YANGON UNIVERSITY OF ECONOMICS
MASTER OF PUBLIC ADMINISTRATION PROGRAMME

AN ANALYSIS OF COMMUNITY LED TOTAL SANITATION TO CERTIFICATION OF OPEN DEFECATION FREE VILLAGES

(Case Study: Selected Villages in Myin Mu Township)

THEINGI SOE
EMPA - 60 (16th BATCH)

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(Case Study: Selected Villages in Myin Mu Township)

A thesis submitted in partial fulfillment of the requirements for the
Master of Public Administration (MPA) Degree

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This is to certify that this thesis entitled **"AN ANALYSIS OF COMMUNITY LED TOTAL SANITATION TO CERTIFICATION OF OPEN DEFECATION FREE VILLAGES (Case Study: Selected Villages in Myin Mu Township)** submitted as a partial fulfillment in the requirements for the degree of Master of Public Administration (MPA) has been accepted by the Board of Examiners.

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ABSTRACT

Water, Sanitation and Hygiene is at the centre of 2030 ambitious new development agenda; with a distinct sector goal, Sustainable Development Goal - SDG 6 that envisions universal, sustainable, and equitable access to safe drinking water, sanitation and hygiene, and the elimination of open defecation by 2030. This thesis aims to assess community-level factors associated with sustaining Open Defecation Free (ODF) status to inform post-Open Defecation Free programming. Both quantitative and qualitative research design and descriptive method are used for this thesis. Simple Random Sampling was used to select six sample villages from 80 villages of Myin Mu Township in Sagaing Region. Systematic Sampling was used to select sample households for personal interview in selected sample villages. This study found that the respondents understand the importance of sanitation for their health, improved socio-economic status and are aware of the sustainability of latrines and ODF status of their village. This study found that the sustainability of ODF status has to be maintained by well-established/robust community mechanism and the respondents acknowledge the critical role and importance of the leadership of village leaders or village development committee.

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LIST OF ABBREVIATIONS

AEC	ASEAN Economic Community
CATS	Community Approach for Total Sanitation
CLTS	Community Led Total Sanitation
DACU	Development Assistance Coordination Unit
DPH	Department of Public Health
EAP	East Asia and the Pacific
EPHS	Essential Package of Health Services
ESD	Environmental Sanitation Division
FS	Faecal Sludge
FSM	Faecal Sludge Management
FTIs	Faecally-Transmitted Infections
GDP	Gross Domestic Product
GLAAS	Global Analysis and Assessment of Sanitation and Drinking-Water
HLPU	Health Literacy Promotion Unit
INGO	International Non-Governmental Organization
JMP	WHO/UNICEF Joint Monitoring Programme
KAP	Knowledge, Attitude and Practice
MDG	Millennium Development Goal
MOALI	Ministry of Agriculture, Livestock and Irrigation
MOE	Ministry of Education
MOHS	Ministry of Health and Sports
MSDP	Myanmar Sustainable Development Plan
NHP	National Health Plan
NTD	Neglected Tropical Diseases
O&M	Operation and Maintenance
OD	Open Defecation
ODF	Open Defecation Free
OSS	On-Site Sanitation System
SDG	Sustainable Development Goal
SVS	Social Vision Services
SWA	Sanitation and Water for All

TMO	Township Medical Officer
UN	United Nations
UNICEF	United Nations Children Fund
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Rationale of the Study

The 2030 Agenda for Sustainable Development offers a historic opportunity to set a new course for the next era of global human development; one that promises transformational change for children and their families. The 2030 Agenda, agreed by all countries, is a plan of action for people, planet and prosperity and sanitation plays a part in all three. No country can be content with less than universal sanitation; it is fundamental to sustainable development and all people have the right to safe water and sanitation. Water, Sanitation and Hygiene (WASH) is at the centre of this ambitious new agenda; with a distinct sector goal (Sustainable Development Goal - SDG 6) that envisions universal, sustainable, and equitable access to safe drinking water, sanitation and hygiene, as well as the elimination of open defecation by 2030.

WASH is also essential in health care facilities, schools and early childhood development centres, but equally, these institutions offer platforms for engaging children in actions that promote behaviour change related to hygiene, sanitation and water. In addition, access to basic sanitation is one of the foundations of health. Poor sanitation has led to infestation of over two billion people, largely children, with a variety of worm infections, and has caused corresponding cost-related problems in health and energy. Besides this toll of sickness and disease, lack of sanitation is a major environmental threat to water resource systems and a fundamental denial of human dignity.

Some 842,000 people in low- and middle-income countries die as a result of inadequate water, sanitation, and hygiene each year, representing 58 percent of total diarrheal deaths. Open defecation and poor sanitation perpetuate a vicious cycle of disease and poverty. The countries where open defecation is most widespread have the highest number of deaths of children aged under 5 years as well as the highest levels of malnutrition and poverty, and big disparities of wealth. In 2010, the UN General Assembly recognized access to safe and clean drinking water and sanitation

as a human right and called for international efforts to help countries to provide safe, clean, equitable, accessible and affordable drinking water and sanitation.

Sanitation is an overall culture of cleanliness, hygiene and healthy habits within the society. It is more than having a toilet or using a toilet; these are just a means to an end. It is part of the overall development process. This overall culture should be evident at all places – at the household, school, institutions, in urban or rural areas, while travelling and during festivals. Improved sanitation and hygiene behavior should be such an ingrained habit that its absence would create discomfort within the individual and within societies.

Poor sanitation not only causes disease, stunting but also creates inconvenience and indignity. It exacerbates inequalities between men and women, rich and poor, urban and rural. This has caused major implications for human rights and human dignity. Poor sanitation is not required and restricted to households and communities, but requires a holistic approach that includes schools, hospitals, transportation, festivities and even tourism facilities. Poor sanitation in healthcare facilities not only causes more serious risks and more infections but also prolonged hospital stays and even higher death rates.

The WHO/UNICEF Joint Monitoring Programme (JMP) released the progress update report in 2017, which included data and progress for the MDG period 2000–2015. The report highlights the continuing gaps in access to basic Water, Sanitation and Hygiene - WASH services; at the end of 2015, some 844 million people still lacked even a basic drinking water source, and 159 million people still collected drinking water directly from unsafe/ unprotected water sources and surface water. The biggest number which was 2.3 billion populations especially from poor countries in the world did not have access to even a basic sanitation service, and 892 million people were still defecating in the open field. The new JMP report also established the SDG baseline and WASH is under SDG 6: Ensure availability and sustainable management of water and sanitation for all.

The Ministry of Health introduced the Community Led Total Sanitation (CLTS) approach in 2011 with technical support from UNICEF and Save the Children. The Ministry of Health and Sports developed the first road map for Myanmar to achieve Open Defecation Free (ODF) Nation by 2030 together with the Ministry of Agriculture, Livestock and Irrigation and the Ministry of Education in 2016. This approach triggers communities' commitments to stop open defecation

practice and adopt good hygiene practices including toilet use. CLTS approach does not support any form of subsidies to the target groups/ communities and household latrines are built or renovated by communities themselves. The commitment for creation of Open Defecation Free (ODF) community is set up through natural leaders and village leaders. Involvement and participation of women are very high in this approach and in many cases, women became natural leaders. The majority of rural population has improved latrines on their premises. In spite of this fairly positive indicator for sanitation, child mortality and stunting rates remain very high compared to other Asian countries. Since the commencement of the CLTS program in Myanmar, there is little documentation on assessment of its uptake from triggering to the certification of open defecation free villages.

1.2 Objective of the Study

The objective of this thesis is to analyse community-level factors associated with sustaining ODF status to inform post-Open Defecation Free (ODF) programme on the community in the selected villages in Myin Mu Township.

1.3 Method of Study

This thesis was conducted through descriptive method based on primary data and secondary data. Secondary data sources were used for literature review and review on previous study. Data collection was through interviews of the households using structured questionnaires. Interview with the questionnaire method was designed under simple random sampling method. Simple Random Sampling (SRS) was used to select six sample targeted villages from 80 villages of Myin Mu Township in Sagaing Region. Systematic Sampling was used to select sample households for personal interview in the sample selected villages of Myin Mu township. The sample size was designed to generate 90 per cent or 95 per cent confidence that results are not due to random error. Representative sample size of households was determined in the project communities using the statistical formula.

1.4 Scope and Limitations of the Study

This thesis was conducted only in six randomly selected villages of Myin Mu Township of Sagaing Region. Myin Mu Township is the first Open Defecation Free (ODF) township in Myanmar where all rural communities in 80 villages of Myin Mu

township stop open defecation practices since CLTS approach was introduced in 2010. This thesis focuses only on the sustainability of ODF status. Sampling comprised two stages: at the first, 6 villages were randomly selected from 80 villages (Simple Random Sampling), and at the second, 402 households which covers 28.4 per cent of total households in 6 randomly selected villages were selected through systematic sampling method and conducted this survey. The period of this thesis is from March to May 2019. As this thesis was conducted only in selected six villages of Myin Mu township, thus survey findings cannot be generalized in other parts of Myanmar.

1.5 Organization of the Study

This thesis contains five chapters. Chapter I is the introduction which includes rationale, objective, method, scope and limitations of this thesis. Chapter II describes on the literature review related to 2030 Vision and Water, Sanitation and Hygiene, Sanitation is Important for Saving Lives and Recognized as Human Rights, Sanitation and Economic Development, Leaving No One Behind and Status of WASH in South Asia and East Asia and the Pacific Region. Chapter III highlights the Water, Sanitation and Hygiene situation, Policy, Strategy and Framework related to Water, Sanitation and Hygiene, Institutional Arrangements on WASH sub sector and CLTS programme/Open Defecation Free status in Myanmar. Chapter IV illustrates survey analysis of CLTS programme and Open Defecation Free status in Myin Mu township. Finally, Chapter V draws the conclusion with findings and recommendations

CHAPTER II
LITERATURE REVIEW

2.1 2030 Vision for Water, Sanitation and Hygiene

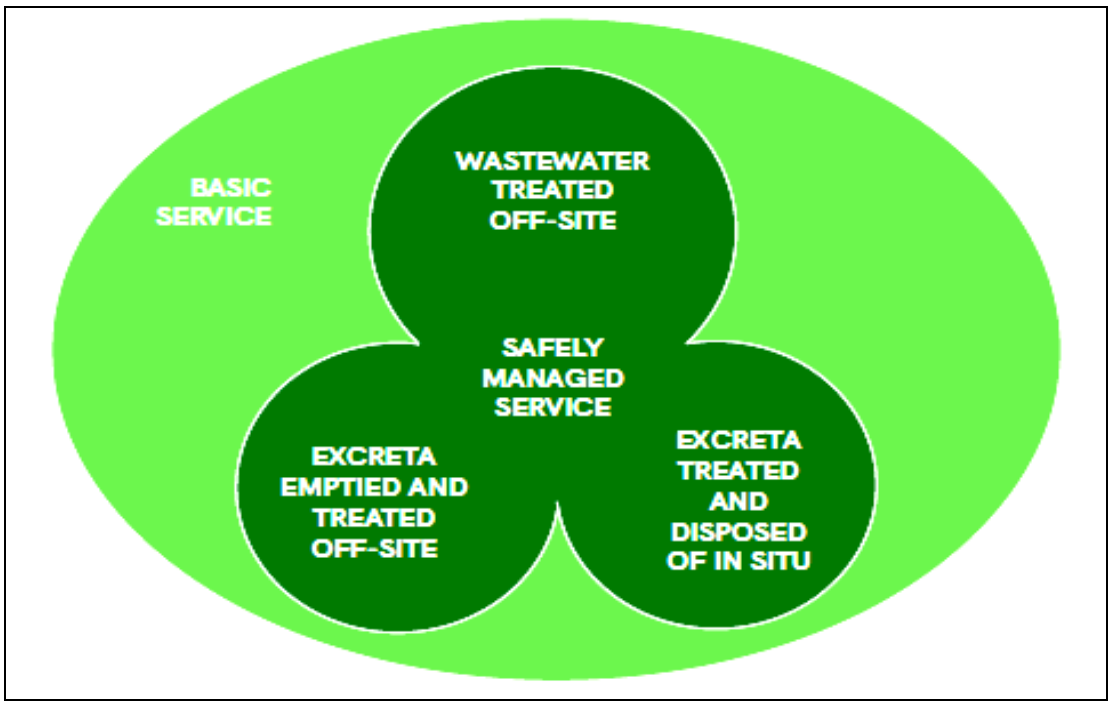
The 2030 Agenda comprises 17 Sustainable Development Goals and 169 targets addressing social, economic and environmental aspects of development, and strives to end poverty, protect the planet and ensure prosperity for all. The SDGs are aspirational global targets that are intended to be universally relevant and applicable to all countries, with each Government setting its own national targets guided by the global level of ambition but taking into account national circumstances. (United Nations, 2015)

Sustainable Development Goal -SGD 6 on safe water and sanitation, by 2030, ensure availability and sustainable management of water and sanitation for all, extends the original MDG 7 targets to cover all freshwater issues from the perspective of economic, social and environmental sustainability, in a holistic manner. The first two targets under SDG 6 raise ambitions to increase access to safe, equitable and sustainable drinking water and sanitation services. In particular, they aim to achieve universal and equitable access to safe and affordable drinking-water for all (Target 6.1) and to achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations (Target 6.2). (WHO, 2017)

The Sustainable Development Goal (SDG) 6 calls for ending open defecation and universal access to adequate, affordable and equitable sanitation. The SDGs also set out the means of implementation as strengthening the participation of local communities and capacity building support for developing countries as well as enhancing the cooperation of international communities especially developed countries to provide financial and technical support/assistance to developing countries who are lacking behind for MDG goals and targets. Community-Led Total Sanitation (CLTS) is an approach to addressing open defecation that triggers emotions to generate a collective demand for sanitation within a community and promoting

sustainable sanitation through behaviour change. This behaviour change approach is based on social capital that triggers households to build latrines without subsidy. CLTS emerged in the year 2000, and has since spread to over 60 countries, many of which now include it in national policy and strategy. CLTS has a role to play in addressing the SDGs, as it is participatory, generally includes capacity building and changing behavior of communities for sustained use of sanitation facilities and has shown promise in addressing open defecation. (WHO, 2017)

Figure (2.1) Safely Managed Sanitation Services versus Basic Sanitation Services



Source: WHO/UNICEF, 2017

The SDGs establish progressive ladders and set a high bar of safely managed water and sanitation services and yet for many the right to even a basic level of access remains unmet. For safely managed sanitation services, the definition is use of improved sanitation facilities which are shared on premises with other households and where feces/excreta are safely disposed in situ or transported and treated off-site or pit latrines that are sealed when they become full and new pits dug. In MDG era, it only said access to improved and unimproved sanitation facilities and did not consider the use and provision of good services from the government or private sector. As of 2016, sanitation coverage is low in many countries and 946 million people are still practicing open defecation in the field. Achievements in water supply coverage are unevenly spread; water quality of drinking water is not assured; water scarcity due to

climate change and over extraction of groundwater is a growing problem; and the sustainability of water supply systems continues to pose challenges. The destructive impacts of climate change and emergencies are an increasing threat to water and sanitation systems and are contributing to disparities in access. Vulnerable groups including isolated communities, poor households, people with disabilities, and in particular women and girls bear the brunt of inadequate WASH services.

2.2 Sanitation is Important for Saving Lives and Recognized as Human Rights

In 2010 the United Nations General Assembly explicitly recognized water and sanitation as human rights that are essential for the full enjoyment of life and all human rights. An increasingly robust body of evidence further highlights the importance of WASH within the global development agenda and for UNICEF's mandate for children. Rapid and effective WASH interventions are critical for saving the lives of children across a range of crises and complex humanitarian situations due to conflict, forced migration, disease outbreaks and public health emergencies, acute and chronic malnutrition, and natural disasters. These interventions are increasingly needed: over the last ten years, the number of people who need humanitarian assistance has more than doubled. (UNICEF, 2016)

Poor WASH is the main cause of faecally-transmitted infections (FTIs), including cholera and diarrhoeal disease, which remains the second leading cause of morbidity and mortality among children under the age of five,8 and the leading cause of death in sub-Saharan Africa. Poor WASH is also strongly associated with malaria, polio and neglected tropical diseases (NTDs) such as guinea worm, schistosomiasis, helminths and trachoma that have a debilitating effect on children and their families. Children are more likely to be undernourished and stunted if they are exposed to faecally-transmitted infections (FTIs)–including diarrhoeal disease and environmental enteropathy – or intestinal worms, which are linked to poor WASH and open defecation. The importance of this link has resulted in a strong consensus in the WASH and nutrition sectors that WASH is an essential nutrition-sensitive intervention to address undernutrition. (UNICEF, 2016)

There is growing evidence that inadequate sanitation, water and washing facilities act as barrier to children's attendance and performance in schools, especially for girls, and particularly for girls' post-menarche when their menstrual hygiene

management (MHM) needs are not addressed. Children with disabilities are denied access to a school education when accessible WASH facilities are unavailable or inadequate. Girls and women are particularly affected by poor WASH including through the loss of productive and leisure time from the drudgery of water hauling and other WASH-related domestic labour; the exclusion from full participation in schools due to the lack of WASH facilities; urinary tract infections arising from delayed urination or reduced water intake to cope with a lack of access to sanitation facilities; and the loss of dignity and threat of sexual assault due to the lack of toilets, both in times of stability and crisis. (UNICEF, 2016)

2.3 Sanitation, Economic Development and Impact on Health and Human Capital Development

In addition to the challenges of providing many millions of rural households with adequate sanitation, the world continues to urbanize, and cities and small towns will increasingly bear the burden of poor sanitation with an estimated 57 percent of urban dwellers lacking access to toilets that provide a full sanitation service, 16 percent of urban dwellers lacking access to basic sanitation services, and almost 100 million urban residents practicing open defecation. Improved sanitation leads to lower disease burden, improved nutrition, reduced stunting, improved quality of life, increased attendance of girls at school, healthier living environments, increased job opportunities and wages, and economic and social gains to society more broadly. Recent analysis shows that ending open defecation can save children's lives by reducing disease transmission, stunting, and under-nutrition, which are important for childhood cognitive development and future economic productivity. Without adequate sanitation facilities, girls are more likely to drop out of school or are vulnerable to attacks while seeking privacy. (World Bank, 2018)

Some 827 000 people in low- and middle-income countries die as a result of inadequate water, sanitation, and hygiene each year, representing 60 per cent of total diarrhoeal deaths. Poor sanitation is believed to be the main cause in some 432 000 of these deaths. Diarrhoea remains a major killer but is largely preventable. Better water, sanitation, and hygiene could prevent the deaths of 297 000 children aged under 5 years each year. Open defecation perpetuates a vicious cycle of disease and poverty. The countries where open defection is most widespread have the highest number of

deaths of children aged under 5 years as well as the highest levels of malnutrition and poverty, and big disparities of wealth. (WHO, 2019)

A lack of good sanitation also hinders and holds back economic growth. Poor sanitation costs billions due to poor health and investment to treat diseases to some countries, amounting to the equivalent of 6.3 per cent of GDP in Bangladesh (2007), 6.4 per cent of GDP in India (2006), 7.2 per cent of GDP in Cambodia (2005), 2.4 per cent of GDP in Niger (2012), and 3.9 per cent of GDP in Pakistan (2006). The economic losses are mainly driven by premature deaths, the cost of health care treatment, lost time and productivity seeking treatment, and lost time and productivity finding access to sanitation facilities. (World Bank, 2018)

Benefits of improved sanitation extend well beyond reducing the risk of diarrhoea. These include: reducing the spread of intestinal worms, schistosomiasis and trachoma, which are neglected tropical diseases that cause suffering for millions; reducing the severity and impact of malnutrition; promoting dignity and boosting safety, particularly among women and girls; promoting school attendance: girls' school attendance is particularly boosted by the provision of separate sanitary facilities; and potential recovery of water, renewable energy and nutrients from faecal waste. A WHO study in 2012 calculated that for every US$ 1.00 invested in sanitation, there was a return of US$ 5.50 in lower health costs, more productivity, and fewer premature deaths. (WHO, 2019)

Good sanitation can have profound and long-term positive impacts on human health, defined as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1948). For instance, good sanitation is associated with improved physical well-being through reducing disease burden (Prüss-Ustün, et al., 2019), and reducing childhood stunting (Spears, Ghosh, & Cumming , 2013). Sanitation also supports human capital development through economic benefits (Hutton & Haller , 2004) and increased school attendance by females (Jasper, Le, & Bartram, 2012).

Acknowledging the sanitation's profound impact on human development in 2015 Nations General Assembly recognised sanitation as a standalone human right (United Nations, 2015). In addition, in 2015, many countries committed to achieving the Sustainable Development Goals (SDGs) by 2030. Goal 6 of the SDGs is to ensure the sustainability and availability of water and sanitation for all and underlying all seventeen SDGs is the objective to create a world where physical, mental and social

well-being are assured aligned with the WHO definitions of health (United Nations, 2015). If all UN member countries are to build resilient societies on a healthy planet and achieve the overarching and prime ambition of the 2030 Agenda for Sustainable Development, all member countries must tackle this issue urgently, as is being done in India. (United Nations, 2015)

2.3.1 Collective and Cooperative Efforts are Needed to Achieve the Targets

Much progress was made over the MDG period to increase access to water and sanitation. Since 1990, 2.1 billion have access to an improved sanitation facility through the collective efforts of sector stakeholders. Over the same period, the importance of encouraging improved hygiene behaviours became entrenched in sector programming and plans; gains and progress were made in the proportion of people washing their hands with soap; and taboos around talking about defecation and about menstrual hygiene were weakened. In spite of these gains, much still remains to be done. The proportion of people practicing open defecation dropped from 24 to 13 percent between 1990 and 2015, but 946 million people - the majority live in South Asia - were still engaging in the practice, with significant costs to health and nutrition status and to national economies. As of 2016, it is still a long way from achieving equal access to water and sanitation for all. (WHO/UNICEF, 2017)

2.3.2 People with No Access to Sanitation Facilities

The elimination of open defecation has been identified as a top priority and is closely associated with wider efforts to end extreme poverty by 2030. The world has made good and steady progress: The proportion of the global population practicing open defecation decreased from 20 percent to 12 percent between 2000 and 2015. However, much remains to be done, especially in rural areas, where open defecation has been declining at a rate of just 0.7 percentage points per year. This rate would need to more than double in order to eliminate open defecation in rural areas by 2030. (WHO/UNICEF, 2017)

2.4 Leaving No One Behind

This is an important theme and an essential thrust for achieving the SDGs, but one that presents major challenges in certain areas. Only one in ten countries below 95 per cent coverage is on track to achieve universal basic sanitation by 2030. Today,

nearly 90 per cent of the people practising open defecation live in 26 high-burden countries, where over 50 per cent of the population (more than 5 million people) continue to practice open defecation. These high-burden countries include both low- and middle-income countries. (UNICEF, 2017)

Table (2.1) Sanitation Service Ladder for Progressive Realization

	Service ladder	**Progressive realization**
SDG 6.2	**Safely managed sanitation services**	Use of improved sanitation facilities **which are shared on premises with other households** and where excreta are safely disposed in situ or transported and treated off-site or **pit latrines that are sealed when they become full and new pits dug**
Improved sanitation facilities: Flush/pour flush to: piped sewer system; septic tank; pit latrine, ventilated improved pit (VIP) latrine, pit latrine with slab or platform and composting toilet	**Basic service**	Use of improved sanitation facilities **which are shared on premises with other households**
	Limited service	Use of improved sanitation facilities which are shared with two or more households
	Unimproved	Use of pit latrines without a slab or platform and pits are not covered properly to protect fly entering, hanging latrines and bucket latrines
	Open defecation	Disposal of human faeces in fields, forest, bushes, open bodies of water, beaches or other open spaces or with solid waste

Source: WHO/UNICEF, 2017

In 2015, 39 percent of the global population (2.9 billion people) used a safely managed sanitation service; that is, excreta safely disposed of in situ or treated off-site. 13 per cent of the global population (0.9 billion people) used toilets or latrines where excreta were disposed of in situ. 68 percent of the global population (5.0 billion people) an improved sanitation facility that was not shared with other households, and thus are classified as having at least basic sanitation services. 2.3 billion people still lacked even a basic sanitation service. In addition, 600 million people (8 per cent of the population) used improved but shared facilities that are classified as limited sanitation services. However, 892 million people worldwide still practised open defecation. Globally, use of basic sanitation services has increased more rapidly than use of basic drinking water services, at an average of 0.63 percentage points per year

between 2000 and 2015. However, coverage is generally lower for basic sanitation than for basic water, and no SDG region is on track to achieve universal basic sanitation by 2030, with the exception of Australia and New Zealand, where coverage is already nearly universal. 9 out of 10 countries where more than 5 per cent of the population lacked basic sanitation in 2015 are progressing too slowly to achieve universal basic sanitation by 2030, and suggests that in one out of seven countries, use of basic sanitation is actually decreasing. Progress needs to accelerate in these countries to achieve SDG target 1.4, universal access to basic services by 2030. (WHO/UNICEF, 2017)

Target 6.2: Achieve access to sanitation and hygiene and end open defecation. Achieving universal access to adequate and equitable sanitation and hygiene by 2030 is a major challenge in many parts of the world. Target 6.2 calls for countries to end open defecation, to ensure that everyone has access to a basic toilet and to put in place systems for safe management of excreta. The proportion of the global population using at least a basic sanitation service increased from 59 per cent in 2000 to 68 per cent between 2000 and 2015. However, 2.3 billion people who lives in developing countries still lacked basic services, 70 per cent were people who live in rural areas, and just 1 in 10 countries below 95 per cent coverage is on track. (UN-Water, 2018)

Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) 2017 Report (estimating the financing gap and needs to meet the SDGs) reveals that meeting these targets will require large investments in terms of finance and resources. The World Bank has estimated that globally, current levels of financing for WASH are only sufficient to cover the capital costs of achieving basic universal water, sanitation and hygiene services by 2030. Meeting SDG Targets 6.1 and 6.2 will require a tripling of capital investments to US$ 114 billion per year, not to mention operations and maintenance (O&M) costs, which are key for sustainable services. Investments in WASH will also have positive effects on and contribute to improving other critical areas related to public health covered by the SDGs such as nutrition, economic development, education, and climate resilience. (WHO, 2017)

2.5 Status of Sanitation Coverage in South Asia, East Asia and Pacific Region

Despite this substantial progress, much remains to be done. The majority of the world's open defecators (more than 600 million) live in South Asia. Millions have limited access to safe water services and practice poor hygiene behaviours, which are

the leading causes of child mortality and morbidity. These further contribute to undernutrition and stunting and act as barriers to quality education for girls and boys in the region. In South Asia, the proportion of people practicing open defecation fell from 65 percent to 34 percent with India, Bangladesh, Nepal, and Pakistan achieving more than a 30 percent reduction in open defecation. However, despite the great progress, 610 million people in South Asia still practice open defecation (over 60 per cent of the global burden). (UNICEF, 2017)

A World Health Organization report said in 2014 that 597 million people in India still practiced open defecation outdoors and in the field. The new WHO/UNICEF report indicates that the Southern Asia region has the highest number of people who defecate in the open. The new data highlights that despite recent efforts, over the past 25 years, India has been losing the regional race to improve sanitation. Its neighbors, Nepal, Bangladesh and Pakistan led the way with the greatest percentage-point change in the proportion of the population with access to improved sanitation facilities between 1990 and 2015. Pakistan's percentage point change was 40 to 64 per cent of people have use an improved sanitation facility. In Nepal, a country in which just 4 per cent of people had access to improved sanitation facilities in 1990, access rose by 42 percentage points to 46 per cent. Bangladesh improved its score by 27 percentage points 61 per cent now have access to improved sanitation facilities. India meanwhile, had a lower 23 percentage point increase in the same period – bringing the number of people with access to improved sanitation facilities to 40 per cent. Sri Lanka is way ahead, with 95 per cent of people having access to improved sanitation. (Abrams, 2015)

The report defines an improved sanitation facility as one that hygienically separates human excreta/feces from human contact and the target was for 50 per cent or more of those with inadequate water or sanitation in 1990 to have adequate sanitary services in 2015. Similarly, rates of open defecation have reduced, but India still has the highest percentage of the population defecating in the open with 44 per cent of people going outside and in the field in 2015—down from 75 per cent in 1990, compared with a 13 per cent figure for Pakistan in 2015, 32 percent for Nepal and only 1 per cent for Bangladesh. However, the report says: The 31 per cent reduction in open defecation in India alone represents 394 million people, and significantly influences regional and global estimates. (Abrams, 2015). However, India has made good progress in the last three years as the Prime Minister has led the nationwide

campaign by engaging different stakeholders such as politicians, famous actors/movie stars and religious leaders and using different communication channels to motivate communities to build and use toilets as well as to maintain good hygiene practices on latrine use and handwashing at critical times. (United Nations, 2018)

Sanitation and hygiene is improving in the East Asia and the Pacific (EAP) region; between 2000 and 2015 the region has made better progress than the world as a whole, with three-quarters of the population of the region now using basic sanitation. But sanitation gains have not been equitable as progress varies widely across the region, with many countries achieving only modest progress since 2000. Huge strides in the region have been made in recent years, but over 500 million people still do not have access proper sanitation facilities. Pneumonia and diarrhoea remain the biggest killers of children under five-years-old in East Asia and Pacific region. Without basic access to safe water and toilets, the lives of millions of children are at risk.

For children under five, water- and sanitation-related diseases are one of the leading causes of death. Sanitation and hygiene remain among the main contributing factors to high child mortality and under-nutrition (stunting and anaemia) rates. Differences in access to safe water and sanitation reveal persisting inequities, with rural areas, urban slums and poorest part of the population lagging far behind. Around 83 million people or 4 per cent of the population in the region - mostly the poor - are estimated to practice open defecation. In the Pacific sub-region, both sanitation and water coverage is far below the East Asia average. There are very high disparities in sanitation and hygiene use within countries; 7 EAP countries still have significant open defecation problems (above the world average of 12 per cent) and a total of 75 million people are still engaged in the dangerous practice across the region. (UNICEF, 2017)

Sanitation coverages in selected Southeast Asian countries such as Myanmar, Thailand and Vietnam, were in increasing trend from 1990 to 2015. The toilet coverage of 96, 100 and 99 per cent was reported in Myanmar, Thailand and Vietnam, respectively. Even though good progress has been made for sanitation coverage, incidences of waterborne diseases especially among children under five and water pollution are still in existence. This situation is due mainly to poor design, performance and operation and maintenance of the dominantly used on-site sanitation systems (OSS) such as septic tanks, cesspools. In addition, fecal sludge (FS), which

has to be emptied from these OSS, is not properly managed, disposed of and treated. There are lacks in rules and regulation on FS management (FSM). (Koottatep, Chapagain, Polprasert, Panuvatvanich, & Ahn, 2018)

2.6 Review on Previous Studies

Jonny Crocker, Darren Saywell and Jamie Bartram conducted a study in 2016 to assess the sustainability of community-led total sanitation (CLTS) outcomes in Ethiopia and Ghana. Plan International, with local NGO partners, implemented four CLTS interventions from 2012 to 2014: health extension worker-facilitated CLTS and teacher-facilitated CLTS in Ethiopia, and NGO-facilitated CLTS with and without training for natural leaders in Ghana. (Crocker, Saywell, & Bartram, 2017)

The review found that CLTS outcomes were reported to be more sustainable where there was a supportive enabling environment with frequent field visits to the project site, where communities had market-access to latrine products and materials, and where communities were socially cohesive. There were a range of pre-existing factors that enabled the CLTS interventions and could contribute to sustainability. In both Ethiopia and Ghana there were supportive national governments that have produced policies or strategies naming CLTS as the preferred rural sanitation approach, national guidelines for CLTS implementation, and CLTS coordinating committees. Moreover, local government is mandated with implementing CLTS. (Crocker, Saywell, & Bartram, 2017)

Sameer Saha and Amsalu Negussieb (2008) conducted a study on Plan International's experiences of promoting Community Led Total Sanitation in Eastern and Southern African Countries. It was found that CLTS has helped to empower the people to identify their own problems, think of solutions, and take actions on their own initiative. Children have played a key role in this process by campaigning in favour of ODF communities, putting pressure on parents and neighbours to construct latrines and discouraging people from defecating in the open. The study revealed that there are challenges in scaling up and sustainability CLTS programme in Africa which include differences exist in efficiency and commitment amongst natural leaders, commitment among stakeholders and understanding and following CLTS approach and steps as well as post ODF monitoring. In addition, there is a severe lack of skilled staff that can facilitate the CLTS process effectively and efficiently. Government policies have to be changed through advocacy so that CLTS is

recognised as a successful methodology to create ODF communities that live with dignity. (Saha & Negussieb, 2008)

The study conducted by Su Sandi Aung (2014) is to analyze the effectiveness of Community Led Total Sanitation (CLTS) programme on the community in selected villages of Pantanaw township. It reveals that almost 94 percent of households use improved latrines which are fly-proof, separate excreta from human contact, no smell and do not have potential contamination to surface water. One significant finding of CLTS programme is this concept has successfully changed subsidy culture and sanitation and latrine construction is not a problem of money and poverty, but it is an issue of mentality which can be tackled by strong motivation and facilitation skills of the field implementers. It is recommended that the CLTS programme in Pantanaw was only short term and long term programme should be set up with participation from relevant government departments such as basic health staff of the Department of Public Health as well as systematic follow up of post CLTS triggering is key to have a successful intervention and sustainability of Open Defecation Free status of the targeted villages.

Chaw Wint Thu (2015) conducted a research to study the status of WASH in School Programme in Pantanaw Township. The research discovered that adequate water supply is vital to ensure the functionality and sustainability of school toilets and hand washing facilities as well as sense of ownership of all stakeholders and increased budget for operation and maintenance of water supply, sanitation and hygiene facilities is critical for long term sustainability of WASH facilities in schools. It also recommended that National Strategy and Standards on School WASH should be developed for scaling up WASH in schools programme throughout Myanmar.

Swe Swe Win (2017) analyzed school sanitation and hygiene programme in 2 schools of Yankin Township in order to identify knowledge, perceptions and practices on personnel hygiene and sanitation. The study found that teachers use posters, pamphlets, leaflets and school textbooks (life skill curriculum) when they educate students on health and hygiene related topics to raise their health awareness. In addition, almost half of students refuse to use school toilets and prefer to hold until they go home, especially older students and girls. Dirty toilets and bad smell are the main reasons for the refusal of students to use the toilets and handwashing facilities are not sufficient for all students. It is recommended to establish coordination mechanism which is led by the Ministry of Education in close collaboration with

relevant government departments and International Non-Governmental Organizations (INGOs) for effective planning and delivering quality services for all school children in Myanmar.

CHAPTER III
WATER, SANITATION AND HYGIENE SITUATION AND OPEN DEFECATION FREE STATUS IN MYANMAR

3.1 Access to Water and Sanitation Services in Myanmar

The Joint Monitoring Programme of WHO/UNICEF 2015 update indicates that Myanmar has met the MDG targets for both water supply and sanitation coverage. Access to basic water supply services is reported as 80 per cent nationwide, while for sanitation it is 65 per cent, with open defecation at 9 per cent. At first glance, WASH services in Myanmar compare well to those in other Southeast Asian countries. There is some concern, however, that JMP data present an overly positive picture, partly because they do not take account of serious deficiencies in service quality and reliability, which are often seasonal in rural areas but ongoing in urban areas. However, under new SDG classifications, the 2017 JMP report which is shown in Table 3.1 indicates that population using basic drinking water service reported as 68 per cent nationwide, while population using basic sanitation services is 65 per cent nationwide, with open defecation at just 5 per cent. However, there are wide variations in access between villages, townships and states/regions. Myanmar is currently in the process of aligning monitoring systems with these SGD new indicators and figures are not available for safe services of water supply and sanitation for the time being.

At first glance, WASH services in Myanmar compare well to those in other Southeast Asian countries. There have been a number of recent initiatives in the sector at policy level which include Myanmar National Water Policy which was developed by the National Water Resources Committee in 2014 and water and sanitation sector is briefly described in it and the first time ever Myanmar national Strategy for rural water, sanitation and hygiene (WASH) and a corresponding investment plan in 2016. The strategy covers community water supply, sanitation and hygiene, WASH in schools, WASH in health care facilities and WASH in emergencies, for the period from 2016 to 2030 and the strategy moves the WASH sector away from short term,

time-bound projects to an approach which ensures continuous quality of service delivery to communities. In addition, the strategy moves the rural sanitation sector away from subsidy-based toilet construction approach to elimination of open defecation in rural communities.

Table (3.1) Household Data on Water and Sanitation Services in Myanmar

Myanmar	Drinking water (%)			Sanitation (%)			Hygiene (%)		
	National	Rural	Urban	National	Rural	Urban	National	Rural	Urban
Safely managed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Basic service	68	60	82	65	59	76.5	80	74	92
Limited service	13	15	10	10	10	12	14	19	05
Unimproved	10	12	05	20	24	11	N/A	N/A	N/A
No service	09	13	03	05	07	0.5	6	07	03

Source: WHO/UNICEF, 2017

Children are among the worst affected: 29 per cent of children (nearly 5 million) live in households that do not drink from improved water sources (Source: Census 2014). 25 per cent of children (over 4 million) live in households that do not use improved toilet facilities. 14 per cent of children (2.34 million) live in households with no access to toilets. Consequently, diarrhea and acute respiratory infections makes up 20 per cent of all under 5 child deaths. This has an impact on child survival and development. In addition, nutritional status of children under 5 also affected. Stunting is high with one out of three children in Myanmar stunted and wasting among children under 5 is also extremely high in some areas. Decline in stunting and wasting has stagnated over the past five years. While there are multiple causes of malnutrition, they include inadequate hygiene and sanitation, infant and young child feeding and care practices, in addition to food insecurity.

By far the most common latrine model is the elevated fly proof latrine introduced by the Environmental Sanitation Division (ESD) of the Department of Public Health. The sustainability of many of the facilities in place is a key concern; field visits during the WASH sector situation analysis report in 2014 revealed that

householders would prefer durable toilets but cannot generally afford them. In addition, a UNICEF study in 2011 found that 89.1 percent of adults reported washing their hands after defecating, but only 69.3 percent washed their hands with water and soap. (MOHS, 2015)

Key challenges for sanitation promotion at community level include changing user behavior where communities (and particularly older people) are unaccustomed to using a toilet; dealing with full pits; the affordability of improved designs; the cost and effort involved in repairing/rebuilding latrines repeatedly damaged by floods; the higher cost of building toilets in flood prone areas where pits need lining; and seasonal shortages of water for flushing. (MOHS, 2015)

In addition, sanitation is not actively promoted by political and community leaders or the media. A National Sanitation Campaign based on Community-Led Total Sanitation (CLTS) has recently been adopted in 2011 but does not yet operate on a national scale, and very few states / regions have sanitation plans. A growing number of local and international NGOs are involved in CLTS but there is so far no common strategy and participating organisations show a limited understanding of the approach. Post-triggering follow-up is often inadequate and little verification of open defecation-free status has been undertaken. Low reported rates of open defecation prompt the question as to whether CLTS offers the best promotional approach for Myanmar.

3.2 Water, Sanitation and Hygiene Sector Situation in Myanmar

The WASH Sector Situation Analysis and Roadmap for the Development of National Rural WASH Strategy and Investment Plans was conducted in 2014 with the leadership of the Ministry of Health. The National WASH Strategy and associated Investment Plan is the follow up action of WASH Sector Situation Analysis Roadmap. With the Sustainable Development Goals newly established, the plan affords a timely opportunity for aligning the national priorities with the SDGs goals and targets. There are significant geographical and wealth disparities, especially afflicting poor and vulnerable communities in rural areas.

Departments in three Ministries have cooperated in the development of the National Water, Sanitation and Hygiene (WASH) Strategy and associated Investment Plans (2016-2030): Department of Rural Development, Department of Basic Education and Department of Public Health, with support and input from other

relevant Departments. Myanmar National WASH Strategy and Investment Planning gives an opportunity to strengthen coordination among key Ministries such as Ministry of Agriculture, Livestock and Irrigation, Ministry of Health and Sports and Ministry of Education and other relevant Ministries.

3.3 Myanmar Water, Sanitation and Hygiene Policy, Strategy & Framework

The Government has committed to achieving the Sustainable Development Goals (SDGs). The SDG and target indicators relevant to this Strategy is: SDG Goal 6: Ensure availability and sustainable management of water and sanitation for all. For water supply: By 2030, achieve universal and equitable access to safe and affordable drinking water for all. For sanitation and hygiene: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.

Table (3.2) Sanitation Targets in National WASH Strategy

	2015	**2020**	**2025**	**2030**
Rural Villages	%	%	%	%
Open defecation free (declared ODF)	0.3	92	97	100
Rural Households				
Access to safe sanitation (own or shared)	67.3	80	90	100
Hand washing facilities	64	80	85	90
Schools				
Latrines adequate for boys and girls separately	N/A	40	65	100
Urinals for boys	N/A	40	65	100
Private space for girls for menstrual hygiene				
Hand washing facilities	N/A	40	65	100
Special facilities for children with disabilities	N/A	40	65	100
Appropriate Solid Waste Disposal	N/A	N/A	N/A	100
Rural Health Centres				
Latrines	50	70	85	100
Handwashing facilities	50	70	85	100
Waste water treatment systems	N/A	N/A	N/A	100
Clinical and hazardous waste disposal	N/A	N/A	N/A	100

Source: MOALI/MOHS/MOE, 2016

In the National WASH strategy 206-2030 which was developed together by the Ministry of Agriculture, Livestock and Irrigation, the Ministry of Health and

Sports and the Ministry of Education in 2016, table 3.2 shows that the sanitation targets for rural community, schools and health facilities are set for every five years from 2015 to 2030. The baseline information is based on 2014 census report and it is aimed to achieve the strategic objective of rural sanitation and hygiene which is all the rural populace will live in open defection free communities; have physical and affordable access to sanitation that is safe, hygienic, secure, socially and culturally acceptable and that provides privacy and ensures dignity. The government has a plan to review the progress of the WASH status every five year with all stakeholders. This will help to achieve all WASH targets by 2030 which is fully aligned with SDG goals and targets.

Strategic Goal of the National WASH Strategy (2016-2030) is to contribute to improved socio-economic life of all the rural populace by 2030 through provision of equitable, effective, efficient and affordable services for water supply and sanitation and safe hygienic behavior.

Strategic Objective of Rural Sanitation and Hygiene: All the rural populace will live in open defection free communities; have physical and affordable access to sanitation that is safe, hygienic, secure, socially and culturally acceptable and that provides privacy and ensures dignity; will use and maintain the sanitation facilities; and will dispose of the domestic solid waste through effective, efficient and affordable services and other arrangements for solid waste recycling and disposal by 2030.

3.3.1 Myanmar Sustainable Development Plan (MSDP) 2018-2030

The Myanmar Sustainable Development Plan (MSDP) provides a long-term vision; a vision of a peaceful, prosperous and democratic country. Founded upon the objective of giving coherence to the policies and institutions necessary to achieve genuine, inclusive and transformational economic growth, this MSDP has been developed to reinvigorate reform and promote bold action. MSDP is the expression of national development vision while finding its resonance in the global sustainable development agenda. Currently, Myanmar has myriad sectoral, ministerial and regional plans. Genuine development will only come to Myanmar if and only if these plans move harmoniously and coherently under the aegis of a single national strategic plan. Therefore, this MSDP provides an overall framework for coordination and

cooperation across all ministries, States and Regions to forge a common path towards the emergence of a prosperous, peaceful and federal democratic nation.

The MSDP has taken maximum advantage of existing sector and thematic-level plans and policies, and those currently being drafted. In this regard, the MSDP is intended to provide a whole of government development framework that offers coherence to these existing strategic documents, ensuring that they are executed in ways that are consistent with macro-level national development priorities. Therefore, the MSDP is the integration and distillation of existing plans and priorities. Furthermore, the MSDP mediates between local developmental needs and global sustainable development agenda by aligning MSDP action plans with global SDG targets.

The MSDP is structured around 3 Pillars, 5 Goals, 28 Strategies and 239 Action Plans. All are firmly aligned with the SDGs, the 12 Point Economic Policy of the Union of Myanmar, and various regional commitments which Myanmar has made as part of the Greater Mekong Sub Region Strategic Framework, the ASEAN Economic Community (AEC) and many others. One of the Goals which is Goal 5: Natural Resources and the Environment for Prosperity of the Nation under Pillar 3: People and Planet is most relevant to Water, Sanitation and Hygiene. The strategy 5.3 states: Enable safe and equitable access to water and sanitation in ways that ensure environmental sustainability. The MSDP therefore sets the framework for achievement of sanitation and hygiene objectives and targets set in National WASH Strategy which are fully aligned with SDG goals and targets.

3.3.2 Investment Needs and Gaps in Sanitation

The National WASH Strategy and Investment Plan (2016) indicates that current levels of investment are insufficient to make a significant impact on access to improved services in rural areas, schools and health facilities and available funds are very small compared to these requirements. Tracking of WASH sector financing remains challenging due to limited delineation of WASH budget lines under different Ministries. Annual estimate gaps for rural sanitation and WASH in Health Care Facilities are 60 million USD and 32 million USD respectively which are expected to be the most challenging to address.

Nearly 39 million people (or 3 million persons per year) will need to construct improved toilets. The majority of the requirements are for replacing latrines that are

expected to reach the end of their practical life during the period. Over 12 million households will require solid waste management facilities and services. Most of the costs are for new facilities, as there are no reported services. For toilets and solid waste management, the most populous regions/states generally have the largest requirements. (MOALI/MOHS/MOE, 2016)

3.3.3 National Health Sector Plan (2017 – 2021)

The health status of the Myanmar population is still poor and does not compare favorably with other countries in the region. Moreover, hidden behind the national averages are wide geographic, ethnic and socio-economic disparities. The Myanmar health system currently faces many challenges. These relate to the availability and distribution of inputs (e.g. human resources, physical infrastructure, essential medicines and supplies, financial resources) and to weaknesses in key functions such as supportive supervision, referral, supply chain, health management information system, and public financial management. Limited oversight, leadership and accountability further exacerbate these challenges. The main goal of National Health Plan (NHP) 2017-2021 is to extend access to a Basic Essential Package of Health Services (EPHS) to the entire population by 2020 while increasing financial protection.

3.3.4 Challenges of Sanitation and Hygiene Sector in Myanmar

According to 2014 Census report, the rural population of Myanmar has relatively high coverage with sanitation compared to other countries in the region. Open defecation, however, remains a significant challenge in many rural areas especially conflict affected areas in Rakhine, Kachin and Kayin States. There is a lack of resilience in the infrastructure for household latrines to hazards such as flooding. The availability of suitable, affordable technical designs for difficult areas such as flood prone areas, high groundwater areas, and vulnerable area such as river banks is a challenge.

International experience has shown that traditional approaches to improving sanitation, which are aimed at building facilities, have not resulted in significant and sustained sanitation coverage. More promising strategies are now focused on creating demand for improved sanitation by changing behaviours while strengthening the availability of supporting products and services. Therefore, sanitation marketing with

a range of toilet designs that are appropriate, resilient to natural disasters, and affordable, particularly for poorer people is included to address the sustainability of sanitation facilities. This will include upgrading existing toilets. (MOHS, 2015)

Latrines are consumer products; their design and promotion should follow good marketing principles – including a range of options and designs attractive to consumers and therefore based on consumer preferences, affordability, and suitability for local environmental conditions. Household access to latrines alone is not sufficient for safe management of excreta. Human excreta can only be considered to be safely managed when it is safely treated in situ or transported to a designated disposal/ treatment site before being re-used or returned to the environment. Sanitation should be considered as a system, in which the latrine is only one part. (MOHS, 2015)

To make the best use of the limited public funding available for sanitation to bring about the biggest change, approaches to sanitation will focus on the creation of conditions for people and households to want toilets and to be able to obtain these for themselves. This will include services to maintain these in the long term, such as emptying of latrine pits and desludging septic tanks.

The number of people requiring access to basic sanitation are mentioned below.

1. CLTS and/or ODF verification and certification will be needed in 63,899 villages
2. Sanitation marketing to develop the private sector provision of sanitation will be required in all 14 States and Regions
3. 664,000 households per year (12,323,000 in total) will require solid waste management services.

It is estimated that the capital expenditures needed in order achieve sanitation targets for rural households are aboutUS$105million/year (a total of US$1.5 billion from 2017-2030). Capital expenditures for toilets (hardware) and solid waste management are expected to be about US$61 million/year and US$13 million/year respectively. Capital expenditure needed for software is about US$32million/year (a total of US$446 million for 2017-2030). (MOALI/MOHS/MOE, 2017)

3.4 Rural Sanitation and Hygiene Policy Development

The Sanitation and Water for All (SWA) global partnership is the multi-stakeholder platform for sanitation, water, and hygiene. It was established eight years

ago and has grown to over 170 partners, including 55 countries, civil society organizations, UN organizations, private sector players, research and learning institutions, and bilateral donors. The Honourable Excellency the Minister of Health and Sports, and Director General of Department of Rural Development attended High Level Meeting of Sanitation and Water for All (SWA) meeting in Washington DC on 19 and 20 April 2017. Myanmar delegate team led by the Union Minister of Health and Sports presented the goals, targets and budget of WASH sector which includes rural sanitation and hygiene programme in Myanmar which was based on the National Rural WASH Strategy and Investment Plan.

One of the key Ministerial dialogues in SWA High Level Meeting (2017): Achieving safely managed sanitation services while eliminating inequalities. 60 Ministers responsible for finance, water, sanitation and hygiene met in small groups to discuss key issues related to the achievement of the WASH targets of the Sustainable Development Goals (SDGs) in a series of three Ministerial Dialogues. A summary of the discussions is as follows;

The first Ministerial Dialogue, on sanitation, covered a range of topics, reflecting the complexity of the subject. Ministers agreed that sanitation is fundamental; it is integral to poverty alleviation, economic growth and women's empowerment. Sanitation should be seen as a complementary investment that optimises the impact of spending in other sectors.

Sanitation needs to be looked at through the lens of economic development and education. You need to work on basic economic development in conjunction with sanitation and focus on attacking poverty at the core to help drive sanitation outcomes.

Sectoral Ministers around the world discussed the need to work in a cohesive manner, as sanitation is integrated into so many other sectors, including health, education, housing, agriculture and urban transformation. This means every ministry has a stake and a role to play. Countries need to build a strategy and a financing plan, to seek better data, and to insist on coordination of inputs, including those from donors, who should respond to needs and to what is in the national plan.

In this context, rural sanitation and hygiene policy, roadmaps and operational plan are required to accelerate the scaling up of Open Defecation Free (ODF) campaigns for reaching sanitation and water for all targets and achieving ODF nation by 2030. Therefore, the Ministry of Health and Sports, WHO and UNICEF have been

working closely for the development of national rural sanitation and hygiene policy and costed implementation plan. The national policy and costed plan is being developed with the leadership of the Ministry of Health and Sports in close collaboration relevant government departments and development partners to achieve and declare Open Defecation Free Nation by 2030.

In order to achieve the targets which were set in the National WASH Strategy and Myanmar Sustainable Development Plan as well as to declare Open Defecation Free Nation, it is critical to develop national sanitation policy and costed implementation plan. In this light, evidence generation from the field that is this thesis is crucial to help develop the national policy and strategy and this will help the Government of Myanmar to have effective planning and provide quality service delivery to all people in Myanmar.

3.5 Institutional Arrangements on Water, Sanitation and Hygiene Sub Sector

The Government of Myanmar established 10 Sector Coordination Groups under Development Assistance Coordination Unit (DACU) in 2017 for Identification of Development Assistance Priorities, drafting a Development Assistance Policy and Establishing Effective Project Screening, Processing and Approval Mechanisms. Under the Agriculture and Rural Development Sector Coordination Group of the Development Assistance Coordination Unit (DACU), Rural Development Sub Sector Working Group was formed, and WASH is included under this sub-sector, but WASH has not been recognized as a sub-sector working group in DACU system. However, Department of Rural Development is leading the WASH Sub Sector Working Group at national and sub national levels to strengthen Water, Sanitation and Hygiene (WASH) sector coordination for effective planning, coordination, monitoring and budgeting of better results especially for children and women as well as to achieve WASH targets/indicators set in the National WASH Strategy and National Indicator Framework/ Myanmar Sustainable Development Plan.

In the National WASH Strategy and Investment Plan, the Department of Public Health (DPH) under the Ministry of Health and Sports (MOHS) is responsible for sanitation and hygiene sub-sector. The Environmental Sanitation Division (ESD) under DPH is engaged in training various groups on issues like hygiene practices, household water treatment as well as technical support to develop sanitation related policy and provide different technical options of toilets for flood prone and coastal

areas, dry zone and hilly region while the Health Literacy Promotion Unit (HLPU) is the lead agency in hygiene promotion activities, behavior change and communication for development. The involvement of ESD in latrine construction is through the provision of pipes and pans. The other ministries involved in sanitation and hygiene sub sector are the Ministry of Agriculture, Livestock and Irrigation (MOALI) and the Ministry of Education (MOE) for school sanitation and hygiene progamme together with School Health Division under DPH.

3.6 Challenges in Myanmar to Implement Community Led Total Sanitation (CLTS) Approach

According to the national census (2014) and JMP, the majority of rural population already has improved latrines on their premises. In spite of this fairly positive indicator for sanitation, child mortality and stunting rates remain very high compared to other Asian countries. There is a need to take rural sanitation a step further in a way that has a more convincing impact on child health and CLTS provides a strategic tool for UNICEF to this end. CLTS is known to have a major and rapid impact on reducing open defecation in areas where it is practiced by the majority of the population and where access to latrines is very low. Moreover, CLTS relies on community commitment and social dynamics that are not found in large size settlements and urban areas; yet in Myanmar, small communities (the most appropriate target for CLTS) are in the minority. Other specific features of Myanmar are proving challenging for CLTS implementation: flood-prone areas, coexistence with subsidy-based approaches, capacity bottlenecks, affordability, etc.

Why is CLTS implementation still limited? Over the last eight years, from 2011 to 2019, eleven local and international organizations have implemented CLTS in 2,482 villages in 44 townships (UNICEF internal report, 2019). Despite this widespread implementation across 12 out of 14 States and Regions, village level implementation is relatively low: CLTS was implemented in only 3.9 percent of the total 63,899 villages in Myanmar. The need for Evidence of CLTS's Relevance for Addressing Sanitation Challenges in Myanmar; Before scaling-up the CLTS programme to all townships in the country, UNICEF supported the Ministry of Health and Sports in 2015 to conduct a review of the CLTS approach in order to identify successes and challenges and strengths and weaknesses and to propose a way forward. (UNICEF, 2015)

3.6.1 Certification and Verification of Open Defecation Free (ODF)

In Myanmar, the CLTS intervention usually takes six to eighteen months depending on the geographic locations for pre-triggering, triggering and post triggering phases where the whole communities are ready to be verified for Open Defecation Free. Three to six months after a community has made its initial ODF declaration (self-declaration), it can become certified as open defecation free by township level ODF verification team who are external body. Certification requires the community to have eliminated open defecation and provided latrine covers, hand-washing facilities and soap next to the latrines, and evidence that latrines are in use – with all elements utilizing durable and sustainable construction.

Certification is done by committees that include local government officials from health department, Natural Leaders, and representatives of neighbouring communities, chiefs and women's groups. To ensure sustainability, considerable follow-up and continuing hygiene promotion are required. Verification is done by the ODF township verification team who are invited to assess the ODF status of the intervention villages. The verification team comprises of range of stakeholders such as Township Medical Officer, government officials from ESD and HLPU, Health Assistant I, township level government officials from General Administration Department, Department of Rural Development, Township Education Office, representative from UNICEF and NGO, village leaders and natural leaders.

Going to scale with verification and certification presents problems, especially when there are prizes/rewards. Therefore, village leaders of successful communities have been invited and honoured by the Township Medical Officer and Township Level Authorities, and the communities receive a recognition, pride, self-respect and the other inherent benefits of ODF conditions. In addition, social competition among communities has been promoted in targeted townships such as official ceremony celebrated by the township health office for the ODF declared villages and ODF Celebration of the successful community should be used as a tactic to motivate and stimulate the communities to declare and maintain ODF status.

CHAPTER IV
SURVEY ANALYSIS

4.1 Survey Profile

The 2014 Myanmar Population Household and Census shows that Myanmar had a total population of 51,486,253 persons as of 29 March 2014. Of these, 24,824,586 were males and 26,661,667 were females. The total population for Sagaing Region as of 29 March 2014 was 5,325,347 persons. Of these, 2,516,949 were males and 2,808,398 were females. The total population of Sagaing Region represents 10.3 percent. The population of Sagaing Region has increased by about 38 percent between the 1983 and the 2014 censuses. It ranks fifth in size when compared with other States and Regions in the country. The population density of Sagaing Region in March 2014 was 56.8 persons per square kilometre. This is lower than the Union level population density of 76 persons per square kilometre, and it means Sagaing ranks ninth in population density when compared with other States/Regions. In terms of access to water supply, 81 percent of population use improved water sources and 19 percent use unimproved water supply sources for drinking water in Sagaing Region. For sanitation coverage, 71.6 percent of population have access to improved sanitation facilities, 12.2 percent use unimproved sanitation facilities and 16.2 percent practice open defecation. (Dept of Population, 2015)

Myin Mu Township is situated in Sagaing region and prone to natural disaster (recurrent floods in rainy season) which is hosting 106,986 people and about 2.0 percent of total population of Sagaing Region. Among them 48,949 people (45.8 per cent) are male and 58,037 (54.2 per cent) are female. 16,558 people (15.5 per cent) live in urban area while 90,428 people (84.5 percent) live in rural area. Population density is 137.9 persons per km^2. It is higher than the Union level population density of 76 persons per km^2. There are 80 villages under 52 village tracts in rural area of Myin Mu Township with 21,405 households. There 10 high schools, 18 middle schools, 70 primary schools and 27 Sub Rural Health Centers and 2 Rural Health Centers. (Township Health Profile, 2018)

2014 Census report indicates that 28.5 percent of total households in Myin Mu Township practice open defecation. This is higher than regional open defecation rate of Sagaing Region which is 16.2 percent. To end the open defecation practice and improve the behavior of communities, CLTS project was implemented in all 80 villages of Myin Mu from June 2017 to August 2018. Before CLTS project, 5134 households (25 percent) practice Open Defecation, 3741 households (18.2 percent) use sanitary latrines, 9817 households (47.8 percent) use unsanitary latrine and 1846 households (8 percent) use shared latrine. At the end of August 2018, zero households practice Open Defecation in all 80 villages of Myin Mu township and it has become the first Open Defecation Free (ODF) Township in Myanmar. (Dept of Population, 2015)

Khwat Kwin village, Mae Naw village, Si Pin village, Lat Pan Kyin village, Ka Lar Pyan village and San Tin Kin village were randomly selected from 80 villages of Myin Mu Township. The total number of households, sample households and its population in Myin Mu township are shown in Table 4.1. The total households in randomly selected 6 villages are 1415 and total sample households are 402 which represents 28.4 percent of the total households. The total population of 6 randomly selected villages are 7,098 people of which 3669 are female (51.7 percent).

Table (4.1) Profile of Sample Villages in Myin Mu Township

Sr	Village Name	Male	Female	Total	Total HHs	Sample HHs	% of Total HHs	% of Total Sample Pop
1	Khwat Khwin	1029	1110	2139	391	111	28.4	27.61
2	Mae Naw	726	753	1479	334	95	28.4	23.63
3	Si Pin	682	715	1397	264	75	28.4	18.66
4	Lat Pan Kyin	537	557	1094	194	55	28.4	13.68
5	Ka Lar Pyan	125	150	275	56	16	28.4	3.98
6	San Tin Kin	330	384	714	176	50	28.4	12.44
Total		**3429**	**3669**	**7098**	**1415**	**402**	**28.4**	**100**

Source: Survey data, 2019

4.2 Survey Design

This research study describes an assessment of Community Led Total Sanitation (CLTS) to certification of Open Defecation free (ODF) villages in Myin Mu Township of Sagaing Region in rural Myanmar in 2017 and 2018. Sample six villages were randomly selected from eighty villages in Myin Mu township of Sagaing Region. All eighty villages were CLTS triggered, claimed to be Open Defecation Free, verified and certified as Open Defecation Free villages. Systematic Sampling method was used to select 402 sample households within these six villages to conduct personal interview. The quantitative questionnaire comprises of five components such as socio-economic characteristics, assets and wealth, social norms, water and sanitation facilities and willingness to pay for sanitation. A quantitative research design was used to gather data from 402 households across six villages in Myin Mu township of Sagaing Region. An interview instrument was used together with, non-participant observation and key informant interviews to collect qualitative data. Data collection activities included questionnaires for face to face interviews, key informant interviews and observations.

Responses which were primary data were analysed both for quantitative and qualitative data collection as well as primary data from observation and transect walk during data collection in the villages. The empirical data was collected at Khwat Khwin village, Mae Naw village, Si Pin village, Lat Pan Kyin village, Ka Lar Pyan village and San Tin Kin village. The face to face household questionnaire was intended to collect the responses from the heads of household and if household head was absent at the time of interview, one adult who was at home was interviewed. Local enumerators were recruited and trained to conduct face to face interview, field observation, transect walk and key informant interviews. The participants were briefed about the study objectives and benefits as well as ensured the confidentiality of the information provided and their privacy by the enumerators. Key Informant Interview was designed to cross check with the quantitative household survey on changes of hardware component such as access to water and sanitation facilities as well as changes of software component such as their perception, attitude and behavior on sanitation and hygiene practices.

4.3 Survey Findings

In this section, the survey findings are presented in two sub headings: 1) Socio Economic Determinants such as Social Demographic Characteristics, Educational and Occupational Status, Assets and Wealth Status, 2) Current Status of Water, Sanitation and Hygiene Facilities, Knowledge, Attitude and Practices (KAP) on WASH and Information, Education and Communication (IEC) that will have impact on the sustainability factors of Open Defecation Free in the villages.

Table (4.2) Socio Demographic Characteristics of Respondents

Characteristics	Total (n=402)	
	Number of Respondents	Percentage
Gender of the Head of Household		
Male	343	85.32
Female	59	14.68
Total	**402**	**100**
Age (years)		
<40	223	55.47
40-60	137	34.08
>60	42	10.45
Total	**402**	**100**
Marital status		
Single	46	11.44
Married	324	80.60
Separate/Divorce/Widow	32	7.96
Total	**402**	**100**
Family Size		
<5	239	59.45
≥5	163	40.55
Total	**402**	**100**
Family Type		
Nuclear Family	354	88.06
Joint Family	48	11.94
Total	**402**	**100**

Source: Survey data, 2019

4.3.1 Characteristics of Respondents

The social demographic characteristics of the respondents are shown in table 4.2. Majority of the respondents are men (85.32 percent) and the mean age is 40.22. 55.47 percent of the respondents is under 40 years old and 80.60 percent of the respondents is married which constitutes more than separate/divorce/widow (7.96 percent) and single (11.44 percent) groups. 52.74 percent of families has less than 2 children. Family size is ranged from 1 to 12 family members with 41 percent has more than 5 family members in their households. Majority of the family (88 percent) are nuclear family type.

4.3.2 Educational and Occupational Status

Table 4.3 shows the educational and occupational status of the respondents. It is found that 32.09 percent of total respondents is illiterate as they had not attained formal education system and can hardly read and write. 39.55 percent of the respondent completed primary education. 17.91 percent and 4.48 percent completed middle school and high school respectively and only 5.97 percent is university graduates. Over half of the households (56.22 percent) run their own business and the second highest is manual labor (28.11 percent) followed by dependent (12.44 percent), government staff and private employee. It is found that about three fourth (73 percent) of the household head earns less than 200,000 Kyats per month and 80 percent of all family members in one household earns less than 300,000 Kyats per month.

Table (4.3) Educational and Occupational Status

Characteristics	Total (n=402)	
	Number of Respondents	**Percentage**
Educational attainment		
University Graduate	24	5.97
High school	18	4.48
Middle school	72	17.91
Primary school	159	39.55
Can read and write	115	28.61
Illiterate	14	3.48
Total	**402**	**100**
Occupation		
Government staff	11	2.74
Private employee	2	0.50
Dependent	50	12.44
Manual labor	113	28.11
Own business	226	56.22
Total	**402**	**100**
Household Head's income per month (MMK)		
<200,000	295	73.38
≥ 200,000	107	26.62
Income of all family members	**402**	**100**
<300,000	322	80.10
≥ 300,000	80	19.90
Total	**402**	**100**

Source: Survey data, 2019

4.3.3 Assets and Wealth Status

Table (4.4) Assets and Wealth Status

Characteristics	Total (n=402)	
	Number of Respondents	**Percentage**
Having electric devices/assets		
Yes	262	65.17
No	140	34.83
Total	**402**	**100**
Own Vehicle		
Car/truck/trailer	28	6.97
Motorbike	316	78.61
Bicycle/None	58	14.43
Total	**402**	**100**
Have own bank account		
Yes	156	38.81
No	246	61.19
Total	**402**	**100**
Type of building		
Bamboo	272	67.66
Timber/ Wood	47	11.69
Timber/Wood and Brick	26	6.47
Brick	57	14.18
Total	**402**	**100**

Source: Survey data, 2019

Table 4.4 describes the assets and wealth status of the respondents. It is found that about two third of the respondents have electronic related devices/ appliances and electric based household utensils. Almost 80 percent of respondents owns motorbike and only 7 percent has truck and trailer. Majority of them (61.19 percent) do not have any bank account to save money and to work with bank related business. Most of the households is built with bamboo products (67.66 percent) and the second highest rank is brick buildings (14.18 percent). Most of the respondents (64.18 percent) still use wood as a major source of fuel for cooking and only 33.83 percent of households use electric stoves for cooking.

4.3.4 Information, Education and Communication to Receive Health and Other Messages

Table (4.5) Channels for Rural Communities Receiving Information, Education and Communication

Characteristics	Total (n=402)	
	Number of respondents	Percentage
Average TV watching hour/Day		
< 1	145	36.07
≥ 1	257	63.93
Total	**402**	**100**
Average Internet watching hour/Day		
< 1	340	84.58
≥ 1	62	15.42
Total	**402**	**100**
Member of any social activities/ committee		
Yes	131	32.59
No	271	67.41
Total	**402**	**100**
Health Education Times/ Year		
≤3	220	54.73
>3	182	45.27
Total	**402**	**100**
Attending health education sessions/ Year		
Yes	232	57.71
No	170	42.29
Total	**402**	**100**

Source: Survey data, 2019

Table 4.5 shows how rural communities receive information and communicated through different channels. Majority of the household heads watch TV for about one and more hours per day on average. For internet social media, only 15.42 percent use internet and average internet using time per day is 15 minutes. It is found that two third of the respondents does not participate in any social activities or get involved in village development activities. 45 percent of household head responded that they had attended health education/awareness raising sessions

conducted by health personnel or other organizations in their villages which was 3 or more times per year. About one third of the respondents are members of village development committee/ village water user committee or any social activities such as village development work and seasonal festivals.

In addition, more than half of the respondents have attended health education sessions during a year. From key informant interviews, it is found that motivation, encouragement and facilitation from village development committee or village administrator/leader and regular health education sessions from basic health staff during field visits is crucial to maintain good hygiene practices especially handwashing at critical times, and proper use and maintenance of the latrine.

4.3.5 Community Perception and Social Norms on Sanitation and Hygiene

Table 4.6 describes the perception of community on sanitation and hygiene. When it comes to the perception on the sanitation practice, 84.33 percent of the respondents understand the benefits of good sanitation practices such as keeping soap and water near latrine and washing hands with water and soap after using latrine that has really helped the communities to practice hygienic behaviours. In addition, 71.39 percent of the households has perfect attitude on sanitation such as stop open defecation in the field, all households in the village should build and use latrines. It is concluded that the rural communities understand quite well on the importance of sanitation for their health as well as for socio economic status. Two third (67.17 percent) of the respondents has positive views and opinions on their neighbors, family members and friends to have good knowledge, attitude and practice such as safe disposal of feces including infant and child feces, regular use of latrine and handwashing with soap after using toilets is crucial for sustainability of the ODF status.

Table (4.6) Knowledge, Attitude and Practice on Sanitation

Characteristics	Total (n=402)	
	Number of Respondents	Percentage
Sanitation Practice Total Score (0-20)		
Imperfect sanitation practice (<20)	63	15.67
Perfect sanitation practice (Have 20)	339	84.33
Total	**402**	**100**
Attitude on Sanitation		
Imperfect attitude (<30)	115	28.61
Perfect attitude (Have 30)	287	71.39
Total	**402**	**100**
Opinion on community		
Negative opinion	132	32.84
Good/positive opinion	270	67.16
Total	**402**	**100**
Conscious on sustained sanitation		
Yes	311	77.36
No	91	22.64
Total	**402**	**100**
Mechanism for sustained ODF		
Instruction from village leaders/ committee	43	10.70
No mechanism	165	41.04
Community encouragement	194	48.26
Total	**402**	**100**

Source: Survey data, 2019

Almost half of the household heads believe that the sustainability of ODF has to be maintained by community encouragement and 10.70 percent of respondents acknowledge the critical role and importance of the leadership of village leaders or village development committee for sustained sanitation and ODF status. In addition, the communities also recognized the importance of having village committee with good mechanism to monitor the conditions and sustainability of their latrines and handwashing facilities. 41.04 percent responded that there is no mechanism for sustained ODF in their villages. The community encouragement among villagers is

also one factor to sustain the good use and enforce the operation and maintenance of latrines.

4.3.6 Status of Access to Water Supply and Sanitation Facilities

In terms of access to water supply, sanitation and hygiene facilities of the rural community in Myin Mu Township, the coverage of sanitary latrine has increased every year. As a result of the CLTS intervention for all 80 villages, there is significant increase of latrine coverage in 2018 where 20,006 out of 26,094 households have access to improved sanitary latrines. In addition, there is no open defecation in rural area of Myin Mu Township after the ODF verification process was conducted in all 80 villages in 2018. However, 5716 households still use unimproved latrines and 372 households have shared latrine with other households. For access to water supply status, 25,522 households (98 percent of population) have access to community managed piped water supply in rural area of Myin Mu Township. (Township Health Profile, 2019)

4.3.6.1 Access to Water Supply Facilities

Table 4.7 shows the status of access to water supply for drinking water, 45.52 percent of the respondents use community managed piped water metering system, 29.60 percent and 23.63 percent of households use borehole/ deep tube well and hand dug well respectively as a main source for drinking water. Three fourth of total respondents get water in their own plot and premises. However, 25 percent of household still need to go to other places to get drinking water.

While 83.08 percent of household have to spend less than 15 minutes to get water and 16.92 percent have to spend more than 15 minutes to get water. Majority of focal person to collect water is adult women (68.66 percent) in the house. Most of the households still need to take one trip per day to fetch water from other places. Only 21.14 percent of them do not need to take trips to get water where water are available in their premises. 394 respondents (98 percent) do not face water scarcity or shortage during dry season. Only 2 percent of household face water shortage problem during dry season. 74.63 percent of respondent can afford to pay for water bill or tariff for community managed piped water metering system. However, one fourth of the respondents can not afford for water tariff or somewhat do not want to pay for water tariff for water supply from community managed piped water systems.

Table (4.7) Access to Water Supply Facilities

Characteristics	Total (n=402)	
	Number of Respondents	Percentage
Main source for drinking water		
Piped water	183	45.52
Dug well	95	23.63
Spring	5	1.24
Borehole/ Deep tube well	119	29.60
Total	**402**	**100**
Place of drinking water source		
In own plot and dwelling	100	75.12
Elsewhere	302	24.88
Total	**402**	**100**
Waiting time to get water		
<15 minutes	334	83.08
≥ 15 minutes	68	16.92
Total	**402**	**100**
Person who collect water		
Adult women	276	68.66
Adult men	110	27.36
Others	16	3.98
Total	**402**	**100**
Water collecting trips		
More than one times per day	317	78.86
No need	85	21.14
Total	**402**	**100**
Water scarcity month		
Not facing any shortage	394	98.01
One month and more	8	1.99
Total	**402**	**100**
Affordable the tariff for user fee		
Affordable	300	74.63
Somewhat and not affordable	102	25.37
Total	**402**	**100**

Source: Survey data, 2019

4.3.6.2 Access to Sanitation Facilities

Table (4.8) Access to Sanitation Facilities

Characteristics	Total (n=402)	
	Number of Respondents	Percentage
Having own toilet		
Yes	383	95.27
Share with others	19	4.73
Total	**402**	**100**
Latrine's age		
<1 year	75	18.66
1-2 year	106	26.37
3-5 years	128	31.84
> 5 years	93	23.13
Total	**402**	**100**
Functionality of toilet		
Fully functional	387	96.27
Not fully functional	15	3.73
Total	**402**	**100**
Number of people using on one toilet		
≤ 5	274	68.16
> 5	128	31.84
Total	**402**	**100**
Youngest child's last defecating place		
In the toilet	128	31.84
Other places	274	68.16
Total	**402**	**100**
Type of latrine		
Basic latrine	199	49.50
Safely managed latrine	203	50.50
Total	**402**	**100**
Safe and improved latrine		
Yes	385	95.77
No	17	4.23
Total	**402**	**100**

Source: Survey data, 2019

Table (4.8) Access to Sanitation Facilities (Continued)

Characteristics	Total (n=402)	
	Number of respondents	**Percentage**
Desludging type		
With desludging car	142	35.32
Manual desludging	10	2.49
Digging up new pit	244	60.70
Others	6	1.49
Total	**402**	**100**
Having space to build up new latrine		
Yes	389	96.77
No	13	3.23
Total	**402**	**100**
Having privacy and security of toilet		
Yes	392	97.51
No	10	2.49
Total	**402**	**100**
Having hand washing facility		
Yes	379	94.28
No	23	5.72
Total	**402**	**100**
Latrine building by self-initiating		
Self-initiating	379	94.28
Motivation by others	23	5.72
Total	**402**	**100**
Knowing hand washing critical times		
<3	76	18.91
≥3	326	81.09
Total	**402**	**100**

Source: Survey data, 2019

The status of access to sanitation facilities is presented in Table 4.8. While 95 percent of household have their own latrines, only 5 percent share latrines with others. Among these latrines, 96.27 percent is functional, and 3.73 percent of latrines is not fully functional on the date of survey. 31.84 percent of the respondents has built

latrine in the last 3 to 5 years, 23.13 percent of latrines were built more than five years, 26.37 percent were built in the last 1 to 2 years and 18.66 percent were built less than 1 year ago.

Number of people using one latrine varies in each household. 68.16 percent of respondents answered that less than five people share one latrine, but more than five people use one latrine for almost one third of the households. Most of the households still need to be aware of the health issues and unsafe disposal of child's feces. Only 31.84 percent of children defecate in the latrine and 68 percent still dispose of children feces to other places. According to the observation on the usage of latrine during field study, 96 percent of the respondents use improved and sanitary latrine.

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97.51 percent of the respondents does not have any privacy and security issues while using their latrines while only 2.48 percent have privacy and security problem due to the poor conditions their latrine such as poor infrastructure and lack of operation and maintenance of the sanitation facilities. 94.28 percent of the respondents have hand washing facilities near the toilet and built their latrines by self-awareness and self-initiation. However, only 5.72 percent can not show their hand washing facilities to wash hands after defecating and built their latrines who were motivated by health staff or other people. Majority of the respondents (81.09 percent) can tell handwashing at critical times rightly with more than 3 out of 5 responses.

Most of the people do not have any desludging services such as manual or desludging car provided by township municipal. When the latrine is full, the community demolish the full pit and dig a new pit. 35.32 percent of households are accessible to the desludging car and 2.49 percent use manual desludging services when their latrine pit was full. Only 3.23 percent of households have limited space to build latrine.

CHAPTER V
CONCLUSION

5.1 Findings

This thesis found that 55.47 percent of the respondents is under 40 years old and 80.60 percent of the respondent is married which constitutes more than separate/divorce /widow and single groups. Majority of the family (88 percent) are nuclear family type. 64.18 percent of the respondents do not have under five children and about 5 percent of households has people with disability in their family. Half of the respondents live in the villages which is 10 miles away from Myin Mu town.

Family size is ranged from 1 to 12 family members and only 47.26 percent of families have more than 2 children. About 41 percent of them have at least 5 family members in their home. 258 respondents (64.18 percent) do not have under five children and about 5 percent of households has people with disability in their family. It is found that 32.09 percent of total respondents is illiterate as they had not attained formal education system and can hardly read and write. 39.55 percent of the respondent completed primary education. 17.91 percent and 4.48 percent completed middle school and high school respectively and only 5.97 percent is university graduates. About 40 percent of households have primary school students and 35 percent have middle and high school students among their family members. Only 10 percent of respondents have university and higher education students among their family members.

96.3 percent of the households in the villages of Myin Mu Township which were taken as a sample have functional latrines and 94.3 percent constructed their latrines by self-initiation and self-motivation after all communities in 80 villages of Myin Mu Township were triggered by CLTS approach in 2017 and 2018. In addition, 95 percent of household have their own latrines and only 5 percent share latrines with others. Over 90 percent of the households have handwashing facilities and soaps near the latrines and 81 percent of the respondents well recognizes handwashing at critical times including after visiting latrines, before eating and handling babies' feces. This

knowledge on hand washing and cleanliness are supportive factors for long term use and sustainability of latrines as well as for sustaining ODF status of those communities.

When it comes to the perception on the sanitation practice, 84.33 percent of the respondents understand the benefits of good sanitation practices such as keeping soap and water near latrine and washing hands with water and soap after using latrine that has really helped the communities to practice hygienic behaviours. In addition, 71.39 percent of the households has perfect attitude on sanitation such as stop open defecation in the field, all households in the village should build and use latrines. In is concluded that the rural communities understand quite well on the importance of sanitation for their health as well as for socio economic status. Two third (67.17 percent) of the respondents has positive views and opinions on their neighbors, family members and friends for knowledge, attitude and practice such as safe disposal of feces including infant and child feces, regular use of latrine and handwashing with soap after using toilets.

Over two-third of respondents are aware of the long-term sustainability of latrines and Open Defecation Free status of their village while 22.64 percent are not conscious and aware of the sustained sanitation status of their village. Most of the household heads (48.26 percent) believe that the sustainability of ODF status has to be maintained by well-established and robust community mechanism and 10.70 percent of respondents acknowledge the critical role and importance of the leadership of village leaders or village development committee for sustained sanitation and ODF status. 41.04 percent responded that there is no community mechanism for sustained ODF in their villages. Therefore, the leadership of village leaders or village development plays a critical role to maintain the ODF status.

For number of people sharing one latrine, this study found that less than five people share one latrine in 68.16 percent of households and more than five people share one latrine in 31.84 percent. Most of the households still need to be aware of the health issues of child's feces. Only 33 percent of children feces dispose of in the latrine and 68 percent still dispose of children feces to other places. Half of the respondents use safely managed latrine type and the rest still use only improved latrine type. According to the observation on the usage of latrine during field study, most of the respondents use sanitary latrine while only 4.23 percent use on unsafe and unimproved latrines. Therefore, if more than five people are sharing one latrine, they

will have to wait to use latrine and consequently they may go back to defecate in the open. In addition, unhygienic behavior on unsafe disposal of children feces will not only have negative impact to the environment but also sustain the ODF status of the community.

Most of the households do not have access to any desludging services such as manual or desludging car provided by township municipal. When the latrine is full, the community digs a new latrine pit. 35.32 percent of households are accessible to the desludging car and 2.49 percent use manual desludging services when their latrine pit was full. 96.77 percent of household have got enough space to build new latrine but only 3.23 percent of households have limited space to build latrine. This situation is challenging to maintain the operation and maintenance of their sanitation facilities and then have negative consequences on sustainability of ODF status.

97.51 percent of the respondents does not have any privacy and security issues while using their latrines and only 2.48 percent have privacy and security issues due to and only 2.48 percent have privacy and security issues due to the poor conditions of their latrine such as poor super structure and lack of operation and maintenance of sanitation facilities. 94.28 percent of the respondents have hand washing facilities near latrine and only 5.72 percent can not show their hand washing facilities to wash hands after defecating. 94.28 percent of the total households built their latrines by self-awareness and self-initiation but only 5.72 percent built their latrines who were motivated by basic health staff or other people. Therefore, strong village committee with good mechanism for community motivation in place, self-motivation/initiation, good infrastructure, proper operation and maintenance of latrines and having handwashing facilities near latrine are key factors for maintaining ODF status of the community.

For water supply, 45.52 percent use community managed piped water supply in their premises as a main source for drinking water and 29.60 percent, 23.63 percent and 1.24 percent of households use borehole/ deep tube well, dug well and spring water source respectively for drinking water. Three fourth of the respondents get water in their own plot and premises. Water is necessary to flush the toilet and keep cleanliness of the toilet. Therefore, regular access to water supply is one of the key factors for sustaining ODF status of the community.

With support from UNICEF, Social Vision Services (SVS) Organization implemented CLTS programme in 2017 and 2018 and mobilized the communities

together with Basic Health Staff to change community's behaviour and social norms in the communities to reinforcing demand. As a result, communities in all 80 villages were fully triggered and then they built their own latrines with self-initiation. Therefore, the sanitary latrine coverage has increased in Myin Mu Township since then.

The households who believed that ODF status has to be maintained by individuals and it is not the responsibilities of village administers have more chance to buy items when the latrine materials need to be replaced through sanitation marketing than the households who rely on village leader's management for ODF sustainability. Previous literature documented that expecting the subsidies and enforcing the community for latrine building are the barriers for sustainability of ODF and it can intend to be low utilization of sanitation facilities and CLTS, through community empowerment and ownership, produced powerful responses that encouraged construction and use of latrines and handwashing practices.

5.2 Recommendations

It is found that the education level of the rural communities has a significant impact on the health outcome and associated with sustainability of ODF status as well as high accessibility of sanitation marketing factors among rural community. The more the communities are educated, the more they attained health knowledge and attitude to adopt good hygiene behaviors. Therefore, the government should invest more in the education sector which aims to have high level education attainment in order to improve the socio-economic status of the rural communities which represents 70 percent of the whole country. This education improvement program can benefit not only for the human resource development of the nation but also for the improvement and sustainability status of sanitation and hygiene sector. Ultimately, this will have long term impact on the improvement of the socio-economic status of the people in Myanmar.

To maintain the sustainability of ODF status, the official recognition and social competition among communities should be promoted such as official ceremony celebrated by the township health office for the ODF declared villages and ODF Celebration of the successful community should be used as a tactic to motivate and stimulate the curiosity of the neighboring villages. Therefore, the ODF Celebration should be organized as a big event along with joyful entertainments in order to get the

upmost attention of the surrounding communities. As a result, this would boost the social competition among the communities and ultimately lead to the creation of enabling environment to become ODF society and nation by 2030.

To formalise an approach to achieving ODF at scale in Myanmar, this could include a combination of community mobilization and motivation, sanitation marketing and targeted subsidies and does not need to be restricted to CLTS and explore more options for Community Approach for Total Sanitation (CATS), but it should be harmonised. This would be supported by formal mechanisms of ODF verification and certification and involve key stakeholders such as basic health staff who are frontline workers, village leaders, village development committee, natural leaders, school teachers, etc. Therefore, sanitation promotion program of the Department of Public Health should promote the community for using own latrine rather than sharing with others. Furthermore, sanitation marketing programs should be developed on the high latrine utilization rate areas and establish supply chain with private sector to have access to latrine construction materials to ensure the sustainability of the sanitation facilities which is a key factor to contribute the sustainability of ODF status.

Desludging services should be increased to reach more places and to be accessible for rural community. Sanitation programs should focus on the triggering the community motivation to construct their own latrines with their self-awareness and consensus without pushing them to build the latrines or handwashing facilities.

Health education, health awareness raising sessions to share health knowledge with good facilitation and communication skills should be conducted during field visits and touring of routine vaccination by health personnel as this thesis found that households who come to the health centers to take regular clinical treatment have more chance for better access to good knowledge and message on sanitation and hygiene from basic health staff.

In addition, the Government should encourage the community to build durable and good quality toilet by integrating with small loan or microcredit program to increase the affordability of high-quality toilet in rural area. So far, the involvement of private sector is limited in the WASH sector to promote different options and designs of toilets for flood prone areas, dry zone and hilly regions. Therefore, the government should promote to establish supply chain for latrine construction materials and

strengthen linkage between microcredit program or small loan for people who can not afford to buy the materials by themselves.

Therefore, the National Rural Sanitation and Hygiene Policy and Costed Implementation Plan should be developed with the leadership of the Ministry of Health and Sports to have consistent approach among all stakeholders for better planning, coordination and effective implementation. This sanitation policy should help focus on planning for a sanitation program, help simulate local action, enables scaling up a sustainable sanitation program. The policy by setting the vision and the direction for the sector will help in giving the overall road map to the stakeholders to carry the sector forward to meet the targets set in the Myanmar Sustainable Development Plan and National WASH Strategy which are fully aligned with SGD. This should also help to achieve ODF nation for Myanmar by 2030 and help set sanitation as a priority for intervention, at the national and region/state levels and define the various institutions and their responsibilities at policy, implementation, monitoring and regulatory levels.

Despite this thesis is the first study to assess community-level factors associated with sustaining ODF status to inform post-Open Defecation Free (ODF) programming in Myinmu Township, Sagaing Region of Myanmar. Therefore, this thesis can be a reference for similar studies to understand the association between socio economic status, community structure, social norms among rural communities and sustaining factors of Open Defecation Free status that will be performed in other parts of Myanmar.

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APPENDICES

Statistical Method

The statistics that used to answer the research question is multiple logistic regressions and the sample size was estimated based on the multiple logistic regressions formula (Hsieh, Bloch, & Larsen, 1998) and is calculated by Microsoft excel.

$$n = \frac{[Z_{1-\alpha} + Z_{1-\beta}]^2}{P_1(1-P_1)\beta^{*2}]} \times \frac{1}{(1-\rho^2)}$$

Where, $P = (1\text{-}B)\ P_0 + BP_1$

- P_0 is the proportion of household leaders who has high accessibility of sanitation marketing factors who have finished secondary education
- P_1 is the proportion of household leaders who has low and middle accessibility of sanitation marketing factors who have not finished secondary education
- B is the proportion of household leaders who have not finished secondary education
- $Z_{1-\alpha} = 1.96$ (confidence interval of 95% a = 0.05)
- $Z_{1-\beta} = 0.84$ (sample size varied to according to proportion of finishing and not finishing secondary education)

In order to cover the incomplete of data which might occur, the sample size data collection for this community survey was 402.

Sampling

Multistage random sampling was used to select samples in this study. Firstly, 6 villages were selected by simple random sampling from all 80 villages of Myin Mu Township. After that, sample households were selected using systematic random sampling procedure. The household numbers with household head name was listed based on the village administration data. Finally, household head of a particular household was interviewed with preformed questionnaires.

Household Questionnaire

"Study community-level factors associated with sustaining ODF status to inform post-Open Defecation Free (ODF) programming among rural community Myinmu Township: A cross sectional analytical study"

Clarification

This questionnaire has been developed in order to identify the association between the social disparities influencing on the community level factors associated with sustaining Open Defecation Free (ODF) programming among rural community in Myinmu Township. It is for research purpose only. I personally assure you that your answer will always be kept strictly confidential and never be revealed to any other people. The only thing I am requesting from you that is to answer the questions truthfully at your best possible way and to the best of your knowledge.

This interview consists of 107 questions of 6 parts

1. Part 1 Socio-economic determinants : 27 questions
2. Part 2 Assets and wealth : 5 questions
3. Part 3 Social norms : 24 questions
4. Part 4 Water supply and Sanitation facilities : 25 questions
5. Part 5 Willingness to pay for sanitation : 9 questions

Participant ID ☐☐☐

----------village, ---------- village tract, ----------Township.
Date ----------/----------/----------
Start time -------/-------- End time --------/---------

Questionnaires

"Study community-level factors associated with sustaining ODF status to inform post-Open Defecation Free (ODF) programming among rural community Myin Mu Township: A cross sectional analytical study"

Please circle the answer or fill in the blanks for explanation the truth.

Part 1. Socio-economic determinants

	Information	**For researcher**
1	Gender of the respondent 1. Male 2. Female 3. Other/third gender	A1 ------
2	Gender of the head of household 1. Male 2. Female 3. Other/third gender	A2 ------
3	Age ---------- years	A3 --------
4	Religion 1. Buddhist 2. Christian 3. Islam 4. Others----------	A4 -------
5	Marital status household leader 1. Single 2. Married 3. divorced/widow/separated	A5 ------
6	Parities ---------- (leave 0 if you are single)	A6-------
7	How many people permanently live in this household? ---------- no.	A7---------
8	Educational Attainment 1. University graduate 2. High School 3. Middle school 4. Primary School 5. Can read and write 6. Illiterate	A8 ------
9	Occupation 1. Government staff 2. Private employee 3. Dependent 4. Manual labor 5. Own business 6. Others specify----------	A9 ------

10	Average household leader income per month ---------- kyats	A10 ------
11	Average family income per month ---------- kyats	A11 ------
12	Distance from the main village (estimate) ---------- mile	A12--------
13	Distance from the city area (estimate) ---------- mile	A13---------
14	Family type 1. Nuclear family 2. Joint family 3. Others	A14--------
15	Presence of primary school student ---------- no	A15--------
16	Presence of middle and high school student ---------- no	A16---------
17	Presence of university and higher student ---------- no	A17---------
18	Presence of under 5 children ---------- no	A18---------
19	Spouse's education 1. University graduate 2. High School 3. Middle school 4. Primary School 5. Can read and write 6. Illiterate	A19--------
20	Spouse's occupation 1. Government staff 2. Private employee 3. Dependent 4. Manual labor 5. Own business 6. Others specify----------	A20--------
21	Is there any disability person who has difficulty in 1. None 2. Seeing 3. Hearing 4. Walking 5. Remembering 6. Dressing 7. Communicating	A21---------
22	TV watching hours /day (self-estimated) ---------- hours	A22---------
23	Internet media watching hours /day (self-estimated) ---------- hours	A23----------
24	Are you a member of any social activities/ committee? 1. Yes 2. No	A24---------
25	Did your family member support (both of financial or physical) in building current toilet? 1. Yes 2. No 3. Do not know	A25
26	How many times per year health personal reach and give health education in your village? ---------- times	A26
27	How many times did you join in health education sessions conducted by health personals in last year? ---------- times	A27

Part 2 Assets and wealth

	Information	For researcher
1	Does your household have 1. A television 2. Refrigerator 3. CD / DVD player 4. Wardrobe 5. Generator / battery / solar panel 6. None	B1 --------
2	Does any member of your household own a 1. Car/truck/trailer 2. Motorbike 3. Bicycle 4. None	B2 --------
3	Does any member of this household have a bank account? 1. Yes 2. No	B3 --------
4	Type of building ((1 or 2 storied)) 1. Bamboo 2. Wood 3. Wood and Cement 4. Cement	B4 --------
5	What type of fuel does your household mainly use for cooking? 1. Wood 2. Charcoal 3. Electric 4. Others ----------	B5 --------

Part 3 Social Norms Practice

No	Information	Always (4)	Frequently (3)	Rare (2)	Never (1)	For researcher
1	How often do you use a toilet when you defecate?					C1 ------
2	Do you avoid disposing of fecal waste in open spaces, drains, and water bodies?					C2-------
3	How often do you dispose of infant feces into the toilet?					C3------
4	How often does your household keep soap and water near the toilet?					C4-------
5	How often do you wash your hands with soap and water after using the toilet?					C5------
	Total score					C6-------

Attitude

No	Information	Agree	Neither agree nor disagree	Disagree	For researcher
1	It is too expensive to have a toilet in one's home.				C7 --------
2	Baby's feces spread disease.				C8 --------
3	Disease can be transmitted through fecal waste in public spaces, such as open spaces, drains and water bodies.				C9 --------
4	Disease can be transmitted through dirty hands.				C10 -------
5	**No one** in the village should defecate in the open.				C11 -------
6	All people in this village should use toilets.				C12 -------
7	All people in this village should dispose of infant feces into toilets.				C13 -------
8	**No one** should dispose of fecal waste in open spaces, drains and water bodies.				C14 -------
9	All people in this village who own a toilet should have soap and water near the toilet.				C15 -------
10	All people in this village should wash their hands after using a toilet.				C16 ------
	Total score				C17 ------

Opinion on community (about the people of your village such as neighbors, family and friends)

No	Information	All 100%	Most More than 50%	Some Less than 50%	None	For researcher
1	How many do you think **never defecate** in the open/field?					C18 -------
2	How many do you think **always** use a toilet?					C19 -------
3	How many people with small children do you think always dispose of infant feces into toilets?					C20 -------
4	How many do you think do **not** dispose of fecal waste in open spaces, drains and water bodies?					C21 -------
5	How many of the people who own a toilet do you think have soap and water near the toilet?					C22 -------
6	How many of the people who regularly use a toilet do you think always wash their hands after using a toilet?					C23 -------
	Total score					C24 -------

General opinion on community

	Information	For researcher
1	If someone in your village was observed defecating in the open, what would happen to them? 1. Village members would ask the person to stop / to use the latrine 2. Village member would report it 3. Village members would scorn or punish the person 4. Financial penalty 5. Nothing happens 6. Other – specify: _____ 7. Don't know	C25------
2	Is there a mechanism in this village to ensure that no one defecates in the open? 1. There is no mechanism 2. Instruction from village leaders or committee 3. Informal rule agreed among village members 4. Written bylaws or rules 5. Encouragement for constructing a latrine 6. Assistance with constructing latrines 7. Follow-up with households that don't have a latrine 8. Recognition for household having constructed a latrine Other – specify: _____	C26 ------
3	Kyaw lives in this area. Kyaw has learned that in a nearby village (not his own village) **almost all** people use a toilet, and **almost all** say that people should use a toilet. If J.D. moved to this village how likely do you think it is that J.D. would start to use a toilet if he had access to one? 1. Extremely unlikely 2. Unlikely 3. Neutral 4. Likely 5. Extremely likely 6. Don't know	C27 ------

Part 4. Water supply and Sanitation Facilities

	Information	For researcher
1	Please list ALL SOURCES of water that your household uses for DRINKING. 1. Piped water 2. Dug well 3. Spring 4. Packaged water 5. Borehole/Tube well	D1 --------
2	The main source of drinking water is 1. Piped water 2. Dug well 3. Spring 4. Packaged water 5. Borehole/Tube well	D2 --------
3	Where is the main drinking water source located? 1. In own dwelling 2. In own yard/plot 3. Elsewhere	D3 --------
4	How long does it take for members of your household to go there, wait to get water, and come back? ----------minutes	D4 --------
5	What is the age and sex of the person who usually goes to this source to collect water for your household? 1. Adult female 2. Adult female 3. Female child (<18 years) 4. Male Child (>18 years) 5. Don't know	D5 --------
6	How many trips does that person usually make per day to collect water? ------- trips	D6 --------
7	How many months is the water not available from the water sources? ---------- months/year	D7 --------
8	Do you or any other member of this household do anything to the water to make it safer to drink? 1. Yes 2. No	D8 --------
9	If you get water supply, can you affordable the tariff for user fee of your household? 1. Affordable 2. Somewhat affordable 3. Not very affordable	D9 --------
10	Does your household use a toilet? 1. Yes, always 2. Yes, sometimes 3. No	D10 --------

11	Does your household <u>own</u> the toilet that you usually use? 1. Yes 2. No, share a toilet owned by another household 3. No, share a public toilet	D11 --------
12	How old is this toilet? 1. Less than 1 year 2. 1-2 years old 3. 3-5 years old 4. More than 5 years old	D12 --------
13	Do you share this toilet with others who are not members of your household? 1. Yes 2. No	D13 --------
14	How many people in total use this toilet, including your own household? ----------nos	D14 --------
15	Is the toilet functional? 1. Yes, fully functional 2. Yes, partly functional 3. No - toilet is full 4. No - toilet is collapsed/abandoned 5. No – other reason	D15 --------
16	How many members do not use toilet? ----------nos	D16---------
17	Does anyone in the household require assistance to use the toilet? 1. Yes 2. No 3. Don't know	D17 --------
18	The last time the youngest child in the household defecated, where were the faeces disposed? 1. Put into toilet 2. Others please specify ---------- 3. Don't know	D18 --------
19	What type of toilet do you use? (Observe it) 1. Septic tank 2. Flush to concrete ring 3. Flush to Pit 4. VIP latrine 5. Others please specify ----------	D19 --------
20	Toilet is build up by (Observe it) 1. Bamboo 2. Wood and bamboo 3. Wood 4. Wood and concrete 5. Concrete 6. Wood and zinc sheet/tarpaulin	D20 --------
21	Is the toilet clean and improved? (Observe it) 1. Yes 2. No 3. No, Other ----------	D21 --------
22	What do you do when the latrine pit is full? 1. Emptying by truck provided by service provider 2. Emptying with buckets by household members or neighbors 3. Cover the old pit and dig a new one	D22 --------
23	Do you have enough land to dig a new latrine pit/latrine? 1. Yes 2. No	D23 --------
24	Does the toilet have enough privacy (both of day and night) (Observe it) 1. Yes 2. No 3. No, Other ----------	D24 --------
25	Is there any hand washing facility near the toilet? (Observe it) 1. Yes 2. No	D25 --------
26	Did you construct latrine by your self-initiation or other's motivation?	D26 --------

	1. Self-initiation 2. Other's motivation 3. Others ----------	
27	What are the main challenges to maintain the functionality of latrine? 1. No water to flush 2. Seasonal floods 3. Poor structure 4. Poor latrine pit lining 5. Pit intruded by rotten 6. Pit collapsed 7. Other pl specify ----------	D27 --------
28	What are the various moments during the day when you usually wash your hands? 1. ---------- 2----------3----------4----------5----------6----------	D28 --------

Part 5 Willingness to pay for sanitation

	Information	**For researcher**
1	Do you know the impact diseases caused from poor sanitation? 1. Yes 2. No If yes, please count the diseases ----------	E1
2	Last year, how many times have you gone to clinic/health center/hospital for any diseases? ---------- times	E2
3	How much did you cost for health services? ----------Kyats	E3
4	Last year, how many times have any of your family members gone to clinic/health center/hospital for any diseases? ----------times	E4
5	How much did you cost for health services for your family members? ----------Kyats	E5
6	How much did you cost on building the current toilet? ----------Kyats	E6
7	How much did you cost on maintaining the current toilet per year? ----------Kyats	E7
8	How much would you like to use for future (if you have to build up new latrine) latrine? ----------Kyats	E8
9	How much would you like to use for consumable latrine facilities and maintenance in the future? ----------Kyats	E9

FGD Questionnaires for Community

***CI1.** Surveyor's Name: _____ Phone Number: _____

***CI2.** Supervisor's Name: _____ Phone Number: _____

***CI3.** Date and time of interview

Date (Day / Month / Year): ___ ___ / ___ ___ / ___ ___

Starting Time (Hours : Minutes): ___ ___ : ___ ___

Finishing Time (Hours : Minutes): ___ ___ : ___ ___

***CI4.** Village name: _____Township _____

CD Community discussion

CD1. How do you feel on the accessibility of sanitation sustainability factors such as Place, Product, Price and Promotion (4Ps)?

---------- (Use extra sheet if needed)

CD2. How can improve the accessibility of sanitation sustainability factors?

---------- (Use extra sheet if needed)

CD3. What do you think the current ODF situation of your village and its sustainability?

---------- (Use extra sheet if needed)

CD4. What are the challenges to maintain the current situation of ODF?

----------(Use extra sheet if needed)

CD5. What about your idea how to improve the total sanitation of your village?

----------(Use extra sheet if needed)

CK – Community key informant interview

*CK1 May I begin the interview now?

- ○ Yes
- ○ No – Specify the reason for refusal:

  _____

***CK2.** *Record the gender of the main village informant (fill in, don't ask)*

- ○ Male
- ○ Female
- ○ Other

***CK3.** What is your role within the village?

Probe: check that respondent is a knowledgeable village member. Select all that apply

- ☐ Village chief/head
- ☐ Local government official
- ☐ Elected councillor/representative
- ☐ Water user committee
- ☐ School principal/teacher
- ☐ Other (specify) _____

***CK4.** How many households currently live in this village:

- ○ Number _____
- ○ Don't know

***CK5.** What is the dominant soil type in this village?

Probe: only one main soil type should be chosen, which makes up the top 2m of the soil profile.

- ○ Sandy
- ○ Rocky
- ○ Mud
- ○ Dirt
- ○ Gravel or coarse sand
- ○ Other, specify: _____

***CK6.** Have some village members faced problems in building, using or maintaining their toilet because of soil type, ground conditions, or climate events?

- ○ Yes
- ○ No

***CK7.** What types of problem has the soil type, ground conditions or climate events caused for toilet construction and use?

Read and probe the following response option - Select all that apply

- ☐ High groundwater table (difficult to dig pits or construct toilets, swampy/marshy, affects toilet use)
- ☐ Strong winds (collapsing superstructures)
- ☐ Flooding (destroying superstructures, flooding pits, damaging toilet facilities)
- ☐ Collapsible soils (collapsing pits, collapsing slabs, collapsing superstructures)
- ☐ Hard soils (difficult to dig pits or construct toilets)
- ☐ Other (specify) _____

***CK8.** Has any institution or organization promoted sanitation in this village?

Select all that apply

- ☐ Local Government
- ☐ Rural Health centre or sub centre
- ☐ Local NGO
- ☐ International NGO
- ☐ Other (specify) _____
- ☐ Don't know

***CK9**. Where are the most common sites of open defecation in or around this village?

Select all that apply and locate these sites on the map of the village.

- ☐ River/pond/lake/sea (at edge or in water)
- ☐ Close to water sources/water points
- ☐ Drains/gullys/canyons/depressions
- ☐ Forest/bushes/jungle
- ☐ Fields/open ground
- ☐ Road/track/path (at sides or on)
- ☐ Behind houses/buildings
- ☐ Outside communal or public toilets
- ☐ Other (specify) _____
- ○ Don't know
- ○ No sites of open defecation

***CK10.** How many households in the village have a toilet?

- ○ All
- ○ Most
- ○ Some
- ○ None
- ○ Don't know

***CK11.** Why are some households not using a toilet?

Select all that apply

- ☐ Not in our culture/habit: prefer to go outside/in the bush
- ☐ Cannot afford to build a toilet
- ☐ New households (not yet built toilet)
- ☐ Tenants (no toilet provided by landlord)
- ☐ Sharing problems (not allowed to use other toilets)
- ☐ Collapsed toilet (not yet rebuilt)
- ☐ Full pit/tank (not yet emptied or replaced)
- ☐ Other (specify) _____
- ☐ Don't know

***CK12.** Were any support or solidarity mechanisms used to help poor or disadvantaged households construct or improve toilets?

Probe: have any forms of assistance been provided, such as building the toilet, providing materials, financial support, land, or others?

- ○ Yes, support from outside the village
- ○ Yes, support from inside the village
- ○ No
- ○ Don't know

***CK13.** Has the village taken any action about the households not using toilet:

Probe: whether this issue has been recognized, numbers are known, and a plan is in place (to return to ODF status)?

- ☐ Households have been asked to build/repair/replace toilet facilities
- ☐ Action taken, but households refusing to respond
- ☐ No action taken
- ☐ Other (specify) _____
- ☐ Don't know

***CK14.** Can you please describe all water supplies that are used by this village for drinking, and then how many of them are currently functioning?

Include only water supplies available to the general public, not private supplies owned by households (except for the piped connections) or supplies owned by businesses, unless they are selling water directly to people in the village.

Type of Water Supply	Total Number Existing	Number Functioning
Piped into dwelling		
Piped to yard / plot		
Piped to neighbour		
Public tap / standpipe		
Water kiosk		
Borehole		
Tubewell		
Protected dug well		
Unprotected dug well		
Protected spring		
Unprotected spring		

Other – specify:		

*CK 15 Do you think whether the current ODF situation of your village can sustain or not?

----------(Use extra sheet if needed)

*CK 16 What are the factors to sustain the ODF status of your village?

----------(Use extra sheet if needed)

*CK 17 How will you maintain the ODF situation of your village?

----------(Use extra sheet if needed)

*CK 18 What about your idea how to improve the total sanitation of your village?

----------(Use extra sheet if needed)

CO – Community observation: transect walk

***CO1.** OBSERVE: Was evidence of open defecation observed while walking through the village and around?

- ☐ Human feces
- ☐ Animal feces
- ○ Not sure
- ○ No evidence of open defecation