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Beyond WASH in Health Care Facilities (HCF) Delivery Settings:

A Situational Analysis in Zambia Using a Gender Framework

Emma Brellochs

Cameron Carr

Lukundo Willy Simwinga

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ABSTRACT

There are factors that prevent women from accessing HCFs in Zambia, including cultural, economic and WASH barriers, as well as a disparity between WASH standards and practices in Zambian HCFs, all impacting maternal health during delivery. The aim of this research was to provide additional literature within the WASH, health, and gender fields in Zambia. To prepare a situational analysis of WASH in HCF delivery settings using a gender framework, literature review and key informant interviews were conducted. These methods helped to address women's needs in delivery settings, the responsiveness of policies and programmes to those needs, and the state of WASH in HCF delivery settings affecting deliveries.

Results showed that while WASH policies, standards, and infrastructure design in HCFs are responsive to women's needs, they are not properly implemented due to lack of funding, maintenance, and training. Stakeholders suggested budget allocations to be more focused towards WASH within health, and that data collection should be improved to aid in the prioritisation of WASH in programmes. Women's increasing involvement in decision-making is viewed as a necessary change which would be helpful in implementation struggles currently facing HCFs. Following this study, further areas of research include the intersections of WASH, health and gender within policies, programmes, and implementation.

ACRONYMS

BDPfA	Beijing Declaration and Platform for Action
DHS	Demographic Health Survey
HAI	Hospital-acquired Infection
HCF	Health Care Facilities
IPC	Infection Prevention and Control
JMP	Joint Monitoring Programme
MHM	Menstrual Hygiene Management
MoH	Ministry of Health
MHS	Maternal Health Services
MWDS	Ministry of Water Development and Sanitation
NGO	Non-governmental Organisation
NWASCO	National Water Supply and Sanitation Council
SADC	Southern African Development Conference
SCC	Safe Childbirth Checklist
SDG	Sustainable Development Goal
SMAG	Safe Motherhood Action Groups
UN	United Nations
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UTH	University Teaching Hospital
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation

1. INTRODUCTION

1.1 Background

1.1.1 Maternal Outcomes in Relation to WASH

Maternal death is defined as "the annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy" (Cresswell, n.d.). Sub-Saharan Africa accounts for the highest global maternal mortality ratios, deaths out of 100,000 live births, averaging 533 in 2017 (WHO, 2019). Zambia, as of 2017, is in the low maternal mortality category, with 213 per 100,000 maternal deaths. The causes of maternal deaths include indirect causes, hemorrhage, hypertension, sepsis, other direct causes, abortion, and embolism (Say et al., 2014). Specifically in Zambia, according to 2018 maternal death data, 38.7% of deaths were related to hemhorrage, 28.3% indirect causes, 13.1% hypertensive disorders, 6.8% by pregnancy related infections, 5.9% abortions, 5.3% unknown, 1.3% unanticipated complications, and 0.4% unobstructed labor (Gianetti et al., 2019). Most maternal deaths could be prevented with proper delivery attendance of a supervised doctor with proper training, equipment and supplies, and the ability to diagnose and refer to emergency obstetric care (UNICEF Data, 2021)

Sepsis, specifically, one of the main causes of maternal mortality, is the body's extreme reaction to an existing infection, which is most commonly acquired through the lungs, urinary tracts, skin, or gastrointestinal tracts (CDC, 2021). Puerperal sepsis is an infection of the genital tract that can occur from amniotic fluid rupture (Melkie & Dagnew, 2021). Both pregnant and recently pregnant women, as well as neonates, are at a higher risk for sepsis (WHO, 2020). Sepsis commonly results from infections acquired in health care settings, which happen to be more resistant to antibiotics. Some measures taken to prevent these infections include vaccination programmes, improved sanitation and water access, and infection prevention and control (IPC) practices in community and health care settings. In Zambia, the Ministry of Health (MoH) mentions that handwashing with soap is one of the most important practices to reduce hospital-acquired infections (HAIs) (Ministry

of Health, 2018). However, handwashing compliance rates are low in health care facilities (HCFs). Inadequate access to water and sanitation in HCFs exacerbates infections in those settings.

1.1.2 WASH in Zambian Birthing Settings

1.1.2.1 Traditional vs. Institutional Births

Traditional birth attendants were banned by the Zambian government in 2010. One study identified the perceived reasons for the ban, including a desire to reduce HIV and maternal and infant deaths, and because birth attendants were not prepared to deal with complications during births (Cheelo et al., 2016). In another study, traditional healers and birth attendants reported not sterilising birthing tools prior to use (Herlihy et al., 2013). Within these communities, there was the belief that if something was newly bought, or came from nature, it was clean and did not need to be disinfected or washed prior to using during birth. For instance, grass, sugarcane, or maize stalks that were used to cut umbilical cords were not sanitised to maintain the physical integrity to cut the umbilical cord. In another study, traditional birth attendants admitted to being trained but not having the same skills or access to equipment as nurses and doctors in HCFs (Cheelo et al., 2016).

Since traditional birth attendants were banned in Zambia, there has been little information on who aids women in home births (Mulenga et al., 2018). Clinics have agreed that since the ban, there has been more early detection of complications, faster transportation of pregnant women to HCFs, more enhanced hygiene and clean deliveries, reduced deaths, and reduced criticisms of traditional birth attendants (Cheelo et al., 2016). Traditional birth attendants are still involved in births by escorting women to HCFs and supplying information to communities. Despite the ban on traditional birth attendants, however, some women still decide to have births at home because they need to travel long distances to HCFs and because of other barriers to health care access.

In the delivery setting of maternal health, Zambia's Demographic Health Survey (DHS) from 2018 revealed that in the previous 5 years, 84% of deliveries had been in a HCF (Zambia Statistics Agency et al., 2020). There is a difference between urban and rural settings, with 93% of births in urban settings occurring in HCFs compared to 79% in rural

settings. By province, the lowest prevalence of births in HCFs was 72% in the Central and Northern provinces, and the highest was 91% in Lusaka and Copperbelt. Education was also noted to be a factor in HCF utilisation for delivering mothers: 66% of mothers without any education gave birth in HCFs as opposed to 99% with higher education. Wealth impacted HCF usage, with the lowest quintile showing 73% HCF deliveries and 96% from the highest quintile.

Meanwhile, in 2018, 80% of births from the previous five years were assisted by a skilled birth attendant (Zambia Statistics Agency et al., 2020). Women in urban areas were more likely to be assisted by a professional than in rural areas, at a rate of 93% compared to 73%. Assistance from skilled birth attendants was lowest at 70% in Northern province, and highest at 91% in Copperbelt and Lusaka. Of women with higher education, 99% were assisted, while 62% of those without any were assisted. Wealth was an indicator as well, with 96% of those in the highest quintile being assisted by a professional compared to 67% in the lowest quintile.

In 2013-2014, 67% of deliveries took place in HCFs (Zambia Statistics Agency et al., 2020). Based on place of birth outside of the HCF, 43.5% of births were attended by a traditional birth attendant, 45.3% by a relative, and 10.1% of births were attended by no one. At HCFs, 94.8% of births were assisted by a skilled birth attendant, compared to 0.7% of births outside of HCFs. In the 2007 DHS for Zambia, 52% of mothers gave birth at home (Central Statistical Office/Zambia et al., 2009). In HCFs, 96.6% of births were assisted by skilled birth attendants, compared to 0.7% of births outside of HCFs.

1.1.2.2 Barriers to Accessing HCFs for Women During Delivery

In Zambia, 51% of women reported a problem in accessing health care (Zambia Statistics Agency - ZSA et al., 2020). This was more likely to occur in rural than urban areas: 62% of rural areas experienced issues with access and 39% of urban areas experienced difficulties. The most noted problem was distance to a HCF, 29%. Access issues were highest in Northern province at 72%, and lowest in Copperbelt at 34%. In accessing health care, there was a significant wealth gap in Zambia, ranging from 68% of those in the lowest quintile reporting one barrier as opposed to 38% in the highest quintile.

Gender dynamics and culture also are factors that affect health care access. According to the Demographic Survey of 2018, 4% of people cited getting permission as an access barrier. The delay to seek care is influenced by a culture of waiting for men to make decisions for medical interventions (Lusaka District Health Management Team & Training and Research Support Centre, 2013). On the other hand, unmarried women also have a harder time accessing health care due to the stigma that they should not be pregnant. Although not found to be significantly associated, one study found that women who report intimate partner violence are less likely to give birth in HCFs (Simona et al., 2018). Husbands who were jealous of their wives speaking to other men and husbands who drink were found to be significantly associated with intimate partner violence. Culture has been used to justify gender-based violence against women, with the superiority of men becoming mainstream due to initiation ceremonies and bride prices (Lusaka District Health Management Team & Training and Research Support Centre, 2013). Sometimes women are not allowed to give birth in HCFs because doctors tend to be young and male (Mweemba et al., 2021). Birth rituals and disposal of the placenta can be a barrier for facility delivery, as can being poorly informed or negligent of health needs to devote time to children and family, delaying the decision to seek care. Many midwives in one study felt unprepared to deal with traditional delivery practices that differed from their medical training (Mulenga et al., 2018).

There are also barriers to accessing HCFs for pregnant women in urban areas of Zambia including treatment by professionals. In a study, both midwives and mothers reported that women's disrespect and abuse posed a potential barrier to future efforts in increasing HCF births (Mulenga et al., 2018). Midwives shared that they resorted to abuse to deliver a live baby. There was fear that without beating and yelling, the mother may close her legs, which would harm the baby during delivery.

Illiteracy, poverty and low social status were all involved in the delay to accessing care (Lusaka District Health Management Team & Training and Research Support Centre, 2013). Economic constraints included the means to pay for transportation to HCFs and buy items required for delivering at a HCF. Lacking money to get to services was a major barrier. In addition, distance made accessing care more difficult in regard to antenatal care

as well (Moyo et al., 2018). These delays to accessing care, and lack of antenatal care, make maternal deaths more likely.

1.1.2.3 Progress in Increasing Institutional Births

While there are a multitude of barriers to pregnant women who seek care in HCFs and some must resort to home births, Safe Motherhood Action Groups (SMAGs) are associated with the utilisation of institutional deliveries. The introduction of SMAGs has led to a 12% increase in HCF deliveries (Johns et al., 2014). SMAGs aim to reduce delays in decision-making about seeking professional care at the household level. They encourage women to receive antenatal, delivery, and postnatal care in HCFs, and are even able to refer maternal and new-born cases to facilities. At times, SMAGs also escort pregnant women to HCFs to give birth.

1.1.3 HCF Access to WASH

A lack of drinking water and availability of adequate sanitation facilities in hospitals and clinics may contribute to pregnant women avoiding the utilisation of HCFs for giving birth and delaying seeking care (Velleman et al., 2014). A perceived lack of water, sanitation, and hygiene (WASH) services in HCFs also has a possible deterrent effect on HCF utilisation by pregnant women. An expectant mother may not use a facility if it is lacking in privacy and basic supplies, or has poor hygiene practices (Lusaka District Health Management Team & Training and Research Support Centre, 2013; Mweemba et al., 2021).

In Zambia, 72% of households have access to an improved water source, while 54% have access to improved sanitation (Zambia Statistics Agency et al., 2020). In terms of water, 92% of households in urban areas have access compared to 58% in rural areas. In the general population, 64% of households have access to basic water while 6% have limited water service. Regarding sanitation, 33% of households have access to basic sanitation: 41% in urban areas and 28% in rural areas. With improved sanitation, 37% of households used a pit latrine slab for a sanitation facility, which is the most common type used. Meanwhile, 25% of the population have access to a facility for handwashing, which amounts to 33% in urban areas and 19% in rural areas. For those that do have access to handwashing facilities, 66% had water, 42% had soap, and 4% had other cleaning supplies.

There is limited data on WASH services in HCFs. From 2019 data from the Joint Monitoring Programme (JMP) for Water Supply and Sanitation, the only available data is from rural HCFs, with insufficient data from urban areas in water, sanitation, and hygiene (WHO/UNICEF JMP, 2019). Of rural HCFs, 75% had access to basic water, 96% had limited access to sanitation, and 69% had limited access to hygiene. Regarding type of facility, sufficient data only exists for government HCFs and non-hospitals. Of government facilities, 71% had access to basic water, 89% had limited access to sanitation, and 71% had limited access to hygiene. Meanwhile, of non-hospitals, 68% had access to basic water, 92% had limited access to sanitation, and 69% had limited access to hygiene. The Zambian government's targets for WASH in HCFs by 2022 are 90% of facilities having basic water and sanitation, and 80% having adequate health care waste management and handwashing (WHO & UNICEF, 2019).

A study on a sample of rural HCFs in Zambia and other countries also depicted the realities of WASH provision in rural HCFs. In Zambia, over 74% of interviewees reported that their water at HCFs came from an improved water source, most commonly boreholes, and the majority of those sources were within a 5-minute walk (Guo et al., 2017). A continuous water supply was present in 84% of HCFs, higher than the other countries studied. In Zambia, 95% of HCFs had improved and functioning sanitation facilities, which were most commonly pit latrines with slabs. Yet, there were common problems with privacy, cleanliness, and regular repair. The portion of HCFs with constant water and soap provision was lowest in Zambia at 25%. Overall, across the countries studied, fewer than 50% of rural HCFs had access to basic WASH services including improved water on the premises, functional and improved sanitation, and continuous access to soap and water for handwashing.

1.1.4 State of WASH in Zambian HCFs

1.1.4.1 WASH Standards in HCFs

At the global level, WASH standards and realities are inconsistent. The World Health Organization (WHO) found that more than 40 countries do not have national assessments

that review the state of WASH in their own country (WHO, 2015). Additionally, only 25% of countries have WASH policies for HCFs that include regular review and funding.

In Africa as a whole, 58% of HCFs have access to improved water, 84% to improved sanitation, and 64% to improved hygiene (WHO, 2015). This coverage isn't allocated evenly, however: most HCFs with improved WASH are large and are in urban areas. To ameliorate this inconsistency, national policies, and targets towards improving WASH services are necessary, as are monitoring and operational research.

WASH standards help paint the general picture of WASH services. In Zambia, the MoH minimum standards for IPC WASH in HCFs outline the minimum policies and procedures that HCFs should be meeting to minimise the risk of spreading infections. The MoH recognizes that handwashing with soap is the single most effective way to prevent the spread of infections (Ministry of Health, 2018). Other highlights of these standards include the importance of using clean needles, having a low toilet-to-patient ratio, and segregating solid waste by colour.

While these policies by themselves are important, the implementation of these policies is equally important. The MoH has a standardised training curriculum in place to ensure that staff in HCFs understand how to include IPC in WASH and how to reduce the incidence of HAIs. This training includes presentations and demonstrations and spans five half-day training sessions, each day focusing on different aspects of IPC (Ministry of Health, 2018). This training is critical because it promotes proper implementation and usage of IPC protocols amongst staff in HCFs. The goal is to reduce the rate of HAIs and make HCFs a clean, safe place to receive medical treatment.

Measures have already been taken in Zambia to increase access to WASH in HCFs. A recent project was undertaken by the MoH to expand inexpensive WASH in HCFs by installing water points with soap for handwashing at key locations. This measure increased staff members' ability to wash hands and increased the rate at which they did so (WHO, 2015). Patients observed this behaviour, reporting higher levels of patient satisfaction, and translated these observations to actions by washing their hands when they returned home. By improving WASH practices in the HCF, WASH practices at home benefitted as well.

1.1.4.2 WASH Practices in HCFs

In a study done at the University Teaching Hospital (UTH) in Lusaka, Zambia, there was found to be a lack of sanitation and hygiene amongst workers. Nurses did not always wash their hands in-between attending different birthing mothers, citing heavy clinical loads as a reason for not upholding IPC standards (Zimba et al., 2022). Another reason for a lack of IPC in the hospital was a lack of access to a constant supply of running water. The hospital stored water in containers because the tap was broken. Other reasons for not upholding IPC included health professionals forgetting to wash their hands given their high workload and large number of patients, and many did not use soap since they were wearing gloves. Meanwhile, the minimum standards for IPC set out by the MoH in 2018 state that personal protective equipment (PPE) and gloves are not an alternative to handwashing (Ministry of Health, 2018). In addition, disposable gloves should be disposed of after use, while reusable gloves should be disinfected regularly to avoid infection transmission. In addition, a ward nurse in the UTH study mentioned that funding for IPC has been cut by the MoH due to a lack of knowledge of IPC (Zimba et al., 2022). Remedial interventions are prioritised, with IPC being a low priority.

The WHO released a safe childbirth checklist (SCC) and the Zambian government required a case study on the outcomes of introducing it to the country. According to the study, the tasks that were least likely to be completed prior to SCC's initiative were IPC tasks such as handwashing, communication with patients surrounding risk management and family planning, and checking of vitals, including infant and mother temperature and blood pressure, and skin- to-skin contact (Mudhune et al., 2021). The biggest improvements were in relation to explaining danger signs, handwashing, placing supplies next to beds prior to birth, and skin-to-skin contact. The main continuing challenge was access to supplies. Health workers referred to the checklist yet did not complete all tasks required.

1.2 Purpose of Research & Objectives

Births are encouraged to occur within HCF settings, in part due to skilled attendance and WASH practices. However, there are factors that prevent women from accessing HCFs,

including cultural barriers, economic and distance barriers, and the perceptions of WASH availability at facilities. WASH in HCFs is also lacking once women arrive at HCFs, demonstrating a disparity between WASH standards and practices in Zambia.

The purpose of this research is to assess the status of WASH in HCF deliveries using a gender framework. It also seeks to consider additional factors leading to insufficient care within HCF childbirths. This is accomplished through the following objectives:

I. Define the biological and cultural needs of pregnant women.
II. Identify the barriers for pregnant women in accessing HCFs during labour.
III. Consider how maternal health and WASH are viewed as issues intersecting with gender and each other.
IV. Determine the level of focus on gender in Zambian policies and programmes as it pertains to WASH and maternal health.
V. Evaluate the WASH environment's capability in meeting women's needs in Zambian HCF birthing settings.

These objectives are addressed by literature, as well as key informant interviews, to seek to aid in a situational analysis of WASH in HCF delivery settings and how it intersects with gender in standards, access, and provision of services.

1.3 Significance of Research

The study intends to research the state of how maternal health is affected by WASH within HCFs in Zambia, using a gender framework. The research was conducted in partnership with WaterAid Zambia, which plans to incorporate gender and social inclusion within WASH in upcoming programme strategies. The hope is for the research to aid in a gap in literature on gender within the maternal health and WASH sectors in Zambia, as well as begin a situational analysis of WASH in HCF deliveries within Zambia, within the gender context.

2. METHODOLOGY

2.1 Literature Review

Much of the literature review consisted of grey literature, including reports, surveys, standards and policies from various government and non-governmental organisation (NGO) entities globally and in Zambia. Additionally, secondary sources were incorporated, primarily consisting of research studies and impact evaluation studies. Through literature review, global as well as national aims and progression within WASH, maternal health, and gender were explored. National policies were also investigated to understand the intersection of sectors both in theory and in practice within policy. The remainder of the literature review explains the gender framework, which is used in the remainder of the paper. Case studies are presented to consider gender empowerment and gender-responsiveness in WASH.

2.2 Stakeholder Interviews

To further assess the role of WASH in HCF deliveries using a gender framework, our team conducted a total of nine interviews with key informants. Stakeholders ranged in expertise across WASH, maternal health, and gender, with the majority coming from backgrounds in WASH and gender. Experts from the Zambian government and NGO organisations, including the MoH, United Nations High Commissioner for Refugees (UNHCR), United Nations Children's Fund (UNICEF), WaterAid Zambia and World Vision, were contacted and interviewed in July 2022.

The research team primarily drew questions from a question bank created before the interviewing process began, categorised by objective. Questions were further narrowed depending on the position and expertise of the stakeholder; however, most questions were framed in the gender context. Interviews were semi-structured, each consisting of seven to nine written questions, allowing for follow-up questions depending on stakeholder responses. On average, interviews lasted approximately 30-75 minutes. Written notes were taken for all nine interviews, and an audio/video recording was taken for all but one interview.

Of the interviews, seven were completed virtually through Zoom, WhatsApp, or phone call. Two interviews were conducted in-person. Stakeholders signed and completed a form to provide consent for a recording. They also indicated whether they would like the research team to use their name, position and organisation in this paper.

3. LITERATURE REVIEW

3.1 Intersections of Gender, WASH and Health

A systematic review assessed WASH-related challenges for women and established the link where gendered WASH inequities interconnect with health outcomes (Pouramin et al., 2020). These intersections come into play with gender roles in WASH activities, disproportional impact of the lack of private and secure latrines, and less access for women to sustainable hygiene resources. This review, however, also mentioned that the detailed understanding of the water-gender-health nexus must be examined and integrated into policies. Analysis demonstrated a clear linkage to gender equitable access to WASH and ending preventable newborn and child death, and maternal mortality. The intersections have also been identified as important to achieving the Sustainable Development Goals (SDGs). The review noted a need to increase sex-disaggregated data collection and incorporate direct gender comparisons to access and monitor WASH services and associated health outcomes.

3.1.1 SDGs

The SDGs are a collection of 17 broad goals and 169 specific targets that reflect the scope and ambition of this new global agenda. Introduced in 2015, the SDGs intend to expand on the Millennium Development Goals and accomplish what they did not previously achieve by 2030. They aspire to realise all people's human rights, as well as recognise gender equality and the empowerment of all women and girls (UN, 2015). They are indivisible and integrated, balancing the three pillars of sustainable development: economic, social, and environmental. By 2030, SDG 3 seeks to reduce global maternal mortality to less than 70 per 100,000 live births; SDG 5 seeks gender equality and the

empowerment of all women and girls; and SDG 6 seeks to ensure universal access to water and sanitation.

Zambia's dataset on the maternal mortality ratio reveals that there have been improvements since the introduction of the SDGs. The maternal mortality ratio has decreased from 232 maternal deaths per 100,000 live births in 2015, to 213 maternal deaths per 100,000 live births in 2018 (World Bank, 2019).

According to a speech delivered to the UN in 2018 regarding SDG 6, the Zambian government has implemented the Zambia Sanitation and Hygiene Programme, whose main activities include increasing the use of improved sanitation facilities from 46% to 75% in order to address the high burden of sanitation- and hygiene-related morbidity and mortality, particularly among rural communities (Zambia Embassy Brussels, 2018).

The Gender Inequality Index (GII) also contextualises advancements in achieving SDG 5: in 2015, the GII score was 0.573, and in 2017, it was lowered to 0.517. This lower score denotes a rise in equality (Ministry of Gender, 2021). The GII rating increased further in 2018 to 0.540, and as of right now, according to the United Nations Development Programme (UNDP), it is currently standing at 0.539. The GII encompasses inequalities that exist in the participation of women in labour markets, the number of women parliamentarians, secondary and higher education attainment by both men and women, and in terms of falling adolescent birth rates.

The Beijing Declaration and Platform for Action (BDPfA), along with SDG 3, serve as foundations for the Zambian government's execution of its health-related policies. They emphasise the significance and necessity of providing women and children with access to high-quality, reasonably priced health care (Republic of Zambia - Ministry of Gender, 2021). Most importantly, the BDPfA is in favour of giving women the ability to make decisions about their own health. For this reason, to encourage excellent health among its population, regardless of sex, the Zambian government has been implementing policies in line with the BDPfA and SDG 3. The Zambian government is also focused on ensuring effective employment policies because they are working to achieve SDG 8 (decent work and economic growth), which specifically aims to promote inclusive and sustainable economic growth, employment, and gender equality, as well as SDGs 3 (good health and wellbeing), 4 (quality education), and 6 (clean water and sanitation).

In 2018, UN Women asserted that UN member nations can only achieve gender-responsive WASH if they tie SDG 5 and SDG 6 together (UN Women, 2018). This indicates the importance of emphasising WASH, health, and gender as intersecting issues that should be addressed together to make progress within each category.

3.1.2 Zambia's Policy Frameworks and Intersections Across Sectors

3.1.2.1 National Policies on WASH

The 2010 National Water Policy's vision is to optimally harness water resources for the efficient and sustainable utilisation of this natural resource, and to enhance economic productivity and reduce poverty (Ministry of Energy and Water Development, 2010). Within the policy, there is recognition that women play a central role in the provision, management and safeguarding of water as they are custodians of natural resources. The policy includes measures to represent women at all levels in water resource management and aims for gender mainstreaming to include the full participation of women through policy implementation. This was a revision from the original policy in 1994, as there was a need to follow international communities in basing water development and management on a participatory and gender-sensitive approach. In regard to health, the policy acknowledges that quality WASH is critical in enhancing health. Due to its critical role in health, the government is investing specifically in the provision of safe water within Zambia.

The 2020 National Water Supply and Sanitation Policy seeks to provide all Zambians with equitable and sustainable access to a reliable supply of clean water, sufficient sanitization, and enhanced services (Ministry of Water Development, Sanitation and Environmental Protection, 2020). Health and gender equality are some of the policy's guiding themes. Communities are tasked to participate in WASH initiatives and make sure to maintain a clean, safe, and healthy environment about health. Some strategies for developing infrastructure and technology that are focused on health are promoting the use of appropriate technologies for effective and efficient service delivery, reducing negative environmental impacts, and enhancing public health. Furthermore, communication and awareness measures include things like developing and implementing a communication

and advocacy strategy for water supply and sanitation and health promotion. As noted in the policy, the MoH is responsible for protecting public health from the negative effects of poor WASH. The Ministry of Gender is responsible for advising policy on gender mainstreaming in national programmes.

3.1.2.2 National Health Policy of 2012

The 2012 National Health Policy aims to reduce the burden of disease, maternal and infant mortality, and increase life expectancy through the provision of quality health care services in a clean and caring manner (Ministry of Health, 2012). Poor environmental sanitation is mentioned as a major source for public health problems and epidemics in Zambia, spurring part of the policy's focus on promoting and strengthening WASH facilities in urban and rural areas, and promoting universal access to WASH. A specific objective seeks to promote awareness that health problems require multi-sectoral collaboration in solutions, including the water sector.

The policy mentions that gender can affect the act of seeking health care (Ministry of Health, 2012). Gender equality is also addressed, with one of the guiding principles requiring equal access for all and to ensure gender sensitivity in the management and delivery of health services in accordance with the National Gender Policy. The policy measures include ensuring that infrastructure is user-friendly, gender-sensitive, and accessible, with appropriate infrastructural elements.

3.1.2.3 National Gender Policy of 2014

The 2014 National Gender Policy aims to achieve gender equality in the development process by correcting existing gender imbalances (Ministry of Gender, 2014). It also guarantees equal opportunities for men and women to actively participate and contribute to the best of their abilities, as well as to benefit equitably from national development. The policy's objectives are to conduct gender research, mainstream gender in all policies, programmes, and legislation, increase participation and decision-making, and facilitate access to gender-responsive health care services for all, including maternal health.

The policy acknowledges as well that many factors contributing to maternal-related problems and the resulting deaths are identified in the recognised part of gender issues in

health (Ministry of Gender, 2014). The policy also recognizes the role that women play in WASH, and how they are disproportionately affected by the lack of access to improved water and sanitation. The policy suggests enabling women to actively engage in community-level choices about the development and administration of water supply and sanitation infrastructure.

3.2 Gender Framework

In Zambia, men are seen as superior to women, with gender inequality originating from traditional cultural and social norms as well as statutory and customary law (Japan International Cooperation Agency, 2016). Women in Zambia experience higher rates of HIV, which can be attributed to discrepancies in decision-making power regarding reproductive health and contraception usage. The existence of gender inequality stems from a gap between statutory and customary laws. More effective gender mainstreaming can be made possible with a new constitution that ensures gender equality in all aspects. Customary law is also rooted further in rural than in urban areas.

In regard to WASH, women and girls are often the primary users, providers, and managers of water and hygiene in households (Water and Sanitation Program, 2010). In most societies, they experience gendered divisions of labour regarding collecting water, cleaning WASH facilities and households, producing and preparing food, washing and waste disposal, and caring for sick family members (Dickin & Bisung, 2019; UN Water, 2006). Their unpaid WASH labour in households and communities reduces the time they have for education, economic activities, and leisure, all of which compromise their empowerment, but with improved access to WASH, they are more able to take on income-generating activities (Jansz & Wilbur, 2013).

3.2.1 Gender-responsiveness

According to UNDP, gender-responsiveness refers to the outcomes reflecting understanding of gender roles and inequalities and encouraging equal participation (Murray, 2019). Priority topics in gender-responsiveness include gender-responsive water governance;, gender-specific knowledge resources, transboundary water management, human rights-based water resources, indigenous and traditional knowledge and

community water rights, and water education and training (Caruso et al., 2021). The WHO provides a gender-responsiveness scale (Figure 1), going from gender blind, gender unequal, gender sensitive, gender specific, and gender transformative (WHO, 2011).

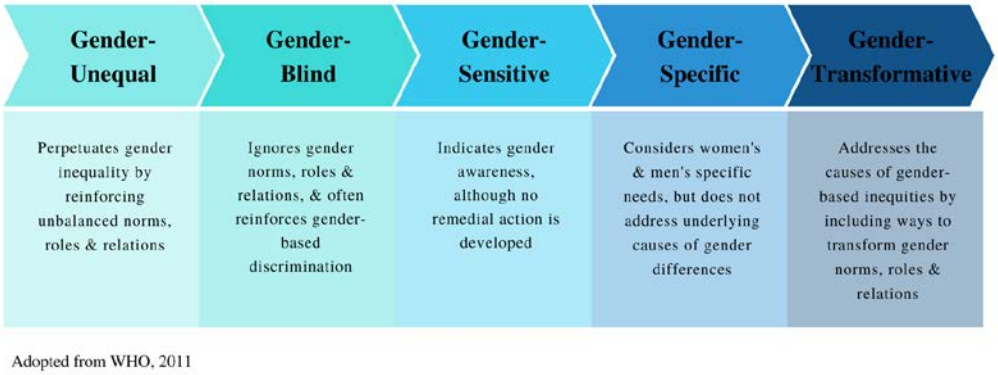

Figure 1. WHO Gender-responsiveness Scale

3.2.1.1 Inequities Experienced by Women During Childbirth

A study in Zambia titled *Women who break the rules: Social exclusion and inequities in pregnancy and childbirth experiences in Zambia*, discussed social rules surrounding childbirth as perpetuating inequities that women experience. These rules include giving birth at HCFs, bringing in-kind materials to HCF when giving birth, and bringing the father of the baby to the facility to register the pregnancy (Sochas, 2019). In some instances, breaking these rules has led to an imposition of monetary sanctions. Unmarried women have less access to financial and social resources to meet rules. These rules were legitimised by authoritative knowledge, and women believe that to avoid complications they must follow the rules. Additionally, if there are complications, health workers may make women feel responsible. Those who struggle to follow facility rules or have home births are viewed as immoral by others. Not all women, however, have the financial and social resources to meet the rules.

3.2.1.2 Case Study on Gender-responsive WASH in HCFs: Rural Uganda and India

One case study titled *WASH and gender in health care facilities: the uncharted territory*, conducted in rural Uganda and India, sought to determine the various aspects of WASH present in HCF settings, including hygiene and health, security and safety, privacy, accessibility, comfort and menstrual hygiene management (MHM) (Kohler et al., 2019). The

HCFs selected all had maternity wards and inpatient facilities and were run by the government. Two HCFs in India showed feedback that inpatients and attendants felt unsafe in toilets and bathrooms, that soap was not available, and that the environment was unclean. There were no buckets for the disposal of sanitary items and there was a lack of facilities for changing, washing, and drying reusable sanitary materials. People suggested recruiting more cleaning staff, providing awareness training for patients and attendants, and increasing communication on MHM.

In Uganda, inpatients and attendants experienced dirty sanitary facilities and a lack of water, with a lack of handwashing facilities and lights (Kohler et al., 2019). Men suggested self-involvement for cleaning, fundraising from patients and stakeholders, and sensitisation on MHM. Women suggested more solutions regarding infrastructure and cleaning, providing more toilets and ventilation, emptying toilets, and providing MHM waste disposal containers. The study showed that the infrastructure of WASH in HCFs was one of the most pressing aspects, alongside lack of sensitisation on hygiene behaviour. Neither women from either country who were menstruating were comfortable during their stay. Even when there are waste bins for MHM, they are oftentimes not used, possibly because of cultural beliefs on menstrual blood in witchcraft and impureness. In this study, there was found to be a need for improved policies and strategies on WASH in HCFs, which the authors cited as currently being weak and heavily centralised.

3.2.2 Gender Empowerment

Access to information and participation have been identified as dimensions to empowerment. Access to information consists of knowledge sharing, awareness creation, and information dissemination (Dery et al., 2019). Sufficient knowledge and information on risks and actionable steps can help with collective action surrounding safe WASH practices. Participation involves community engagement, partnerships and involvement in design and governance of WASH projects.

Participation can also include needs-based assessments and the expression of opinions, needs and ideas on addressing WASH challenges (Dery et al., 2019). Capacity building refers to leveraging human capital, organisational resources, and social capital to solve collective problems (Chaskin, 2001). There is an emphasis on improving WASH

knowledge and training to increase community involvement (Chaskin, 2001; Hetherington et al., 2017).

Leadership and accountability focuses on encouraging people to become active participants in WASH programs, since when local citizens and leaders agree on WASH challenges, it can become easier to solve issues (Brinkman et al., 2012). When authorities are transparent in their communication with community members, they become more willing to contribute resources towards provision and maintenance of WASH services (Dery et al., 2019).

Inclusive decision-making is considered in collective planning, participation, and opinion sharing on decisions (Dery et al., 2019). When women contribute to planning and resolutions of problems, it is considered a process of empowerment. Communities are not able to express their views when external bodies make decisions, which results in services not meeting needs and solutions not being properly maintained.

One indicator is women's representation in decision-making. Empowerment has a role in promoting equitable WASH services and plays an important role in the efforts to achieve SDG universal coverage targets for WASH. Empowerment is both a cause and an outcome of successful gender-sensitive WASH programs. Figure 2 demonstrates a summary of the gender empowerment framework.

Figure 2. Gender Empowerment Framework Summary

3.2.2.1 Women's Involvement in Gender Empowerment in Zambia

As Zambia is a patriarchal society, men typically possess more economic power and authority in households (Ministry of Gender, 2021). Zambia's DHS from 2018 analysed the

percent of wives who participated in decisions regarding their own health care, daily household purchases, major household purchases, and visits to their own family and friends. While 81% of women make decisions about their own health care, only 57% make decisions in all categories (Zambia Statistics Agency et al., 2020). Additionally, 61% of women who are employed make decisions in all categories, and those with a higher education are more likely to make decisions in all areas.

The fact that men hold most of the power at the household level is why SMAGs aim to include men as well as women. SMAGs are volunteer-based community groups that assist maternal health care workers, increase women's knowledge and access to maternal health services (MHS), and actively involve husbands in their wives' maternal health, among other things (Jacobs et al., 2018; Sialubanje et al., 2017). By involving men and educating them about MHS, SMAGs can more significantly impact households and encourage them to properly use MHS. This in turn promotes better maternal health outcomes in the community at large and benefits women's health and well-being.

At the national level, attempts to increase women's involvement in policy development and decision-making have fallen short of the country's goals. In 2008, Zambia signed the Southern African Development Conference (SADC) Gender Protocol, which aimed to represent women in 50% of all political appointments (Nakray & Kafukanya, 2019). While this was a noble goal, women's representation in politics has fallen short of this goal: in 2015, women comprised just 6% of all political appointments, a slight increase from the 2009 level of 5%. This relatively low rate of participation is evidenced in the cabinet ministries, where currently women are ministers in just 4 out of the 25 ministries that comprise the government. Additionally, in 2021, women held just 15% of all seats in parliament (World Bank, 2021).

The WASH sector specifically has been traditionally dominated by males as well (Water and Sanitation Program, 2010). In Zambia, women account for just 4.2% of all employees working in WASH and waste management (Ministry of Gender, 2021). At the community level, women's involvement remains low for the most part. However, from 2017-2019, the Ministry of Water, Sanitation, and Environmental Protection undertook measures to increase women's participation in WASH and environmental management projects. As a result, in Western province, women composed approximately 50% of the

workforce on village committees that focused on WASH and environmental management. Though women's inclusion can still be drastically improved, this shows that measures to increase involvement can be successful.

While women's involvement at the community level is important, policy-level involvement is important as well. Recognising that women's participation is critical when creating WASH policies, Tanzania passed a law that requires local water committees to contain equal numbers of men and women (Water and Sanitation Program, 2010). However, reaching 50-50 gender participation is just one step in moving towards gender equality and inclusion. Ignoring the underlying factors and gender dynamics that contribute to gender inequality can lead to men and women having different, unequal roles in making decisions about WASH (Greeney et al., 2017).

4. INTERVIEW FINDINGS

4.1 Birthing Settings

4.1.1 Traditional Birthing Settings

Mundia Mutukwa, Project Manager at World Vision, shared that there is not a significant difference in home birth compared to HCF birth outcomes. At home, women are viewed as more at risk when experiencing infections or complications due to the lack of a skilled birth attendant presence to prevent, monitor and treat infections. *Joseph Ng'ambi*, WASH Officer from UNICEF, particularly believed that traditional IPC in homes places emphasis on natural processes. *Dr. Caren Chizuni*, Chief Safe Motherhood Officer at the Ministry of Health, mentioned that during home births, people use their bare hands rather than gloves. Across stakeholders, there was the perception that traditional births do not occur within clean environments that have the proper equipment. HCFs, on the other hand, are meant to practice IPC, and have skilled birth attendants.

In the home delivery setting, *Emmanuel Phiri*, Protection Assistant from the UNHCR, shared that delivering mothers will at times receive assistance from other women in the neighbourhood, and *Ng'ambi* mentioned that traditional birth attendants still play a role in bringing and referring pregnant women to HCFs when complications arise. *Mutukwa and*

Dr. Chizuni compared that to HCF settings, which have skilled birth attendants, while at home a woman could be alone making cutting the umbilical cord more difficult.

Yet, stakeholders cited why women still may choose to give birth at home rather than in a HCF is WASH itself. Both *Ng'ambi* and *Dr. Chizuni* shared that the perception of a lack of water at HCFs may cause women to shy away from giving birth at HCFs if they have water at home. *Mutukwa* continued to say that in areas with safe access to WASH, there is an increase of deliveries at HCFs. A lack of water at facilities may lead to home births increasing, with a lack of trained personnel to address birthing complications.

4.1.2 Barriers to Accessing HCFs for Women During Delivery

Stakeholders identified several barriers for mothers in accessing HCFs: cultural beliefs and gender norms, WASH resource provision within HCFs and transportation. *Stakeholder G*, a gender related NGO stakeholder who wished to remain confidential, stated cultural barriers to access, stating that in rural areas, women are more likely to wait for men to allow them to go to HCFs. *Phiri* and *Ng'ambi* shared that some fathers do not allow the attendance of a male nurse or women are not comfortable being attended by male midwives because of cultural tradition, leading some women to avoid delivering in HCFs. While permission pertains mainly in regard to antenatal care, it also relates to deliveries. As distance is a barrier, men may also need to provide transport for pregnant women, citing gender involvement as a barrier.

Phiri also identified resources as being a barrier, given that water is scarce in some areas, specifically rural areas. *Mutukwa* noted that rural areas have the most trouble regarding access to HCF services. Long distances, type of facility (clinic versus hospital), and local resources were cited as specific access barriers. *Chola Mbilimbi*, Senior Inspector at the National Water Supply and Sanitation Council (NWASCO) also mentioned distance and safety based on access points to be challenges. Currently in the WASH sector, goals include access, safety, and sustainability, with focuses on investment in access and safety. *Ng'ambi* said that access can change based on region, and even if HCFs are within 5km, access to them can be made more difficult with the terrain, forcing locals to walk. He contended that access issues lead to women delivering at home instead.

One problem this stakeholder notes is that partners supporting health tend to

address problems in more easily accessible and less difficult to reach areas. He said that if women have water at home, they may be less likely to shy away from HCFs. Perceived uncleanliness of facilities is also a barrier. *Davy Ng'oma*, Programme Manager of WASH at WaterAid Zambia, stated areas' resources as possible access barriers. If a local area does not get rain or if it has runoff, access is affected. He believes that infrastructure, including the roads to get to HCFs, should be improved.

Ng'ambi shared that in urban areas, roads and local transport provide easy access to HCFs if one has money. *Stakeholder G* contributed that women are commonly advised to save money for transport to get to HCF access, as this is a first delay of care. They also mentioned that many individuals go to the government level hospitals because it is free for maternal care. In urban areas, there are more private institutions available, so those with money or insurance from employers can get better care. Meanwhile, a Senior Planner and WASH related stakeholder, indicated that there were no barriers to women accessing WASH in HCFs.

4.1.3 WASH Realities in HCFs

Phiri indicated that each HCF needs a sufficient toilet ratio but that the government is not meeting its standards, creating a gap. He shared that organisations including UNICEF and WaterAid need to help meet minimum WASH standards through supplementation. *Mutukwa* stated that in HCFs and maternity settings, services may not be provided, or they may not have the capacity. The challenges are about resources. Although decentralisation is meant to improve service delivery, there are gaps in rural areas where local levels may not have the resources to supply. It is *Mutukwa*'s view that resources should be combined from other sectors, and that there should be a multisectoral approach of government and donor support. Rural areas do not always meet the standards, and World Vision aims to help with this.

Ng'oma shared that infrastructure is dilapidated in HCFs, demonstrating high mortality rates, and that the status of WASH in these settings is poor. The lack of WASH in HCFs, he said, is partially due to budget and allocation of resources, while the minimum standards include toilets and lighting for a HCF environment. He made clear that Zambia is doing well with policy and standards, but less with implementation and adherence.

Currently, WaterAid Zambia is helping with a detailed analysis on 60 HCFs in the South and West provinces surrounding infrastructure. He believes that there needs to be a holistic approach to improving WASH in HCFs, including personnel and a comprehensive district level approach. He finds the need for someone to look over the whole development process from different perspectives rather than a sector level approach. *Ng'ambi* shared that there is a difficulty in the operation and maintenance of WASH in HCFs. WASH is incorporated in design, but the budgets allotted make it difficult to sustain WASH. The following below are more specific themes that stakeholders noted as issues in HCFs.

Ng'ambi cited staffing as an issue regarding the realities in HCFs, specifically in rural areas. Work is being done to incentivize workers to rural areas, including hardship allowance for certain rural settings, institutional housing and facility electricity and water coverage from institutions. Cleaning may be neglected by workers because they may need to complete other tasks such as retrieving water for patients. Patients themselves, or their caregivers, may even be asked to get themselves water for their stay in the facility.

Dr. Chizuni mentioned that all programmes in maternal health include IPC yet lack the resources to adhere to the guidelines such as gloves, PPE, washing powder, gowns, cord cutters, and water. The sterilisation of equipment is lacking in most HCFs, as disinfectant is used but does not kill all of the microbes. Mutukwa said that IPC specifically is lacking because funds are not consistent, and she stated that more resources are needed from the MoH. IPC, while critical in HCFs and requiring water and sanitation systems in HCFs, is not effectively implemented in HCFs. The issue lies in commodities available, and while this is an issue in all settings, rural areas experience worse conditions than urban areas.

Hamugunyu contended that there are high infections in HCFs in hospitals due to poor hygiene and cross contamination, with 1.4-14% HAI rates. He mentioned that IPC and supplies are taken care of, with resources and practices being supported by the government and partners. *Dr. Chizuni* did say that HAIs heavily contribute to sepsis, which comprises 7-8% of deaths. Yet, the prevention of sepsis is not paid attention to because deliveries continue without adequate supplies, and supplies are not prioritised even when acknowledged to be able to reduce issues. Furthermore, she noted that health care after obtaining a HAI is not sufficiently provided. There is a lack of antibiotics for sepsis in HCFs, with many not having all antibiotics necessary, or only being able to provide oral

antibiotics which take a longer time to work.

Ng'ambi and *Hamugunyu* stated that the issue also lies in IPC training and software usage within maternal health. The problem is in conducting trainings and staff adopting new practices. Not everyone in the facilities is trained. Rather, a few are trained and a trickle down of training is expected. *Ng'ambi* finds virtual training to be important so that everyone can receive training. *Hamuyungu* specified that training targets for doctors and nurses are 50% of what they should be, and training of support staff is at 10% of the target. He shared that it is important for drivers to have proper PPE and cleaning supplies to protect themselves, patients, and patients' caregivers. Meanwhile, cleaners need to know the importance of the segregation of waste.

Katongo shared alongside *Hamugunyu*, that the status of WASH in HCFs differs by geographical area due to the different types of HCFs available, ranging from district hospitals to provincial hospitals. Urban areas have more infrastructure, with rural areas generating more of a concern for women. Support is not sufficiently given to all HCFs, and *Hamugunyu* addressed the need to mobilise resources from government and partner budget allocations for infrastructure development and transport.

4.1.4 HCF WASH Infrastructure for Women's Needs During Delivery

Phiri indicated that most maternal needs are met at the facility level. *Ng'oma* determined that the environment, toilets, water access, shower, and infrastructure are the most important for pregnant women in HCFs. In terms of toilets, pit latrines do not work for pregnant women, which must be considered with infrastructure. *Mutukwa* identified drinking water as an important need in HCFs during delivery. In addition to toilets, showers with running water and safe sources for drinking water, *Dr. Chizuni* listed some important standards for women as including hand washing by the mother.

Many of the standards and needs are not met, according to *Dr. Chizuni*. The reality, she mentioned, is that wards may not have a source of safe drinking water. Some women are forced to get water themselves or bring their own buckets. Women may need to bring their placentas home because the pits may be missing at the HCF. Sanitation is a challenge, and the toilets that are available could be dirty due to a lack of running water. High infection rates may also come from the lack of access to a shower.

Mutukwa said that from World Vision's perspective, sanitation is not inclusive, and that the government needs to promote inclusive WASH such as access ramps and handrails. *Ng'ambi* noted the importance of the integration of the female perspective when it comes to the design of WASH facilities. Currently, the design standards are all inclusive. In his view, there is not the need to make specific standards for women because the designs already include women. Implementation, however, is the problem.

Ng'ambi said that many workers assist with deliveries because it is necessary. Due to staffing shortages, environmental health technicians may need to help with clinical work even when their intended job is in outreach for prevention. *Hamugunyu* mentioned that in terms of maternal services, this again depends on the level of HCF. He says that only certain levels of HCFs have maternal services, with some only including the basics. Urban areas have hospitals with better services, while rural areas struggle more with gender-specific care. *Dr. Chizuni* agreed that more specialised HCFs provide maternity services. Meanwhile, there are only 49% of the required midwives within staff, most birth attendants being non-midwives and general health care professionals.

Mutukwa shared that the WASH standards within maternity settings include a delivery room, shower room for after birth, postnatal room, and that the bed linen be washed after. In rural settings, however, there is less space oftentimes combining the labour and postnatal rooms, compromising privacy. *Ng'ambi* said that most HCFs have maternity settings, and most likely offer MHS at first level hospitals and rural health centres that act as referral centres. UTH has specific wards and rooms for maternal health. He mentioned HCFs without maternity settings still attend to pregnant women due to health needs. Rural areas may even have to close some of their services to help with an urgent delivery. *Ng'oma* cited maternity wards with security and comfort to be an indicator of gender-responsive practices in HCFs.

Ng'ambi said that regarding gender-responsive infrastructure, the aim is to have gender segregated toilets and washing facilities. Some HCFs have shared facilities, causing some pregnant women to express disinterest in attending HCFs for their deliveries. *Katongo* declared that there are separate wards for men and women. Male wards tend to be more open while females are more segregated for privacy. Females also have different sections within HCFs, including a maternity ward. According to *Katongo*, infrastructure is

present at most HCFs but also differs at the level of HCF. Centres have basic facilities with separation, whereas hospitals offer more services. *Dr. Chizuni* also cited there to be gender inclusive infrastructure in the sense that there are separate wards for males and females, as well as separate toilets and showers. The reality, however, is that infrastructure is responsive in design, but facilities may not be available, encouraging women to use male toilets and showers instead. There are not enough WASH facilities, or supplies such as toilet paper and cleaner, for the number of patients in HCFs.

4.2 WASH, Health and Gender

4.2.1 Prioritising Focus in the WASH and Health Sectors

Prioritisation determines what issues and needs are focused upon within sectors, as well as which programmes are implemented. Indicators of prioritisation include changes in power and political agenda, allocation of funds, as well as decisions based on research and data demonstrating need.

Ng'oma cited changes in government to cause fluctuations in policies and focus, suggesting that there is constant restarting with changes in power. He believes that the government should lock in policies for more than the minimum of five years and to see the impacts based on data and deliberation. He also believes to better meet Zambian needs there must be the promotion of Zambian oriented research.

Mbilimbi shared that prioritisation can depend on input from investors such as corporate partners, as the WASH sector is approximately heavily externally financed, with the stakeholder estimating around 95%. Common causes and agreements between partners make committees to advise collective efforts. Investors have a strong and positive voice in influencing policy, with regulators also serving a legal function to participate in policy making. *Hamugunyu* mentioned that action plans and budgets depend on input from stakeholders and communities.

Mbilimbi also shared that WASH facilities are financed in part through loans. In the attempt for money to be paid back, there may be a focus on affluent areas. However, she also believes that the wrong sorts of projects are being undertaken. Investments are going into other areas besides sanitation, due to the attention put on cost. WASH receives

approximately 2% of the national budget, which is divided between resources and development and supply and service delivery. The bulk of funds go to resources because they are more expensive. *Ng'ambi* stated that partners supporting health tend to go to help in easily accessible and less hard-to-reach areas.

Ng'oma said that currently, budgets are used for current visible needs, although some problems remain unseen. He declared that budget allocation must be equitable and that to determine what area needs focus and money, data should be collected. He cited the MoH as previously overseeing health management information systems, but that he is unsure of their current work in that realm. *Ng'oma* mentioned that it is better to indicate, analyse, and understand problems with data.

Mbilimbi and *Stakeholder G* indicated that at the more local level, areas are presented with constituency development funds in which they can choose how to allocate them. These funds are not specifically given for WASH but allow for locales to prioritise issues in the manner they believe best. *Katongo* mentioned that the Ministry of Water Development and Sanitation (MWDS) has a mandate to supply water to all HCFs, but that individual HCFs make their own decisions regarding how that water is used. Standards of WASH in HCFs are drafted by the MoH, but management of water supply, and therefore focus on WASH provision is to some extent up to individual HCFs.

Dr. Chizuni also said that in relation to maternal health, the allocations of funds are not adequate. *Ng'oma* shared that money is not provided, even though maternal health is claimed to be a top priority in government and programs. *Dr. Chizuni* continued that the MoH is given 8% of the total budget, and it is not meeting health standards. Money goes to pharmaceutical drugs, while WASH is not sufficiently prioritised. WASH in her opinion should have more funding in relation to other services within allocation because diseases are oftentimes related to WASH as well.

4.2.2 Intersections of WASH, Health and Gender in Policies and Programmes

When asked whether WASH, gender, and health intersected with policies and programmes, most stakeholders responded affirmatively, indicating that there appears to be an intersection between two or all three dimensions. Furthermore, regardless of the

view of the realities of intersections, stakeholders agreed that WASH, health, and gender issues should be addressed together for efficiency in policies and programmes.

Ng'oma mentioned that maternal health and WASH are considered gender issues in Zambia. The intersection of the three dimensions is consistent. This is demonstrated by the fact that WASH focuses on preventive measures rather than curative measures. As a result, the majority of WASH programmes are health focused. This is demonstrated by the driving force for WASH in HCFs, such as the steering committee, which aims to integrate WASH in HCFs. Furthermore, health policies are attempting to blur lines by incorporating more WASH, such as access to sanitation as an access indicator for gender. IPC represents the intersections of WASH and health.

Dr. Chizuni contended that while there is a relationship between gender and both maternal health and WASH, there isn't one between the two, WASH and maternal health. This is demonstrated by the fact that WASH is included under environmental health in the National Health Policy but not under public health. However, *Katongo* and *Hamugunyu* believe that there is a connection between the WASH and maternal health dimensions. They held the opinion that the MoH and the MWDS collaborate closely as per their mandate, with water supply to HCFs part of the role of the MWDS and standards of WASH in HCFs part of the MoH. They consult with one another to set standards and operational procedures, and they work together as policies are drafted.

Mbilimbi asserted that, while the link between WASH and health is weak, their needs inextricably interconnect. As a result, investment in WASH could benefit the health sector by reducing spending across sectors. According to *Ng'ambi*, maternal health and WASH are currently viewed as distinct, just as WASH and health are. However, they should complement one another. Gender, maternal health, and WASH appear to be unrelated; gender-responsiveness may be within WASH but not in health. Gender must be incorporated into WASH and health, and by extension, maternal health.

Dr. Chizuni specifically mentioned that in relation to making progress towards SDGs that it would be better to combine the three issues of gender, WASH, and health. Accessing safe WASH can prevent health issues, particularly in rural areas. In addition, there should be awareness-raising surrounding gender roles within WASH and advocacy for both men and women to contribute to housework and WASH activities.

4.3 Gender in Zambia

4.3.1 Prioritisation of Gender in Policies and Programmes

There was a consensus that gender is prioritised in government policies and programmes. While the Ministry of Gender was recently dissolved, stakeholders shared that this was done to streamline gender in the national government. Instead of only being focused on in one ministry, gender is instead integrated across policies in all sectors of government. *Ng'ambi* mentioned that there is now a gender division that the female Vice President oversees. *Mbilimbi* said that the National Gender Policy applies to all sectors of government, in its attempt to mainstream gender in Zambia.

In addition to gender mainstreaming in governance, NGOs are starting to incorporate gender mainstreaming in their programming. For example, stakeholder 4 mentioned that UNICEF is now recognizing gender as a top priority for programming within Zambia. In addition, WaterAid Zambia is working to prioritise gender further within its upcoming country programme strategy for Zambia. They are hoping to eventually include a separate budget for gender, further highlighting its importance within the organisation.

There was one differing opinion, however. While gender is supposed to and expected to be integrated within various sectors, *Katongo* fee;s that gender was not necessarily given priority within the government focusing on water. He mentioned that it is important to include a budget line for gender. He also shared that MWDS is drafting their first policy on gender, which aims to address gender through various projects.

4.3.2 Gender Empowerment Strategies and Male Involvement in Gender Issues

There was consensus among stakeholders that measures are being taken to empower women to make their own decisions about their maternal health. *Ng'oma* stated that one area that schools are focusing on in education is maternal health and MHM. Schools are expanding WASH infrastructure to better accommodate girls' health needs.

In communities, *Stakeholder G* shared that pregnant women are encouraged to seek pregnancy services from HCFs rather than giving birth at home. *Mutukwa* attributed actions like these to SMAGs, which train community members to educate men and women

about available MHS within their community. *Ng'oma* acknowledged that empowering women in these areas is critical because women in Zambia are oftentimes viewed as lesser than men, due to both cultural and religious reasons.

Stakeholders recognized that male involvement is necessary to advance women's empowerment. *Ng'oma* said that there are taboos or cultural inhibitions that prevent husbands from participating in their wife's maternal health, however, which may need to be overcome. *Stakeholder G* acknowledged that educating men on women's maternal health needs is important since men are sometimes sought after for permission to seek care in their pregnancies. This is more common and has more of an impact on accessing MHS in rural areas, specifically with antenatal, but also delivery services. Community programs aim for the transformation in seeking care, empowering women to seek treatment from HCFs regardless of receiving permission or not. *Mutukwa* also stated that programs are in place to train and educate men to support their pregnant wives and recognize when complications arise that require the use of MHS. *Stakeholder G* also mentioned that men are instrumental in transporting women to HCFs to access MHS, since HCFs may be far away from households, particularly in rural areas.

Stakeholder G mentioned that on a macro scale, men's involvement is valuable in the decision-making process. They stated that men should drive social change through involvement in the service delivery chain. Currently, there are men making decisions in the effort to address maternal health issues. Specifically, the permanent secretary at the MoH, a male fistula surgeon, is a good ally who speaks with the minister of health to ensure the agenda of certain policies and programmes. According to *Stakeholder G*, it is simply important for men in power to listen to women and advocate on their behalf.

4.3.3 Women's Decision-making in Policies and Programmes

There was some disagreement amongst stakeholders about the current state of women's involvement in the WASH and health sectors. Some stakeholders felt that women are sufficiently represented when it comes to decision-making. *Katonga* pointed out that women oftentimes make up most of the workforce at water-focused NGOs. Additionally, when the MWDS implements policies, many of the stakeholders they collaborate with are

women. *Hamugunyu* held a similar position, stating that women are involved at all stages of the decision-making process, from the local to the national level, including when stakeholders and communities are interviewed. *Stakeholder G* thinks that there are a good number of women involved when making policies. They think it is beneficial for many voices to urge issues, and that whoever uses their voices to urge these issues should have health expertise. *Stakeholder G* emphasised the importance of having men that amplify women's voices.

Phiri believes that more women should be included in decision-making but mentioned that the MoH employs several women already, which he thinks is a step in the right direction. *Ng'ambi* echoed this point and added that many in-charges of health centres and community health workers are women. He approved of this inclusion and feels that women should be included more when designing WASH facilities and HCFs. *Ng'ambi* thinks the integration of female voices has benefitted facilities, as women bring different perspectives when considering issues like menstrual hygiene and maternal health. *Ng'oma* said that women's inclusion varies by region, but that women's voices are effective in enacting change at the community level. There has been more focus on community involvement since the 1990s.

Dr. Chizuni specifically mentioned that decisions are made by those at the national level. They analyse access to facilities, and occasionally conduct interviews with experts to research what women want and need to be implemented. Community groups such as SMAGs, neighbourhood health committees, and young women associations represent women and sit with health centre staff, contributing to decision-making. National levels then get information from patterns to make strategic plans. *Dr. Chizuni* indicated the low involvement of women at the policy and parliamentary levels, mentioning that the majority of MoH employees are male. It is mainly men in leadership at the provincial levels as well. *Mbilimbi* further used employment statistics to illustrate that women's participation is low within the WASH sector: of the 11 utilities that supply WASH in Zambia, 17% of employees are female, 21% of management is female, and only one utility is led by a woman. Furthermore, she said that this low participation level has been stagnant for the past four or five years. *Dr. Chizuni* mentions the problem with WASH in HCF delivery settings to be in the implementation of policies. Currently, there is a lack of ensuring activities resulting

from policies, and she believes that more female representation would aid in making implementation more successful.

4.3.4 Gender-responsiveness of WASH in Maternal Health

Many stakeholders agreed that Zambia's WASH policies and programmes regarding maternal health are gender-responsive to an extent. However, the level to which they thought these policies are gender-responsive varies. *Katongo* held the most definitive outlook, stating that maternal health policies are gender-responsive, and that there are no gaps in gender-responsiveness. He declared that WASH facilities cater to women's needs. *Stakeholder G* mentioned that the government is placing recognition on the importance of WASH, and that the issues for women and girls are generally acknowledged, with the country specifically emphasising maternal health as a priority. In her view, the measures are a different story, although she did not explain further. The remaining stakeholders stated that WASH regarding maternal health is neither completely gender-responsive nor unresponsive regarding MHS provision in HCFs for women.

Dr. Chizuni explained that infrastructure design, in the sense that there are separate wards, toilets, and shower rooms, make WASH gender responsive within HCF maternity settings. However, those facilities are not always maintained or available. *Ng'oma* also believes that infrastructure designs, as well as policies, are gender-responsive, while the implementation of those designs and policies are lacking. A reason according to him could be that there is a lack of emphasis and financing. *Dr. Chizuni* cited that there is a misallocation of funds in the health sector, which does not prioritise WASH in health, but instead curative measures including pharmaceuticals. Both *Dr. Chizuni* and *Hamugunyu* noted gaps in training, with there being little awareness and integration of gender across staff in the provision of care.

Phiri thinks gender needs are met in some areas, but that there are challenges, especially in rural areas as water is scarce in certain regions. *Mutukwa* also acknowledged that World Vision promotes inclusive WASH facilities and access, yet in the rural areas, sanitation is not as inclusive. She views that the government needs to promote inclusive WASH further.

5. DISCUSSION IN THE GENDER FRAMEWORK

5.1 Gender-responsiveness

There are improvements being made in gender empowerment and gender-responsiveness in Zambia, as many stakeholders cited that there has been progress in gender mainstreaming across government and ministries, in line with the National Gender Policy of 2014. Maternal deaths are viewed as an issue of gender inequality (Ministry of Gender and Child Development, 2014). One goal of the policy is to enable active engagement of women at the community level in WASH development and management of infrastructure. Due to the focus on the mainstreaming of gender in Zambian governance as evidenced by literature and stakeholder interviews, parts of Zambia's policies and programmes are gender-sensitive according to the gender-responsiveness scale which notes gender-sensitivity as gender awareness (WHO, 2011).

A major issue found by literature and stakeholders was the state of WASH within HCFs. Handwashing practices are lacking in IPC and there is a lack of HCF accessibility to WASH (Mudhune et al., 2021; Velleman et al., 2014; Zimba et al., 2022). However, gender-responsive infrastructure is also in question. The purpose of separate wards, toilets, and showers is to meet women's WASH needs while respecting more cultural needs for privacy. However, these facilities are not in good enough condition to allow for those needs to be met. Gender-specificity within the gender-responsive framework is identified as considering women's needs but not addressing underlying causes of gender differences (WHO, 2011). The biological needs of females are addressed by virtue of the design of infrastructure to include toilets and showers for after delivery, while the cultural need for privacy is also addressed to an extent by HCF design for segregated wards and facilities. However, the reality is far from gender-specific in nature. The state of WASH prevents the infrastructure from being as gender responsive as it is intended to. In addition, while the need for privacy is considered, there is a lack of emphasis on other cultural practices impacting gender-responsiveness in HCFs. The rules of bringing the father to the birth, possible blame being placed on women for complications if they are unable to follow the rules, and the imposition of monetary sanctions for rule-breaking (Sochas, 2019), do not

consider the inequality of women's economic statuses or their independence from men. In Zambia, gender-specificity is present largely in policy, standards, and design, not in practice.

There are several aspects of HCFs in maternal health that address the gender-transformative part of the scale, which refers to addressing the causes of gender inequalities by including ways to transform gender norms, roles, and relations (WHO, 2011). While men are typically seen as superior (Ministry of Gender, 2021), and are depicted as a barrier at times to women being unable to access HCFs (Zambia Statistics Agency et al., 2020), there are community groups and interventions addressing gender and power relations. As seen from stakeholders and literature, SMAGs aim at providing education to both men and women surrounding pregnancy. Meanwhile, stakeholders shared the need to involve men more, and mentioned the transformation of seeking care by encouraging women to go to HCFs with or without a man's permission. Both initiatives aim at improving mother's health by transforming gender roles and relations, including male involvement and the deconstruction of permission-seeking.

5.2 Gender Empowerment

Throughout stakeholder interviews, several stated cultural beliefs as barriers to accessing HCFs during births, one being the requirement of permission from males. However, the work being done with SMAGs and gender mainstreaming throughout the Zambian government, does suggest that there has been movement with gender empowerment in the realm of maternal health. The gender empowerment framework mentions one of its core dimensions of empowerment to be access to information, through knowledge sharing and awareness creation (Dery et al., 2019). A key informant in the NGO sector focusing on gender discussed how there is a current push to get women to decide to go to HCFs for care, regardless of the permission from the man. This is being done through awareness and advocacy, enhancing women's empowerment to seek proper care during childbirth. In addition, another informant mentioned SMAG's education of men of the importance and role in their involvement is important in helping women access HCFs

during childbirth. This empowers women in the current state of Zambia, where there still may be the influence of men's permission to seek care.

According to stakeholders, design of WASH infrastructure in HCFs in Zambia is inclusive, and there is sufficient community level representation in the decision-making process of ministries. This contradicts the Gender Status Report of 2017-2019, which states that women's involvement at the community level remains generally low, but that it varies by region and government interventions (Ministry of Gender, 2021). According to some stakeholders, ministries seek community input and consultation. As some dimensions of gender empowerment include leadership, decision-making, and participation, ranging from active participation in programming, input of women into resolutions, and involvement in design and governance (Dery et al., 2019), Zambia currently is working on gender empowerment within the WASH sector in HCFs. Inclusive design may be attributed to women's participation and stake in ministry decision-making. However, it has been cited by stakeholders that for design, women need to be involved more as they are most affected by a lack of WASH in the health setting. It is possible that while the report mentioned women at the community level were not heavily involved, that it has changed in recent years, such as with Western province when measures were taken to increase involvement and subsequently women composed 50% of village WASH committees (Ministry of Gender, 2021).

The problem remains in the infrastructure not being sufficient, with some HCFs lacking maternal services and maternity training, segregation and privacy of rooms and WASH facilities such as toilets and showers, as well as the need for women to at times get their own water during childbirth in HCFs. This may be because of the lack of representation of women at the national level. Decision-makers at policy level tend to be male, although several stakeholders mentioned that national levels consult community organisations prior to developing policies and programmes. This still may pose a problem for the empowerment of women within the WASH sector when delivering in HCFs, as a stakeholder mentions that implementing the designs of gender-responsive WASH facilities would be more effective with women at the national decision-making level. This issue is further shown within literature, which states that in 2015 only 6% of political appointments were held by women (Ministry of Gender, 2021).

Stakeholders also mentioned that one of the hindrances to meeting women's needs in HCFs during delivery was a lack of training. This lack of training in IPC is connected to HAIs, as mentioned by Caren, as well as in the review of the SCC, mentioning that the increase in IPC adherence with the checklist was an indicator for sepsis (Mudhune et al., 2021). This is possibly a hindrance to gender empowerment as there is a lack of awareness or care about the importance of IPC and gender-responsiveness by staff. There could be an increase in gender empowerment through the mode of information dissemination (Dery et al., 2019), allowing staff in HCFs to better find out women's needs and how to respond to them regarding IPC, privacy, and facility usage. As previously mentioned, most maternal deaths could be prevented with proper delivery attendance of a supervised doctor with proper training, as well as equipment and supplies (UNICEF Data, 2021), suggesting that an increase of empowerment through training of staff on WASH and gender-responsiveness could positively affect maternal outcomes.

6. RECOMMENDATIONS

6.1 Resource Allocation

6.1.1 Budgets

There are several common recommendations that came from stakeholders, one regarding resource allocation. Two recommendations come from this, one being that there needs to be more WASH prioritisation in budgeting, and one being the need for Zambian specific data. Regarding budgeting, stakeholders mention both maternal health and WASH to be addressed as priorities, specifically maternal health. Yet, several stakeholders believe that within those sectors there is not enough funding and within allocation, money is prioritised poorly. The health sector prioritises drugs as a curative measure rather than WASH as a prevention measure to health problems. WASH fails to prioritise sanitation. Therefore, stakeholders share that budget structures should change, and that links to the need for more research and data. Focus should also be on developing and maintaining sustainable WASH, and several stakeholders agree that with more investment in WASH, the status of the health sector will improve. They believe that resources should be combined from other sectors for more efficiency and effect.

6.1.2 Research and Data

One stakeholder mentioned that it is necessary to base resource allocation on what Zambian-specific data indicates are the most substantial problems in need of addressing. Currently, money and programme developments are directed to visible issues, but many remain unseen and therefore not prioritised. Alongside the need for more data to aid in the determination of resource allocation, another stakeholder shared that more situational analyses need to be done by organisations across the country to identify which entities are supporting which areas in Zambia, as well as where the gaps are. These discussions have led to the recommendation from our stakeholders that focus should be put to producing more Zambian-specific data. Stakeholders mentioned the lack of quality empirical data, and how that influences the path of investments and direction of policy and programming across sectors, specifically within the WASH sector. Gender empowerment could be better addressed within Zambia through the dimension of access to information by increasing awareness of the country's social justice issues within the government, NGOs, communities, and individuals.

6.2 Intersections of WASH, Health and Gender

This area of discussion is one that was highly disputed amongst stakeholders. Many believed that there are intersections between the three categories, however the level to which those intersections are viewed varied. Some stakeholders believed that they are intersected continuously, with the MoH and MWDS working together, and gender being emphasised in all policies and programmes. Others mentioned that gender intersects in policies and programmes for both WASH and maternal health separately, but that WASH, and maternal health are not emphasised together much. Another shared that intrinsically, WASH, health, and gender are linked, but they are not focused upon as such in policies, programmes, and implementation. One said even further that maternal health and WASH are distinct, just as the focuses in WASH and health usually are. Differing views from stakeholders, as well as a review of Zambia's national policies showing intersections across some but not all the three categories, suggests the need for further research in the area. When it comes specifically to gender-responsiveness in maternity settings, discrepancies

amongst stakeholder opinion on gender-responsiveness, especially as there lacked a standard definition of the term across interviews in questions, it seems valuable to further explore this area as well.

6.3 Gender Emphasis at the Implementation Level

6.3.1 Trainingin HCFs

Stakeholders generally cited Zambia's policies and programmes to be gender responsive as they address gender needs, rights, and inclusion. However, several shared that where gender-responsiveness and gender empowerment fall short is at the implementation level. This is in regard to training staff, who are not trained specifically in relation to gender and gender-responsive practices, or IPC training, which is especially important to implement for pregnant women giving birth. More work needs to be done to enforce training and behaviours to better accommodate and serve pregnant women's needs when delivering in HCFs. Stakeholders noted the need to enforce the minimum WASH standards in HCFs as a baseline for care.

6.3.2 Women's Decision-making at the National Level

Stakeholders demonstrated that women's voices are necessary, and to an extent incorporated, in the decision-making process for policies and programmes. The MoH and other stakeholders shared that decision-making at the national level involves conducting stakeholder interviews and consulting community groups, many of which are led by women or advocate on the behalf of women. However, some stakeholders described the discrepancies between male and female employment levels at the water utilities and ministries, stating that there are far more men in those national level positions than women. One stakeholder shared that as implementation of policies and programmes is the issue with gender-responsiveness in Zambia, more women need to be in national level positions to aid in the successes of implementation. This suggests that integrating more women at the national level would improve both gender empowerment, as well as the state of WASH in HCF delivery settings.

This topic was debated by our stakeholders, however. Several believed that there is enough women involvement in government. However, the employment appears to fall short of the goal of 50% employment in the SADC Gender Protocol based on quantitative and qualitative evidence from stakeholders and literature. More emphasis placed on research could help bring to light women's participation in the WASH and health sectors at the national level in Zambia.

7. CONCLUSION

There is more that influences maternal health during delivery in HCFs than just the state of WASH. While there is a focus on increasing institutional births, in part due to the WASH practices and skilled attendants in those settings, there are hindrances for women in reaching HCFs, the first delay of health care. Cultural factors specifically involving the need for permission and existing rules within HCFs prevent women from going to HCFs or prevent HCFs from meeting women's needs during birth.

Privacy and WASH provision were identified as two needs of women in maternity settings. These are met in theory through separate wards for privacy and comfortability, IPC to prevent HAIs, and toilets and showers for cleansing following delivery. Policies and infrastructure designs for WASH in HCF maternity settings are responsive to women's needs, yet there is a lack of implementation. Investigating the WASH environment within HCFs, infrastructure was not well maintained, and WASH provisions were not well supplied, affecting both women's attendance at HCFs as well as their safety within them. Stakeholders tended to agree that WASH environments in HCFs have the infrastructure designed to meet pregnant women's needs in privacy and WASH through separate facilities, but the reality is that they are not always available or maintained and supplied with WASH provisions. IPC is also not always followed due to inadequate training and lack of resources.

Stakeholders suggested that budget allocations need to be more focused towards WASH within health, and that data collection needs to be improved to aid in the prioritisation of WASH in programmes. More female leaders at the national level may aid in the implementation of policies and programmes within the WASH and maternal health

sectors. While WASH, health and gender are areas intersecting in nature, how they are viewed and addressed within policies and programmes as issues affecting one another varies by stakeholders. Disparities in stakeholders' views suggest that the interconnections of WASH, health and gender could use more focus in research and implementation.

8. LIMITATIONS

In our research, we encountered several limitations. First, the time allotted for the completion of research was seven weeks. This constrained time frame had a few implications. There was limited time to distinguish significant stakeholders and hold interviews. One interview was declined due to lack of time toward the end of the research. More time within the program would have allowed us to interview more stakeholders and include more perspectives, particularly more from the maternal health perspective, which would have been valuable when considering the situational analysis of Zambia when it comes to maternal health and WASH in HCFs.

There was also limited literature that the team found in the Zambian context. There was sufficient literature on WASH, as well as on the WASH standards and realities within HCFs in the country. There was also literature present on the various topics, WASH, maternal health, and gender separately. Yet, the intersections of WASH and maternal health were not sufficiently addressed together in literature within the Zambian context, particularly as they pertain to gender. Information in literature had to be pieced together from the various areas to gain better understanding of the situational analysis, possibly hindering a full understanding of the problem at hand.

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APPENDIX

Appendix A

Stakeholders Interviewed in July 2022

Name	Position	Organisation
Dr. Caren Chizuni	Chief Safe Motherhood Officer	Ministry of Health
Innocent Hamugunyu	Principal Environmental Health Officer	Ministry of Health
Mweshi Katongo	Senior Planner	WASH Related Stakeholder
Chola Mbilimbi	Senior Inspector	NWASCO
Mundia Mutukwa	Project Manager	World Vision
Joseph Ng'ambi	WASH Officer	UNICEF
Davy Ng'oma	Programme Manager WASH	WaterAid Zambia
Emmanuel Phiri	Protection Assistant	UNHCR
Stakeholder G	Confidential	Gender Related NGO Stakeholder