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Challenges and Threats to the Sustainability of Sanitation Programs and the Role of Gender Equality and Women Empowerment in Sanitation Programs in Chivi, Zimbabwe

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Abstract

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The goal of this thesis is to identify threats or challenges to the sustainability of sanitation programs, and the role of gender equality and women empowerment in sanitation in Chivi, Zimbabwe. Chivi District is found in Masvingo province of Zimbabwe. Chivi is a rural district inhabited by subsistence farmers whose source of income is farming. Households in Chivi that do not have toilets on their homesteads resort to open defecation. Open defecation hinders the sustainability of sanitation programs implemented by CARE International, government, and other agencies. CARE implemented the Chivi WASH Project (CWP), in ten wards of Chivi District from 2014 to 2017. In 2021, CARE USA and CARE Zimbabwe carried out Key Informant Interviews (KII) of an end-line evaluation of the 2014 to 2017 Chivi WASH Project. The interviews were semi-structured paper-based questions. For the purpose of this thesis, responses from three stakeholder groups were chosen for analysis: 3 District Officials (DO), 7 Sanitation Action Groups (SAG), and 28 Village Heads (VH). A thematic analysis was used for analysis of their open-ended responses to questions on sanitation and women's empowerment. The results were grouped into themes, and common themes among the stakeholders were used for analysis. The results observed were that collapsed toilets, lack of sanitation education, lack of resources, and households without toilets, were the threats or challenges to sustainability of sanitation programs. The results also demonstrated that, leadership was found to be a role that promotes women empowerment in Chivi, Zimbabwe. By completing this thesis, CARE International can use these results in other communities in Zimbabwe or other countries in the

African region to design sustainable WASH interventions by looking at the lessons learned from Chivi District. What caused the slippage from open defecation free status to open defecation status? What caused the success story? If the villages managed to sustain their sanitation programs and remain an open defecation free village. How to capitalize on problems in Chivi and create a solution for other communities in Zimbabwe or the African region?

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Names and Abbreviations of Organizations used in this Thesis

CARE	Cooperative for Assistance and Relief Everywhere
CDC	Centers for Disease Control and Prevention
CLTS	Community Led Total Sanitation
CSHC	Community School Health Clubs
CWP	Chivi WASH Project
DO	District Official
EU	European Union
GoZ	Government of Zimbabwe
HH	Household
IFRC	International Federation of Red Cross
JMP	Joint Monitoring Program
NGO	Non-Governmental Organization
OCHA	Office for the Coordination of Humanitarian Affairs
OD	Open Defecation
ODF	Open Defecation Free
RCS	Red Crescent Society
RDC	Rural District Council
SafPHHE	Sanitation Focused on Participatory Health Hygiene Education
SAG	Sanitation Action Group
SDG	Sustainability and Development Goals
UN	United Nations
UNICEF	United Nations for Children's Fund
USAID	United States Agency for International Development
VH	Village Head
VPM	Village Pump Mind
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization

Literature Review

According to WHO, 673 million people still defecate in the open such as gutters, behind bushes or into water bodies (World Health Organization, 2019). The presence of a toilet on a homestead is only the first step to “safely manage sanitation.” Each step of sanitation such as containment, transportation, treatment, or reuse is an opportunity for pathogens leaching into the environment thereby contaminating the environment. Sanitation protects the environment and improves the health of the people, whereas open defecation contaminates the environment and affects the health of the people. For example, one gram of feces can contain ten million viruses, one million bacteria and one thousand parasite cysts (United Nations, 2019b) that can lead to diarrheal infections and deaths. Addressing open defecation is highly important because it is estimated that, some of 432,000 diarrheal deaths that occur annually may be caused by poor sanitation (World Health Organization, 2019). Some of these deaths can be prevented through sanitation interventions such as promoting toilet use which is defecating in a pit, or disposal containers and safe disposal of infant feces without contaminating the environment.

Toilet use is important in any community whether it be in a developed country or under-developed country. Toilet use enhances good sanitation, which promotes good health when people are disposing of their waste appropriately (Centers for Disease Control and Prevention, 2021). Inappropriate waste management increases the risk of contaminating the community’s environment and water bodies, which will in turn escalate the dangers of infection for individuals (Centers for Disease Control and Prevention, 2021). The infection will cause illnesses which are easily transmittable through contaminated water and may cause deaths of thousands of people (Johnson S, 2006).

Lack of toilets has led to women experiencing multiple problems. The problems women face because of lack of toilets are sexual assault when they travel long distances to relieve themselves or when they wait to relieve themselves in the dark (United Nations, 2019a). The other problem is waiting to defecate or urinate in the dark which exposes women to attacks by wild animals or being bitten by snakes (Azeez A. E. P. et al., 2019). The third problem women encounter is the effect on their health. By waiting to use the bathroom when nature calls, it is detrimental to women's health (Lifewater, 2019). Delayed urination causes urinary tract infection. Women might suffer from dehydration because they are not drinking enough water for fear of the need to urinate regularly. Additionally, resisting the urge to defecate causes accumulation of gases in the intestines (Lifewater, 2019).

In the following sections, the discussion on both sanitation coverage, gender equality, and women empowerment will be discussed from a broader perspective that is global, then narrowed down to Zimbabwean perspective and further narrowed down to Chivi district.

Global Rural and Urban Sanitation Disparities

In 2020, urban sanitation coverage was more than the rural sanitation coverage. In urban areas, 3.5% of the population still practice open defecation compared to 22.1% of the population in rural areas who still practice open defecation (JMP, 2020). Rural communities, densely populated urban, and peri-urban households in underserved communities are susceptible to poor sanitation (Lipscomb M, 2018). Urban migration is a challenge urban communities face because the urban population is becoming greater than the rural population and there is a need for expansion of sanitation services to parallel with urban growth (Lipscomb M, 2018). Common poor sanitation issues in urban and peri-urban communities include waste management and disposal, such as improper disposal of fecal sludge from households with septic tanks which

needs emptying on average every 6 months to 3 years (Lipscomb M, 2018). Improved sanitation has multiple benefits such as lowering disease burdens, improving the quality of life, healthier living environment, competitiveness of the cities, and economic benefits (World Bank, 2016b). Even though toilet use is promoted, and the benefits are known, there remain challenges faced on toilet usage.

Global Challenges and Successes of Sanitation Coverage

Toilet use is beneficial to the individuals and community at large, but there are challenges of promoting toilet use especially in underdeveloped countries. Some challenges include that some public toilets are not clean and well maintained, which forces people to defecate in the open (World Bank, 2016b). In some market places, there are no toilet facilities which leaves the merchants and customers with no access to sanitation facilities (World Bank, 2016a). Some public toilets require payment to use them; if individuals are poor it will impact the number of times they visit the toilet (Armand A. et al, 2018). Poverty is also one of the challenges faced by many households; the little income they get they prioritize in buying food, clothes, and other necessities rather than buying supplies to build a toilet (World Bank, 2016b). The other challenge is lack of government support since most Water, Sanitation and Hygiene (WASH) initiatives, including toilet use, are advocated for and implemented by nongovernmental organizations (NGO) (World Bank, 2016b). Toilet implementation and usage also faces the need for behavioral change, because in many areas there is no tradition of using the toilet due to variations in culture, attitudes, lifestyles, and beliefs of different ethnic groups (Kumwenda S., 2019). Lack of sufficient water and proper waste management also affects the success of promoting toilet usage (Lipscomb M, 2018).

However, there are some success stories of increased adopted toilet usage. According to USAID, by 2017 India, Indonesia, Nigeria, and Ethiopia are some of the low-income countries that made gains in reducing open defecation and increasing toilet usage (USAID, 2019). India recorded the world's fifth highest annual rate of change in toilet access by 2.54% and the third largest decrease in open defecation rates by -2.76% (USAID, 2019). The Indian toilet use success story was achieved through the Indian government's launch of a multi-year Swachh Bharat (Clean India) with the support from USAID and India's private sector. The Clean India program saw the construction of 110 million toilets throughout India (USAID, 2019). In Indonesia, USAID funded a loan program for an urban water, sanitation, and hygiene program. The project helped 186,000 people gain access to improved toilet facilities. Qualitative interviews in Indonesia demonstrated the wide-ranging impacts of the program. For instance, one beneficiary of the USAID loan program, Nurita, reported that before the program she was worried about the risk of diseases and dangers her grandchildren faced when they use fields for defecation. After the program, she stated, "I feel more comfortable inviting guests to visit and feel safe while using the toilet at night." (USAID, 2019). In Nigeria, there were lessons learned from its national sanitation and health strategies, Community Led Total Sanitation (CLTS). These strategies led to more toilet construction and use, thereby reducing open defecation in poorer and more isolated communities. In Nigeria, open defecation declined by 9% in poor communities and toilet ownership increased by one third (USAID, 2019). Access to a clean and safe toilet is of major importance in a woman or girl's life.

Women, Girls, and Lack of Access to Toilets

Lack of access to toilets has particularly critical impacts for women once they reach puberty and require a space to change or clean menstrual products. These adolescents are affected because at school there are often no toilet facilities to use when they are menstruating (Miuro G. et al., 2018). Young girls may prefer to stay at home because they have nowhere to clean up at school. The impacts of lack of access are evident in a study demonstrating that when young girls reach puberty and start menstruating their school attendance rate begins to go down (Miuro G. et al., 2018). They can miss up to 40 days of class in a single academic year and this will, in turn, affect their performance and they may end up dropping out of school (Miuro G. et al., 2018). A usable toilet in school brings about change and transformation in girls' education and their lives (Miuro G. et al., 2018).

Access to a toilet provides women with dignity, peace of mind and good health. Having a decent toilet to use provides women with dignity and peace of mind when they perform their ablutions in privacy without fear of being seen, mocked, sexually assaulted, or attacked by wild animals (Azeez A. E. P. et al., 2019). A toilet also improves the health of women because they are not resisting the urge to urinate or defecate. (Lifewater, 2019). Zimbabwe has its own successes and challenges in sanitation coverage.

Zimbabwe Sanitation Overview

The government of Zimbabwe and UNICEF are working in partnership. Their goal is to improve sanitation coverage in both rural and urban areas countrywide in order to achieve the Sustainability and Development Goal (SDG) number 6 (UNICEF, 2021b). To assist Zimbabwe achieve the aims of SDG number 6, which is access to clean water and sanitation for all by 2030,

UNICEF and the Government of Zimbabwe (GoZ) implemented the Sanitation Focused on Participatory Health and Hygiene Education (SafPHHE) in 45 rural districts for educating and spreading awareness of good hygiene behavior (UNICEF, 2021b). Zimbabwe is set to achieve SDG goal number 6, and it has done so by increasing sanitation coverage from 28% to 56% (Septak M., 2020). In urban areas, sanitation coverage reached 90% up until the 1990s when the economic crisis affected the increases and gains made in sanitation coverage. Sanitation coverage continued to decrease in the early 2000s (African Development Bank, 2013). There is a magnified difference between access to toilets for rural and urban residents in Zimbabwe.

Zimbabwe Rural and Urban Sanitation Disparities

According to WHO and UNICEF JMP in 2011, 2016 and 2020, Table A below summarizes the sanitation coverage in urban and rural Zimbabwe by service level and residency type (JMP, 2021).

Table A: Zimbabwe Rural and Urban Sanitation Coverage

Service Level	Urban Coverage (%)	Rural Coverage (%)	Total	Urban Coverage (%)	Rural Coverage (%)	Total	Urban Coverage (%)	Rural Coverage (%)	Total
	2011	2011	2011	2016	2016	2016	2020	2020	2020
Open Defecation	1.6	39.3	26.9	0.6	36.7	25.1	0	34.7	23.5
Unimproved	2.7	11.0	8.3	2.8	13.3	9.9	2.7	15.1	11.1
Limited Service	41.5	15.9	24.3	49.2	17.2	27.5	55.5	18.2	30.2
Basic Service	32.8	2.0	12.2	29.0	1.9	10.7	1.8	25.8	9.5
Safely Managed Service	21.4	31.8	28.3	18.4	30.9	26.6	16.0	30.2	25.7

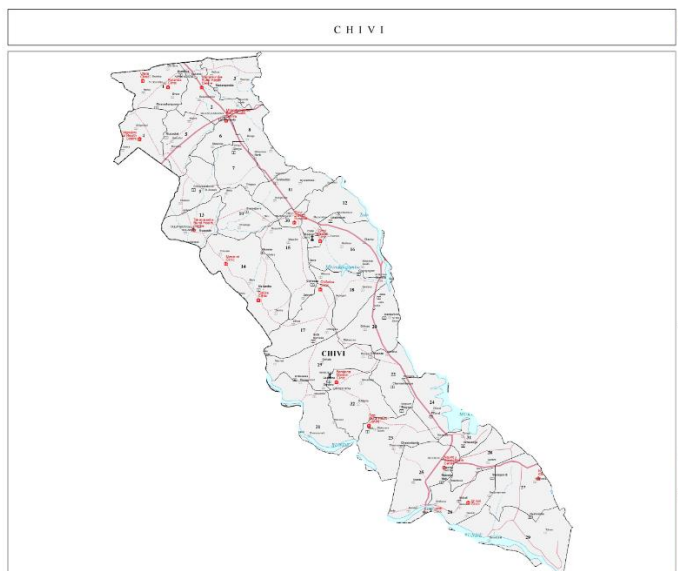
Challenges and Successes of Sanitation Coverage in Zimbabwe

The sanitation crisis in Zimbabwe still exists after the 2008/09 cholera epidemic which killed 4,000 people (Cuneo N.C et al., 2017). Sanitation challenges are most evident in Harare the capital city, with a water and sanitation system that is broken (Human Rights Watch, 2013). Sometimes the government itself exacerbates the sanitation challenges, through corruption by the Zimbabwean officials at local and national levels (Human Rights Watch, 2013). In Harare, water and waste management board bills residents for water and waste treatment (Human Rights Watch, 2013). Though, the residents are paying for water and waste treatment, there is still water shortage in Harare. Further, if the water is running it may not be properly treated (Human Rights Watch, 2013). Wastewater is seen flowing in some streets of Harare suburbs, and garbage sometimes takes weeks without being collected. Yet the city council is collecting rates and fees from residents for water and waste management (Human Rights Watch, 2013). The sanitation challenges are not only exclusive to Harare municipality, but all these challenges are also common throughout the town and city municipalities across the breadth of Zimbabwe.

Despite the challenges faced by Zimbabwe on sanitation provision to its citizens, there are still some gains being made in sanitation coverage by Non-Governmental Organizations (NGO) especially in rural areas. Non-governmental organizations such as CARE, International Federation of Red Cross and Red Crescent Societies (IFRC), and the European Union (EU) grants are assisting rural communities by building toilets with handwashing facilities in schools and villages (Library net, 2014). Through the efforts of these NGOs, 6,671 students have access to 2,870 toilets with handwashing facilities (Septak M., 2020). Chivi district is one of the districts that benefited from the efforts of these various NGOs.

Sanitation Overview of Chivi District

Figure A: Map of Chivi District



https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/A3_districts_Chivi.pdf

Chivi Rural District Council (RDC) is located in Chivi District in Masvingo province.

The district is in the drought-prone region of the country, north of Mwenezi and west of Masvingo. Much of the District is occupied by subsistence farmers. Because of low average rainfall, the Government of Zimbabwe has established several small-scale irrigation schemes for the populace to supplement their meagre harvests (Gender links for Equality and Justice, 2015). According to the population census of 2012, Chivi District has a population of 166,049: males 45.7% (75, 879) and females 54.3% (90,170) (City Population, 2022).

In Chivi District, 59.2% of the households have access to a toilet and 40.8% are sharing a toilet with a neighbor or practicing open defecation (Reliefweb, 2016). CARE has assisted communities and families to build toilets on their homesteads and schools. According to Reliefweb, Claire, a grade 7 student at Denga Primary School said, “she loves the girl-friendly toilets that have been built for her school. She has noticed that many of the older girls are now

coming back to school rather than missing out due to their periods and fear of being mocked by the boys when they had leaks on their uniforms.” (Reliefweb, 2017). Construction of toilets has also contributed to the reduction of diarrheal cases by 22% in the targeted villages (Reliefweb, 2017). Construction of toilets has also resulted in reducing open defecation and 170 villages were declared open defecation free in 2017 (Reliefweb, 2017). Many non-governmental organizations have played a major role in the improved sanitation coverage of Chivi district.

Successes of Sanitation Coverage in Chivi District

Chivi district has experienced an influx of organizations coming to offer humanitarian assistance (OCHA Services, 2021). Chivi District is divided into 29 wards and each ward is headed by a Ward Councilor (OCHA Services, 2021a). The organizations involved in Chivi district for humanitarian services are ten national and international non-governmental organizations, two government and one UN agency (OCHA Services, 2021b). The influx of these agencies propelled the reduction of open defecation in Chivi. This is summarized by Table B below for CARE Australia Chivi WASH project implemented in 2014-2017 in 10 wards in Chivi. The proportion of households with toilets increased from 44.1% to 59.2% and the percentage of people practicing open defecation decreased from 54.5% to 35% (Reliefweb, 2016).

Table B: CARE Australia Chivi WASH Project at Baseline and End-line (2014 -2017)

Percentage With Toilets			Percentage Practicing OD	
Project Inception	Project Midterm	End of Project	Project Inception	End of Project
44.1	48.7	59.2	54.5	35

Women and Sanitation in Chivi

In Zimbabwe, generally speaking, women oversee anything to do with household hygiene, water and sanitation. Taking this into consideration, women in Chivi district were organized by CARE Australia in collaboration with the government of Zimbabwe to be the custodians of their community's sanitation (CARE Australia, 2017). The Chivi WASH project conducted activities to promote women's involvement in the WASH sector. For example, the project trained women as latrine masons and as water pump mechanics in order to widen the pool of people who can be hired for WASH improvements. Additionally, the project worked with community leaders and WASH committees to encourage women with vocal male support, to take up leadership positions in the WASH committees (CARE Australia, 2017). Women make up 70% of Sanitation Action Groups (SAG), whilst schoolgirls make up 75% of Community School Health Clubs (CSHC) (CARE Australia, 2017). The SAGs were trained to promote sanitation use in their community and were tasked to be sensitive to girls' needs, which resulted in the construction of girl friendly toilets at schools (CARE Australia, 2017). The government of Zimbabwe and UNICEF are advocating for women empowerment and inclusion in leadership positions.

Gender Equality and Women Empowerment in Zimbabwe

Zimbabwe has diverse cultures that contribute to the challenges faced by women to achieve meaningful gender equality and women empowerment (Ushewokunze E.T, 2012). Zimbabwe is a patriarch society, anchored in wives playing a subordinate role to their husbands (Food and Agriculture Organization, 2017). A wife is expected to serve her husband's needs and bear children (Food and Agriculture Organization, 2017). A woman in a polygamous marriage,

will have reduced access to family resources because they are shared by other wives and their children (Food and Agriculture Organization, 2017). Women seeking permission from their husbands to attend meetings does not complement gender equality programs initiated and being implemented by the Government of Zimbabwe (Food and Agriculture Organization, 2017).

Sometimes GoZ or non-governmental organizations assists villagers with agricultural inputs for farming, but men end up taking most of the inputs (Mutanana N. et al., 2015). Another challenge to women empowerment is the unfair distribution of agricultural inputs such as tractors, fertilizers, and seeds for planting (Mutanana N. et al., 2015). For instance, one participant interviewed by Mutanana N said, “Look, my husband passed away some five years ago. But these men take the inputs away with them. How am I supposed to survive?” (Mutanana N. et al., 2015).

Despite the challenges, Zimbabwe has made considerable strides in promoting and encouraging women empowerment. Zimbabwe is a signatory to several international conventions for gender equality (UNICEF, 2021a). In recognition of women’s rights, women economic empowerment and inclusion of women in leadership positions the Zimbabwean government implemented different policies for women empowerment (United Nations Women, 2011). The implemented women empowerment policies and efforts are supported by the Ministry of Women Affairs, Gender, and Community Development. This ministry was established to support women empowerment initiatives in collaboration with other institutional structures executed to promote gender equality, and to fulfil international obligations under the SDGs goal number 5. The SDG goal number 5 states that to achieve gender equality and empower all women and girls by 2030 (United Nations, 2021). The economic empowerment in Zimbabwe has seen targeted training of women to operate women owned businesses with access to affordable loans with flexible credit

terms from Microfinance Bank which was established with the aim of enhancing financial inclusion of women (Tarinda S., 2019). As of 2019, women in Zimbabwe occupied the Lower House and Upper House seats of parliament 31.9 % and 43.8 % respectively (Inter Parliamentary Union, 2019).

Gender Equality and Women Empowerment in Chivi

Levels of women empowerment in Chivi at a district level are glaringly lower than women empowerment in Zimbabwe at a national level. This is evidenced by the lack of women in leadership positions in Chivi rural district council. The district comprises of a chief executive officer, 32 councilors who are organized into six committees namely, finance, human resources, community services, roads planning and works, natural resources and audit. In this leadership structure, only 6% (2/32) of the 32 councilors are women (Musingafi M.C.C et al., 2015). Both the ruling party and opposition party have women's leagues and national assembly of women branches in Chivi district but women are inconspicuous in Chivi district council leadership structures. (Musingafi M.C.C et al., 2015).

Challenges of Gender Equality and Women Empowerment in Chivi

Women in Chivi still remain socially, culturally, and politically dominated by men despite standards being set and expressed by the government. The challenges are women are not given the opportunity to be in positions of power because it is a patriarchal society, men prefer to lead not to be led by a women and women accept it because it is the cultural norm (Musingafi M.C.C et al., 2015). It is entrenched in the Zimbabwean culture that women are inferior to men in all aspects, even on the home front wives make decisions when the husband is absent

(Musingafi M.C.C et al., 2015). Some women in Chivi lack confidence and are more comfortable being led by a man (Musingafi M.C.C et al., 2015).

Successes of Gender Equality and Women Empowerment in Chivi

The Chivi WASH project (CWP), led by CARE Zimbabwe has enabled women with more time to pursue other productive activities. This had been made possible by CWP which installed several water points close to homesteads. Water points close to homesteads reduced the time required by women for a round trip to fetch water (Reliefweb, 2016). An evaluation done by CARE on the impact of CWP at baseline and end-line, showed that the project brought significant positive changes to women and girls (CARE Australia, 2017). The changes were mostly realized in households with access to safe water. Access to safe water saw a marked increase from 70% at baseline to 98% at end-line (CARE Australia, 2017).

Need, Goal and Aims

Sustainability of Water, Sanitation, and Hygiene (WASH) projects is the ability of the beneficiaries to maintain the project in the long run after project implementation. Sustainability of WASH is better clarified by the World Vision's principles of sustainable WASH which are: i) Technical sustainability which refers to technology or hardware being repaired or replaced by the locals. ii) Institutional sustainability refers to policies and procedures at local level that are functional and meet the demand of users of WASH services. iii) Social sustainability refers to ensuring appropriate social conditions are realized and sustained such as equity, culturally sensitive and needs based. iv) Environmental sustainability refers to implementing a sustainable management of water, wastewater and resources to protect the environment. v) Financial sustainability refers to continuity in the delivery of products and services related to WASH are

assured. The activities should locally funded not depended on foreign donors (World Vision, 2018).

In order to sustain WASH programs in Chivi, Zimbabwe, there is a need to understand the sustainability and challenges of Water, Sanitation and Hygiene (WASH) programs implemented in Chivi, Zimbabwe. The goal of this thesis is to identify threats and challenges to sustainability of sanitation programs and role of gender equality and women empowerment in Chivi, Zimbabwe. This goal is accomplished through four aims. Aim 1 is to identify threats or challenges to sustainability of open defecation free (ODF) status in Chivi district. This aim will help to identify the challenges and threats that do not promote toilet use and reduce open defecation. Aim 2 is to identify the role of gender equality and women empowerment in sanitation programs. This aim will help to identify the roles, that women are involved in to promote gender equality and women empowerment in Chivi District. Aim 3 is to identify the perception of stakeholders about the causes of open defecation (OD). This aim will help to understand what are the reasons villages fail to attain or maintain ODF status. Aim 4 is to understand the challenges associated with villages' failure of reaching and maintaining ODF status in Chivi district. This aim will identify the reasons for villages' failure to reach or maintain ODF status.

Significance

Open defecation is responsible for the contamination of the environment and water bodies. Contamination of water bodies increases waterborne diseases, such as diarrhea, typhoid, trachoma, and cholera. Getting infected by these diseases results in mostly poor health of children and the community. Reducing open defecation and helping communities sustain open defecation free (ODF) status, requires different forms of interventions. The various interventions that are required are:

- Educating the community on the importance of defecating in the toilet in order to keep the environment and waterbodies clean.
- Encouraging behavioral change by using a toilet every time a person defecates.
- Encouraging the building of toilets at homesteads and schools.

Significance to CARE International

By completing this thesis, the results would be significant to CARE International in that, the results can be used for future planning purposes. CARE International can use these results in other communities in Zimbabwe or other countries in the African region to design sustainable WASH interventions by looking at the lessons learned from Chivi District. What caused the slippage from open defecation free status to open defecation status? What caused the success story? If the villages managed to sustain their sanitation programs and remain an open defecation free community. How to capitalize on problems in Chivi and create a solution for other communities in Zimbabwe or within the African region? If the Chivi program was successful CARE can adopt the success story in Chivi, to work in other communities in Zimbabwe or within the African region. Also, CARE would be able to determine which part of the sustainable

principles of their sanitation programs needs revisiting before new project implementation. The sustainable principles can either be in strengthening technological, financial, or environmental sustainability.

Significance to the Government of Zimbabwe

The results from this thesis would be of significance to the Government of Zimbabwe (GoZ) in that it can inform policies that tackles the problem of slippage from open defecation free status to open defecation status. The results will also be significant to GoZ in informing monitoring and evaluation programs to monitor the success or failure of WASH programs and be able to implement a solution before the whole community slides back to open defecation. The GoZ can use the success results and implement these successes in other districts in Zimbabwe. The results will also assist the GoZ in identifying areas where it needs to focus on its sanitation programs in ensuring the whole country reaches and maintains open defecation free status.

Methods

Background

The Chivi WASH Project (CWP) was implemented to counteract the challenges of shortages of basic service delivery, education, water, sanitation, and health, related to the deteriorating WASH conditions in Zimbabwe after the 2008/9 cholera outbreak (Reliefweb, 2009). The project was in line with the Ministry of Health, Child Care National Sanitation and Hygiene Strategy that outlines strategic actions that ensures Zimbabwe achieves zero open defecation through Demand-Creation. Demand-Creation is based on behavior change and community managed projects for sustained elimination of open defecation (Government of Zimbabwe, 2017).

Chivi WASH Project (CWP) was implemented by Australia Aid Non-Governmental Cooperative Partnership (ANCP) from 2014 to 2017 in order to improve access, sustainability of water and sanitation in 10 wards of Chivi district. The goal of the project was: *Increased equitable and sustainable access to and use of safe water supply, improved sanitation and improved hygienic practices among the rural population of Chivi district* (CARE Australia, 2017). The ANCP Chivi WASH project interventions were implemented in the areas of rehabilitation of WASH infrastructure, demand led sanitation and hygiene, public private partnership for operation and maintenance and WASH sector monitoring, gender and governance (CARE Australia, 2017). Chivi district was chosen because it was the only district within Masvingo province which was not part of the \$62 million four-year rural WASH program (2012-2016) led by United Kingdom, Swiss Agency for Development and Cooperation, and UNICEF (Ahmad T et al., 2017).

In 2017, an impact evaluation was carried out to determine the impact of CWP in Chivi district. CWP was implemented in 10 wards which translated to 230 villages. 133 villages attained ODF status by the end of the project in 2017. The other results of the impact of CWP are reported on Table C below (CARE Australia, 2017).

Table C: Chivi WASH Project Impact Evaluation Results (2014-2017)

Indicator	Baseline (N=356)	End-line (N=396)	% Change
Households that reported practicing OD	41%	1%	-40%
Households that reported having a toilet	49%	97%	+48%
Respondents who strongly agreed women and girls should be empowered	43%	75%	+32%

Study Design

CARE USA in collaboration with CARE Zimbabwe conducted an evaluation in April 2021, four years after end of Chivi WASH Project (CWP) implementation in 2017. The goal of the evaluation was to assess the sustainability of post-project outcomes and impacts of sustaining open defecation free status and putting women and girls at the center of Water, Sanitation and Hygiene (WASH) in Chivi, District Zimbabwe.

Inclusion and Exclusion Criteria

Key Informant Interviews (KII) were sampled from villages that participated in Chivi WASH Project (CWP) by the end of the project in 2017. The inclusion criteria for the evaluation were: i) Key informants in the villages that benefited from CWP intervention were selected. ii) Key informants in villages that did not participate in CWP intervention were excluded.

Data Collection

The data collection team comprised of 6 enumerators and 1 supervisor. The enumerators were trained on conducting semi-structured interviews and participated on piloting the tools. After training, the enumerators were deployed into selected villages to conduct the interviews. The key informant's data were collected using paper-based semi-structured interviews and which were later exported to Excel. The key informants were 3 Chivi district officials, 28 village heads, 16 water point committees (WPC), 7 Sanitation Action Groups (SAG) and 7 WASH Entrepreneurs known as Village Pump Mechanics (VPM). The interviews were conducted between April 6-22, 2021

Sampling Methodology

The primary study utilized a multi-stage cluster methodology for sampling. The first stage cluster included the selection of ten CWP wards which participated in the CWP interventions. One ward out of the ten wards was excluded from the study because it only had one village. The second stage cluster involved selection of villages from the nine wards. The third stage involved selection of key informants from the CWP villages using purposive sampling method. Twenty-eight village heads, three district officials, seven sanitation action group (SAG) members, seven wash entrepreneurs/ village pump mechanics (VPM), and sixteen wash point committee (WPC) members were selected from the nine CWP wards.

Thesis Methodology

Stage 1: Identifying Key Informant Interviews

The first step was to review the Excel workbook databases of all Key Informant Interviews (KII). All the questions and responses were read to identify the questions and responses that answered the goal question. *The goal is to identify threats and challenges to sanitation programs and the role of gender equality and women empowerment in sanitation programs in Chivi, Zimbabwe.* Three KIIs were eventually chosen because their questions prompted responses to answer the thesis goal. The KIIs that were chosen were from the District Officials (DO), Sanitation Action Group (SAG), and Village Heads (VH).

Stage 2: Identifying Relevant Questions

After the selection of the three Key Informant Interviews (KII) groups, the second part was to go review all the questions and responses collected from the three KIIs groups. The purpose of reviewing all the questions was to identify questions that were relevant to the thesis goal. From the databases, eleven questions were selected from the District Officials (DO), fourteen questions were selected from the Sanitation Action Group (SAG), and fourteen questions were selected from the Village Heads (VH).

Stage 3: Coding of Themes

After selecting the questions that were relevant to the thesis goal from the three Key Informant Interviews (KII), the next step was to code for the four aims of the goal. Responses referring to “sanitation”, such as when they refer to toilet use, open defecation, and toilet accessibility, were assigned a color code of red. Responses referring to “sustainability”, such as when they refer to toilet maintenance, failure to reach and maintain open defecation free status,

were assigned a color code of yellow. Responses referring to “gender equality” and “women empowerment”, such as when they refer to women and men given equal opportunity, and the skills women were empowered with, were assigned a color code of green. Responses pertaining to perception of stakeholders about what are the reasons they think causes open defecation, were assigned a color code of purple. The color codes were randomly selected and there was no special meaning assigned to the color codes. After the assignment of color codes, the responses from the three KIIs were then organized in their relation to the thesis aims.

Stage 4: Creating the Theme Dictionary

After color coding the responses of the Key Informant Interviews (KII), common themes were identified after review of the color codes. Themes that could be grouped were grouped into common themes. Themes that were not common and could not be grouped were left as they were. After identifying all the themes used in the Theme Dictionary (Table D), representative quotations from the KIIs were selected to illustrate these themes in Tables 1-7. Table 8 was created to summarize common themes only across Tables 1-7 and is used in the discussion section.

Table D: Theme Dictionary

Theme	Description
Collapsed toilets	To be included if respondent mentions collapsed toilet, due to heavy rains or flooding. Also includes toilet with cracks.
Lack of handicapped friendly toilets	To be included if the respondent mentions that some people are handicapped physically, they use wheelchairs, or they crawl. Also included if the respondent mentions that some people need toilet that are friendly to them.
Vulnerable	This will be included if the respondent mentions the vulnerable such, the elderly who cannot squat or go to the toilet. Also includes the vision impaired and child headed HHs.
Lack of resources	This includes factors mentioned by the respondent that keep HHs from building a toilet. Such as lack of building resources, cement, bricks, and money to buy the building resources and pay the builders. Also include asking for donations, assistance to build toilets, poverty or poor if they are mentioned by the respondent.
HHs without toilets	This includes all households without a toilet, such as newlyweds' households, old households, and new households without toilets mentioned by the respondent.
Bush abundance	This will be included if the respondent mentions the abundance of bushes, shrubs, or trees.
Donor dependency	This will be included if the respondent mentions that the villagers suffer from donor dependency or syndrome.
Lack of by-laws	This includes factors mentioned by the respondents that indicates there are laws lacking that villagers should obey and adhere to. Such as laws, measures or constitution binding the villagers building toilets and toilet usage. Also includes penalties, fines, and mandatory ownership of WASH programs.
Temporary residents	This will be included if the respondent refers to residents who are not permanent to the community, that do not build toilets.
Lack of sanitation education	This includes any mention by the respondent for lack of education, awareness campaigns, sanitation meetings, teaching and sensitizing the villagers. Also includes passing of information to villagers.
Resistance to change	This will be included if the respondent mentions actions that show the villagers are not changing their way of life, they still Open Defecate (OD), negative attitude, not acting on sanitation message, and reluctant to build toilets.
Fecal disposal	This will be included if the respondent mentions lack of training on fecal disposal or toilets that are filling up.
Never reached ODF status	This will be included if the respondent responded that their village never reached Open Defecation Free (ODF)status.
Still ODF	This will be included if the respondent responded that their village is still maintaining its ODF status.
Sustainability	This will be included if the respondent mentions lack of sustainability and people forgetting about WASH programs.

Toilet maintenance	Includes training of toilet maintenance or regular maintenance
Appreciation of toilet	This will be included if the respondent mentions that villagers do not appreciate or see the benefits of a toilet.
Follow up	This will be included if the respondent mentions that there is lack of continuous follow up, advising, and checking villagers on WASH programs.
WASH introduction	This will be included if the respondent mentions at what age WASH issues should be introduced to a person.
Data Collection	This will be included if the respondent mentions the poor quality of WASH data collected and its dissemination.
Lack of Permanent Structures	This will be included if the respondent mentions that Households (HH) should construct permanent structures and maintaining WASH infrastructure in place.
Building	This will be included if the respondent mentions that some HHs are in the process of building their toilets.
Lack of Title Deeds	This will be included if the respondent refers to villagers being given title deeds to ownership of land they are living on.
Equal Representation	This will be included if the respondent mentions efforts to promote gender equality, gender balance, gender power, male, and females involved in WASH issues.
Contributions	This will be included if the respondent mentions the contributions of different ideas from everyone and promotes gender equality and improves on belongingness.
Elections	This will be included if the respondent refers to election of women into WASH committees and providing same privilege to boys and girls in education as well.
Culture	This will be included if the respondent mentions culture and men's role being the ideal way.
Training	This will be included if the respondent the training of women in different skills such as VPM, resources distribution, toilet builders, poultry, and gardening projects as a way of empowering women.
Leadership	This will be included if the respondent mentions the leadership positions women are in such as chairperson, secretary, treasurer, or committee members.
Decision Making	This will be included if the respondent mentions that women are in decision making positions or are making decisions for the community or on issues that affect them.

Analysis and Results

Tables 1-7 will be analyzed using the following ranges as a guideline to classify the groups of threats, challenges, or roles. The groups were classified into three categories based on percentage response of respondents identifying the specified theme. The top threat/challenge/role was between 67 -100% of respondents selecting that theme, the middle threat/challenge/role was between 34 -66% of respondents selecting that theme, and the least threat/challenge/role is between 0 -33% of respondents selecting that theme.

Threats to Toilet Usage

The goal was to identify threats to toilet usage in Chivi, Zimbabwe. Three key stakeholders were interviewed: Village Heads (VH), Sanitation Action Groups (SAG), and District Officials (DO). Different questions were selected for each stakeholder, to identify the threats to toilet usage. The stakeholder's responses were grouped into common themes that were repeated between the stakeholders (Table 1). No common themes were linked to the VHS within the top threat range. Within the top threat range, SAGs cited lack of resources and collapsed toilets as the top threats to toilet usage. DOs cited lack of handicapped friendly toilets and donor dependency. In middle threat range, the VHS cited lack of resources as a threat to toilet usage. SAGs cited that Households without toilets. The DOs did not share any common threat that was within the middle threat range. In the least threat range, the VHS cited collapsed toilets, HH without toilets, and toilet usage by vulnerable groups. The SAGs did not share any common threat within the least threat range. The DOs cited bush abundance, lack of by-laws, and temporary residents. The common threats between VHS and SAGs were lack of resources, collapsed toilets, and HH without toilets. In conclusion, these results suggest that the common

threats to sanitation sustainability were that the villagers need assistance with resources to build their collapsed toilets or new toilets to increase the uptake of toilet usage.

Table 1: Threats to Toilet Usage

Theme	%	Actual	Quotation
Lack of resources (SAG)	86	6/7	"No money to build"
Collapsed Toilets (SAG)	71	5/7	"Collapsed due to heavy rain "
Handicapped friendly toilets (DO)	67	2/3	"Yes, those using wheelchairs must have access to toilets which are friendly to them"
Donor dependency (DO)	67	2/3	"Donor syndrome has destroyed the communities to achieve ODF"
HHs without toilets (SAG)	57	4/7	"New HHs do not have toilets"
Lack of resources (VH)	39	11/28	1. "Help us build toilets" 2. "Most people in the village are very poor" 3. "Reintroduce WASH program to help people without toilets to build"
Bush abundance (DO)	33	1/3	"Uptake of toilet usage is sometimes difficult in some remote areas where bushes are in abundance"
Lack of by-laws (DO)	33	1/3	"There are no by laws that binds the community to mandatory ownership and use of toilets"
Temporary residents (DO)	33	1/3	"Yes, uptake of toilet use is sometimes difficult with HHs of people who are not permanent residents of the wards"
Collapsed toilets (VH)	32	9/28	1. "Water floods resulted into collapse of the toilet" 2. "Three Collapsed and others have cracks"
HHs without toilets (VH)	32	9/28	1. "Every HH should have a toilet to promote health in the village" 2. "All HHs must have a toilet"

Vulnerable (VH)	14	4/28	1."HHs with elderly couple and short sighted" 2. "Old age can no longer use squat holes they need with seats" 3." Child headed families"
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¹ Actual represents respondents who stated this theme in their answers divided by total respondents to the question

Threats to Reduction of OD

The goal of this analysis was to identify threats to reduction of Open Defecation (OD) in Chivi, Zimbabwe (Table 2), through a similar analysis as described threats to toilet usage section above. Within the top threat range, there was no common theme for the VHs, SAGs, and DOs. In the middle threat range, the VHs cited lack of sanitation education. The SAGs and DOs did not share any common themes. In the least threat range, the VHs shared that the lack of by-laws with strict measures or penalizing villagers for OD was a threat to reduction of OD. The SAGs did not share any theme within the least threat range. The DOs cited lack of sanitation education programs as a threat to the reduction of OD. In conclusion, the common theme between the stakeholders was that the villagers need to be educated about sanitation to successfully reduce OD in the community.

Table 2: Threats to Reduction of OD

Theme	%	Actual	Quotation
Lack of sanitation education (VH)	36	10/28	1."Educate community on use of toilet" 2."More education on importance of using toilets" 3."Sensitize people during meetings"
Lack of sanitation education (DO)	33	1/3	"People need information about health and hygiene and dangers of OD"
Lack of by-laws (VH)	21	6/28	1."Strict measures" 2."Fines are paid for OD" 3."Tough fines"

¹ Actual represents respondents who stated this theme in their answers divided by total respondents to the question

Challenges with Village’s Failure of Reaching ODF Status

The goal of this analysis was to identify villages’ challenges in reaching Open Defecation Free (ODF) status in Chivi, Zimbabwe. Three key stakeholders were interviewed: Village Heads (VH), Sanitation Action Group (SAG), and District Officials (DO) (Table 3). Within the top challenge range, only the DOs, and no VHS and SAGs, shared common themes. The DOs cited lack of sanitation education programs within the community a challenge for villages’ failure to reach the ODF status. In the middle challenge range, the VHS cited lack of resources, and lack of sanitation education programs as a challenge in villages’ failure to reach the ODF status. SAGs cited lack of sanitation education programs. The DOs did not share common themes within the middle challenge range. In the least challenge range, the VHS cited a resistance to change, HHs without toilets, and toilet usage for vulnerable groups. The SAGs cited HHs without toilets as a challenge. In the least challenge range, the DOs cited lack of by-laws as a challenge to villages’ reaching the ODF status. In conclusion, the interviews demonstrated that, in order to reach ODF status, addressing the lack of sanitation education was important as it was the most common challenge among all stakeholders.

Table 3: Challenges with Village’s Failure of Reaching ODF Status

Theme	%	Actual	Quotation
Lack of sanitation education (DO)	67	2/3	“Cascading correct information on dangers of OD. Holding meetings with community leadership”
Lack of sanitation education (SAG)	43	3/7	"Educate those without toilets. Awareness campaigns every month to ensure sustainability"
Lack of resources (VH)	39	11/28	1."Help from the government to build toilets" 2."We need cement from government for toilet construction"

Lack of sanitation education (VH)	36	10/28	"Education on importance of using a toilet"
Lack of by-laws (DO)	33	1/3	"There are no bylaws/ rules that binds the community to mandatory ownership and use of toilets"
Resist change (VH)	25	7/28	1."People reluctant to respond to message 2. "Negative attitude by HHs 3."Most HHs used to OD hard to change way of thinking"
Vulnerable (VH)	14	4/28	"Build toilets for the vulnerable"
HHs without toilets (SAG)	14	1/7	1."Every HH to have a toilet" 2."Latrines have to be built on new HHs"
HHs without toilets (VH)	7	2/28	1."Every HH to have a toilet" 2. "No toilets on some HHs"

¹ Actual represents respondents who stated this theme in their answers divided by total respondents to the question

Challenges with Village's Failure of Maintaining ODF Status

The goal of this analysis was to identify villages' challenges of maintaining Open Defecation Free (ODF) status in Chivi, Zimbabwe (Table 4). The VHs and DOs did not share any common themes within the top challenge range. The SAGs cited collapsed toilets as the top challenge to the villages' failure to maintaining the ODF status. The VHs and SAGs did not share any common themes within the middle range. The DOs cited that collapsed toilets, sustainability and follow up were a challenge to villages' failure of maintaining ODF status. In the least challenge range, the VHs cited HHs without toilets, collapsed toilets, and sustainability as challenges to villages' maintaining the ODF status. Some VHs cited that they are still ODF so there was no challenge in maintaining the ODF status and some VHs cited that their challenge was that they never reached the ODF status. In the least challenge range, the SAGs cited toilet maintenance. The DOs cited fecal disposal, sustainability, appreciation of a toilet, and data

collection, WASH introduction, and lack of permanent structures. In conclusion, the interviews suggested that villages' failure to maintain their ODF status was because they had collapsed toilets since it was the most common challenge across all the stakeholders even though some were found in the top, middle, or least challenge ranges.

Table 4: Challenges with Village's Failure of Maintaining ODF Status

Theme	%	Actual	Quotation
Collapsed toilets (SAG)	71	5/7	"Some toilets collapsed due to heavy rain"
Collapsed toilets (DO)	67	2/3	"Usually due to natural disasters when a number of structures collapse, and community fail to rebuild"
Sustainability (DO)	67	2/3	"The challenge with communities has always been on sustainability, some toilets were pulled down by the floods recently experienced in the district"
Follow up (DO)	67	2/3	1." May also be due to lack of ownership of the programs" 2. "When there are no continuous check and advice people tend to forget"
Fecal Disposal (DO)	33	1/3	"Some infrastructure gets or fill up"
Appreciation of a toilet (DO)	33	1/3	" Poor or no appreciation of good benefits of a toilet"
Data collection (DO)	33	1/3	"WASH data is not effectively updated hence the issue of real time reporting is not working for decision making"
WASH introduction (DO)	33	1/3	"WASH issues must start at kindergarten level"
Lack of permanent structures (DO)	33	1/3	"We have to encourage HHs to construct permanent lasting infrastructure especially toilets and hand washing facilities"
HHs without toilets (VH)	29	8/28	"New HHs young people getting married without enough resources to build toilets"
Toilet maintenance (SAG)	29	2/7	1."Maintenance of toilets" 2."Regular trainings maintaining toilets"

Collapsed toilets (VH)	14	4/28	1."Toilets collapsed" 2."Collapsed toilets need to be built as soon as possible"
Still ODF (VH)	11	3/28	"We are maintaining ODF"
Never reached ODF status (VH)	7	2/28	"Never been reached"
Sustainability (VH)	4	1/28	"People forget about WASH when the project ends"

¹ Actual represents respondents who stated this theme in their answers divided by total respondents to the question

Perception of Stakeholders about challenges to OD reduction

The goal of this analysis was to identify the perceptions of stakeholders about the challenges to Open Defecation (OD) in Chivi, Zimbabwe (Table 5). Within the top challenge range, the VHs and DOs did not cite any challenge about OD reduction. The SAG's insights about OD reduction were HHs without toilets. In the middle challenge range, the VHs and SAGs believed that collapsed toilets were a challenge to OD reduction. The DOs did not cite any challenge about OD within the middle challenge range. In the least challenge range, the VHs also believed that lack of resources, HHs headed by the vulnerable, lack of sanitation education programs, those still building, lack of toilet maintenance, and those that resist change were challenges to OD reduction. The SAGs insight about OD reduction was lack of resources. The DOs believed that lack of permanent structures and lack of title deeds to the land they live on were the least challenges to OD reduction. In conclusion, the stakeholders agreed that lack of resources and collapsed toilets were the common challenges to OD reduction. The results are summarized in Table 5 below.

Table 5: Perception of Stakeholders about challenges to OD reduction

Theme	%	Actual	Quotation
HHs without toilets (SAG)	71	5/7	"New HHs do not have toilets"
Collapsed toilets (VH)	43	12/28	"Collapsed during rainy season"
Collapsed toilets (SAG)	43	3/7	"Toilets were destroyed (2020) by rain"
Lack of permanent structures (DO)	33	1/3	"There is need to encourage ODF villages to sustain, keep WASH infrastructure in place"
Lack of title deeds (DO)	33	1/3	"Provide title to land and people will invest in their welfare knowing they own the property they live in, and no one will take for free "
Lack of resources (VH)	21	6/28	1. "No funds to build toilets" 2. "Collapsed during rainy season and poverty"
Lack of resources (SAG)	14	1/7	"Some HHs don't share toilets. No money to build. Collapsed due to heavy rain "
Vulnerable (VH)	4	1/28	"Newly married HHs, Elderly and some who don't have resources"
Lack of sanitation education (VH)	4	1/28	"Lack of resources and knowledge on importance of toilet"
Building (VH)	4	1/28	"They are in the process of building"
Toilet maintenance (VH)	4	1/28	"Built pit latrines were not maintained now no longer using them"
Resistance to change (VH)	4	1/28	"Poverty and ignorance to change"

¹ Actual represents respondents who stated this theme in their answers divided by total respondents to the question

Promotion of Gender Equality in Sanitation Programs

The goal of this analysis was to identify the promotion of gender equality in sanitation programs in Chivi, Zimbabwe. Different than past analyses, only two, not three, key stakeholders were selected: Village Heads (VH) and District Officials (DO). The SAGs were not asked gender equality related questions. Different questions were used for each stakeholder, to identify the promotion of gender equality in sanitation programs (Table 6). In the top range, the VHS did not mention any role or activity done to promote gender equality. The DOs cited equal representation as the top promotion of gender equality. In the middle promotion activities range, neither the VHS nor DOs cited any promotion activity. In the least promotion activity range, the VHS cited contributions by women and electing them to positions of power as an activity that promotes gender equality. One of the VHS cited a reason that demotes gender equality, by saying that “it is the culture for men to lead, not women”. In the least promotion activity range, the DOs did not cite any activity that promotes gender equality. In conclusion, there were no common themes between the stakeholders. The interviews reported that women were being given opportunity to contribute, were being elected to various committees, and were equally represented in various committees to promote gender equality.

Table 6: Promotion of Gender Equality in Sanitation Programs

Theme	%	Actual	Quotation
Equal representation (DO)	100	3/3	1. "Males and females are involved in WASH issues. In Water Point Committees we encourage more women to positions of power" 2. "Gender mainstreaming at every level"
Contributions (VH)	25	7/28	1. "Will get different ideas especially in sanitation". 2. "Everyone feels they belong to the community if their ideas are considered" 3. "It empowers women and make their voices heard and problems that concern women can be heard"
Elections (VH)	25	7/28	"Elect woman on leadership roles. Encourage girl child gets same privilege as boys e.g., Education"
Culture (VH)	4	1/28	"It is our culture men lead"

¹ Actual represents respondents who stated this theme in their answers divided by total respondents to the question

Role of Women Empowerment in Sanitation Programs

The goal of this analysis was to identify the role of women empowerment in sanitation programs in Chivi, Zimbabwe. Similarly, to the previous analyses, two key stakeholders were interviewed: Village Heads (VH) and District Officials (DO). The SAGs were not asked women empowerment related questions (Table 7). In the top women empowerment role range, the VHs did not cite any women empowerment role. The DOs cited that some women were already in leadership roles, were involved in skills training, and some already held decision making positions. In the middle women empowerment role range, the VHs and DOs did not cite any women empowerment roles. In the least women empowerment role range, the VHs cited that some women are already in leadership positions. The DOs did not cite any roles within the least role range. In conclusion, the stakeholders reported that women are being empowered through holding leadership positions.

Table 7: Role of Women Empowerment in Sanitation Programs

Theme	%	Actual	Quotation
Leadership (DO)	100	3/3	"Women are in leadership positions in the Water Point Committees"
Training (DO)	67	2/3	1."Training of female latrine builders. Women chairpersons for some WP" 2."Garden projects committees of various events including WPC Training of pump minders which is gender sensitive"
Decision making (DO)	67	2/3	"Yes, female Latrine builders. Women are in decision making positions in WPC"
Leadership (VH)	21	6/28	1."Empower equality and ensuring woman are leaders in the community" 2."Many women now have key positions the village has more women" 3."Ensure women get leadership roles in the community and promote gender equality in meetings"

¹ Actual represents respondents who stated this theme in their answers divided by total respondents to the question

Discussion

Introduction

The goal of this thesis was to: 1) identify threats or challenges to the sustainability of sanitation programs implemented in Chivi, Zimbabwe and: the 2) role of gender equality and women empowerment in sanitation. The results described below as common threats/challenges/roles for this goal were selected because they were common themes (Table 8) between two or more respondents in each, and across, tables (Tables 1 -7). The common threats or challenges to sustainability of sanitation programs implemented in Chivi were collapsed toilets, lack of sanitation education programs, lack of resources, and households without toilets. The study also highlighted that leadership was reported as a common role that women held in sanitation programs and that this leadership promoted women empowerment.

Tables 8: Common Themes from Key Informant Interviews in each Table and across Tables

Theme	Table 1	Table 2	Table 3	Table 4	Table 5	Table 7
Collapsed toilets						
VH	Yes			Yes	Yes	
SAG	Yes			Yes	Yes	
DO	No			Yes	No	
Lack of sanitation education programs						
VH		Yes	Yes		Yes	
SAG		No	Yes			
DO		Yes	Yes			
Lack of resources						
VH	Yes		Yes	Yes	Yes	
SAG	Yes		No	No	Yes	
DO	No		No	No	No	
HHs without toilets						

VH	Yes		Yes		No	
SAG	Yes		Yes		Yes	
DO	No		No		No	
Leadership						
VH						Yes
DO						Yes

Threats to sustainability of sanitation programs: Collapsed Toilets

The respondents believed that collapsed toilets were a threat to the sustainability of sanitation programs. One reason they may have believed collapsed toilets were a threat was because if there was no access to a toilet, then a person would defecate in the open thereby threatening the sustainability of sanitation programs. Joynews reported that people in Ghana were building toilets to combat open defecation but, “the impact of climate change is threatening the sustainability of those latrines as many have collapsed, following torrential rain (JoyNews, 2020). In Nicaragua, Soriano R et al., reported that in Nicaragua some residents reported that some latrines flood during the rainy season as reported by Brenda a resident whose toilet has flooded, “When it rained heavily many latrines would collapse. Sometimes flood water levels would exceed the capacity of the latrine, causing feces and waste to overflow. This dirty water would contaminate the community’s wells which led to an increase in illnesses, especially among the children” (Soriana R. et al., 2021). Additionally, Global Communities reported that in Malawi when Cyclone Idai hit, Cyclone Idai caused severe flooding that destroyed latrines, and lack of latrines increased open defecation cases (Global Community, 2020).

Threats to sustainability of sanitation programs: Lack of Sanitation Education

Lack of sanitation education was one of the common threats to sustainability of sanitation programs that the respondents mentioned. One reason they may have believed the lack of sanitation education was a threat was because if a person was not educated on the importance of defecating in the toilet, then they would not see the benefit of changing their behavior of defecating in the open. Thereby, they would continue to defecate in the open and impede the success of sanitation programs. The observation by the respondents that lack of sanitation education was a threat to sanitation was supported by the study carried out in Pemurus Village RT003 Indonesia. It was determined that there was a relationship between knowledge and open defecation (Noor .M.S. et al., 2021). Additionally, Noor M.S. et al., found out that, open defecation was more common in people with low level education, compared to people with good level of education (Noor .M.S. et al., 2021). Noor et al's findings suggest that when educated about sanitation, individuals will change their open defecation behavior. This was also supported by Weston Northrop when he said, "when educated about the link between sanitation, hygiene, health and economic development, communities have a higher demand for improved sanitation facilities" (Northrop W, 2016). Further support for the role of education on sanitation program comes from Ritter N.R when she stated that, "water, sanitation and hygiene education is a key element in enabling behavior change" (Ritter N.R, 2019). Therefore, these studies suggest that desired behavior change will only take place if people are educated on sanitation and are awareness on the importance of sanitation.

Threats to sustainability of sanitation programs: Lack of Resources

The respondents in the Chivi study believed that the lack of resources was a threat to the sustainability of sanitation programs. One reason they may have believed the lack of resources was a threat was because there was rampant poverty within the community. Poverty affects the poor, and the poor prioritize to meet their basic survival needs over building a toilet. For example, if a household is poor, they cannot afford to build a toilet, thereby they will defecate in the open and threaten the sustainability of sanitation programs. Busienei. P. J et al., carried out a study to understand why there was high percentage of open defecation in Lodwar, Kenya. They found out that, high levels of poverty affected toilet adoption, hence the continuous open defecation practices (Busienei P.J. et al., 2018). Additionally, Whaley et al., examined the determinants on the household's lack of an ability to build a toilet in rural areas of Zimbabwe. They discovered that, building a toilet heavily depended on the ability to afford to build a toilet (Whaley J. et al., 2011). Furthermore, there was a study carried out by Moyo et al., to examine the factors contributing to low sanitation and hygiene coverage in Hwange District in Zimbabwe. The study suggested that, "open defecation in rural areas of Zimbabwe could be attributed to poverty and this is quite reasonable given the fact that poverty is rampant in the country" (Moyo W. et al., 2017). In addition, World Bank is also in agreement with the Chivi results and the above studies, when it stated that, there was a need for providing communities with technical, administrative, and especially financial resources for improving sanitation infrastructure (World Bank, 2016b).

Threats to sustainability of sanitation program s: Households without Toilets

The other common result from the Chivi study was that households without toilets in order to promote the sustainability of sanitation programs. One reason they may have believed that all households must build a toilet is because the lack of a toilet in a household pushes people to defecate in the open, thereby making open defecation a barrier to success of sanitation programs. Belay D. G et al., carried out a study to determine open defecation practices and determinants among households in 33 sub-Saharan African countries: 11 Eastern Africa, 3 Southern Africa, 6 Central Africa, and 13 Western Africa. The study suggested that, households without access to a toilet practice open defecation (Belay D.G et al., 2022). Additionally, Delaire. C. et al., carried out a study in Ghana to determine if ODF status can be sustained in communities. They found out that households without toilets practice open defecation even after the implementation of a community led total sanitation (CLTS) intervention (Delaire C. et al., 2022). In addition, Osuman K et al., carried out a study to find out the determinants of practicing open defecation in Wa Municipality, Ghana. The study revealed that 49.8% of households that had no form of a toilet facility at home were practicing open defecation (Osumanu I.K et al., 2019). This observation by respondents and the studies completed was supported by the World Bank report when it stated that, lack of toilets or poor sanitation is a threat or barrier to sustainable development (World Bank, 2016b).

Role of gender equality and women empowerment in sanitation

Under the gender equality questions and answers, there were no common themes between the respondents, the Village Heads (VH) and District Officials (DO). The Sanitation Action Groups (SAG) were not interviewed on gender equality and women empowerment questions, so these were excluded from this analysis. Under women empowerment, the results revealed one

common theme: women were empowered by holding leadership positions in sanitation programs. The respondents believed that leadership positions were promoting women empowerment because women in Chivi held leadership positions in various sanitation programs such as Sanitation Action Groups and Water Point Committees. The observation by the respondents is supported by a systematic review on water, sanitation and women empowerment done by Caruso B. et al., The study revealed that, women who served as leaders in water, sanitation, and hygiene (WASH) initiatives, were being empowered because it increases confidence among women and towards women leaders (Caruso B. A et al., 2021). Furthermore, Caruso. B. et al., also reported that collective action by women in leadership positions has led to “experiences and opportunities in funding, demand construction, repair, and maintenance of water services” (Caruso B. A et al., 2021). Caruso B.A. et al., also reported that, ”Women also organized lending groups to support women businesses” (Caruso B. A et al., 2021). By so doing these lending groups promoted women empowerment. Likewise, women empowerment is supported by WaterAid which mapped various pathways to empower women and girls in Water, Sanitation and Hygiene. WaterAid made investments in WASH reducing burden of unpaid work on women and girls, and facilitating participation in education, employment, leisure activities and decision-making (WaterAid, 2017). As suggested by Caruso et al’s systematic review done using van Eerdwijk et al’s conceptual model of women and girls’ empowerment. They found out that women and girls empowerment will improve the livelihoods of women, their families, and the communities (Caruso B. A et al., 2021). The Zimbabwe Hands of Hope Trust (HoHT) participant Tatenda Gwezuva’s testimony sums up what the respondents observed, and studies revealed when she said, “taking part in workshops by HoHT made me realize that I had to find my voice and speak up on issues that affect me starting in my own family, then at community level. I am much more

confident in my leadership skills and believe that I can steer development” (Hands of Hope Trust, 2022).

Strengths

The first strength of the study was that men and women were both interviewed during the study evaluation phase. Because of the involvement of both sexes, the study was able to obtain information from both genders for equal gender representation of perceptions, views, and ideas. The other strength of the study was that it was carried out in villages that only participated in the CARE Chivi WASH project intervention. Since every village was exposed to the same intervention, there was reduced bias in contrast to collecting data from villages participating in different WASH interventions.

Limitations

The first limitation of the study was that during the interviewing process COVID-19 restrictions affected the diversity and number of people interviewed. Some people or villages were holding funerals within the community and some households had members suffering from COVID-19 related illnesses so, they were left out of the study. The other limitation of the study was that the interviewing process was held soon after unprecedented heavy flooding in Chivi. The threat to sanitation program of collapsed toilets outcome might have been influenced by recent events of flooding. The collapsed toilets might have been recently damaged or flooded.

Public Health Implications

The following implications are the areas of focus derived from the study. First, promoting good sanitation protects the water and the environment from contamination and pollution. Second, toilet use protects women from exposure to sexual attacks and promotes their privacy and dignity. Third, improved sanitation reduces the risk of sickness due to outbreaks of diseases caused by water contamination and environmental pollution. Fourth, women empowerment improves the livelihood of women, their households, and communities. The results of this study will help policy makers, non-governmental organizations identify areas of focus. The results will also help decision makers in providing alternative solutions to problems in order to promote sanitation coverage in rural areas.

Conclusion

The goal of this thesis was to identify threats or challenges to sustainability of sanitation programs and the role of gender equality and women empowerment in sanitation in Chivi, Zimbabwe. The results observed were that collapsed toilets, lack of sanitation education, lack of resources, and households without toilets were threats/challenges to the sustainability of sanitation programs. The results also demonstrated that leadership was found to be the role that promotes women empowerment in Chivi, Zimbabwe. Consequently, if the threats and challenges to sustainability of sanitation programs in Chivi are alleviated, Chivi district would be able to sustain its sanitation programs and promote the health and sanitation of the community. As evidenced by quotations from two of the Sanitation Action Group (SAG) members in villages that are open defecation free, when they were asked, were there changes in the community because of your SAG activities? they responded that, “the community achieved Open Defecation

Free (ODF) status” and the other one said, “now the community has clean environment, even water bodies are free from feces”.

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