditional toilets had a handwashing facility with soap and water, while that rose to 46% for pour flush toilets. This is likely because the pour flush toilet usually includes a tank for water storage both for flushing the toilet and for washing and bathing.

Figure 6 below shows that a key determinant to the presence of both a handwashing facility and both soap and water at the facility is the accessibility of water. The presence of a hand washing facility and the presence of a facility with soap and water increased as water became more accessible. From only 6% households with soap and water when the main household water source is surface water, it only increased to 17% when water is accessed from a public tap stand (still need to carry water to the home). However, when the water source was in the yard or this increased to 28%. When water was accessible inside the house, the aspiration of SDG 6, the presence of soap and water in the handwashing facility increased to 74%.

Figure 6: HWWS by source of water



Implications for practise

6. Implications for practise

There is usually not a single reason why a household either maintains its ODF status or reverts to OD. There is actually a combination of factors which interconnect and reinforce each other. These factors make it 'easy' for the person or household to maintain the positive behaviour change and make a 'habit' of that behaviour. Conversely, they can create multiple barriers and difficulties, and it is easier to revert to the old behaviour.

There are a few key findings from this research that have major implications for practise.

- Health is a major driver for sustainability:** Even though it may not be a driver for the initial defecation behavior change and toilet construction, people continue to make the effort to maintain and use a toilet because the health of themselves and their family are important to them. Ongoing and consistent hygiene promotion messaging from the Ministry of Health and Community Authorities is essential to habituate hygienic practices as well as improving the sanitary environment of the household. The hygiene promotion appears to be reaching those who are already ODF and more likely to have good access to water for hand washing and an improved toilet. The challenge is in delivering supportive and encouraging hygiene promotion to the more vulnerable households who are still open defecating and are unable to muster the energy to rebuild a traditional pit toilet for the nth time, because of multiple other de-motivating factors in their lives.
- Hygienic and healthy communities are the goal:** The ultimate objective of CLTS is not just open defecation free communities but hygienic and healthy individuals, families and communities. ODF is just one step in the journey to maintain a clean and hygienic toilet and washing hands at critical times, especially after defecation. The evidence from this study suggests that it is almost impossible to maintain a hygienic toilet and hand washing facility with both soap and water if you do not have access

to water in your yard or home and have a traditional pit toilet. Water and an improved toilet facilitates hygienic practices, beyond just ODF sustainability.

- **Pit toilets are not valued or desired:** The formative research that informed the Sanitation BCC campaign identified 'pride' as a key motivator to change defecation practices. While it spares people the embarrassment of being seen defecating in the open, a traditional pit toilet is not seen by many as an improvement on open defecation. They are not proud of this toilet and there is no sense of pride offering it to visitors. It requires constant maintenance and repair and householders do not feel the benefit from this level of effort. This is reflected in the lack of prioritizing time to repair or rebuild the toilet. A pit toilet is seen as a temporary or provisional facility until the household has access to water and 'finds' the resources to build an improved toilet.
- **Financing improved sanitation and hygiene facilities:** Lacking the financial resources to either initially build an improved toilet, or to upgrade their traditional pit latrine is a major barrier to ODF sustainability. Having to constantly build and repair and re-build a traditional pit latrine because of lack of resources to buy the materials for an improved toilet is degrading, and households get tired of investing and re-investing the time and effort for little perceived benefit.
- **Access to water:** With the growth of CLTS and demand creation at scale, sanitation improvement programs have become delinked from water supply improvements. This study clearly demonstrates that in Timor-Leste, when water is close to or inside the house, people are building and using and maintaining not just toilets, but their own washing (esp. handwashing) facilities. For the households and communities, water and sanitation improvements are intrinsically linked and cannot be separated. This provides the opportunity to mutually reinforce the motivations to sustain both the sanitation practices and the management of the water supply services at scale.

Recommendations for programming based on the findings from this study:

Hygiene promotion for improved health outcomes

- Phase ongoing hygiene promotion for the higher levels of the Basic Sanitation Policy to reinforce the health benefits of toilet use, hand washing, breaking the oral-faecal route
- Consolidate a collection of participatory educational and BCC materials that promote the health benefit of sustained toilet use, hand washing and other hygienic behaviours (eg: revisit PHAST)
- Ministry of Health outreach programs (Family Health Program, SISca) continue to promote the health benefits of toilet use, maintaining a hygienic toilet and hand washing through their house-to-house and group activities. The messaging can be targeted to the needs of the individual household and SISca target groups.

Implications for practise

Improve the image of the pit toilet.

There are contexts where a pit toilet is the only appropriate toilet technology option (far or unreliable water source), so it cannot be totally discounted and neglected.

- Further data analysis and/or research to better understand the drivers for sustainability of traditional toilets and the improved toilet models that do not require water
- Sound and timely technical advice to improve the quality of a pit toilet (eg: pit size and lining, compacted earth platform, sturdy superstructure)
- Test the market for lightweight, attractive sanitation products that do not require water
- Promote the use of ash to reduce the smell from pit toilets.
- Promote an outside, pit toilet (further from the house) as a dignified and pleasant sanitation option for times when water is scarce.

Equity for vulnerable households (improved toilets for everyone as quickly as possible) while building both household responsibility for sanitation and social cohesion within the community.

- Introduce a voucher or credit system for improved toilet construction as early as possible in the sanitation improvement process
- Promote a "simpan pinjam" (rotating savings/loans) among small groups to build an improved toilet

- Promote community support for vulnerable households to physically construct a dignified toilet option
- Timely promotion of household investment in improving sanitation facilities at times where cash is more available (harvest time, pension days, pay days)

A reliable, sustainable water supply to the house or yard (pipe system, hose from public tap, hand dug well, rainwater tank) will improve hygiene and sanitation related health outcomes

- Advocate for water to the yard and home for toilet and bathroom use. This could be through piped systems or household wells where groundwater is plentiful.
- Advocate for sustainability of water management systems to ensure sustainability of sanitation and hygiene behaviour change.
- Focus on water service areas with sustainable, high-levels of service to test/pilot higher levels of the Basic Sanitation Policy

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