



**Barriers to Women Adopting
Decision-Making Roles in
Sanitation-Related Public Bodies
and Attitudinal Differences
between Male and Female
Decision-Makers**

Literature Review

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List of Abbreviations

AfDB	African Development Bank
CAWSTEM	Connecting African Women in STEM
DFAT	Department of Foreign Affairs and Trade, Australia
DHS	Demographic and Health Survey
FAWE	Forum for African Women Educationalists
GBV	Gender Based Violence
GEM	Global Education Monitoring
GLAAS	Global Analysis and Assessment of Sanitation and Drinking Water
ILO	International Labour Organisation
IWA	International Water Association
KEWI	Kenya Water Institute
KIWASH	Kenya Integrated Water, Sanitation and Hygiene project
MCA	Member of County Assembly
MHM	Menstrual Hygiene Management
SAGA	STEM and Gender Advancement
SDG	Sustainable Development Goal
STEM	Science, Technology, Engineering and Mathematics
SUWASA	Sustainable Water and Sanitation in Africa
WaSH	Water, Sanitation and Hygiene
WEF	World Economic Forum
WSP	Water and Sanitation Program
WSSCC	Water Supply and Sanitation Collaborative Council

1 Executive Summary

Gender inequality at the level of policy, regulation and management, can manifest as a limitation on the presence, voice, participation and power of women decision-makers; this further has the potential to perpetuate gender inequality throughout the sector. Product design and delivery of sanitation facilities are usually exclusively undertaken by men, neglecting the cultural and social norms that have a bearing on the gendered access to and use of sanitation facilities, thus affecting the take-up of such facilities.

Addressing the pressing needs of women and girls in the sanitation sector requires a look behind the curtain, interrogating the internal workings of the organizations that make and implement sanitation policy, regulation and services. Our project aims to do this in the Kenyan sanitation sector, through two objectives: (i) identify the barriers that women face in attaining decision-making posts in sanitation public bodies in Kenya and (ii) analyse whether female leaders think of access and use of sanitation facilities and related issues in a different light, as compared to male leaders in this field. As a first step towards these larger goals, we have put together a comprehensive literature review, covering both the peer-reviewed research literature and the grey literature. We have structured our review so as to cover all of the major components of gender inequity when it comes to women leaders in the sanitation sector in Kenya.

Our review is focused on four thematic areas, chosen to provide context for our research and fit in and fill gaps in existing literature on gender and leadership, especially in WaSH: (i) *the business case for women in decision-making roles in the corporate sector and challenges for women leaders*; (ii) *gender inequity in sanitation governance*; (iii) *barriers to women in technical fields*; and (iv) *gender roles and cultural norms in Kenya*. For each of these themes we found a reasonable number of publications; for the second theme we found a nascent but rapidly growing literature, while for the other themes we found a well-established and growing body of literature, consisting of both research and policy reports.

The Business Case for Women in Decision-making Roles in the Corporate Sector and Challenges for Women Leaders

There exists a gender gap at the top rungs of the corporate ladder, despite various countries enforcing mandated gender quotas. The continental average of Africa for women on corporate boards is 12.7%, but with 32.9% of firms surveyed having no women on their boards at all (AfDB, 2015). Research documents both positive and negative impacts of mandated gender inclusion, but the overall evidence is modestly positive regarding the impact of female board members on firm performance. Gender diversity on boards have been linked to diverse board characteristics leading to increased returns to equity and governance and monitoring structure within firms.

Women face discriminatory behaviour both in getting to and performing leadership roles. Middle level female employees are often not provided with adequate and representative line

experience that will enable them to progress along the corporate ladder. They also lack access to social capital or 'old boys' networks' that constrains their advancement within organisation. At the top level, women face a glass cliff or a second wave of discriminatory behaviour (Ryan & Haslam, 2005). They are evaluated less favourably than male managers for the same job, receive greater criticism and are given less credit for their success (AAUW, 2016).

Gender Inequity in Sanitation Governance

Women in leadership positions in government organisations tend to implement policies that are more supportive of women and children than male leaders. Although women's representation in village water committees has increased over the years, women are not adequately represented at the sectoral level where decisions on planning, resourcing and programs are made. Countries such as Uganda, Tanzania and Zambia have gender strategies that explicitly address women's WaSH needs (Mulenga, Manase, & Fawcett, 2001). Several programs such as KIWASH in Kenya and organisations such as Sanivation are actively trying to increase the participation of women professionals in the sector. Despite ministerial and other regional efforts, women are still under-represented in sanitation governance. GLAAS reports that women make up less than 10% of the professional and managerial water and sanitation staff in half of the 74 developing countries surveyed (UN-Water & World Health Organization, 2012).

Barriers to Women in Technical Fields

Women's disadvantage in technical fields, including sanitation, arises from a range of institutional, socio-cultural and educational barriers. Lack of female mentors, unclear policies on placement and advancement and hostile work environments where women feel more isolated are some of the institutional barriers that women face in the sector. Socio-cultural norms prevent female employees from taking up extensive field work or working in sectors that are considered to be male-dominated. The most extensively reported challenge is the lack of educated and trained female professionals. Parental expectations and social biases against girls' ability to perform well at math and science subjects are ingrained at an early age, affecting their test scores and carrying over to their choice of careers. A lack of female role models in the field and female teachers teaching STEM subjects further exacerbates these biases.

Gender Roles and Cultural Norms in Kenya

Gender roles are strictly imposed in Kenya, with socio-cultural factors feeding into economic and educational decisions and restricting women's empowerment and contribution to their households, community and the country. The Global Gender Gap report ranks Kenya 76 out of 144 countries surveyed (World Economic Forum, 2017) and the Global Gender Equality Index finds that 62% of women in Kenya are restricted from economic opportunities, on account of gender-related issues (AfDB, 2017). Women are largely engaged in the informal labour force and make up about 80% of the labour force in food production but only 1% of women have ownership of their land (AfDB, 2017). Even in the formal sector, women are mostly employed in low-paying, administrative jobs. Physical and sexual violence against women is rampant.

Women are not adequately represented in the political sphere- only 9% of elected candidates were women in the 2017 general elections (National Democratic Institute & Federation of Women Lawyers, Kenya, 2018). Female participation is restricted by lack of access to financial resources to run electoral campaigns and gender-based electoral violence.

Summary

We found in this review that corporate leadership, although still suffering from inequities overall, seems to have largely benefited from the increased gender diversity. Yet the barriers to women leaders working in technical fields are numerous; they are located in various points throughout an individual's career-path; and they are observed to be persistent, as they are rooted in cultural norms and institutional practice. Although we have attempted to build a comprehensive review, based on these four thematic areas, we have identified patterns and geographical as well as thematic gaps in the literature. Beyond the current research project, we believe that both the thematic and geographic gaps will be useful for others in the sector, as a partial guide for setting relevant research agendas.

The thematic gaps include a lack of understanding when it comes to gender-diverse leadership outside of the corporate sector; greater integration of knowledge when it comes to the cumulative impacts of multiple barriers for women across their career-paths; and the particular institutional practices in the sanitation sector that impact gender diversity at the level of decision-makers. In addition, we found no research on how men and women define and design sanitation services, and how they might differently prioritize service interventions. We hope that the conclusions from our study will fill in at least some of the existing gaps in literature in this area, particularly in the context of Kenya, and add to the much larger global and regional literature on gender mainstreaming and gender and leadership.

2 Introduction

All around the world, in high income countries as well as low income countries, providers of gendered public latrines often mistake equality and equity, resulting in equal space and number of seats, but longer lines and wait times for women. Women have both biological needs and social restrictions that are different than men; for example, although never encouraged, in many countries' men face fewer sanctions than women for public urination, for example. Social norms prevent women from public urination and even when they do, women select areas that are often physically unsafe for them in order to meet their biological needs. Gender equity in sanitation services will require the biological needs of both genders are met, in clean, affordable and accessible facilities; if biology and social restrictions are different, should facilities be the same? Are current sanitation systems fully adapted to pregnant mothers with children in tow, or women of all ages, or menstruating girls who might need to wash and receive a new pad before returning to class? Meeting the sanitation needs of all genders is a complex issue, and designing equitable facilities, programs, policies and management systems may need leaders and technicians who are ready to explicitly incorporate the different needs of women, men, boys and girls.

In this research call, we aim to understand if women know the needs of other women better than men and if this is true, whether and how they are able to actively use that knowledge to specifically address the needs of women and girls in sanitation access. We will try to identify and analyse the barriers that limits women's participation in executive, managerial or technical roles in public bodies with significant roles in sanitation planning, provision and regulation.

As part of this study, this report is intended to serve as a comprehensive literature review, aimed at gaining a better understanding of some important aspects that have a bearing on our research objective. It also serves the dual purpose of acting as a starting point in developing the right set of questions and validating the conclusions that we will draw from our research.

This literature review is built around four key thematic areas. These four thematic areas have been chosen to provide context for our research, and an indication on areas in the research literature where our study might fit in, fill gaps and build on previous research.

- *Research on women leaders in the corporate sector:* The 'business case' or economic impact of women in senior leadership posts or as decision-makers in the corporate sector and the challenges they face in getting to and performing these roles. Evaluating the impact of women leaders on firm performance will give us an idea of the economic effects that gender diversity in management brings and the channels through which diversity translates into performance
- *Gender inequity in sanitation management and governance:* Analysing gender inequity in the governance of sanitation sector across the globe will help us understand the initiatives that have been taken, the problems that are reported by women leaders and where Kenya stands in the global frame of things
- *Barriers for women and girls in STEM:* Specific barriers that women face in technical fields such as sanitation and other STEM fields. Reviewing global literature on the

barriers that women face in these roles will serve as a starting point for us in identifying the problems that women leaders in Kenya might also be facing.

- *Gender roles and relations in Kenya*: Studying the gender roles and relationships in Kenya provides an important cultural context to our study, helping us to understand how cultural norms might have a bearing on gender inequities in the sanitation sector.

For theme 1, women in corporate governance, we have tried to map out the current proportion of women in executive roles across the world, the business case that motivates female representation in these roles, the argument in favour of looking beyond mandated gender quotas to underlying issues and the barriers that women face in entry and advancement in the corporate world. The section on inequity in sanitation governance iterates the need to have women in decision-making roles in the sector, provides available statistics on female staff and leaders in WaSH and also mentions various national policies and international and regional efforts aimed at addressing gendered issues in sanitation, including increasing the participatory role of women. In barriers to women in technical roles, we have aimed to identify all existing technical, socio-cultural and educational challenges that women face. The literature is skewed towards barriers that women face in Science, Technology, Engineering and Mathematics (STEM). The last section on gender roles and relations in Kenya addresses gender inequality in education and labour force participation, political representation and gender-based violence. It also highlights existing policies and efforts in gender equality and gender mainstreaming.

The report is organised as follows. The methods section details the key sources and techniques employed in identifying and gathering literature. The scale of evidence obtained from different sources and identifiable patterns in the literature have been reported in the section on evidence base. The remaining sections provide detailed review of literature analysed in each thematic area.

3 Methods

We have employed five methods to ensure an exhaustive search for existing relevant literature:

1. Using research search engines such as Google Scholar, JSTOR and Web of Science, we gathered materials using the keywords listed below, restricting our search to articles published after 2000.
2. We identified five relevant journals for each thematic area from lists of the top-ranked disciplinary journals, then searched for the same keywords within each of these journals.
3. We identified six influential international NGOs, multi-lateral organizations and international finance institutions that are working on sanitation, especially those working in Kenya, and those working on gender issues as well. This includes the Bill & Melinda Gates Foundation, the Water and Sanitation Program, the Water Supply and Sanitation Collaborative Council, USAID, Gender and Water Alliance and UN Women. We then searched through their reports, presentations, factsheets and policy briefs for relevant materials. We identified at least three such organizations for each area, and more for some of them.
4. We identified at least one expert in two of our thematic areas and did an author search for all of their research publications. We then selected all of their publications that fit into our theme and included them in our review.
5. Finally, ancestry and descendancy searches were also conducted on the documents to identify other potential literature.

Our primary search for existing literature in these resources were based on the keywords listed in Table 1.

Table 1: Search words used for each thematic area

Sl. No	Thematic Area	Search Words
1	Women in Decision-Making Roles and Executive Management	Economic impact of female corporate leaders, women leaders and firm performance, gender quotas and firm performance, female leadership style, women directors, effects of gender diverse boards, women decision-makers, women on corporate boards, female leaders and corporate governance, board diversity and firm performance
2	Inequity in Sanitation Governance	Women leaders in WaSH, gender in WaSH, gender mainstreaming in WaSH, gender balance in sanitation, female WaSH leaders, gender and sanitation governance, sanitation

		in Kenya, women water service providers. Sanitation and GBV, sanitation and women policy makers, gender inequity in WaSH designing, female staff in WaSH
3	Barriers to Female Leadership in Technical Fields	Socio-cultural barriers for women in STEM, challenges for women in technical fields, female leaders in technical fields, women professionals in STEM, barriers to STEM for girls, inclusive STEM, institutional barriers to women in technical fields, discrimination in STEM, STEM education and gender
4	Gender Roles and Relations in Kenya	Gender roles in Kenya, gender relationships in Kenya, women in politics in Kenya, female labour force participation in Kenya, gender wage gap in Kenya, GBV in Kenya, gender disparity in education in Kenya,

We filtered the papers for relevancy by reviewing all of the titles and abstracts. A condensed list was built using two exclusion criteria. First, since the research call is exclusively to look at barriers that women face in adopting decision-making roles in the sanitation sector, resources that focus exclusively on women as users or beneficiaries of sanitation facilities or which focus only on water as part of WaSH facilities have been excluded. Second, we have also excluded all resources published before 2000 since the studies and reports are unlikely to be relevant. All remaining articles, policy briefs, reports, factsheets and briefs were included in our review. We created brief summaries for every resource included in each thematic area, noting down the authors, journal name or publishing institution, the questions addressed, relevant statistics and main takeaways. These summaries were then synthesized for the main content of this report.

Our literature review potentially misses out on contextual information from Kenya and Sub-Saharan Africa since we have excluded graduate-level literature, due to lack of appropriate measures for reliability and validation. The search for resources was also restricted to those published in English and limited to the organisations and experts we identified in the thematic areas. All resources from our condensed list were added onto our project folder on Zotero, a citation software, for easy referencing.

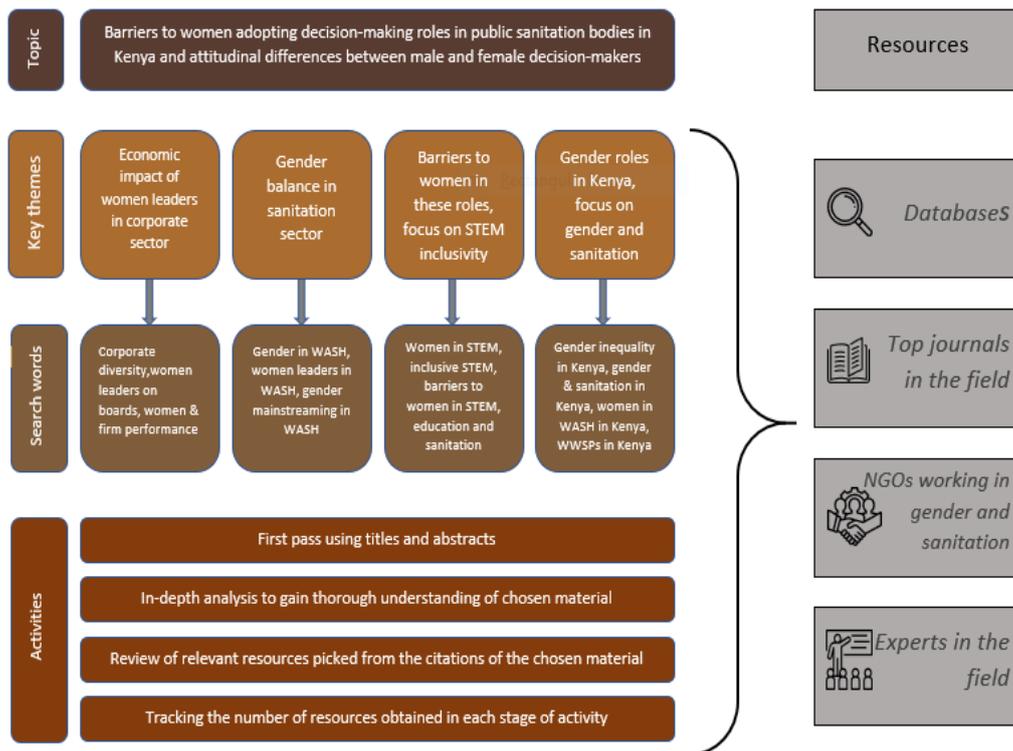


Figure 1 Method for Literature Review

4 Evidence Base

The proportion of resources obtained from peer-reviewed and grey literature varies according to the thematic area. The majority of the literature reviewed on women's representation in corporate boards is obtained from peer-reviewed management and business journals. Certain organisations such as Catalyst focus exclusively on promoting women in corporate leadership whereas publications and reports by other multi-lateral organisations and donor agencies, such as ILO (International Labour Organisation), AfDB (African Development Bank) and DFAT (Department of Foreign Affairs and Trade, Australia), on this theme are a small part of their wide work. The majority of the literature focuses on mandated gender quotas and its implications on firm performance in the U.S and Scandinavian countries. We found a research gap in the literature, as few papers were available on diversity in board room representation in Africa and Asia.

In contrast, the existing literature on inequity in sanitation governance is drawn from organisations and donor agencies that work in the sanitation sector, especially the Bill and Melinda Gates Foundation. The Water and Sanitation Program (WSP), Water Supply and Sanitation Collaborative Council (WSSCC), USAID and the World Bank provided the bulk of the literature in this thematic area. Programs and policy reports that focus on promoting female leaders in the sanitation sector is limited; most of the literature only has a very small section on the topic. A large number of the reports and briefs focus either on women's participation in village water committees or exclusively on water (which were part of our exclusion criteria). Although wider content on gender mainstreaming is available, the focus is on women as beneficiaries of WaSH facilities rather than on women as decision-makers and leaders in the sector.

There is very little literature on institutional and socio-cultural barriers that are specific to female employees in technical fields. Some of the resources on barriers for women in corporate governance also address some challenges that women face in such sectors, although it is very restricted. A vast amount of grey literature is available on advancing girls' education in STEM. The literature covers a range of factors, particularly because there are programs and interventions by multi-lateral organisations, regional institutions and other NGOs that work specifically in this thematic area. In Africa, the focus is on addressing the psycho-social factors that restrain girls' and women's participation in STEM education and careers and not so much on issues related to access.

The resources for review on gender roles and relations in Kenya has been sourced from policy documents of various ministries, reports from national surveys such as the Demographic and Health Survey (DHS) and country profiles or country-specific portals of international agencies that work in Sub-Saharan Africa. It is of particular note that the Kenya National Bureau of Statistics provides very limited gender-disaggregated data and gender does not feature as a standard stratification in their analyses.

5 Women in Decision-making Roles and Executive Management

5.1 Women's Representation in Boardrooms: Figures from Across the World

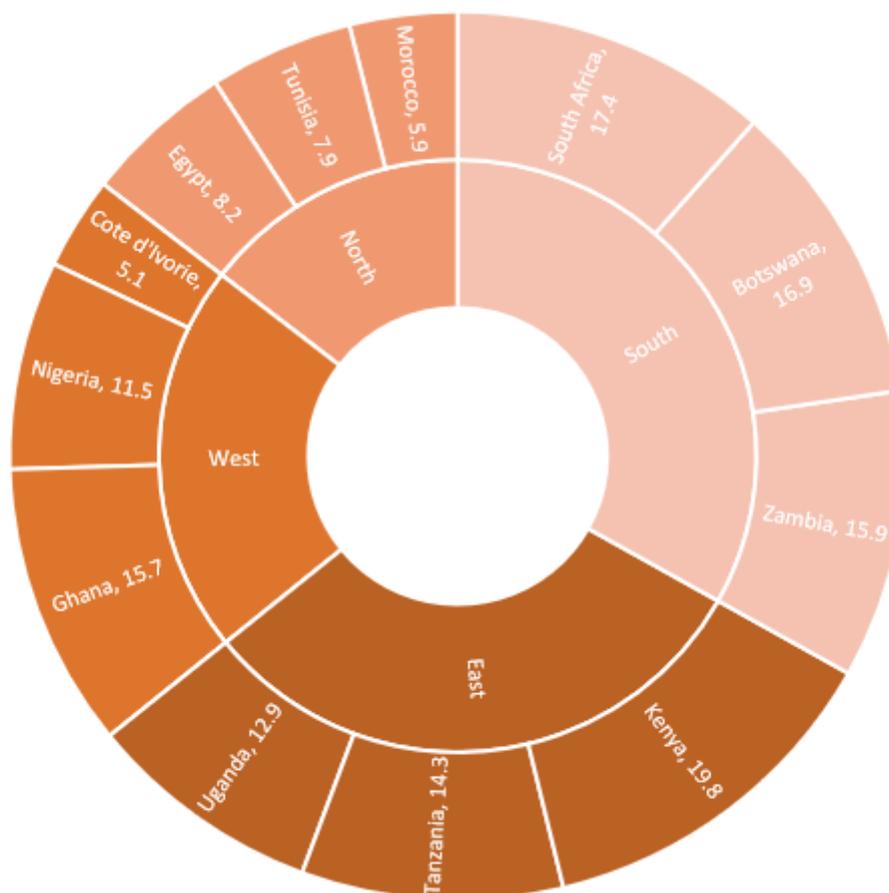
The Global Gender Gap Report of 2017 (World Economic Forum, 2017) states that it will take 217 years to achieve gender parity in the workforce. Currently, the average pay for women is \$12,000 compared to \$21,000 for men. Research by the World Economic Forum (WEF) has found that women represent fewer than 50% of leaders in every industry and women hold only 34% of the managerial positions across the world, wherever data is available (World Economic Forum, 2017). In some industries such as mining and engineering, female leadership is as low as 20%. Women's representation in soft sectors are high, both in the corporate world and in senior government positions. Amongst women public office holders in Africa, more than 50% are in charge of social welfare portfolios and only 30% lead the ministries with more political influence (McKinsey & Company, 2016). Healthcare, education and the non-profit sector have the highest number of female leaders, but these female-dominated industries also pay less than male-dominated ones. Social portfolios do not prepare office holders for political advancement and skews the real distribution of power. This has led to the theory that the barriers that women face today are more lateral than vertical, or that they face glass walls instead of a glass ceiling, preventing them from advancing in traditionally male-dominated sectors (Bureau for Employers' Activities, & International Labour Office, 2019).

Women's representation at top rungs of the corporate ladder have increased both with some countries adopting mandated gender quotas and with some firms making a 'business' case for female representation. Despite these efforts, the numbers remain inadequate. A survey conducted by ILO's Bureau for Employers' Activities among 1300 firms in 39 countries across five regions captures information regarding women's representation at all levels of management (ILO et al., 2019). The report states that in developing countries, there is fewer than one woman for every ten male employees at junior levels of management in 29% of companies. 10% of the companies had no women managers at the junior level and only 16% had gender-balanced workforces at this level. The disparity continues in higher levels: at the senior management level, 21% of the companies had no women senior managers and 27% had less than 10%. At the top executive levels, 34% of companies had no women and 21% had less than 10% of women. There is also a firm size effect: the share of enterprises with a female CEO fall as the firms grow. 26% of the small enterprises surveyed had a female CEO as compared to only 16% of the large firms.

Africa is no exception to this global trend; the majority of African companies have a minimal presence of women on their boards. ILO (ILO et al., 2019) reports that the continental average for women on corporate board is 12.7%. About 32.9% of firms have no women on their board and only 33.6% have at least one female director. Of the 12 countries included in a report on inclusive boardrooms in Africa (AfDB, 2015), Kenya had the highest percentage of women

board directors with 19.8%. Regionally, the Southern and Eastern parts of the continent perform best in appointing women onto boards. South Africa, Botswana and Zambia in the South and Kenya, Tanzania and Uganda has an average of 17.1% of women directors. In McKinsey's Women Matter in Africa study (McKinsey & Company, 2016), only one in three CEOs stated gender diversity as an agenda. The study also reports on various unconscious biases held by organisational representatives that adversely affect meaningful participation and advancement by women.

Figure 2 Percentage of Women Directors, by Region, in Africa



Source: *Where are the Women? Inclusive Boardrooms in Africa's Top Listed Companies*

5.2 Economic Impact of Diverse Boardroom Representation

Several studies on the economic impact of board room representation by female directors have contradictory results. Literature indicates two theories on how gender diversity on corporate boards can impact firm performance:

- a) Agency theory: Female directors bring in distinct and differential characteristics from those of male directors, who often share the same style of leadership as male CEOs. These attributes increase boardroom independence and result in better monitoring of managers, leading to improved firm performance.
- b) Resource dependency theory: According to this theory, gender diversity helps firms access skills and resources that are critical for firms' success and enhances its overall problem-solving capacity by looking at it from diverse perspectives.

Improved firm performance is linked to representative boards only by way of the positive effects of diversity. The literature does not suggest that women and men are inherently different or that women have essential characteristics that make them better leaders, or that translate into better economic outcomes for firms. Instead, it is theorized that the social processes which create and reinforce gender roles also impact performance and the terms of engagement between organizations and individuals. Without going into these complex processes, which would be beyond the scope of this review, we note that gender-inclusion might also help organizations to meet the needs of varied communities; an improved ability to take into consideration a variety of perspectives, might add capacity for addressing such needs in addition to enhancing the firm's problem-solving capacity.

Most of the economic impact of diverse boardrooms have been studied in relation to gender quotas. The Cope-Zimmerman Act, mandating at least 40% representation by women in the boards of large French companies was found to have contributed to firm performance as measured by Returns on Investment, Returns on Assets and Tobin's q ¹ (Sabatier, 2015). Analysis of 17,682 board seats of firms in the MSCI World Index (Lee, Marshall, Rallis, & Moscardi, 2015) shows that companies with a strong female leadership reported higher returns on equity. Companies that had a strong leadership (defined as the board having three or more women or having a higher % of women on boards than the national average), generated a Return on Equity of 10.1% per year as compared to 7.4% in the firms without gender diverse boards. Evidence linking gender diverse boards to improved economic performance is also available from an emerging economy context: Kilic and Kuzey (Kılıç & Kuzey, 2016) finds a positive correlation between representation by female board members and firm performance as measured by ROA (return on assets), ROE (return on equity) and ROS (return on sales) in Turkey. A recent study in China (Li & Chen, 2018) also finds a positive impact from female inclusion on firm performance, provided that the size of the firm is less than a critical value. Researchers at the Peterson Institute for International Economics found a positive correlation between the presence of women in senior leadership and profitability, defined as gross and net margin (Noland, Moran, & Kotschwar, 2016). Increasing gender diversity on boards is also

¹ Tobin's q is the intrinsic value of a firm, as seen by investors. The ratio is a measure of firm assets in relation to a firm's market value and is used for making investment decisions.

linked to reduction in firm inefficiencies—a study estimated that a 10-percentage point increase in the number of women on boards would reduce inefficiency by about 7 points (Sabatier, 2015). This increase in efficiency could result from stronger control and more efficient monitoring by boards.

Research indicates that the presence of female board members increases the independence of the boards, since these members are not hired by 'old boys' networks' and display different characteristics from that of male CEOs (Adams & Ferreira, 2009; Mori & Richard, 2019; Sabatier, 2015). This independence and enhanced risk consideration brought in by female directors leads to increased monitoring of firm and CEO performance by corporate boards. Adams and Ferreira (Adams & Ferreira, 2009) argue that if women have higher standards of monitoring, CEO turnover should be high after poor stock performance of the firms and finds direct evidence in support of this hypothesis. However, the paper also finds a negative correlation between greater board diversity in terms of gender and firm performance, suggesting that firms perform worse when they have more female directors. They conclude that enhanced monitoring by diverse boards increases firm performance, but only in companies with weak shareholder rights; in firms that offer relatively strong rights to shareholders, excessive monitoring may affect the shareholder relationship, leading to decreased shareholder value.

Negative or no effect from fulfilling gender quotas have also been reported; gradual implementation of gender quotas on corporate boards in Italy did not have any effect on the economic performance of the firm, only changing the selection process of directors and changing the board composition to satisfy the gender quotas (Ferrari, Ferraro, Profeta, & Pronzato, 2018). Announcement of gender mandated quotas in Norway led to a significant drop in the stock price of firms and a large decline in Tobin's Q over the following years (Matsa & Miller, 2013). Gender quotas have also been reported to lead to younger and less experienced boards, sometimes resulting in reduced operating performance (Matsa & Miller, 2013; Sabatier, 2015). Evidence regarding the ripple effects of an increased presence of women in boardrooms is also mixed - a global MSCI study finds that in the period before quotas, all replacement CEOs were male but after implementation of gender quotas, about 5% of the replacement CEOs were female (Lee et al., 2015). The ILO study also finds that having a female CEO is associated with more women in middle and senior management positions in strategic departments that act as pipelines to higher levels (ILO et al., 2019). When the CEO was a woman, firms were 12.6% more likely to fill senior management posts with other women. However, Bertrand et al. (Bertrand, Goldin, & Katz, 2010) find that gender quotas for listed firms in Norway had no trickle-down effects and no significant effect on reducing the gender gap, although it increased female representation at the top of the earnings distribution.

Overall, the difference in finding positive and negative associations in different countries may be due to endogeneity problems, sampling issues or the use of different performance measures. Nevertheless, the evidence is modestly positive regarding the impact of female board members on firm performance, although clearly there continue to be on-going debates in the literature regarding the impacts of boardroom gender diversity.

In addition to economic benefits, female representation in board rooms also change the leadership and governance style in firms. A study on gender quotas for corporate board membership in Norway show a short-run negative impact on firm returns caused by women in the boardroom bringing a decidedly different style of corporate leadership (Adams & Ferreira, 2009). Firms that were affected by mandated gender quotas of 2006 in Norway undertook fewer layoffs which resulted in an increase in labour costs and reduced the short-run profits of the firm. This difference in employment policy might reflect either the female board members' consideration of labour hoarding as a more profitable strategy in the long run or greater consideration for workers' vulnerability to unemployment risk. The MSCI study (Lee et al., 2015) also found evidence that companies that lack board gender diversity suffered more governance related controversies. Boards with gender diversity above the regulatory mandates, on the other hand, had fewer governance issues such as bribery, corruption, fraud and shareholder battles. A survey of 314 respondents from various organisations also found that women preferred participative leadership as compared to men and the greater the number of women in the organisation, the more likely that a participative leadership style would be adopted in the organisation (Herrera, Duncan, Green, & Skaggs, 2012). Bart and McQueen (Bart & McQueen, 2013) argue that women make better directors because their decision-making frameworks suggests that they are more likely to make consistently fair decisions when competing interests are at play.

5.3 Beyond Gender Quotas: Tokenism and 'Critical Mass'

Affirmative policies, such as gender quotas, try to address the structural and institutional barriers that women face in obtaining and performing leadership roles and place onus on institutional actors and power holders to create an inclusive and enabling environment. A 2017 report on women leaders in parliament finds that women won more than 30% of seats in countries with quotas as compared to 15.4% of seats in countries with no mandated representation (IPU, 2017). However, institutional barriers that favour the recruitment, retention and promotion of males over females are easier to challenge and change than traditionally assigned gender roles and stereotypes. Addressing strategic needs is also important since such policies do not aim to resolve the underlying problems. For example, women working in highly male-skewed groups or appointed only as 'tokens' face further exclusion. One study found that the presence of one woman generated ambiguities in a highly male-dominated group culture (Settles, 2014). Men responded to this ambiguity by further excluding the female members and raising the boundaries between the two groups.

Research also shows that gender diversity on boards only translates into performance when women's suggestions and voices are actively heard and valued and not when women directors play the role of tokens. In a study of gender composition of U.S corporate boards, Chang et al. (Chang, Milkman, Chugh, & Akinola, 2019) find that boards are much more likely to have two female members only because firms faced backlash when they appointed a single female board member. Several studies show that a critical mass of at least three female directors on corporate boards is required to have an impact on major decisions (Chang et al., 2019; Torchia, Calabrò, & Huse, 2011). A study of 2000 companies in China revealed a positive correlation between gender-diverse boards and measures of financial performance such as ROA and ROA

and these measures were stronger for boards with three or more women (Liu, Wei, & Xie, 2014).

5.4 Barriers for Women in Corporate Leadership

Although gender quotas have helped remove glass ceilings (at least in name), women still face barriers in advancing to managerial levels and performing in executive roles. Men still have greater access to social networks; this has been called the 'glass escalator' that helps advancement within an organisation (Ryan & Haslam, 2005). The lack of social capital or access to influential networks and mentoring support is a major barrier for women trying to move up the corporate ladder. Networking in corporate circles often happens around activities that are considered masculine, such as golf, limiting women's entry into informal networks (AAUW, 2016). Recruitment suggestions for most top positions in most countries, including Kenya, come from informal networks which women are not often privy to. Since names come from these traditional resources and there is no comprehensive database of competent individuals, decisions are still influenced by the subjectivity of existing members. Career advancement is also determined by experience on high-visibility projects, holding mission-critical roles and gaining international experience (Silva, Carter, & Beninger, 2012). A Catalyst survey found that the budgets on male-led projects were twice the size of projects of women-led projects and had more than three times as many employees staffed to them, as compared to women. 35% of men reported getting C-suite visibility while working on projects as compared to 26% of women and even among those willing to relocate, men were more likely than women to get an international assignment (Silva et al., 2012). McKinsey's report of women in the workplace finds that there is a hollow middle- there are significantly fewer women with the right work experience to promote or hire within and from outside the organisation (McKinsey & Company, 2016). In a survey of 55 companies across Africa, women made up 45% of the workforce but received just 36% of the promotions (McKinsey & Company, 2016).

Status-based discrimination is also prevalent in the workplace, adversely affecting mothers' entry, placement and advancement in an organisation (McKinsey & Company, 2016). Participants of a laboratory experiment were asked to evaluate applications of a pair of same-sex applicants with identical qualifications but differed on parental status (Correll, Benard, & Paik, 2007). The experiment showed the existence of a motherhood penalty, where describing a consultant as a mother created the perception that she was less competent and less committed to her job but the same effect was absent for fathers. Motherhood also affects women's working patterns and careers-38% of mothers in the U.K work part-time compared to only 7% of fathers. The absence of continuous labour market attachment feeds into the gender wage gap and limits growth of female employees. Research conducted in the U.K in 2012 found that by the time a first child reaches the age of 20, mothers' earnings fall by 30% per hour as compared to fathers with similar qualifications (Parodi, Costa Dias, & Joyce, 2018). A quarter of this gap is explained by mothers taking up more part-time work and the consequential lack of wage progression and some of the gap is explained by mothers exiting the labour market. The lack of wage progression in part-time work has a huge adverse effect on graduate women- it is estimated that a graduate who has worked full-time for an average of six years will see a 6% rise in hourly wages by continuing in full-time work (Parodi et al.,

2018). Out-of-work care responsibilities still fall heavily on women and women's choice to not participate in the workforce due to such reasons must be mostly seen as a forced choice arising out of structural conditions and stereotyping.

Women who succeed in attaining executive roles often face a second wave of discrimination—women managers tend to receive greater criticism than male managers, employees often express a preference for male supervisors, and they tend to be evaluated less favourably, even while performing the same jobs (AAUW, 2016; McKinsey & Company, 2016). Unconscious bias for male leadership along with social and cultural norms often leads to women being considered “inadequate” managers. A meta-analysis of 69 studies on stereotypes and leadership found that stereotypically male characteristics such as independence, aggression, competitiveness and dominance were associated with employees' expectations of leadership roles (AAUW, 2016). The stereotypes were also prevalent amongst female employees; the greater number of jobs a woman had held, the less likely she was to state a preference for a female boss (AAUW, 2016).

There is also a performance evaluation bias: men tend to be evaluated more on their future potential whereas women are evaluated on their past and current performance. Women are often given less credit for their success and criticised more for their failures, which affects their visibility and promotion (McKinsey & Company, 2016). This second wave of discriminatory behaviour that women face in executive roles is termed as glass cliff—their positions of leadership are associated with a greater level of failure (Ryan & Haslam, 2005). Women are more likely than men to be recruited for leadership positions with high risk of criticism and failure, exposing them to more work stress and eventually leading them down a slippery slope, where they opt out of the organisation and maybe even their chosen career (Hill, Corbett, & St. Rose, 2010a; McKinsey & Company, 2016). As women advance in an organisation, stereotypes about female leaders also multiply. Women leaders are often considered to be cold and not likeable when they are competent. (AAUW, 2016).

Key Takeaways

- Studies exist that document both positive and negative economic impacts of increased female representation in boardrooms, but overarching evidence tentatively shows a positive impact of female leadership on firm performance.
- Female leadership has been observed to also change corporate governance styles, with firms becoming more participative and facing less issues such as bribery and corruption.
- Women still face barriers in attaining and performing leadership roles such as a lack of access to ‘old boys’ networks, and fewer high-visibility assignments on average.
- Mothers are discriminated against for motherhood. They are viewed as less competent and less committed and face wage penalties if they exit the labour market.
- Women face an additional level of discriminatory behaviour in getting to leadership roles: they are evaluated more harshly, face more criticism and get less credit for their success. This leads to the ‘glass cliff’ effect: on average women are more likely to be assigned jobs that have a greater risk of failure, consequently affecting their career and feeding the perception that women cannot perform in such roles.

6 Inequity in Sanitation Governance

6.1 Making the Case for Female Participation in Sanitation Governance

The gender inequity present in corporate management also extends to sanitation service providers and sanitation governance organizations. But in areas such as WaSH, this gender inequity has the potential for wider negative implications. Women have unique sanitation needs: for example, urination requires sitting and squatting in private, leading to longer wait times; also, more frequent use of toilets at certain times, such as during pregnancy and menstruation.

The majority of the women in East Africa, including Kenya, form most of the work force in the informal sector and face barriers in accessing sanitation and hygiene facilities, including at places of work. However, the location and design of facilities, need for privacy and suitability of the infrastructure for women's unique needs are often overlooked by program implementers and women and girls are rarely considered for gathering inputs on such interventions (WSP, 2010). Exclusion of women from meaningful participation in WASH processes can lead to sub-optimal outcomes, perpetuate inequities in access and sometimes to failed projects since they do not adequately address women's needs and hence, are not used. Service designs and delivery systems that are built under assumptions of gender-neutrality ultimately lead to gender-specific failures. Although participation of women in community water and sanitation management committees have increased, very few women leaders are present at the sectoral level, where decisions on policy, resourcing and planning are made. A series of studies commissioned by the WSSCC and UN Women focusing on MHM found that women are often the de facto managers of water, hygiene and sanitation services in their households and in many communities but are excluded from the processes of decision-making, design, planning and implementation of WASH programs (WSSCC, 2015).

A seemingly simple way to address women's access to sanitation and related issues is to increase the representation of women in firms and public bodies that design products, services and interventions in the WaSH sector. We hypothesize that increasing diversity in the design and development of products and services will help to ensure that all users are well represented, and the unique needs and problems of each user type will be adequately addressed. Product designers often are not aware of, and do not take into account, the cultural and normative factors that influence women's use of sanitation products and facilities (Burt, Nelson, & Ray, 2016).

North-west Nigeria has a predominant Muslim population and religious injunctions require women to be accompanied by men in public places, making the use of public toilets very difficult (GWA, 2010). Taking these contextual concerns into consideration when designing, locating and building public toilets can make the difference between use and non-use. In Kibera, Kenya, toilets designed without considering the needs of women and children resulted in pit latrines with wide drop holes, through which children could easily slip and fall. Women and children did not use these facilities, instead using 'flying toilets'- polythene bags which are used for defecation and then tossed out at night (WSP, 2010). WaSH technologies are also

often developed exclusively by men, resulting in products that do not consider women's unique needs or the power dynamics in societal settings that has a bearing on women. Aqua Privy, an organization in South Africa, created a new sanitation technology that use little water and reduces odour but use of these facilities resulted in degrading experiences for women. The toilet required users to pour water into the bowl and empty the sludge periodically. Women seen emptying the bowls were considered unmarriageable by senior members of the community and the toilets were too small to be used by pregnant women comfortably (WSP, 2010).

6.2 International, Regional and Organisational Efforts at Gender Mainstreaming in WaSH

WaSH outcomes relevant to women can be significantly improved by involving gender experts and high-level leadership that is committed to gender inclusion. This inclusive approach is gaining international traction: in 2016, the Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation reported that 'the lack of water, sanitation and hygiene facilities that meet women's and girls' needs can be largely attributed to the absence of women's participation in decision-making and planning' (Grant, Huggett, Willetts, & Wilbur, 2017). Another high-level effort was the adoption of a resolution by the UN General Assembly in December 2015, calling upon states to promote women's leadership in decision-making on water and sanitation management (UN Women & Water Supply & Sanitation Collaborative Council, 2016). The UN Inter-agency Task Force on Gender and Water was set up with a view to promote gender mainstreaming in water and sanitation related Millennium Development Goals (Grant et al., 2017). However, very few countries especially in Sub-Saharan Africa, have clearly defined policies and guidelines to address gender related sanitation and hygiene concerns. As of 2001, in Sub-Saharan Africa, only South Africa, Zambia and Zimbabwe had national gender policies and only the Zambian policy made specific reference to sanitation (Mulenga et al., 2001). The Zimbabwean policy provides comprehensive strategies for water supply but not sanitation. The South African policy makes only a passing reference to water supply services. The Zambian national gender policy addresses specific problems in the sanitation sector including:

- a) Promoting and encouraging the involvement of women in the decision-making processes in the provision of WASH facilities
- b) Promoting partnerships between men and women in WASH provision
- c) Ensuring the use of gender-friendly technologies in WASH

The Mainstreaming Gender in Water and Sanitation Strategy adopted in Zambia in 2000 recommends the "formulation, adoption and implementation of internal gender policies by organizations and institutions that are involved in the provision and promotion of sanitation and use of gender sensitive participatory approaches in needs assessments" (Mulenga et al., 2001). Uganda has also been performing well in terms of championing women's needs and decision-making powers in the sector. The Uganda National Gender Policy led to the formulation of a separate gender strategy for the water and sanitation sector in 2003 (WSP, 2010). An institutional review led to the hiring and assignment of gender experts to each sub-

sector and women making up 18% of positions at the managerial level. In Tanzania, the National Water Policy requires village water committees to have equal representation and a merit-based gender sensitive recruitment policy in all water sector institutions. The Ministry of Water and Irrigation in Kenya has also introduced incentives for gender mainstreaming through staff performance contracts. Government officials are held contractually responsible for implementing gender goals and were annually evaluated on this parameter (WSP, 2010).

Government ministries that are in charge of the sanitation sector do not generally have departments dealing with gender-related issues and most gender-related decisions are taken by a separate ministry for gender or a different department for gender, usually housed under a different ministry (Mulenga et al., 2001). When a gender department is part of water and sanitation committee, the departments are more involved in addressing practical needs such as access to latrines rather than strategic needs such as involving women in decision-making. In addition to ministerial policies, institutional interventions that increase the autonomy, credibility and accountability of sanitation utilities are also necessary. (Mulenga et al., 2001)

Regional organisations are also attempting to integrate women into prominent roles in sanitation. Sanivation is a social enterprise in East Africa that aims to design cost-effective and non-sewered sanitation for urban and peri-urban areas. It hires women client service managers to ensure that women's issues are identified and addressed. They ensure internal gender balance by conducting regular staff surveys (BMGF, 2018a). Sustainable Water and Sanitation in Africa (SUWASA) is involved in conducting gender analyses in water and sanitation utilities in Kenya and drafting company-wide gender mainstreaming policies. These policies address hiring practices, expectations of staff in a gender-sensitive work environment, roles and responsibilities of the gender mainstreaming committee and mechanisms for addressing gender-related grievances when they arise (USAID, 2015). The Kenya Integrated Water, Sanitation and Hygiene (KIWASH) project, supported by USAID and DAI (a private development company), has an exclusive gender strategy that is part of all its interventions. As of 2018, KIWASH had trained 11 WSPs in gender mainstreaming and helped at least two of them to develop gender policies (USAID, 2018). This training has had a visible impact on users' access to sanitation facilities- a major water utility in a Kitui county, KITWASCO, scrapped the requirement of having to present a title deed for a new water connection, leading to an increased demand for water connections from women, as a greater number of women head of households were without title deeds. Nairobi Water and Gusii Water (GWASCO) have also adopted gender-sensitive strategies (USAID, 2018).

6.3 Women in WaSH Staff and Governance

Despite enabling legislations and affirmative policies for female representation, women are still under-represented in governance roles in WASH at all levels. We extend the definition used by Rogers and Hall to define governance in sanitation as the range of political, social, economic and administrative systems that are in place to develop and manage sanitation resources, and the delivery of sanitation services, at different levels of society (Rogers & W. Hall, 2003). In a report of the Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS), prepared jointly by WHO and UN Water, women make up less than 10% of the professional and managerial water and sanitation staff in half of the 74 developing countries

surveyed (UN-Water & World Health Organization, 2012). Women are also absent from lower levels in the sector; only 16.7% of the workforce in the sector were reported to be female professionals in a survey conducted to identify human resource gaps in WaSH, in 12 middle and low-income economies (International Water Association, 2014). The figures vary widely around the world- Papua New Guinea reported an average of 7% of women on the workforce whereas Burkina Faso reported 35%. Female professionals were better represented in non-governmental organisations working in the sector whereas the gender gap was wide and almost the same in both the public and private sector (WSP, 2010). A gender institutional assessment of WaSH utilities in Ghana, Uganda, Senegal and Zambia found that men occupy most of the jobs in the sector (Greenberg, 2006). In Senegal, five utilities surveyed only had 18 women technicians out of a total of 246. In the Lusaka Water and Sewerage Company, only 74 out of 524 employees were female, there were only 10 women at the middle management level and even fewer in the main engineering directorate. The study also reports that female employees in such utilities are usually found in lower or non-technical positions such as secretaries and accountants. Similarly, an exploratory study undertaken to understand the profile and number of women water providers in South Asia reported that some water, irrigation and sanitation departments in India and Nepal had only 1.9% and 1.5% of female technical staff (Kulkarni, Bhat, Majumdar, & Goodrich, 2009).

Key Takeaways

- Gender equity in ministries and organisations that provide sanitation facilities could lead to sanitation outcomes that are more equitable and sanitation systems that are more accessible for women.
- Products and services designed without considering the unique needs of girls and women as well as socio-cultural norms that prevent women from freely accessing these facilities can lead to failed interventions, perpetuate gender inequities and results in sub-optimal outcomes.
- Some countries and organisations have undertaken targeted policies and programs that explicitly address gender inequities in the WaSH sector, in part through an attempt to increase the representation of women in the sector. However, the number of women in sanitation governance still remains very low.
- Female leaders represent diverse viewpoints, enabling service providers to provide better services. In some contexts, women leaders are reportedly viewed as more transparent, and more organised.

7 Barriers to Female Leadership in Technical Fields

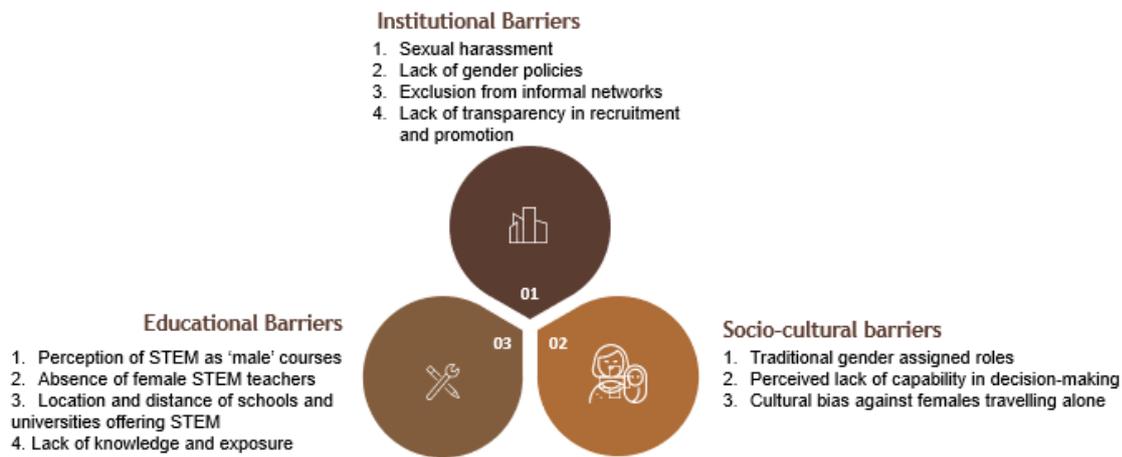


Figure 3 Barriers to women in technical and decision-making roles

7.1 Institutional Barriers

Technical solutions that take into consideration women's needs are not sustainable as a stand-alone strategy. Equitable and satisfactory access to WaSH facilities can be attained only if all policies and institutions related to sanitation address gendered concerns. Female employees in the WaSH sector face additional institutional and structural barriers since it is considered a technical and male-dominated field. Connecting African Women in STEM (CAWSTEM) reports that women make up less than a quarter of STEM professionals and only about 20% of these women are in leadership roles (CAWSTEM, 2019).

The absence of other women mentors and the challenges of field visits and limited work flexibility often hinders women's participation in these fields (Jalal, 2014). A study on women leadership and management in public sector undertakings in India found that the number of women applicants and recruits are already skewed at the entry level, which subsequently gets reflected at higher levels in the organisation (ILO, 2018). Male employees at the organisation perceived women to be less enthusiastic about taking up transfer postings or serving long terms at field site locations due to familial responsibilities. Women reported that field postings sometimes occur at times when they are making critical life choices such as marriage or pregnancy. It was suggested that an organisational policy that allows flexibility in serving at a field site and the time period for such postings would enable women to gain the necessary experience to advance within the firm. Such reform measures can be initially sustained through positive incentives (Soppe, Janson, & Piantini, 2018).

Female employees in technical roles also experience role incongruity (Hill et al., 2010a). People hold negative opinions of women who hold "masculine" positions like scientists or engineers and when a woman is competent at one of these jobs, she is considered to be less likeable

and less likely to be promoted (AAUW, 2016). 29% of women in technical and STEM jobs report earning less than a man doing the same job, 29% have been treated as incompetent because of their gender and 18% report that have received less support from senior leaders than a man doing the same job (Funk & Parker, 2018).

Explicit gender bias, discrimination, and microaggressions, to a lesser extent, is also present at workplaces. In a study of WaSH sector organisations and utilities in Nepal, it was found that more men than women were hired in higher-paying technical tasks (Regmi & Fawcett, 2001). In a water supply office in eastern Nepal, senior managers perceived field work to be very intensive and beyond their capabilities and hence reassigned them to administrative tasks. Women, who are the only female managers at their workplace, are often subject to increased microaggressions; 51% of women managers in such situations reported having to provide more evidence of their competence, 35% reported that they were mistaken for someone at a lower level and 49% reported having their judgement questioned in their area of expertise, as compared to 24%, 15% and 32% of women with multiple female colleagues.

The more often female STEM faculty held research aligned conversations with their male counterparts, they felt less engaged with their work whereas holding social conversations with them increased the engagement of male counterparts with their work (AAUW, 2015). Women in STEM often report feeling more isolated due to structural biases in-built into male dominated settings (AAUW, 2015; Hill et al., 2010a). Male colleagues, even if unconsciously, penalize women for working in male-dominated field by isolating them (Settles & APA, 2014). Research on gender-based discrimination in the hiring and mentoring process in physics, biology and chemistry departments show that evaluators viewed female applicants as less competent, less hireable and demonstrated lower willingness to mentor them, as compared to identical male candidates (AAUW, 2015). Women that hold technical or STEM jobs also report more incidents of sexual harassment. 55% of women in senior leadership and 45% of women in technical fields report sexual harassment. A 2017 study by Pew Research Center of working adults in the U.S found that 49% of women in male-dominated industries considered sexual harassment to be a problem in their workplace (Parker, 2018). In an assessment of nine water utilities across 13 counties in Kenya, it was found that none of them had clear sexual harassment policies in place and female employees reported gender discrimination in placement and advancement within the organisation (Torkelsson, Wasike, & Rop, 2011).

Affirmative recruitment policies have positively impacted the number of women hired across firms and academic institutions. Departments that hired above the average number of women in the applicant pool often had targeted initiatives such as selecting diverse search committees and building professional relations with females in the field. Organisations such as CARE in Ethiopia have undertaken gender mainstreaming activities throughout its activities, even restructuring their recruitment process. It re-graded all their job descriptions, re-advertises positions if no applications from female candidates are received, conducts gender-blind competency tests and reconfigured their interview process to factor in gender (CARE, 2018).

7.2 Socio-cultural Barriers

ADB reports that missing women in WaSH leadership is due to the short supply of women water professionals, entrenched cultural and traditional attitudes, gender stereotyping and perceptions that women lack technical and managerial skills (Jalal, 2014). Women leaders in the sanitation sector face a double barrel since it is also a technical sector. Technical sectors are often presumed to be 'male' sectors and are largely male-dominated (AAUW, 2015; Hill, Corbett, & St. Rose, 2010b). In highly patriarchal societies, having a woman lead a team of largely male employees presents its own barriers in the form of strong opposition from the employees. Research on cultural differences and board gender diversity indicates that societies with lower power distance² tend to have a greater number of women on the boards as compared to societies with higher power distance (Downs, Reif, Hokororo, & Fitzgerald, 2014). The nature of discrimination or obstacles that women face also change with respect to countries. Different cultures have different stereotypes and discrimination against women who do not conform to these stereotypes is higher. For example, female health workers in South Africa report difficulties in getting promoted if they are perceived to be outspoken (Gardner, James, & Evans, 2002). Other forms of covert discrimination such as viewing men as more competent and deserving of a higher salary than equally qualified women also exist in many countries (Correll et al., 2007; Downs et al., 2014). A research study of four experiments also shows that male and female candidates are treated differently when they attempt to negotiate higher compensations, adversely affecting the propensity to initiate negotiations. Only 7% of female graduate students attempted to negotiate their initial compensation offers as compared to 57% of men in a study of graduating professional students (Bowles, Babcock, & Lai, 2007). Women tended to present their skills more modestly than men, which leads to the perception that they are lacking in technical skills. On the other hand, if women display more masculine self-promoting tendencies, they are often perceived to be technically competent but lacking social skills, which also affects recruitment and promotion. Women who attempted to initiate negotiations suffered a social cost: on average, there was a fall in the evaluators' willingness to work with such female candidates, and they were reported to be seen as 'overly demanding' and 'not nice' (Bowles et al., 2007). The same effects were not observed for male candidates who initiated negotiations. Across all three experiments, men evaluated female candidates more negatively than male candidates for initiating negotiations.

Perceived differences as a factor for exclusion is observed in a study of nine African countries as well - men and women were found to have equal capabilities but were not perceived as such (International Water Association, 2016). Existing sociocultural norms and beliefs deters women from technical roles that require travel to field locations and overnight stays (ILO, 2018). Male colleagues also have expectations about the work that female employees can perform and do not offer them such positions. The findings from a study of water and sanitation entrepreneurs in Indonesia, Viet Nam and Timor-Leste confirm that entrepreneurial activity in WASH in each of these countries is male-dominated (Willetts, Murta, & Gero, 2016). Female entrepreneurs reported less confidence in the ability of their business to succeed and displayed lower commitment to continuing the business in the future, despite having received the same training. Several male entrepreneurs also recorded that women were generally less

² Power distance indicates the strength of societal social hierarchy. It measures the distribution of power and wealth between people in a nation, business or culture.

capable than men, had limited skill and time as compared to men, and their personalities were considered to be more appropriate for desk work than technical roles. Another study done exclusively in Timor-Leste also shows the same evidence: qualitative interviews revealed that men and women believed that technical roles should be held by men, in turn perpetuating the low number of women in the sector (BMGF, 2018a).

7.3 Educational Barriers

Some part of the absence of female leaders in sanitation public bodies and related technical fields can be traced back to the low participation rate of girls and women in STEM education. UNESCO reports that only 28% and 27% of women are enrolled in higher education in information and communication technology and engineering, manufacturing and construction, compared to 72% and 73% of men in the same fields (UNESCO, 2017).

7.3.1 Stereotype Threat and Biases

There are various factors that contribute to under representation of women in STEM including societal norms and parental expectations, which are more relevant in highly patriarchal societies, lack of access to information that might motivate women to enter STEM fields and institutional factors that inhibit entry and growth within the field. Implicit biases regarding girls' abilities to perform well in STEM subjects are ingrained from an early age and become more pronounced as gender roles become more defined (Hill et al., 2010b; UNESCO, 2017). A study in the U.K found that at age 10-11 years, 75% of boys and 72% of girls report that they found science topics interesting but by the age of 18, this proportion fell to 33% for boys and 19% for girls (McWhinnie & Peters, 2014). A summary of 21 case studies of the scientific, technical and vocational education for girls in 21 African countries shows that participation of girls in pure sciences such as Physics and Chemistry is low in Kenya and Uganda (Hoffmann-Barthes, Nair, & Malpede, 1999). In Kenya, girls are reported to perform less well than boys in science, at the end of 4 years of a secondary school cycle in mathematics and science subjects.

Parental and societal expectations have an effect on girls' decision to pursue STEM. Gender stereotypes that communicate the idea that STEM studies and careers are male domains adversely affect their interest, engagement and achievement in STEM (UNESCO, 2017). Girls' participation and achievement in STEM and a lower differential in achievement between boys and girls in STEM have been found to be positively correlated to more gender equal societies where girls are supported to display more confidence in their mathematical skills (UNESCO, 2017, 2018). Parents with higher socio-economic status and higher educational qualifications have more positive attitudes towards involvement of girls in STEM. There is also a stereotype threat that feeds into girls' and women's performance in STEM tests; when negative stereotypes about women's mathematical skills were brought to the attention of test-takers during tests, women's performance dropped. One study found that when test administrators tell students that girls and boys are equally capable in math, the performance differential disappears (UNESCO, 2017). Similarly, when teachers and parents told girls that math skills are not an innate ability and could expand with learning, girls performed better on tests (AAUW, 2015). Women who reported the presence of such a 'growth' mindset in their classrooms were less susceptible to the negative effects of these stereotypes and displayed more confidence in

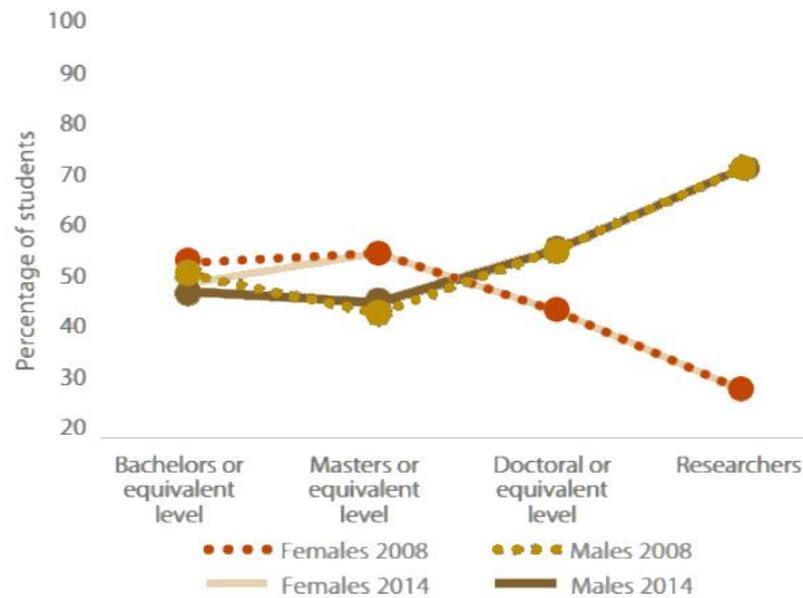
pursuing math in the future (Good, Rattan, & Dweck, 2012). Girls also hold themselves to a higher standard than boys in STEM subjects, believing that they have to be “exceptional” in order to succeed in the field. This leads girls to self-select out of such fields (UNESCO, 2017).

7.3.2 Female Role Models

Female STEM teachers and female role models in STEM fields have been found to positively influence girls’ interest in studying and pursuing STEM. The Global Education Monitoring (GEM) report found that girls performed better in math and science courses when instructed by female teachers (UNESCO, 2018). Female teachers not only help to address the myth that math skills are innate but also may be more sensitized to such problems and actively encourage girls’ participation in such classes, as compared to their male counterparts. Similarly, mentoring programs have been found to increase participation and confidence of girls in pursuing STEM studies and careers (GPE, 2019; UNESCO, 2017). UNESCO, along with the L’Oréal Foundation and French ministries, set up a ‘For Girls in Science’ program, where 100 science ambassadors intervene in classes and serve as role models. In 2015, 75% of the 2000 participating students reported an increased interest in scientific careers, as compared to 46% at the start of the program (UNESCO, 2018). Rosenberg-Kima et al. (Rosenberg-Kima, Baylor, Plant, & Doerr, 2008) also found an increase in middle school girls’ interest in engineering after the girls were exposed to a 20-minute narrative delivered by a computer-generated female agent describing the lives of female engineers and the benefits of engineering careers.

The gender gap in STEM widens as students transition to post-graduate levels of education and on to their careers. UNESCO reports a significant drop in the number of female graduates between the masters’ level and doctoral level (UNESCO, 2017). Moreover, this gap has not reduced over the years, with no difference in the number of female graduates at these levels between 2008 and 2014 (Figure 4). It has been found that women do not take up careers in their field of study even after graduate education, despite the large amount of time and resources invested (UNESCO, 2017). The female share of researchers in science in the world is only 28.8%; for Sub-Saharan Africa it is only 31.3%; the share was only 25.7% in Kenya in 2010 (“UIS Statistics,” 2019). The Women’s Engineering Society reports that in the U.K, men are significantly more likely than women to be in engineering and technology roles six months after completion of their studies (McWhinnie & Peters, 2014). There are regional differences in take-up of these subjects as well. According to UNESCO reports, enrolment in engineering, manufacturing and construction amongst female students is higher in South-East Asia and the Middle East as compared to Sub-Saharan Africa, North America and Europe (UNESCO, 2017).

Figure 4 Proportion of Women and Men in Higher Education and Research, World Average



Source: *Cracking the Code: Girls' and Women's Education in Science, Technology, Engineering and Mathematics*(UNESCO, 2017)

7.3.3 Bridging the Gap

Several international and regional attempts are being made to bridge this gender gap, including UNESCO's STEM and Gender Advancement (SAGA) program and UNITWIN Networks in Gender, Science and Technology. The programs are aimed at reducing the STEM gender gap by monitoring data and developing policy tools and encouraging and promoting girls' education and women's careers in these fields through mentoring and networking. As a result of SAGA, several countries such as Gambia, Argentina and Uruguay have introduced specific policy instruments addressing women in STEM (STEM and Gender Advancement (SAGA), 2017). In Lao People's Democratic Republic, ADB offers scholarships to female high-school graduates to train as water engineers, civil and environmental engineers and technicians. It also offers a mentor networking program, comprising of female experts from private and public sector (Jalal, 2014). Increasing girls' exposure to STEM experience through internships, networking events and science camps also increases girls' willingness to pursue these subjects (Jalal, 2014). In Israel, a programme called Mind the Gap! organised school visits to Google, annual tech conferences and provided access to female engineers to talk about their experience. This had an impact on girls' choice to pursue computer science as a high school major (UNESCO, 2017). Science, Technology, Mathematics Education (STME) clinics located across different regions in Ghana provides short-term intensive intervention programs with female scientists for secondary school girls. In Kenya, the government, along with the University of Nairobi and National Commission for Science, Technology and Innovation, organises STEM camps. These one-week camps are aimed at demystifying science for girls- they are encouraged to carry out scientific experiments and interact with STEM students from universities (UNESCO, 2017). The Forum for African Women Educationalists (FAWE) works in

13 countries across Africa (including Kenya) and focuses on increasing both girls' participation in STEM and their STEM test scores (GPE, 2019). It does this in part through the creation of gender-sensitive instruction material. It also establishes science camps, conducts study tours to research centres and laboratories, regularly holds events to feature role models and profiles women achievers in the field. FAWE has also partnered with Microsoft Africa to launch a program called DigiGirly, aimed at enhancing girls' skills in coding. The Kenya Water Institute (KEWI) funded by the government was set up to offer training and provide research and consultancy services exclusively for the WASH sector in Kenya. It offers diploma courses on water engineering and water and waste water laboratory technology, an operators' course on sewerage treatment as well as bridge course on science and mathematics (Kenya Water Institute, 2017).

Key Takeaways

- Women face additional institutional, socio-cultural and educational barriers upon entry, during work and regarding promotions in technical fields.
- Some institutional barriers that women in scientific and technical fields face include: an absence of female mentors; limited work flexibility; hostile work environment; microaggressions; sexual harassment; and unclear and biased recruitment, placement and advancement policies.
- Technical sectors are considered to be culturally 'male' fields and it becomes difficult for a woman to join or lead a team in such fields, especially in highly patriarchal societies. Women and men in these field have equal capabilities but are not perceived as such.
- Some part of the missing female leadership in WaSH can be traced back to low participation rate of girls in STEM education. Women make up less than a quarter of STEM professionals in Africa.
- Societal and parental biases regarding women's capabilities to perform well in STEM, lack of female teachers and female role models teaching STEM subjects, lower self-perception of girls with regard to their performance on math and science tests and stereotype threats deter girls and women from pursuing and progressing in STEM subjects at school.

8 Gender Roles and Relations in Kenya

Societies in Kenya are considered to be highly patriarchal, with men being power brokers in most households. Gender roles are strictly imposed in Kenya, with socio-cultural factors feeding into economic and educational decisions and restricting women's empowerment and contribution to their households, community and the country. The Global Gender Gap report ranks Kenya 76 out of 144 countries surveyed, with significant gaps in gender outcomes in education, health, political representation and economic freedom (World Economic Forum, 2017). The Gender Equality Index score for Kenya was 38%, indicating that 62% of women are excluded from economic activities, primarily based on gender (AfDB, 2017).

8.1 Education and Labour Force Participation

Women constitute about 80% and 50% of the labour force involved in food production and cash crop production, but only hold 1% of the registered land titles (AfDB, 2017). Although the Constitution guaranteed equality of ownership of all assets, access to land and other property is constrained by customary law (OECD, 2019). They are usually granted life interest³ in property and without title deeds, they are denied access to markets, credits and cooperative memberships that would help their businesses grow. Despite owning 48% of micro and small enterprises, women access only 7% of the credit. Women in Kenya receive less than 10% of the credit given to small land holders and only 1% if the total credit granted for agriculture (AfDB, 2017). Men also control most of the proceeds from the agricultural sector. Female-owned farms own less than half of the capital equipment owned by male-headed households. About 60.1% of all seasonal workers are female and about 60.8% of women are under-employed. (AfDB, 2017)

Even in the formal sector, women are mostly employed in service industries such as education and typically occupy the lower-paying jobs. Career progression is also difficult for women in Kenya; according to the Kenya Institute of Management, women account for only 26% of management positions in the companies listed in the Nairobi Securities Exchange. Systemic gender biases and assigned gender roles restrict women from working even when they are qualified and also feeds into a large gender wage gap. Of those with a college education who were unemployed in 2015-16, 67.8% of them were women (KNBS, 2018) and male employees in Kenya make 55% more income than women, on average (BMGF, 2018b). Limited access to childcare facilities along with limited access to financial resources also restrict women's ability to participate in formal employment.

The introduction of free primary education in 2003 has helped bridge the gender gap in education with levels of primary education being roughly the same for both boys and girls (OECD, 2019). However, there are wide regional disparities with female literacy being only 10% in 2015 in counties with arid and semi-arid land (ILO et al., 2019). The gap widens for secondary and tertiary education- the proportion of women who had attained university education was 3.7% as compared to 5.3% for men (KNBS, 2018). Financial difficulties, cultural norms and

³ Life interest in property refers to a form of right of use that lasts only for the lifetime of the person to whom it has been granted. A person with life interest generally does not have the right to sell the property.

stereotypes and early marriages often prevent girls from pursuing higher education. Girls' education is considered to be not important since cultural norms dictate that a woman should be married and educating girls only enriches the prospective husband's family and brings no value addition to the parents (Kulkarni et al., 2009).

8.2 Violence against Women and Girls

Gender-based violence is prevalent in Kenya; the 2014 Demographic Health Survey (DHS) found that 45% and 14% of women have experienced physical and sexual violence, respectively, at least once in their life (Kenya National Bureau of Statistics, 2014). The 2014 SIGI study places Kenya in the category of countries with highly restrictive physical integrity for women (OECD, 2019). Kenya does not have a specific law against domestic violence nor any clear law on marital rape. The 2008-09 DHS survey reports almost half of the people surveyed find intimate partner violence acceptable, with 43.7% of men and 52.6% of women agreeing with at least one reason for justifying why a man might beat his wife (KNBS, 2009). Women are disproportionately affected by HIV/AIDS- 6.9% of women aged 15-64 are reported to be affected, as compared to 4.4.% of men (UN Women, n.d.). Childbearing also begins early in Kenya, with almost a quarter of girls giving birth by age 18, according to DHS (Kulkarni et al., 2009).

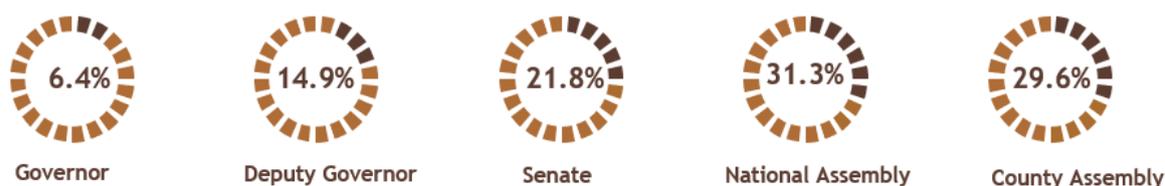
8.3 Political Representation

Women are not adequately represented in politics, serving as a major barrier to formulation of inclusive policies and legislation. Out of the 14,501 candidates in 2017 general elections, only 1,259 (8.7%) were female and of the 1,862 persons elected, only 172 (9%) were women. At the county level, women account for only 3 out of 47 governors, 10 out of 47 deputy governors and 96 out of 1430 members of county assemblies (MCAs). Even at parliamentary levels, women constitute only 23 out the 290 members of parliament, 3 out of 47 senators and 5 of 47 cabinet secretaries. This is below the required minimum of one-third representation set out by the Constitution in 2010 (National Democratic Institute & Federation of Women Lawyers, Kenya, 2018). Research on the influence of women in politics in Kenya found a high persistence of threats of violence and verbal abuse against female political candidates (Opoku, Anyango, & Alupo, 2018). Since women have less access to financial resources and most do not own or control property or other assets, the financial costs of running a campaign is also a major barrier (Opoku et al., 2018).

UN Women and other partner institutions are currently training all women members of the parliament to advance equality and other gender agendas in the parliament. It is also preparing a cadre of female political leaders for the 2022 elections (UN Women, 2018). The Kenya School of Governance is also offering training sessions to female leaders, based on a Women in Leadership curriculum, developed by the organisation. In a survey to understand women's access and participation in political parties, respondents reported that women were involved only in grass-root decision-making and not at the policy level (Opoku et al., 2018). GROOTS Kenya, a grassroots organisation, aims to contribute to enhanced gender equality in the country by increasing the proportion of women in elective positions. It undertakes activities involving the creation of positive images of women leadership, prevention of electoral violence

against women through community watchdogs and popularisation of women candidates nominated by political parties (GROOTS Kenya, n.d.).

Figure 5 Political Representation of Women in Kenya



Source: *Gender Analysis of 2017 General Elections* (National Democratic Institute & Federation of Women Lawyers, Kenya, 2018)

8.4 Existing Policies and Programs

Kenya has made some progress in moving towards gender parity in economic opportunities, health, education and in public life and decision-making. The Constitutional amendments made in 2010 does not allow discrimination based on gender and provided for specific interventions aimed at girls, including distribution of sanitary facilities, re-entry into schools by teenage mothers and mentorship programs to encourage girls to take up STEM subjects. Article 27(8), known as the Gender Principle, also introduced a two-thirds gender rule, stating that any gender should not be more than two-thirds at both the national and local legislative assemblies (UN Women, n.d.). However, voting on this rule has been postponed since its introduction due to a lack of quorum in parliament. Kenya also adopted a Gender Policy in Education framework in 2007, encouraging gender-friendly learning environments and curriculum as well as the provision of grants and loans (Mutua, 2017). However, the policy has not been widely implemented and only limited resources have been allocated. It also passed a Public Procurement act in 2015, which reserves 30% of public procurement opportunities for women, youth and people with disabilities (AfDB, 2017).

The State Department for Gender Affairs was established in November 2015. The department has several directorates, one of which is responsible for gender mainstreaming in ministries, other departments, agencies and the private sector (State Department for Gender Affairs, 2018a). It has already made some progress: the directorate has launched a national strategy to support greater participation of women in electoral politics, established gender sector working groups and Kenya won the Gender Score Card Award for Education and Skills Development in Africa in 2017. The department, in collaboration with the UN, has launched several helplines for gender-based violence a gender-based violence recovery centre. The Sanitary Towels program under the department aimed to distribute sanitary towels to 3.7 million girls in public schools in 2017-18, with a view to promote equality in education (State

Department for Gender Affairs, 2018b). The Department also drafted its first Women's Economic Empowerment Strategy in 2018.

Donor agencies and multilateral organisations are also undertaking programs aimed at promoting gender equality. UN Women and the Government of Kenya worked together to implement the 'Making Every Woman and Girl Count' program, to enhance the capacity of the government to collect gender disaggregated statistics to improve progress towards SDG goals (UN Women, 2018). GBV Working Groups have been set up in nine counties to provide support and enhance access to justice for those subject to GBV. A national GBV helpline continues to operate, to provide immediate medical, legal and psychological support (State Department for Gender Affairs, 2018a).

Key Takeaways

- Global Gender Gap report places Kenya at 76 out of 144 countries surveyed and finds significant gaps in education, healthcare, political representation and economic freedom.
- Although the Constitution prohibits all gender discrimination and guarantees women the right to own property and other assets, customary laws and entrenched cultural practices prevent women from exercising their rights.
- Kenya has mandated that any gender should not be more than two-thirds at national and legislative assemblies. It also has a gender policy for education and a policy of rewarding 30% of public contracts to women and youth.
- Although women make up a major proportion of the labour force in food production, only 1% hold registered title deeds, cutting off access to credit markets.
- There is equitable level of primary education but the gap widens at the tertiary level. Women in the formal sector occupy lower paying jobs and men earn 55% more than women, on average.
- 14% of women report sexual violence and a large proportion of men and women think intimate partner violence is acceptable. Early marriage and teenage pregnancies are also prevalent.
- Women's political participation is restricted by persistent threats of violence and lack of financial resources. Only 9% of the elected representatives were women in the 2017 national elections.

9 Conclusion

The objective of this review was to assess and synthesise all current literature on relevant aspects related to women in decision-making roles in the sanitation sector. The review helps us understand the research that has been undertaken so far and provides us with a basis on which to build our research design, including structured interview questions and standardized surveys.

The largest body of evidence emerges around the thematic area of women in corporate governance and the barriers that women face in advancement along the corporate ladder. We find that in addition to these barriers, women also face discrimination once they have attained management and executive roles, which could be a possible threat to their careers. The research on this second barrier of discrimination is limited but understanding this behaviour could lead to more sustainable careers for women. The effects of increased board diversity have mostly been studied in the context of gender quotas. The evidence from literature is largely inconclusive, mainly because evaluations are carried out in different countries with different enabling situations and use different performance indicators. It is also difficult to draw a direct link; confounders also contribute to the performance of a firm. A large proportion of the studies on gender and firm performance come from the U.S or Scandinavian countries, which have seen increased attention on women in the workforce in the last decade. Evidence of the impact of gender diversity in boardrooms and management from Kenya, or the rest of Africa, is quite limited. Much less research has also been done on the impact of female management on increasing the role and visibility of women among the firm employees and its impact on other aspects such as social responsibility.

We found relatively few resources on either inequity in sanitation governance or socio-cultural barriers that women face in technical fields. Most of the evidence on these themes arises from qualitative research, where respondents have identified what they perceive to be potential problems. This gap might be because global attention on promoting women decision-makers in technical sectors is fairly recent, and most interventions and programs to address the issue have only been launched in the past 2-3 years. Results from ongoing projects will help identify the best methods that can be adopted as well as linkages between increased female representation and better sanitation outcomes for all users. Although we find some evidence on how customary laws and practices in countries, in addition to societal power structures, perpetuate occupational segregation, there is scope for much deeper research in this area. Much of the evidence focuses on water and the associated problems that women face or the impact of this on absentee rates of girl students and GBV; research focused on sanitation is not adequately represented in the research literature thus far. A large proportion of the available literature on women's engagement and participation focuses on the community level and not on the sectoral level where policy decisions are made. However, the educational barriers that women face in obtaining and advancing in technical education has been widely studied in the grey literature. We find that the focus of the literature is on psycho-social barriers that restrict girls from studying STEM subjects. Issues related to lack of access to good technical schools, affirmative action that promote women in STEM and financial constraints are not addressed adequately, especially in the context of Kenya.

We find a geographical disparity in evidence collected. The focus on gender, leadership and sanitation is largely restricted to Africa, which suits this particular research call. However, very few studies have been carried out in other middle and low-income countries. Even within Africa, the research is skewed towards East Africa. Beyond the current research project, we believe that both the thematic and geographic gaps will be useful for others in the sector, as a partial guide for setting relevant research agendas.

As identified, there are gaps in this literature review. The thematic gaps include a lack of understanding when it comes to gender-diverse leadership outside of the corporate sector; greater integration of knowledge when it comes to the cumulative impacts of multiple barriers for women across their career-paths; and the particular institutional practices in the sanitation sector that impact gender diversity at the level of decision-makers. In addition, we found no research on how men and women define and design sanitation services, and how they might differently prioritize service interventions. We hope that the conclusions from our study will fill in at least some of the existing gaps in literature in this area, particularly in the context of Kenya, and add to the much larger global and regional literature on gender mainstreaming and gender and leadership.

10 References

- AAUW. (2015). *Solving the Equation*. Retrieved from https://www.aauw.org/aauw_check/pdf_download/show_pdf.php?file=solving-the-equation-summary-english
- AAUW. (2016). *Barriers and Bias*. Retrieved from AAUW website: https://www.aauw.org/aauw_check/pdf_download/show_pdf.php?file=barriers-and-bias
- Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 19.
- AfDB. (2015). *Where are the Women Inclusive Boardrooms in Africa's top-listed companies*. Retrieved from African Development Bank website: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Where_are_the_Women_Inclusive_Boardrooms_in_Africa%E2%80%99s_top-listed_companies.pdf
- AfDB. (2017). *Country Gender Note For Kenya* (p. 45).
- Bart, C., & McQueen, G. (2013). Why women make better directors. *International Journal of Business Governance and Ethics*, 8(1), 93. <https://doi.org/10.1504/IJBGE.2013.052743>
- Bertrand, M., Goldin, C., & Katz, L. F. (2010). Dynamics of the Gender Gap for Young Professionals in the Financial and Corporate Sectors. *American Economic Journal: Applied Economics*, 2(3), 228–255. <https://doi.org/10.1257/app.2.3.228>
- BMGF. (2018a). *Case Studies In Gender Integration* (p. 8). Bill & Melinda Gates Foundation.
- BMGF. (2018b). Gender Gap Africa. Retrieved April 19, 2019, from <https://gendergap.africa>
- Bowles, H. R., Babcock, L., & Lai, L. (2007). Social incentives for gender differences in the propensity to initiate negotiations: Sometimes it does hurt to ask. *Organizational Behavior and Human Decision Processes*, 103(1), 84–103. <https://doi.org/10.1016/j.obhdp.2006.09.001>
- Burt, Z., Nelson, K., & Ray, I. (2016). Towards Gender Equality Through Sanitation Access. *UN Women*. Retrieved from <http://isharay.com/wp-content/uploads/2018/06/RAY-UNW-DiscPaper12-2016.pdf>
- CARE. (2018). *Institutional Gender Reform*. Retrieved from https://insights.careinternational.org.uk/images/in-practice/Gender-in-the-workplace/CARE-Ethiopia-Institutional-Gender-Reform_case-study_final.pdf
- CAWSTEM. (2019). Home | CAWSTEM (Connecting African Women in STEM). Retrieved August 14, 2019, from CAWSTEM website: <https://connectingafricanwomeninstem.org/>
- Chang, E. H., Milkman, K. L., Chugh, D., & Akinola, M. (2019). Diversity Thresholds: How Social Norms, Visibility, and Scrutiny Relate to Group Composition. *Academy of Management Journal*, 62(1), 144–171. <https://doi.org/10.5465/amj.2017.0440>
- Correll, S. J., Benard, S., & Paik, I. (2007). Getting a Job: Is There a Motherhood Penalty? *American Journal of Sociology*, 112(5), 1297–1339. <https://doi.org/10.1086/511799>

- Downs, J. A., Reif, L. K., Hokororo, A., & Fitzgerald, D. W. (2014). Increasing Women in Leadership in Global Health: *Academic Medicine*, *89*(8), 1103–1107. <https://doi.org/10.1097/ACM.0000000000000369>
- Ferrari, G., Ferraro, V., Profeta, P., & Pronzato, C. (2018). *Do Board Gender Quotas Matter? Selection, Performance and Stock Market Effects*. 52.
- Funk, C., & Parker, K. (2018, January 9). Women and Men in STEM Often at Odds Over Workplace Equity. Retrieved April 23, 2019, from Pew Research Center website: <https://www.pewsocialtrends.org/2018/01/09/women-and-men-in-stem-often-at-odds-over-workplace-equity/>
- Good, C., Rattan, A., & Dweck, C. S. (2012). Why do women opt out? Sense of belonging and women's representation in mathematics. *Journal of Personality and Social Psychology*, *102*(4), 700–717. <https://doi.org/10.1037/a0026659>
- GPE. (2019, March). Bridging the gender equality gap in STEM to fully transform Africa. Retrieved from <https://www.globalpartnership.org/blog/bridging-gender-equality-gap-stem-fully-transform-africa>
- Grant, M., Huggett, C., Willetts, J., & Wilbur, J. (2017). *Gender equality & goal 6: The critical connection*.
- Greenberg, D. (2006). *Rapid Gender Assessment Synthesis Report* (p. 111). GWA.
- GROOTS Kenya. (n.d.). Women & Property programme | GROOTS Kenya. Retrieved July 31, 2019, from <https://grootskenya.org/women-property-programme/>
- GWA. (2010). Gender-sensitive toilet design meets cultural needs of girls and women in north-east Nigeria — English. Retrieved June 14, 2019, from <http://genderandwater.org/en/gwa-products/knowledge-on-gender-and-water/articles-in-source-bulletin/gender-sensitive-toilet-design-meets-cultural-needs-of-girls-and-women-in-north-east-nigeria-1>
- Herrera, R., Duncan, P. A., Green, M. T., & Skaggs, S. L. (2012). The effect of gender on leadership and culture. *Global Business and Organizational Excellence*, *31*(2), 37–48. <https://doi.org/10.1002/joe.21413>
- Hill, C., Corbett, C., & St. Rose, A. (2010a). *Why so few? women in science, technology, engineering, and mathematics*. Washington, D.C: AAUW.
- Hill, C., Corbett, C., & St. Rose, A. (2010b). *Why so few? women in science, technology, engineering, and mathematics*. Washington, D.C: AAUW.
- Hoffmann-Barthes, A. M., Nair, S., & Malpede, D. (1999). *Scientific, Technical and Vocational Education of Girls in Africa*.
- ILO. (2018). *Women in Leadership and Management in Public Sector Undertakings in India* (p. 96). International Labour Organization.
- ILO, Bureau for Employers' Activities, & International Labour Office. (2019). *Women in business and management: The business case for change*. International Labour Office.

- International Water Association. (2014). *An Avoidable Crisis: WASH Human Resource Capacity Gaps in 15 Developing Economies*.
- International Water Association. (2016). *The Untapped Resource: Gender Diversity in the Water Workforce*. Retrieved from <https://iwa-network.org/publications/untapped-resource-gender-diversity-water-workforce/>
- IPU. (2017). *Women in parliament in 2017 The year in review*. Inter-Parliamentary Union.
- Jalal, I. (2014). *Women, Water and Leadership* (No. 24; p. 8). Asian Development Bank.
- Kenya National Bureau of Statistics. (2014). *DHS Survey Report: Kenya*. Retrieved from <https://dhsprogram.com/pubs/pdf/fr308/fr308.pdf>
- Kenya Water Institute. (2017). Kenya Water Institute. Retrieved April 24, 2019, from <https://www.kewi.or.ke/index.php/about-kewi/background>
- Kılıç, M., & Kuzey, C. (2016). The effect of board gender diversity on firm performance: Evidence from Turkey. *Gender in Management: An International Journal*, 31(7), 434–455. <https://doi.org/10.1108/GM-10-2015-0088>
- KNBS. (2009). *DHS Survey Report*. Retrieved from Kenya National Bureau of Statistics website: <https://dhsprogram.com/pubs/pdf/fr229/fr229.pdf>
- KNBS. (2018). *Labour Force Basic Report 2015/2016 Kenya Integrated Household Budget Survey (KIHBS)*. Retrieved from Kenya National Bureau of Statistics website: <https://www.knbs.or.ke/download/labour-force-basic-report/>
- Kulkarni, S., Bhat, S., Majumdar, S., & Goodrich, D. C. G. (2009). *Situational Analysis of Women Water Professionals in South Asia* (p. 51). Society for Promoting Participative Ecosystem Management (SOPPECOM).
- Lee, L.-E., Marshall, R., Rallis, D., & Moscardi, M. (2015). *GLOBAL TRENDS IN GENDER DIVERSITY ON CORPORATE BOARDS*. 31.
- Li, H., & Chen, P. (2018). Board gender diversity and firm performance: The moderating role of firm size. *Business Ethics: A European Review*, 27(4), 294–308. <https://doi.org/10.1111/beer.12188>
- Liu, Y., Wei, Z., & Xie, F. (2014). Do women directors improve firm performance in China? *Journal of Corporate Finance*, 28, 169–184. <https://doi.org/10.1016/j.jcorpfin.2013.11.016>
- Matsa, D. A., & Miller, A. R. (2013). *A Female Style in Corporate Leadership? Evidence from Quotas*. <https://doi.org/10.2139/ssrn.1636047>
- McKinsey & Company. (2016). *Women Matter Africa*. Retrieved from <http://genderinkenya.org/wp-content/uploads/2017/12/Women-Matter-Africa.pdf>
- McWhinnie, S., & Peters, J. (2014). *Diversity in Engineering* (p. 121). Retrieved from Women's Engineering Society website: <https://www.wes.org.uk/sites/default/files/u82/Diversity%20in%20Engineering%20Data%20Report%20FINAL.pdf>

- Mori, N., & Richard, E. (2019). Board Gender Diversity: Challenges and Implications for Corporations in the East African Community. *Journal of African Business*, 20(2), 224–241. <https://doi.org/10.1080/15228916.2019.1597324>
- Mulenga, M., Manase, G., & Fawcett, B. (2001). An analysis of sanitation policies in Southern Africa: The case of Gender Policies in Sanitation in South Africa, Zambia & Zimbabwe. WEDC. Retrieved from http://genderandwater.org/en/other-resources/case-studies/Gender_GWA_WEDC_Sanitation_Policies_S.Africa_Zambia_a_Zimbab.doc/view
- Mutua, M. (2017). *How effective has the education policy been in addressing gender inequality in Kenya?*
- National Democratic Institute, & Federation of Women Lawyers, Kenya. (2018). *A Gender Analysis of the 2017 Kenya General Elections*. Retrieved from https://www.ndi.org/sites/default/files/Gender%20Analysis%20of%202017%20GeneralElections%20FINAL%20High%20Res%20for%20Printer%20-%20NEW%20COVER_small.pdf
- Noland, M., Moran, T., & Kotschwar, B. R. (2016). Is Gender Diversity Profitable? Evidence from a Global Survey. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2729348>
- OECD. (2019). Kenya. Retrieved August 14, 2019, from Social and Gender Inclusion Index website: <https://www.genderindex.org/country/kenya-2014-results/>
- Opoku, M. P., Anyango, B., & Alupo, B. A. (2018). Women in politics in Kenya: An analysis of participation and barriers. *Multidisciplinary Journal of Gender Studies*, 7(1), 1506. <https://doi.org/10.17583/generos.2018.3179>
- Parker, K. (2018, March 7). Women in majority-male workplaces report higher rates of gender discrimination. Retrieved April 23, 2019, from Pew Research Center website: <https://www.pewresearch.org/fact-tank/2018/03/07/women-in-majority-male-workplaces-report-higher-rates-of-gender-discrimination/>
- Parodi, F., Costa Dias, M., & Joyce, R. (2018). *Wage progression and the gender wage gap: The causal impact of hours of work*. <https://doi.org/10.1920/BN.IFS.2018.BN0223>
- Regmi, S. C., & Fawcett, B. (2001). *Men's roles, gender relations, and sustainability in water supplies: some lessons from Nepal*. 6.
- Rogers, P., & W. Hall, A. (2003). *Effective Water Governance* (No. 7). Global Water Partnership Technical Committee (TEC).
- Rosenberg-Kima, R. B., Baylor, A. L., Plant, E. A., & Doerr, C. E. (2008). Interface agents as social models for female students: The effects of agent visual presence and appearance on female students' attitudes and beliefs. *Computers in Human Behavior*, 24(6), 2741–2756. <https://doi.org/10.1016/j.chb.2008.03.017>
- Ryan, M. K., & Haslam, S. A. (2005). The Glass Cliff: Evidence that Women are Over-Represented in Precarious Leadership Positions. *British Journal of Management*, 16(2), 81–90. <https://doi.org/10.1111/j.1467-8551.2005.00433.x>
- Sabatier, M. (2015). A women's boom in the boardroom: Effects on performance? *Applied Economics*, 47(26), 2717–2727. <https://doi.org/10.1080/00036846.2015.1008774>

- Settles, I. (2014). Women in STEM: Challenges and determinants of success and well-being. <https://www.apa.org>. Retrieved from <https://www.apa.org/science/about/psa/2014/10/women-stem>
- Silva, C., Carter, N. M., & Beninger, A. (2012). *GOOD INTENTIONS, IMPERFECT EXECUTION?* (p. 26). Catalyst.
- Soppe, G., Janson, N., & Piantini, S. (2018). *Water Utility Turnaround Framework: A Guide for Improving Performance*. <https://doi.org/10.1596/30863>
- State Department for Gender Affairs. (2018a). Ministry of Public Service, Youth & Gender Affairs. Retrieved April 24, 2019, from State Department for Gender Affairs website: <http://www.gender.go.ke/gender-mainstreaming/>
- State Department for Gender Affairs. (2018b). Sanitary Towels Program. Retrieved April 24, 2019, from State Department for Gender Affairs website: <http://www.gender.go.ke/sanitary-towels-program/>
- STEM and Gender Advancement (SAGA). (2017, May 21). Retrieved August 14, 2019, from UNESCO website: <https://en.unesco.org/saga>
- Torchia, M., Calabrò, A., & Huse, M. (2011). Women Directors on Corporate Boards: From Tokenism to Critical Mass. *Journal of Business Ethics*, 102(2), 299–317. <https://doi.org/10.1007/s10551-011-0815-z>
- Torkelsson, A., Wasike, T., & Rop, R. (2011). *Placing Women at the Center of Water Supply Management in Kenya*. Retrieved from International Finance Corporation website: <https://medium.com/usaid-global-waters/placing-women-at-the-center-of-water-supply-management-in-kenya-4f8705aef2bc>
- UIS Statistics. (2019). Retrieved August 14, 2019, from <http://data.uis.unesco.org/>
- UN Women. (2018, October 8). Making Every Woman And Girl Count. Retrieved August 7, 2019, from Gender in Kenya website: <https://www.genderinkenya.org/ungendernews/making-every-woman-and-girl-count-kenya-to-implement-un-womens-global-programme-on-gender-statistics/>
- UN Women. (n.d.). Where we are : Eastern and Southern Africa : Kenya. Retrieved August 7, 2019, from UN Women | Africa website: <http://africa.unwomen.org//where-we-are/eastern-and-southern-africa/kenya>
- UN Women, & Water Supply & Sanitation Collaborative Council. (2016). *Best Practices of the Joint Programme on Gender Hygiene and Sanitation*. Retrieved from <https://www.wsscc.org/wp-content/uploads/2016/11/Best-Practices-of-the-Joint-Programme-on-Gender-Hygiene-and-Sanitation-UN-Women-WSSCC.pdf>
- UNESCO. (2017). *Cracking the code: Girls' and women's education in science, technology, engineering and mathematics (STEM)*. UN Educational, Scientific and Cultural Organization.
- UNESCO. (2018). *Global education monitoring report gender review 2018: Meeting our commitments to gender equality in education*. Retrieved from UNESCO website: <https://unesdoc.unesco.org/ark:/48223/pf0000261593>

UN-Water, & World Health Organization. (2012). *GLAAS 2012 report: UN-Water global analysis and assessment of sanitation and drinking-water : the challenge of extending and sustaining services*.

USAID. (2015). *SUWASA*. Retrieved from USAID website:
<https://www.tetrattech.com/pdf/download?url=http://localhost%252fen%252fdocs%252fpd14%252d120%252den%252dsustainable%252dwater%252dand%252dsanitation%252dcity%252dreport%252epdf>

USAID. (2018). *KIWASH Annual Report*. Retrieved from USAID website:
https://drive.google.com/file/u/1/d/1VFNgggh1geERXjYvhN5q2NTBpYaTzsFa0/view?usp=embed_facebook

Willetts, J., Murta, J., & Gero, A. (2016). *Water and sanitation entrepreneurs in Indonesia, Vietnam and Timor-Leste: Traits, drivers and challenges* (No. Working Paper 4; p. 38). Sydney: Institute for Sustainable Futures, University of Technology Sydney.

World Economic Forum. (2017). *The global gender gap report: 2017*. Geneva: World Economic Forum.

WSP. (2010). *Mainstreaming Gender in Water and Sanitation*. Water and Sanitation Program.

WSSCC, U. W. (2015). *Menstrual Hygiene Management: Behaviour and Practices in the Kedougou region, Senegal* (p. 72). WSSCC/UN Women.