Mainstreaming Gender in Infrastructure: Desk Review

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Introduction

1.1 Objectives, scope and methodology of the desk review

This study conducts an exploratory review of the literature on infrastructure and gender to discuss best practices and lessons learned for mainstreaming gender and identify gender gaps. The scope of this study is limited to gender mainstreaming in upstream infrastructure planning and implementation. The review goes beyond publications produced by MDBs and other multilateral institutions to include academic literature on gender & politics. This literature is particularly helpful in understanding (i) the complexities of gender-based social marginalization, and (ii) challenges that entrenched gender norms pose in understanding gendered needs for infrastructure and producing equitable outcomes through interventions.

The methodology draws on principles from two different approaches, systematic mapping and systematic reviews, to accomplish two different goals. Systematic maps describe the state of knowledge on a particular topic in the literature (Haddaway and Bilotta 2016). Whereas, systematic reviews, which are typically employed in medicine and other scientific disciplines, answer narrow research questions through comprehensive and rigorous analysis of vast volumes of literature.[1]

The study employs systematic mapping to synthesize best practices and lessons learned from the literature on gender equality and infrastructure, particularly case studies of projects that serve for both men and women. While a systematic review is not appropriate for this study given that the literature on infrastructure and gender is limited and lacks empirical rigor, the Gender Equality Framework (discussed below) is used as a conceptual guide to frame specific questions for identifying gender gaps in the extant state of knowledge.

[1] See (Thompson 2016, p .2) for combining principles from the two approaches.

1.2 Roadmap

The remaining desk review spans four chapters. Chapter two theorizes relationship between infrastructure and gender equality. It posits a Gender Equality Framework which (i) adopts a nuanced approach to framing gendered inequities, and (ii) accounts for the challenges that gender norms rooted in power imbalances create for mainstreaming gender in infrastructure planning. This chapter lays the foundation for subsequent discussions about the components and challenges relating to the Gender Action Plan (GAP). Chapters 3, 4 and 5 provides an exhaustive discussion on the components of the GAP, particularly the challenges associated with collecting primary, project-level data on gendered needs for infrastructure. The discussion lays the basis for the envisioned gender toolkits by (i) providing potential questions, data and sources, and (ii) identifying practical strategies for overcoming challenges in collecting data for the Gender Analysis.

Chapter 6 focuses on Gender Mainstreaming in PPPs. It focuses on identifying the pitfalls and risks that poorly planned projects procured as PPPs may pose to women. Whereas, the discussion in Chapter 7 (i) synthesizes strategies and practices for gender mainstreaming in PPPs, as discussed in the the WBG's 2019 Primer *Gender Equality, Infrastructure and PPPs*, (ii) identifies gender gaps, and (iii) proposes solutions that the envisioned gender toolkits can take as a point of departure.

Conceptualizing the relationship between Infrastructure and Gender Equality

This chapter is divided in three parts. This first section provides an overview of the conceptual literature on sex and gender and discusses the reasons why needs and preferences for infrastructure are a gendered phenomenon. The second section discusses the conceptual relationship between infrastructure and gender equality in the corpus of policy & development literature published by the World Bank Group. The third section proposes a causal model which posits that gender-responsive infrastructure interventions are mediated by the social and political context, particularly (i) multiple sources of marginalization caused by intersecting social identities, and (ii) power inequities rooted in mundane everyday gendered behavior. This causal model informs the Gender Equality Framework which is used to frame questions to identify gender gaps in the literature relating to the different stages of upstream infrastructure.

2.1 Engendering Infrastructure – differences in usage and gaps in access

2.1.1 Theorizing gender

Famous sociologist and feminist Ann Oakley succinctly describes the difference between sex and gender:

> " 'Sex' is a word that refers to the biological differences between male and female: the visible difference in genitalia, the related difference in procreative function. 'Gender' however is a matter of culture: it refers to the social classification into 'masculine' and 'feminine' (Oakley 2015, p .22)."

Historically, societies have conflated sex, or a person's biological characteristics and physical embodiment, with a binary concept of gender that considers masculine and feminine behavior, attitudes, and characteristics as being polar opposites. However, researchers have shown that not only is sexual dimorphism – the notion that there are only two sexes – problematic because it does not account for the different modes of intersexuals, biological and physical differences related to hormones and secondary sex characteristics between 'men' and 'women' are not as stark as typically imagined (Hawkesworth 2013). Moreover, there is no credible scientific research showing that an individual's physical embodiment determines the gender that society assigns them at birth.

Social scientists argue that individuals do not have any natural predisposition to exhibit behavior that we associate with masculinity or femininity, and are, in fact, socialized to perform the gender that society assigns them at birth. We are constantly *performing* our gender identity to *achieve* the status of a woman or a man. As sociologists (West and Zimmerman 1987, p .139) have famously put,

> "Individuals have many social identities that may be donned or shed, muted or made more salient, depending on the situation. One may be a friend, spouse, professional, citizen, and many other things to many different people-or, to the same person at different times. But we are *always* [italics added] women or men – unless we shift into another sex category. What this means is that our identificatory displays will provide an ever-available resource for doing gender under an infinitely diverse set of circumstances."

Since gender fundamentally structures social institutions (as the discussion below highlights), there is a strong social expectation that individuals must perform gender to legitimize the prevailing social order. If individuals transgress or violate societal expectations of gender performances in social interactions, members of society – friends, family members, coworkers and even strangers – will hold them accountable to social expectations. Thus, by choosing to engage in gender performances that are socially perceived as being dissonant with biological sex, transgenders violate the unquestionable, matter-of-fact social norms and processes that 'tightly' couple gender and biological sex. This 'transgression' has historically been viewed as social deviance, which explains the stigmatization and marginalization that gender minorities have faced in many societies.

For feminists, gender performances are not innocuous, and are, in fact, inherently political because they provide the normative basis for *gender stratification* in society, or "the extent to which societal members are unequal in their access to the scarce values of their society (Chafetz 1988, p. 111)." The basis for this stratification is the *gendered division of labor*, which is essentially underpinned by the assumption that men and women should perform different social and economic roles based on their abilities and talents that are 'naturally' determined by their physiological and biological traits.

There is a general consensus among anthropologists, historians and economists that the division of labor was institutionalized during the transition from hunter-gatherer to agricultural societies, laying the basis for *patriarchy*, or the domination of men in society. As women transitioned from a nomadic existence, they began reproducing more to fulfill the increased demand for labor on the fields (Diamond et al. 1987, p .66). As a result, they became increasingly focused on bearing and rearing children. Whereas, men became responsible for non-domestic issues – those related to politics and the economy.

The gender division of labor has historically ensured that men control public life and are able to exert power in society by dominating politics, securing lucrative jobs, and holding leadership positions in all the major sectors of the economy. Male control of the public sphere has a bearing on how private or personal lives of individuals at the household level are organized; it determines who has greater access of scarce resources, who makes decisions on behalf of the family, and who is responsible for unpaid labor (Celis et al. 2013*a*).

The spatial variation in the gendered division of labor is determined by how capitalistic and technologically advanced societies are, yet childcare is universally associated with women (Chafetz 1988, p. 113). In societies where women perform paid labor outside their homes, gender is the basis for occupational segregation. Consequently, women are disproportionately represented in professional roles such as teaching, nursing and caregiving that appear to be an extension of their domestic roles as homemakers and caregivers (Anker 1998; Guy and Newman 2004).

2.1.2 Why gender matters in infrastructure

As a result of the gender stratification, which is essentially based on and continually reinforced by the gendered division of labor, male and female members of society are likely to have different

needs and preferences for public goods and services. There is considerable evidence which shows that men and women have different political and policy preferences.[1] In a study of gender quotas in village councils in India, economists Chattopadhyay and Duflo (2004) show that women were more likely to contact their representatives for issues relating to water provision and less likely to contact them for requests relating to roads.

Since men dominate society, they are inclined to ensure that public goods and services, including infrastructure utilities and services, serve their needs. Roads, dams and waste management systems may seem apolitical and gender-neutral, with the potential to reduce poverty and hardship and transform lives for the better. Yet, they can be deeply exclusionary if infrastructure planning and implementation does not include women and minorities. Even if everyone in society is guaranteed equal access to an infrastructure facility, it may still act as a source of social exclusion if its design is determined by masculine sensibilities and preferences. For instance, urban infrastructure is often less likely to be responsive to needs of women and gender minorities because it does not account for gender differences in perceptions of safety in relation to space, lighting and crowds.[2]

Yet gender mainstreaming in infrastructure is challenging because it has traditionally been a male-dominated field.[3] In 2018, women globally held 19% of the leadership positions in the different sectors of infrastructure, and out of the staff serving in infrastructure ministeries, only 18% were women. Moreover, only nine countries had women serving as Ministers of Transports out of the 59 countries which are part of the International Transport Forum (ITF).[4]

[1] See What Women Want: Gender Gaps in Political Preferences (p.42)
WOMEN AS POLICY MAKERS: EVIDENCE FROM A RANDOMIZED POLICY EXPERIMENT IN INDIA
Do men and women have different policy preferences, and if so, why? Determinants and implications of 'good' and 'bad' gender gaps in Africa

[2] See 'Shall We Go Out?' Women's Safety in Public Spaces in Delhi Table 2.1 shows how gender affects needs and use of infrastructure.
Feeling safe in the dark: Examining the effect of entrapment, lighting levels, and gender on feelings of safety and lighting policy acceptability

[3] See The gendered production of infrastructure

[4] See Gender Equality and Sustainable Infrastructure

Table 2.1: How gender affects infrastructure needs and use

Sector	Gendered lives	Differences in needs and use
Transport	**Compared to men, women are likely to**: • Manage multiple responsibilities relating to household chores, childcare, and work. • Less likely to be able to afford motorized private transport (Clarke, 2010). • More likely to have flexible or part-time jobs due to childcare responsibilities. • More vulnerable to sexual harassment and violence.	**Compared to men, women are more likely to**: • To do trip-chaining or take multipurpose trips (Greed 2019, p30). • Use public transport or travel on foot (Clarke, 2010). • Travel during off-peak hours (Greed 2019). • Avoid traveling at night.
Energy	• Procure and manage traditional and modern fuels for cooking and heating (Köhlin et al. 2011). • More vulnerable to health risks due to smoke inhalation (Okello, Devereux and Semple 2018). • More engaged in energy-dependent small-scale businesses, such as the informal food sector (IFS) (de Groot et al. 2017). • Be subjected to domestic violence when they fail to produce cooked food due to shortages or interruptions in fuel supply (Shankar et al. 2017).	• Use energy to reduce competitive disadvantages in cooking and heating (de Groot et al, 2017). • Reap health-related benefits from the provision modern fuels, such as LPG, for domestic use.

Water	• Responsible for fetching and managing water for the household. • More affected by lack of access to hygiene and sanitation because of menstruation (Das 2017). • More involved in caregiving when children affected by waterborne diseases (Das 2017). • More hesitant to use public toilets because of menstruation and the threat of sexual harassment (Mahon and Fernandes 2010).	• Use water in multiple ways – for productive chores (as co-farmers, managers of livestock and homesteads) and household chores (cooking, washing) Zwarteveen, 1997). • Prefer private toilets instead of public or open ones.
ICT	• Encounter a competitive disadvantage in conducting business through traditional, face-to-face mode of interaction due to mobility constraints, lack of access to financial services and capital. (Sicat et al. 2020).	• Benefit from access to ICTs because it will allow them to manage operate businesses from home and access financial services (Sicat et al. 2020).

2.2 The relationship between Infrastructure and Gender Equality in existing literature

The World Bank Gender Equality Strategy 2016-2023 builds on the 2012 World Development Report and the 2015 World Bank Report to identify four objectives that need to be addressed to achieve gender equality: (i) **Improving human endowments**, (ii) **Removing constraints for more and better jobs**, (iii) **Removing barriers to women's ownership and control of assets**, and (iv) **Enhancing women's voice and agency and engaging men and boys** (Foerster and Vermeulen 2019, p.6).

These objectives advance the agenda for women's empowerment set by the historic Beijing Declaration and Platform for Action adopted during a landmark conference in 1995 (Bunch and Fried 1996). The platform identified 12 critical areas in which action needs to be taken: 1) Women and poverty, 2) Education and training of women, 3) Women and health, 4) Violence against

women, 5) Women in armed conflict, 6) Women in the economy, 7) Women in power and decision-making, 8) Women and the media, 9) Women and the environment, and 10) The girl child.

The World Bank's GE Strategy posits that households, markets and formal and informal institutions, and the relations among them, influence gender equality and economic development (Foerster and Vermeulen 2019). As Figure 2.1 illustrates, infrastructure can act as an exogenous 'shock' to this system by directly affecting markets, and directly and indirectly affecting households. infrastructure projects can be designed to intervene in markets by creating demand-side incentives for women's participation in the labor force as employees and business owners. Reskilling and employment of women in nontraditional jobs, such as road construction, has the potential to change occupational sex segregation (Casabonne, Jimenex and Muller 2018).

Infrastructure projects can reduce inequities in asset ownership within a household through equitable compensation strategies, such as joint titling of land. Moreover, through the provision of clean water, safer transport, electricity, and ICT, infrastructure indirectly affects division of labor at the household level. The reductions in women's time poverty and improvement in their health creates opportunities for educational and entrepreneurial pursuits. ICT enables women to access financial services and provides them avenues for pursuing flexible self-employment or remote employment.

Gender-responsive infrastructure has the potential to change formal and informal institutions in the long run. By achieving financial sufficiency through employment outside their homes and ownership of assets, women have the ability to build robust social networks, learn to negotiate with men, and exercise their agency as citizens.[5]

[5]See Beegle, Frankenberg and Thomas (2001), Iversen and Rosenbluth (2006), and Schlozman, Burns and Verba (1999)

Figure 2.1: infrastructure interventions to reduce gender gaps

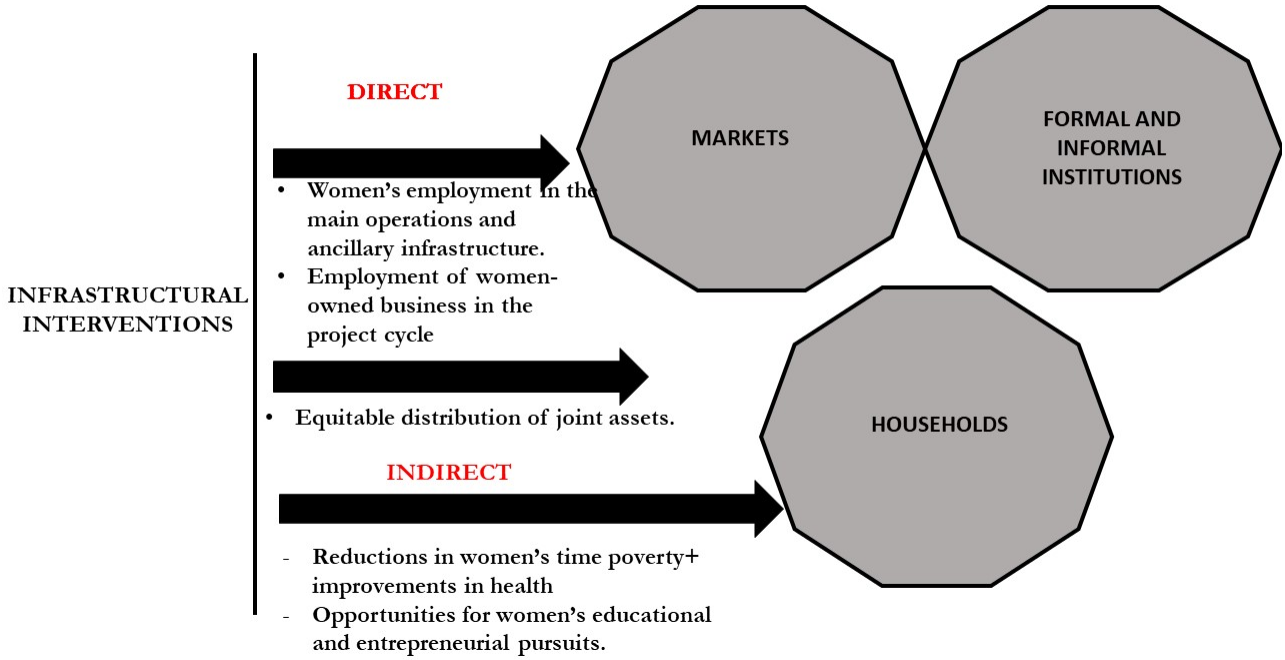


Table 2.2 offers a holistic overview of the relationship between infrastructure and gender. It maps majority of the critical areas highlighted in the Beijing Platform for Action to the four objectives of the World Bank Gender Strategy 2016-2023. It then identifies project-specific outputs that can reduce gender gaps. Additionally, it also lists long-term, aspirational outcomes that infrastructure can achieve by fundamentally restructuring gender relations.

Table 2.2: Reducing gender gaps through infrastructure

Critical areas of the 1995 Beijing Platform Action	**The World Bank's GES 2016-2023**	**Gender entry points for infrastructure**	
		Project-specific outputs	*Long-term achievable outcomes*
Women & poverty; Education & training of women; Women & health; Women and the environment; The girl child	Reducing gaps in human endowments	• Improved access to water, clean energy, electricity and safer transport and ICT technologies • Improvements in physical and mental health as a result of cleaner sources for household fuel, easier access to clean drinking water, and safer transport. • Reductions in time poverty created by drudge work, caring for sick children, and traveling on foot.	• Reduction in education, income and health gaps.
Women in the economy; Women & poverty	Removing constraints for more and better jobs	• Employment for women in infrastructure operations and supply chain. • Better access to ICT and electricity allows women to access financial services and pursue flexible self-employment and remote employment opportunities.	• Reduction in occupational sex-segregation as a result of reskilling and employment in nontraditional sectors.
Women & poverty	Removing barriers to women's ownership and control of assets	• Equitable compensation during resettlement, such as joint titling	• Access to ICT and reduction in time poverty allows women to pursue entrepreneurship and build a digital credit history.
Women in power & decision-making	Enhancing women's voice and agency; engaging men boys	• Inclusion of women's voices during consultations in the project planning phase. • Inclusion of women in leadership positions in resource management board.	• Financial independence allows women to strengthen their social networks, learn to negotiate with men, and exercise their agency and rights as citizens.

2.3 A Gender Equality Framework for identifying gender gaps

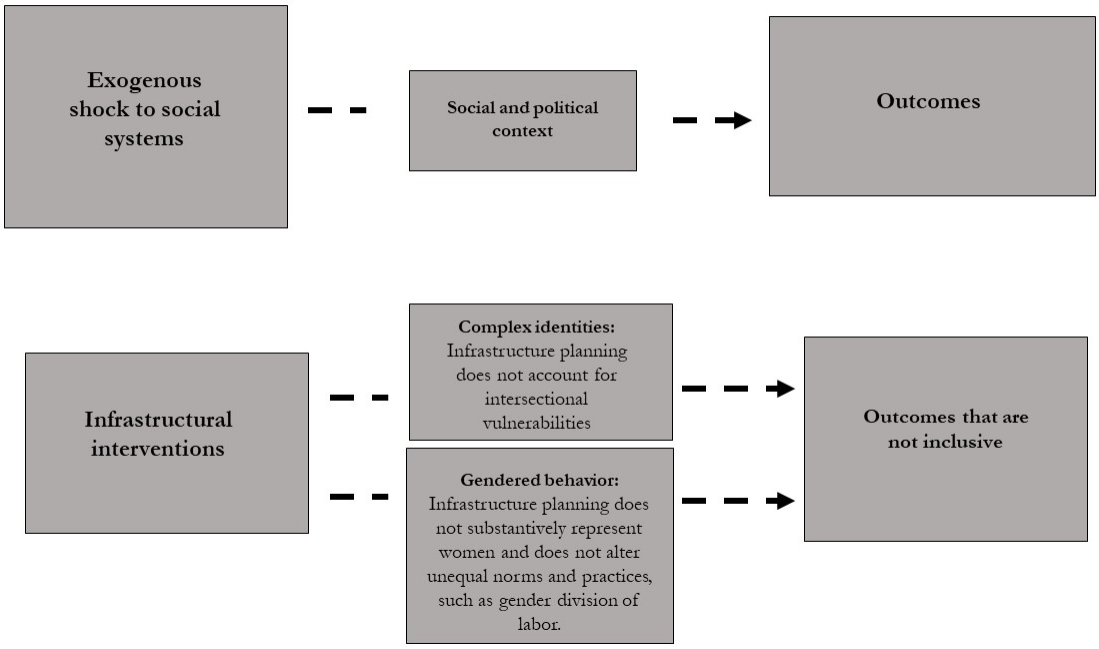
The conceptual relationship between infrastructure and gender equality in the preceding discussion can benefit from a more nuanced, context-sensitive understanding of why infrastructure projects that integrate gender equality concerns do not produce outcomes that reduce gender gaps. The causal model in Figure 2.2 explicitly posits that exogenous interventions are mediated by the social and political context. infrastructure planning will not produce inclusive outcomes if it does not account for:

1. Inequities associated with intersectional social identities and minority status on gender identity and sexual preference.

2. Power imbalances rooted in gender differences that are likely to erect barriers in collecting gender-disaggregated data.

3. Gendered social behavior that resists or subverts the potential for infrastructure to reduce gender gaps.

Figure 2.2: A context-sensitive model linking infrastructure interventions to outcomes



2.3.1 Intersectional and minority identities – Employing a multidimensional approach to understanding gendered vulnerabilities

Socioeconomic and political marginalization is often determined by more than one individual characteristic. Identities such as class, race, caste, and ethnicity often intersect to compound gender-based inequities and disadvantages (Crenshaw 2017) and create 'interlocking oppressions' (Collins 1986). Moreover, a dichotomous conception of gender also fails to take into account that gender is a social construction. In many societies, individuals who identify as non-binary often live in poverty and squalor, and are vulnerable to disease and gender-based violence (GBV) (Divan et al. 2016). Table 2.3 adopts a multidimensional perspective to illustrate gendered disadvantages in endowment, economic opportunities, and agency – the three domains related to gender inequality as defined in the *2012 World Development Report*.

Intersectionality also suggest that individuals who experience life through these social markets have unique knowledge as a result of their structural position in society.[6]. Consequently,

[6]Agarwal (2000) discusses the valuable knowledge about environmental resources possessed by women who live in and use a forest area for subsistence" (cited in (Kaijser and Kronsell 2014, p .432))

infrastructure planning must adopt a multidimensional approach in understanding gendered vulnerabilities, needs, priorities and opportunities for incorporating local knowledge.

The policy community has recently stressed the need for intersectional data for understanding how developmental challenges are experienced through multiple social markers (Seck 2020). Yet, the biggest challenge is the paucity of data that are disaggregated for multiple social identities.[7]

Table 2.3: Viewing gender gaps through a multidimensional lens

Key domains for GE	**Gaps**
Human endowment	– Gender, class, and ethnicity/caste often intersect to create ecological insecurities, such as access to clean drinking water and food (Thompson 2016). – Gender and sexual minorities may be particularly vulnerable to gender-based violence (Winter et al. 2016; Safer et al. 2016).
Economic Opportunities	– Feminization of labor means that women of lower SES (socioeconomic status) may be relegated to low-paying jobs with little opportunity for social mobility.
Agency	– Caste, disability, and non-binary status of individuals determines their social and political disenfranchisement, laying the basis for discriminatory legal regimes, formal institutions and health systems.

2.3.2 Barriers to women's meaningful participation as stakeholders in infrastructure planning

Feminists emphasize that the personal is political (Hanisch 1969) — who gets what and who makes decision and non-decisions takes place in personal and private spaces (Celis et al. 2013*b*). These disparities in power are reproduced through everyday behavior – the repetitive performance of mundane habits and routines that is rooted in cultural norms, attitudes and expectations.

[7] See Counted and visible: Global conference on the measurement of gender and intersecting inequalities

Gendered behavior can make it difficult to reduce gender gaps through formal interventions. For instance, an increase in women's descriptive representation in decision-making processes, formal institutions, and the workforce, does not necessarily correspond to an increase in their substantive representation. **Descriptive representation** means the extent to which the representative is similar in attributes to those represented – or the extent to which the representative 'stands in' for constituents (Pitkin 1967). Whereas, **substantive representation** refers to the act of standing on behalf of constituents or the extent to which the constituents' interests are represented in actual decisions and policies.[8]

Infrastructure interventions must strategize to overcome 'invisible' barriers to substantive representation of marginalized populations. A plethora of literature shows that gender quotas in political institutions were often ineffective in changing informal norms that determined decision-making power and access to resources (Franceschet and Piscopo 2014). Thus, measures to include marginalized populations as respondents and stakeholders in infrastructure planning should ensure that they are able to use their voice and exercise their agency.

2.3.3 Infrastructure and gendered behavior – barriers that thwart behavioral change

Moreover, infrastructure planning must account for the fact that adaptive behavioral responses to infrastructure interventions may not conform to utilitarian expectations of human behavior that underpin the existing conceptual link between infrastructure and gender equality. This literature assumes that reductions in time poverty as a result of better access to utilities and services will make women engage in selfish pursuits to improve their social status, such as educational attainment and entrepreneurship. However, this may not be the case as adaptive responses are likely to be mediated by gender norms that encourage women to sacrifice their own time and resources for the sake of other household members. For instance, survey experiments have shown that women were more likely to forego their preferences for those of men in their households(Khan 2017). In their review of energy transitions, (Thompson 2016, p.7) note that while energy transitions in several cases empowered women by decreasing their workloads, in certain instances, it simply shifted women's

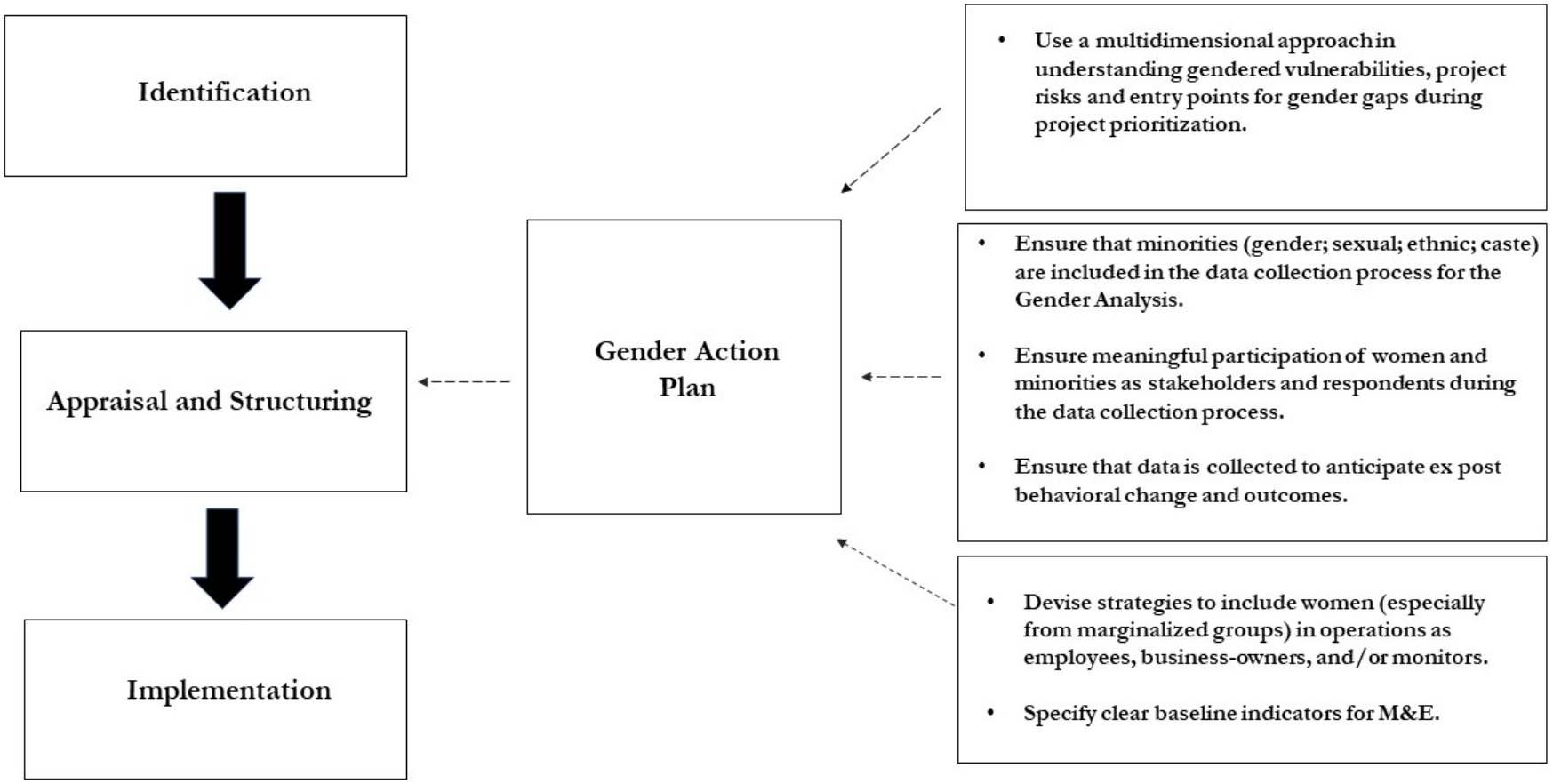
[8]Substantive representation and meaningful representation are used interchangeably throughout this document.

labor from one domain (collecting firewood and cooking) to livestock management or farming.

The Gender Equality Framework in Figure 2.3 below is underpinned by the ideas that infrastructure planning needs to (i) adopt a complex view of gendered vulnerabilities, and (ii) anticipate how gendered social behavior subverts the goal of understanding gender gaps in society and closing them. This framework is used to posit three main questions that will be used to identify gender gaps in existing studies of the Gender Action Plan in Chapter 2.

- Does the literature account for intersectionality and gender and sexual diversity while framing gender entry points for infrastructure?
- Does the literature discuss (i) practical constraints in collecting gender-disaggregated data and data pertaining to issues that disproportionately affect women (such as GBV), and (ii) strategies for overcoming them?
- Does the literature (i) identify barriers rooted in patriarchal gender norms and practices that are likely to prevent infrastructure interventions from closing gender gaps in the long run, and (ii) propose measures to alleviate these barriers?

Figure 2.3: Mainstreaming Gender in Infrastructure



Gender Action Plan – Components and Data

3.1 Identifying Gender Entry Points

Data collection is key for doing a **Gender Gap Analysis** and identifying gender entry points in the project cycle. This data, which typically relates to the country and target population of the area where the project will be implemented, is critical during:

- **Prefeasibility assessment** for analyzing gender gaps to identify projects that will potentially reduce them.
- **Appraisal & design stage** to incorporate gender in the different feasibility assessments and design considerations, and consequently, devise a project-centered Gender Action Plan, which draws on the results of the feasibility assessments to delineate activities, measurable outputs and long-term outcomes relating to mainstreaming gender.

A project-centered **Gender Action Plan** could be (i) integrated in project development and design to reduce gender gaps in access to utilities and services, and/or (ii) in the actual operations through women's employment, procurement of women-owned businesses in the project cycle, and women's representation in monitoring institutions, such as resource governance bodies and local governments (Foerster and Vermeulen 2019, p.13).[1] Figure 3.1 shows the stages and sequence of steps that are involved in devising a Gender Action Plan. Some GAPs go beyond the specific design and operations of the project and adopt a more holistic approach to reducing gender imbalances in the target community. This may include capacity building, reskilling, education, and provision of facilities to women that ease disruptions caused by displacement and resettlement.[2] Figure 3.1

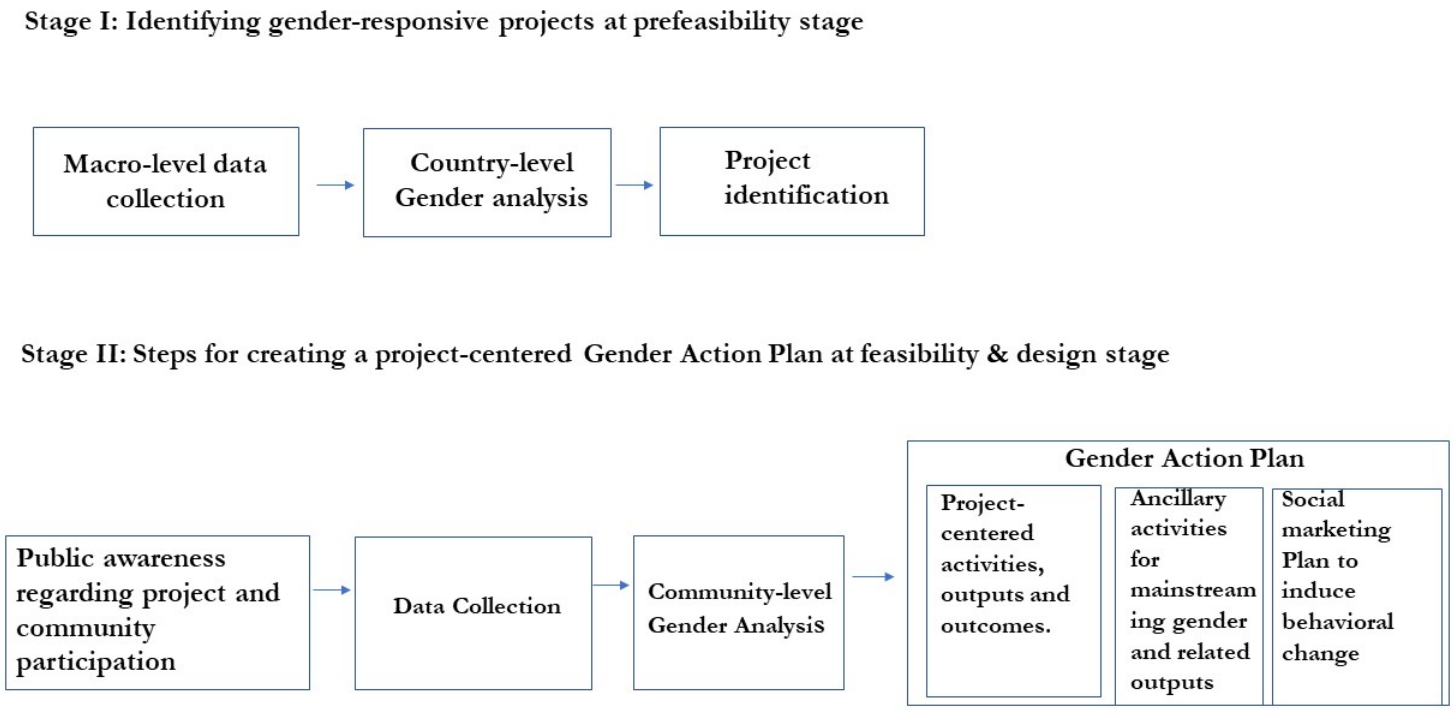
[1] See Tip sheet and case studies for effective Project Gender Action Plans. Also see ADB's GAPs for Water, Sanitation and Health (WASH) Gender Action Plan 1 and Gender Action Plan 2

[2] For more, see case studies in Making Infrastructure Work for both Men and Women: A Review of World Bank Infrastructure Projects (1995-2009)

below describes these as *ancillary* activities and outputs for mainstreaming gender that are part of the GAP.

Typically, GAPs encompass activities and outputs aimed at behavioral change in the target population in relation to the infrastructure facility. These interventions are part of the **social marketing plan**, which is integral for ensuring that the target population uses the infrastructure facility or service. However, social marketing plans have not received adequate attention in the literature on infrastructure & gender. The proposed toolkit could potentially have a tool for creating a social marketing plan which is centered on marketing principles and draws on the contextual gender analysis to create effective campaigns targeted at behavior change. The sections below discuss social marketing in detail, and also highlight how they can be potentially tailored to prevent behavioral mediators – specifically social norms – from thwarting positive long-term outcomes/externalities that reduce gender gaps.

Figure 3.1: Stages and steps involved in devising a project Gender Action Plan



3.2 Gender Gap Analysis

The existence of a viable GAP depends on the **Gender Gap Analysis** or **Gender Analysis** (GA)[3] which is based on data collected for different units and at levels of analysis. At project identification or prefeasibility stage, data collected for GA would allow for a rapid review that can be included in the Project Concept Note (PCN). Whereas, the contextual, project-centered data collected subsequently at feasibility stage is quite detailed and comprehensive. It should build on data from past projects and operationalize gendered indicators that will be used for results monitoring & evaluation during implementation (Kodama et al. 2016). A GA would typically entail:

1. Macro-level data collected for project identification which is typically (i) data pertaining to gender inequality in society, and the structural constraints and opportunities for reducing them, and (ii) data relating to overall constraints, gaps, and risks associated with gender in the particular sector of infrastructure.

2. Contextual primary data collected for project appraisal & design by project teams.

- **Macro-level data for prefeasibility/concept**:

    1. **Gender in society**: This relates to (i) country-specific diagnostics, legal, policy and regulatory frameworks that discriminate against or support women, (ii) national-level gender gaps in employment, education and health, and (iii) social risks associated with infrastructure.

    2. **Gender in infrastructure**: This relates to (i) sector-specific gendered risks and inequities associated with infrastructure, and (ii) existing gender gaps that can potentially be reduced through infrastructure.

- **Contextual data for appraisal & design**:

    1. Socioeconomic and health indicators of the target population.

    2. Existing state of infrastructure services and utilities in society.

    3. Gender differences in infrastructure access and usage.

[3]This document uses Gender Gap Analysis and Gender Analysis interchangeably.

4. Ideas and strategies about how make infrastructure access, design and operations more inclusive, gauged through gender-sensitive stakeholder consultations and meetings.
5. Gender-disaggregated opinions and perceptions of the target population regarding displacement, resettlement and fair compensation associated with large infrastructure projects.

Table 3.1 lists rapid review questions, in addition to the data and sources required to answer them, that would allow project teams to identify structural constraints relating to gender in society. Table 3.1 focuses on the sector-specific questions, data, and sources. The rapid assessment proposed in Table 3.1 and 3.2 accounts for questions and concerns relating to intersectionality and minority identities highlighted in Table 3.3. Subsequent sections discuss the challenges project teams are likely to encounter in collecting contextual primary data relating to the target community.

Table 3.1: Macro-level gender assessment at identification stage

Gender in society	
Data	Source
Structural diagnostics; legal & regulatory environment • Country-level diagnostics and partnerships: Country Diagnostics (SCDs), Country Partnership Frameworks (CPFs), and/or Regional/Country Gender Action Plans. • Has the country ratified ILO gender equality conventions and CEDAW, 1979. • National-level laws and policies aimed towards improving the status of women. • Does the country have citizenship laws that explicitly discriminate against minorities	• The World Bank Group's diagnostic tools and reports. • CEDAW and ILO's websites. • Gender Equality Index in the UN's annual Human Development Report; World Economic Forum's annual Global Gender Gap Report. • Key informants, such as women's and human rights activists and legal experts, can be consulted to understand the policy, legal and regulatory landscape.
National, individual-level data • Sex-disaggregated statistics on schooling, employment (occupational sex segregation, wage labor vs. contractual), time use. • Gender statistics relating to infant mortality, maternal mortality, incidence of gender-based violence, occupational gender segregation etc. • Documented incidents of human rights abuses against women and minorities.	• The national census or nationally representative surveys conducted by multilateral institutions, such as the UN, or local CSOs. • National-level data on attitudes in the The World Values Survey. • Data from human rights organizations such as Human Rights Watch & Amnesty International.

Table 3.2: Sectoral gender assessments at identification stage

Gender in infrastructure	
Transport	
Rapid Review Questions	**Data**
• What are the different means of public transport in the country? Which areas are not served by the public transit network? • Are there gender differences in the ability to afford public transport? Do women face constraints in mobility as a result of cultural norms? • Do women and gender and sexual minorities experience harassment and GBV in public spaces? • Are there gender differences in how men and women use public and private transport? • Is there a significant rate of human trafficking using transport routes? • Is there a high rate of HIV/AIDS infection in the general population? Do gender and sexual minorities experience relatively high rates of HIV/AIDS infection? Among the transport sector workers?	• Maps, routes and schedules of the public transport network serving urban and rural localities. • Maps, routes and schedules of the public transport network serving neighborhoods where minorities reside. • Official statistics on road accidents, and those relating to social and health problems associated with transport. • Census or other official statistics to map minority neighborhoods. <u>Sources</u> • Ministry of Transport and associated government depts. • Transport workers unions; transport policy exports; institutional data from major transport companies.

Water	
Rapid Review Questions	**Data**
• Does the WSS sector address gender-based challenges in policy? • Would the planned privatization of WSS result in high tariffs or user fees that the poor, especially women, will not be able to afford? • Do men and women use WSS differently? Does difficulty in accessing WSS affect women more than men? • Do women experience GBV when collecting water or when removing human waste? • Do women experience harassment and GBV while using public toilets and latrines? • Do specific communities or minorities experience disproportionately high water stress (as a result of low SES and/or social discrimination and/or geographical location)? • Are there barriers to women's participation in construction, management, and maintenance?	• Maps and official data on water sources (ground or surface water) and supply (wells, piped etc) in or near rural and urban residential areas. • Human waste disposal systems in rural and urban localities (are toilets private, public or open?). • Data on safety of water that is used for consumption, and on prevalence of waterborne diseases in the population. • Tariffs or user fees charged by private companies for supplying water. <u>Sources</u> • Ministries relating to water, urban planning, health & environment, and their associated depts. • Reports and statistics produced by environmental groups, local CSOs and women's organizations, particularly those operating in territories facing water insecurity.

Energy	
Rapid Review Questions	**Data**
Questions • What type of fuels are consumed by households and businesses in urban and rural regions? In which areas do women predominantly use traditional fuels to fulfill energy needs of their households? • Do households have access to clean or renewable energy? Do women use renewable energy? • Are women from certain communities more at risk of developing respiratory conditions as a result of using traditional fuels? • Do specific communities have less access to electricity (due to geographical location, low SES)? • Does energy infrastructure employ women in operations as engineers, construction workers and managers? • Do women experience GBV as a result of immigrant workers involved in the construction of ancillary infrastructure, such as roads? • Loss of agricultural land and livelihood due to land acquisition.	• Official statistics on the prevalence of respiratory diseases in rural populations disaggregated according to gender, socioeconomic class, ethnicity, age etc. • Women's educational and occupational data, particularly data on women pursuing STEM degrees. • Data on access to and use of energy for household chores (modern and biomass fuels, electricity, renewable energy). Sources • Ministry of energy/energy industries and its associated depts. • Institutional gender-disaggregated data about graduates from top STEM universities.

ICTs	
Rapid Review Questions	**Data**
• Does the ICT sector reduce licensing fees, spectrum prices, and interconnection charges that can make ICT more affordable for women? • Do independent regulators require private telecommunications companies and Internet service providers to offer services at affordable prices to men and women? • Do women have less access to ICTs due to cultural norms, technological and financial constraints? • Do women face a 'literacy gap' in accessing ICTs?[4] • Are women more likely to encounter ICTs-facilitated harassment, intimidation and abuse?	• Ministries related to IT and communications and their associated depts. • Technology and IT sector experts and specialists; IT & telecommunications business/industry associations. • Reports and data published by CSOs working on digital rights.[5]

[4]See Somalia's ICT strategy to know more about the literacy gap in ICT access in Luciana, Silva. 29 June 2020. *PPIAF Progress – Gender Equality*. 2020 Council Meeting

[5]Sources: See Ahmad, Ikuforiji and Sinha (2010), *Making Transport Work for Women and Men – Tools for Task Teams* (2010) , *Making Information Communication Technologies and Their Applications Work for Women and Men – Tools for Task Teams* (2010) , Foerster and Vermeulen (2019), Hung (2013), Orlando et al. (2018) and Bank (2021).

Table 3.3: Sector-specific questions and concerns relating to intersectionality and gender & sexuality diversity

Risks and lack of access to infrastructure	
Transport	**Water**
Access & Design: • A plethora of literature shows that urban spaces, which are navigated through public transport, cater to straight, able-bodied men and are less responsive to needs and preferences of women and gender and sexual minorities (Terraza et al. 2020). Risks: • Women and minorities may have limited access and mobility in urban landscapes and their transportation systems because they perceive their design (such as poor lighting at night, deserted areas, lack of surveillance) to compromise their physical safety and make them vulnerable to harassment and gender-based violence (Boomsma and Steg 2014).	Risks • Do minorities and low-income groups face greater challenges in accessing safe sources of water? Do they disproportionately bear health risks from lower access to WSS? Example, women from the Dalit caste in India, which is considered ritually impure, perform the 'dirty' task of cleaning latrine pits, sewers and drains without adequate safety precautions (Coffey et al. 2015). Access • Does access to WSS affect all women equally? Identities other than gender (caste, ethnicity etc) often intersect with gender to determine how the latter interacts with the ecological environment. While majority of the development literature considers fetching water as women's work (Borja-Vega and Grabinsky 2020; Geere and Cortobius 2017; Kodama et al. 2016)[6], some studies show that cultural and religious differences often determine whether water collection is a woman's work. For instance, in conservative Muslims, men or older women are responsible for collection of water.[7]

[6]See Who Carries the Weight of Water? Fetching Water in Rural and Urban Areas and the Implications for Water Security and Water fetching responsibilities reveal unequal gender dynamics: Elevates need for expansion of on-site WASH facilities

[7]See Coles (N.d.) cited inThompson (2016).

Energy	**ICT**
Access • Studies show that transitions to renewable or clean energy systems are not typically more inclusive or empowering than traditional energy systems, and are, "mediated by political dimensions (e.g., enabling or constraining policy environments and bureaucratic power structures) and socio-cultural dynamics (e.g., prevailing gender norms, power relations and social stratifications, and community structures) (Johnson et al. 2020)." • The social and environmental risks of renewable energy transitions, which involve the construction of geothermal, hydro and wind-based infrastructure – are typically borne by indigenous communities which hold the rights of the land where construction takes place (Lieu et al. 2020).[8] Risks • Large energy infrastructure projects that are implemented over long time horizons often carry complex social and environmental risks, that can disproportionately affect women from indigenous communities and marginalized groups through physical displacement, loss of livelihood and forced male outmigration.[9]	Access • Women of lower SES are less likely to be able to afford access to ICTs. Risks • Gender and sexual minorities may be more subjected to ICT-facilitated harassment and abuse which can prevent them from reaping benefits associated with digital access to information.

[8] Three sides to every story: Gender perspectives in energy transition pathways in Canada, Kenya and Spain

[9] See case study about the Tata Mundra project in the next chapter.

Gender Action Plan – Challenges in collecting primary data for the Gender Gap Analysis

4.1 Barriers in women's representation and meaningful participation in data collection processes

Women may not participate as stakeholders and respondents in the data collection process because of the following barriers.

- **Division of labor**: They may not be able to in meetings because they are busy managing multiple responsibilities relating to productive labor, childcare, and housekeeping etc.
- **Patriarchal norms**

    1. Women may be hesitant to speak in front of men during public consultations due to gender norms. They may engage in self-censoring or speak in a diffident, reluctant manner (Kodama et al. 2016).
    2. Even when women are present during consultations, male voices may dominate meetings because, as research shows, men are inclined to speak more than women do in social settings. Compared to women, men are also more inclined to interrupt members of the opposite sex as they talk in social settings (Karpowitz and Mendelberg 2014; Smith-Lovin and Brody 1989).

4.2 Solutions for reducing barriers to women's representation and meaningful participation posited in existing literature

- Organize separate consultation meetings for men and women to facilitate women's participation.
- Consider having female surveyors on survey teams (Foerster and Vermeulen 2019, p .15)[1] so that women feel comfortable responding to the questions, particularly those concerning sensitive topics, such as GBV.
- Monitor female participation during meetings through qualitative and quantitative indicators.
- Build capacity of women's organization and groups to develop a collective female identity (Kodama et al. 2016, p. 35).[2]

4.3 Gaps in the literature – How power imbalances and inequality in society may affect data collection for the GA

The literature on gender & infrastructure is similar to the rest of the development literature on gender because it does not adequately acknowledge power imbalances that reproduce gender-based inequities in society. However, reducing gender gaps to problems that can be corrected through apolitical developmental interventions ignores the intractable complexities of social and political inequities. The following are three areas relating to political and social inequities that are not adequately addressed in the literature and are likely to affect the process of collecting data for the GA.

[1] Also see Sequeira and Warner (2007)
[2] Also see Prillaman (2017).

4.3.1 Broad-based representation

With the exception of some recent studies,[3] the literature on development and poverty eradication produced by MDBs lacks a theoretical and empirical discussion of how intersecting identities compound vulnerabilities and disadvantages, but also determine lived experiences that create special, unique knowledge. Not accounting for intersectional vulnerabilities and minority identities in the gender analysis threatens the goal of achieving social inclusion in infrastructure planning.

4.3.2 Meaningful participation

With the exception of a 2016 WBG's toolkit for mainstreaming gender in water (Kodama et al. 2016), the literature on gender & infrastructure does not comprehensively discuss threats to women's substantive representation or meaningful participation in infrastructure planning and strategies for overcoming them. However, even this discussion views meaningful participation purely as a behavioral problem rather than as a political one rooted in inequities of power. As a result, the solutions proposed in the literature, which are discussed above, do not account for complex social and power dynamics that informally exclude women from decision-making processes.

For instance, the recommendation for building capacity of women's organizations and groups which can then collectively strive for participation and representation in project consultations (Kodama et al. 2016), is essentially a political solution because it aims to increase the salience of a gender identity that seeks redistribution and equality. However, this may attract a social backlash or be difficult to achieve if women are confined to their homes. The proposed gender toolkits must include practical guidance on how to foster collective gender identities through groups and organizations without threatening men in the community.

Moreover, men may actively exclude women from discussions and consultations – a problem that is difficult to solve. During OXFAM's Ebola WASH response, community health volunteers reported that a women's group complained that men deliberately did not inform them about meetings and trainings, especially when a per diem was associated with participation (Carter, Dietrich and Minor 2017).[4]

[3] See Handbook for Gender-Inclusive Urban Planning and Design

[4] See Mainstreaming gender in WASH: lessons learned from Oxfam's experience of Ebola

4.3.3 Gender norms subvert aspirational outcomes of infrastructure outcomes

The literature theoretically linking infrastructure interventions with gender equality makes certain behavioral assumptions about how women will behave when their lives get easier as a result of better access to utilities and services. For example, women may use their free time to educate themselves or pursue entrepreneurial opportunities. However, as discussed in section 2.3.3, this may not be the case as gender norms may constrain women from engaging in utility-maximizing behavior. In Peru, men were more likely to reap benefits from reductions in time poverty as a result of electrification, women sacrificed their free time to increase household income or complete domestic chores (Fernández-Baldor, Lillo and Boni 2015). Another 2017 article published in *Gender & Development* shows that poor women in Bangalore resisted efforts for privatization of water. While the discourse around the supply of piped water focused on freeing time of women by supplying clean water and, thus, creating opportunities for increased mobility, the women argued that material realities still bound them to their homes (Thara 2017).[5]

4.3.4 Methodological implications

The following are the ways in which the lack of broad-representation and meaningful participation, and assumptions about behavioral adaptation that are not backed by evidence and research, can affect data collection for the GA:

- **Inadequacy**: Data that is only disaggregated on gender may not capture other markers of social exclusion, such as caste and ethnicity, and consequently not allow for a comprehensive analysis of how social stratification affects needs and preferences for infrastructure.

- **Measurement error**: For some infrastructure projects, a binary measure for gender (man/woman) in surveys or other questionnaires may not reflect gender identity of a sizable number of respondents.[6] For instance, a project relating to public transport in a large, urban metropolis must include gender minorities in willingness-to-pay surveys because these communities

[5] See In troubled waters: water commodification, law, gender, and poverty in Bangalore

[6] See Transgender-inclusive measures of sex/gender for population surveys: Mixed-methods evaluation and recommendations

are typically concentrated in urban areas. Moreover, gender and sexual minorities face the threat of harassment and violence while using public transit (Lubitow, Abelson and Carpenter 2020) and their safety concerns ought to be included in transport design.

- **Bias**: Biased data collection may result from (1) *nonresponse* when women and minorities choose not to respond to surveys or participate in meetings due to gender norms, (2) *social desirability bias* which may be the case when group dynamics of meetings reproduce existing social hierarchies, and thus, exert pressure on participants to articulate ideas that they perceive as politically correct and socially acceptable. These biases affect validity, or the "truth-value" of the data (Seale 2004), of the data and the inferences made from it.

4.3.5 Recommendations for overcoming challenges in data collection

- **The need for comprehensive social data**: Data need not to just be gender-disaggregated, it also needs to be disaggregated for other indicators of social status. In specific contexts, special attention should be given to incorporating inclusive measures for gender in survey questionnaires. Moreover, minorities often constitute hard-to-reach populations and may require special effort and strategies for inclusion in surveys.

- **Ensure that groups for meetings and consultations are safe spaces for facilitating freedom of expression.** Project teams should be mindful of social inequality while organizing group-based data collection. For instance, OXFAM's project for improving water security for women in Nepal, project teams selected lower-caste Dalit women and upper-caste Chettri men to attend meetings together. The Dalit women faced a double disadvantage of gender and caste which prevented them from communicating freely during group meetings (Leder, Clement and Karki 2017, p .244).[7]

- **Leveraging associations with local leaders and powerful male allies**

  Task teams will benefit from building strategic alliances with authority figures – such as female representatives in the local government – and powerful male allies to ensure that women are not included in participating in project meetings.

[7] See Reframing women's empowerment in water security programmes in Western Nepal

The development and academic community has recently increased its effort to engage men in reducing gender inequality by changing male behavior that is underpinned by patriarchal norms, particularly as a strategy for countering gender-based violence.[8] In fact, the fourth pillar of the WB's Gender Equality Strategy 2016-2023 is to engage men and boys.

The suggestion to rely on male allies to facilitate female inclusion in infrastructure planning, is not motivated by the goal of changing gender norms, but to leverage informal power that is accorded to men in group settings. Men who hold positions of authority and are receptive to the idea of gender equality can play a critical role in countering male resistance in the community to women's inclusion in infrastructure planning. However, these male allies must merely facilitate women in exercising autonomy and should not try to impose their will or control group discussions (Wiley and Dunne 2019).

- **Using research and evidence to predict behavioral responses to infrastructure interventions**:

  Data should be collected to anticipate behavioral responses to infrastructure interventions to gauge whether gender norms and behavior will 'hijack' infrastructure's potential to close gender gaps. This can entail *perception surveys* to understand what women will do with the benefits reaped as a result of behavioral adjustments to new infrastructure, such as reduction in time poverty (Lundvall et al. 2015). Moreover, relying on existing behavioral research, results of experimental interventions related to social marketing,[9] and quasi-experimental studies on infrastructure use[10] can help project teams create more effective social marketing campaigns targeted at behavioral change.

Table 4.1 provides an overview of the components and considerations related to primary data collection for the Gender Gap Analysis. It includes the data collection methods in addition to recommendations for overcoming methodological and practical challenges in including women as respondents and stakeholders. The gender toolkit should build on these recommendations.

[8] See "We Learn How to Become Good Men": Working with Male Allies to Prevent Violence against Women and Girls in Urban Informal Settlements in Mumbai, India
Engaging Men and Boys in Changing Gender-based Inequity in Health: Evidence from Programme Interventions.
Involving men in ending violence against women: Facing challenges and making change

[9] See Moving from efficacy to effectiveness: using behavioral economics to improve the impact of WASH interventions and Fear Appeals in Social Marketing: Strategic and Ethical Reasons for Concern

[10] See Changes in mode of travel to work: a natural experimental study of new transport infrastructure

Table 4.1: Collecting gender-disaggregated data for the Gender Gap Analysis

Data	**Respondents**	**Method**	**Strategies for overcoming methodological and practical challenges**
Socioeconomic and health indicators; time use; gendered use of infrastructure	affected community	Surveys	• Include female surveyors on the team. Gender specialists should train them to collect household data from women who may have trouble communicating or articulating their preferences. • Ensure that proxy responses of household members are not allowed. • Ensure private interviews with women to collect sensitive data, such as that relating to GBV.[11] • Oversample minorities to ensure that their data are included in survey.

[11] According to Mirrlees-Black (1999), when male partners of women were involved in completing the survey on intimate partner violence for the British Crime Survey, the rate of reporting was less than half compared to the women who completed the questionnaire in private. See Kilic et al. (2020) to know the gendered impact of proxy and non-private interviews on reporting of employment in Malawi.

Opinions, perceptions, and attitudes	Affected community; organized groups, such as civil society organizations, women's rights groups and women's credit rotating associations; female representatives from the government	Surveys; semi-structured interviews; focus groups; consultative (town hall style) meetings	• Organize separate focus groups for men and women to facilitate women's voices. • Be wary of how social composition of groups may recreate power imbalances in society rooted in class, caste and ethnic identities, and thus fail to create a safe space for women to express themselves. • Be mindful of the gender composition of groups. The proportion of women in a group can be a critical factor in determining whether and how often women speak (Karpowitz, Mendelberg and Shaker 2012). • Measuring participation of women through qualitative and quantitative indicators (Kodama et al. 2016). • Create a 'buffer' against 'invisible' gendered imbalances in power that may prevent women from speaking in front of men by creating a favorable environment for women's participation. For instance, this could entail making male allies and female authority figures (such as women serving in political office office) moderate deliberative meetings and encourage women to participate.

4.4 Social marketing and public awareness

The Gender Action Plan should include a plan for social marketing which will be used to induce behavioral change in the target population with regard to new design or technology of the infrastructure facility.[12] The literature posits that social marketing is successful in inducing behavioral change if campaign messaging aligns with respective needs and priorities of men and women (Kodama et al. 2016). Therefore, it is important to include women on teams that determine campaign messaging.

The case of OXFAM's Ebola WASH campaign, which was not developed through collaboration with women, presents an example of a case where culturally inappropriate messaging failed to be effective in changing behavior. The campaign focused on women's role as caregivers and aimed to inculcate fear by stressing the risk of getting infected if women continued to take care of loved ones. However, for the women in the community, 'abandoning' their children at treatment centers meant that they were 'bad' mothers (Carter, Dietrich and Minor 2017, p .213).

4.4.1 Area that warrants greater attention

Social marketing campaigns should not only target behavioral change with respect to the infrastructure facility, but also with regard to the positive externalities (such as reductions in time poverty and improvements in health) that are associated with using the facility. As discussed in earlier sections, gender norms may 'hijack' the potential for women's empowerment created through infrastructure interventions. By collecting data to anticipate behavioral outcomes and consulting existing behavioral research, project teams can incorporate effective, culturally sensitive messages in social marketing campaigns aimed at changing norms of the target population.

[12] See The Future of Social Marketing.

Gender Action Plan – Using Project Implementation to Close Gender Gaps

The Gender Action Plan can potentially include actionable proposals about how project implementation can be made inclusive. Existing literature posits that women can be included as **employees**, **business-owners**, and **monitors** at the implementation stage.

5.1 Inclusion of women as employees and business owners in operations

The procurement strategy can focus on prioritizing companies that have a strong record of recruiting women and the human resources (HR) have clear policies relating to sexual harassment and Diversity & Inclusion. Moreover, toolkits for mandatory gender-based assessments and audits can be included in bidding documents to institutionalize commitments to gender goals. For instance, IFC's 2018 OGM Toolkit *Unlocking Opportunities for Women and Businesses* proposes a Gender Audit of the contracted company, which on 11 areas: 1) Corporate gender priorities, 2) Human resources, 3) Recruitment Practices, 4) Gender-sensitive HR policies and uptake, 5) Sexual harassment and gender-based violence policies, and 6) Board composition, 7) Senior management, 8) Staffing, 9) Workplace/Organizational Culture, 10) Leadership development, and 11) Health & Safety (IFC 2018, p .26-27).

The publication also proposes that a Gender Scorecard should be used as a self-assessment tool to evaluate existing procurement environment with regard to supply chain diversity and inclusion, particularly the inclusion of women-owned businesses. This assessment focuses on: 1) Strategies for communications and outreach with women-owned businesses, (2) Current criteria for procurement, 3) Corporate environment relating to engagement with women-owned businesses, and 4) Monitoring and evaluation (IFC 2018, p .18).

5.1.1 Areas that warrant greater attention

The gender toolkit for infrastructure should not only see gender inequity in operations as institutional/policy and cultural issues that can be solved with training, capacity building and policy change, but also as *political problems* that require leveraging power. Therefore, it should focus on the following questions:

- What are the strategies and practices for ensuring that the contracted company and third parties involved in the supply chain adhere to gender goals in day-to-day operations? This could potentially involve strategically targeting leaders (managers and executive managers) with the requisite gender equality training and positive incentives. The OGM toolkit proposes that 'gender champion' be recruited to marshal internal political will, or committed senior staff should lobby senior management regarding the importance of gender balance (IFC 2018, p. 25).

- What are the strategies to ensure that women represented in senior management and human resources are not simply tokens and have actual power to influence decisions and have access to resources (such as budgets)?

- Does the company have an active women's network, particularly one that actively offers opportunities for women serving in senior positions to mentor junior female employees, and allows women to take collective action against discrimination?

5.1.2 Important references relating to women in infrastructure operations

- **Briefs, toolkits, and reports:**

    1. Women in Water Utilities
    2. Integrating Gender in Power Operations
    3. Integrating Gender in Transport Operations Integrating Gender in Water & Sanitation Projects Unlocking Markets for Women to Trade and Empowering Women through Public Procurement
    4. The Business Case for Global Supplier Diversity and Inclusion

5. The power of procurement: How to source from women-owned businesses
6. SheWorks Knowledge Report: Putting Gender Smart Commitments Into Practice
7. https://www.bsr.org/reports/BSR-Report-Womens-Empowerment-Supply-Chains.pdf

- **Case studies**

1. Gender-sensitive HR – Uganda- p.14
2. Cross-national strategies for 'correcting' gender biases in recruitment and retention of female employees Women in Water Utilities
3. Employment women in transport operations (as engineers, mechanics, bus drivers, ticketing booth staff etc.) in the VietNam: Ha Noi Metro Rail System Project and People's Republic of China: Jiangxi Fuzhou Urban Integrated Infrastructure Impovement Project Gender Tool Kit: Transport – Maximizing the Benefits of Improved Mobility for All, p.31
4. USAID's Energy Policy Program for increasing female employment in Pakistan's energy sector. Women at the Forefront of the Clean Energy Future - p.43-44.

5.2 Inclusion of women as monitors in resource management bodies

The development literature, with respect to water, has stressed on participatory, community-oriented management, especially in rural communities that use water productively for agriculture and livestock. Integrated water resource management is the "coordinated development and management of water, land, and related resources, in order to maximize economic and social welfare in an equitable manner without compromising vital ecosystems and the environment (What is IWRM)." Following the *Dublin Statement on Water and Sustainable Development, 1992*, there has been a multilateral push for making water resource management gender-inclusive.

5.2.1 Areas that require further attention

While there has been a global push for mainstreaming gender in Water Resource Management (WRM), women's representation in community-based organizations (CBOs) or water user associations (WUAs) does not automatically guarantee equitable outcomes (Adams, Juran and Ajibade 2018; Cleaver and Nyatsambo 2011). In fact, gender inequities relating to social norms and conventions, time poverty, division of labor, and inequities in land and asset ownership may mean that responsibilities related to resource management may be too arduous for some groups (Elias 2017). The gender toolkit for infrastructure should focus on:

- Examining how other identities pertaining to caste, class and ethnicity affect women's participation in WUAs. For instance, equitable distribution of responsibilities pertaining to WUAs may be excessively burdensome for women of low SES because of time poverty (Cleaver and Nyatsambo 2011).
- Ensure that women's representation on WUAs is meaningful and is not subverted by informal gender norms.

5.2.2 Important references relating to women in WRM

- **Briefs, reports, toolkits**
    1. Gender Mainstreaming in Water Resource Management
    2. Mainstreaming Gender in Water Management
- **Case Studies – Empowering women in CBOs**
    1. Empowering Women in Irrigation Management - The Sierra In Peru
    2. A Community Resource Book for the Water and Sanitation Sector - Uganda (Chapter 3)
    3. Enhancing the Role of Women in Water User Associations in Azerbaijan
    4. Community management and sustainability of rural water facilities in Tanzania

Gender and Infrastructure PPPs

As has been discussed earlier, women have different needs and preferences for infrastructure and often have lesser access to it. Therefore, as Table 2.2 in an earlier chapter shows, catering to these needs can lead to massive improvements in women's lives, enhancing outcomes for women in the three key domains identified by the World Bank – human endowments, employments and agency. The provision of utilities and large-scale infrastructure has typically been seen as the responsibility of the state.

Public-private partnerships have emerged as a way to counter shortfalls in financing of large-scale infrastructure and ensure more efficient delivery of services. The World Bank defines a private public partnership as "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance." [1] PPPs fill a space between "traditionally procured government projects and full privatization" (Grimsey and Lewis 2005).

PPPs have produced mixed results in Emerging Markets & Developing Economies (EMDEs) where markets are not mature, and where structural and institutional weaknesses and political uncertainty discourage private sector investment (Jamali 2004; Sulser 2018; Leigland 2018). Since governments in developing countries may be particularly tempted by private finance due to opportunities to keep public investments off the balance sheet, [2] they may fail to objectively assess economic, social and environmental risks involved in complex projects that are implemented over long time horizons (Osei-Kyei and Chan 2017).[3] Figure 6.1 shows how structural and contextual challenges associated with PPPs in developing countries can negatively affect decision making over the course of the project life cycle, and produce adverse outcomes.[4]

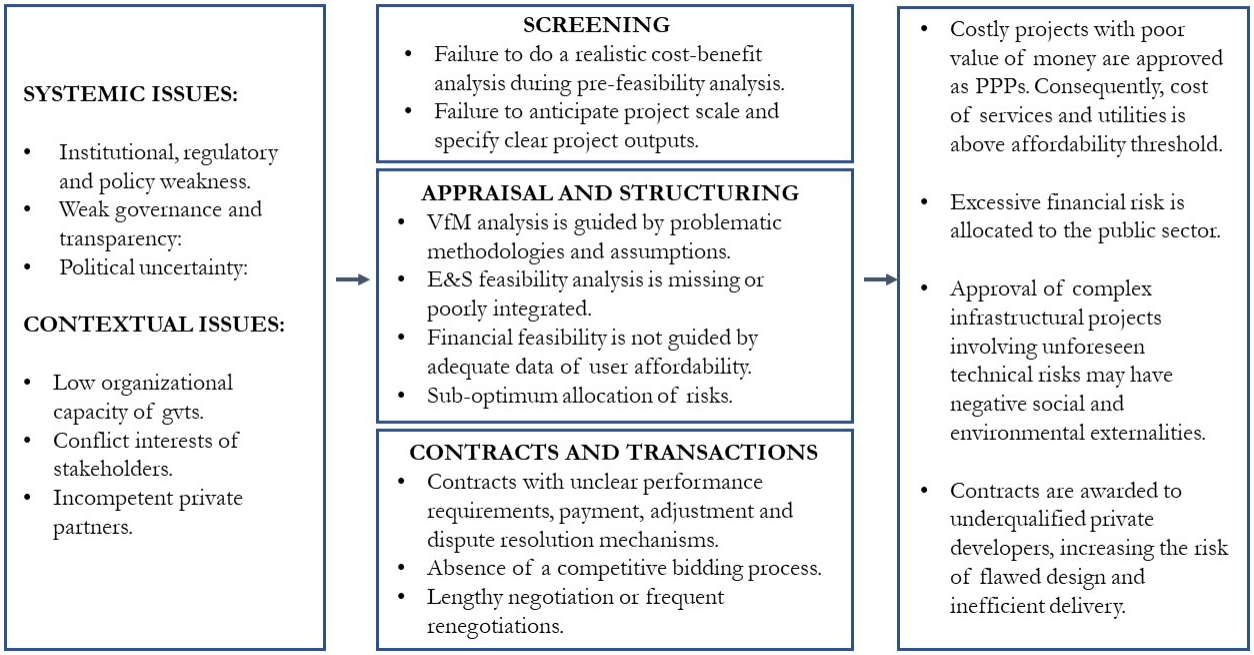
[1] See What is a PPP: Defining "Public-Private Partnership"

[2] See PPPs as a Financial Mechanism for Governments to Develop Infrastructure Projects

[3] Risk assessment in public-private partnership infrastructure projects: Empirical comparison between Ghana and Hong Kong

[4] See PPP Knowledge Lab and Michelitsch et al. (2017); Percoco (2014); Group (2020)

Figure 6.1: Linking structural and contextual challenges to adverse outcomes in PPPs



6.1 Gendered risks in infrastructure PPPs

Profit-seeking private companies are accountable to shareholders and lack the incentive to maximize affordability of public services. Consequently, PPPs may experience an inherent conflict of interest, whereby maximizing profits may be at odds with building inclusive and accessible infrastructure (*History rePPPeated: How Public-Private Parternships are failing* 2018). However, evidence on the social impact of PPPs in EMDEs is neither robust nor conclusive. Leighland, reflecting on Independent Evaluation Group's 2015 assessment of the WBG's involvement in PPP, argues that success is measured according to their business performance rather than achievement of social and environmental indicators (Leigland 2018). Thus, data and case studies on the social and environmental impact of PPPs are limited (Jomo et al. 2016).

Additionally, strong evidence relating to gender and PPPs is lacking. In fact, there only two major studies that explicitly focus on gender mainstreaming in PPPs (Hawkes, Buse and Kapilashrami 2017; Unterhalter 2017). Hawkes et. al (2017) study 18 Global Public Private Partnerships for Health (GPPPH), and find that gender was poorly integrated in the overall institutional strategy despite the fact that many of them dealt with maternal and child health.

Infrastructure PPPs in EMDEs may create adverse outcomes for women:

1. By adopting a gender-blind approach in project planning and implementation.
2. Through externalities of large infrastructure projects related to resettlement, environmental pollution, ballooning budgets, influx of immigrant workers etc.

6.1.1 Pitfalls of adopting a gender-blind approach in infrastructure planning

Given that needs and preferences for public services are gendered, adopting a gender-blind approach in infrastructure planning will exclude women from accessing critical services and utilities. Moreover, opportunities to close gender gaps in employment by including women in project design and operations will be wasted.

6.1.2 How poorly planned or failed PPP projects may exacerbate gender inequities

Costly projects with poor VfM and long payback periods may lead to an increase in user fees or tarrifs of basic utilities and services (*History rePPPeated: How Public-Private Parternships are failing* 2018). Given the feminization of poverty, women are likely to be affected disproportionately by high user costs of transport, ICT and energy. Moreover, inequality within the house suggests that women will have to compromise on their usage of essential services and utilities when their prices rise.[5]

Moreover, private financing through PPPs is riskier compared to public financing. Mega projects have heterogeneous stakeholders, complex contracts and high transactions costs, and are plagued with unforeseen uncertainties over long time horizon, leading to low "investment fragility theshold" (Flyvbjerg 2017) i.e. too many random variables can make investments vulnerable to becoming unrecoverable (Leigland 2018). Governments are often left to bear the brunt of unforeseen expenditures, which means that they have less to spend on essential services that are likely to benefit women and other marginalized groups. [6]

6.1.3 The case of Tata Mundra Ultra Mega Power Project

The Tata Mundra project is an example of a PPP project where high environmental and social costs have adverse impact on women's lives. The project intended to build coal-based thermal power plants along the Mundra cost of Gujarat, India. However, the project has had a damaging impact on the surrounding the marine and coastal environment, consequently reducing the fish catch – the primary source of livelihood of the indigenous community that resided there. Project planning did not conduct any community-wide consultations, and as a result, has led to forced displacement away from the fishing area. This has had a negative effect on women's livelihood who were engaged in the fish trade. Girls, in an effort to sustain themselves, have had to drop out of school to serve as physical and domestic laborers (*History rePPPeated: How Public-Private Parternships are failing* 2018, p .13).

[5]To know more about gender inequality in energy use, see Rosenberg et al. (2020).

[6]see History rePPPeated: How Public-Private Parternships are failing. Add other references on PPPs and poverty.

How MDBs can integrate gender in Infrastructure PPPs

There is limited discussion in the literature about strategies to make projects that are managed through public-private partnerships responsive to gender. IFC's report *Gender Impact of Public Private Partnerships* published in 2012 provides a forecasting tool for calculating the gendered impact of infrastructure projects. However, the report acknowledges that the tool is compromised by the lack of quantified data (p.ii). The WGB's 2019 Primer *Gender Equality, Infrastructure and PPPs*, which draws on extensive literature produced by the WBG, is the most comprehensive attempt to identify and discuss strategies to mainstream gender in the PPP framework and infrastructure project cycle.

7.1 The challenge of aligning diverse stakeholders on gender

Figure 7.1 shows the stakeholders and their responsibilities towards gender mainstreaming at different stages in the project cycle.[1] Whereas, Table 7.1 provides an overview of how interests of stakeholders, and the specific constraints they encounter, contradict with responsibilities related to gender mainstreaming, and how MDBs can intervene to ensure that stakeholders fulfill their gender commitments. Gauging from this overview in the Table, the proposed gender toolkit for infrastructure needs to account for the idea that with regard to PPPs, MDBs should not only provide the services they conventionally offer – capacity building, training and advisory services – but also focus on creating internal and external transparency, generating political will for committing to gender goals, and creating self-sustaining monitoring mechanisms.

Sections 5.2 and beyond in this chapter (i) summarize strategies and tools for mainstreaming gender in infrastructure PPPs discussed in the Primer and (ii) identify gender gaps, and (iii) propose

[1] See figure on Project life-cycle of MIR-SR (Social responsibility of major infrastructure projects) in (Zeng et al. 2015, p .543).

recommendations that the proposed gender toolkit can use a point of departure.

Figure 7.1: Stakeholders and their responsibility with regard to gender during the project cycle

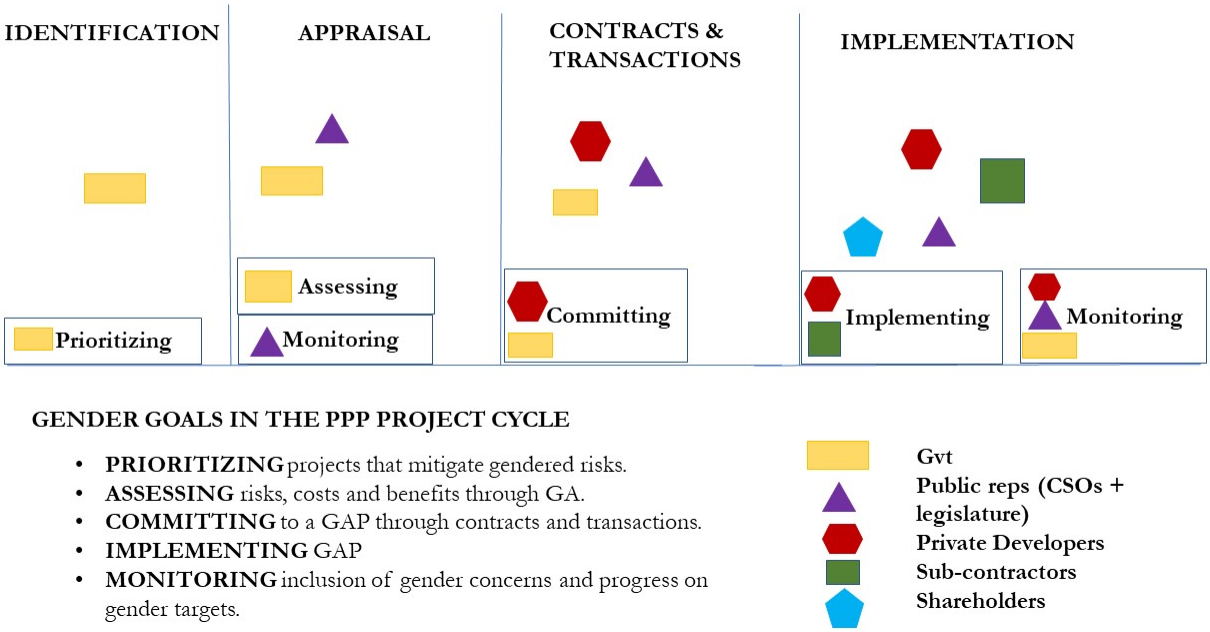


Table 7.1: Challenges and gender entry points in PPPs for MDBs

PPP areas	Conflicting interests and constraints	Gender entry points for MDBs
PPP framework	• PPP projects in discriminatory policy and legal environments may entail gendered risks. • Governments may escape scrutiny from public representatives during the PPP screening process due to poor external transparency. • The role of gender specialists or a gender sub-unit in the PPP unit may be underdefined.	• Reform and streamline the PPP regulatory and policy environment for gender mainstreaming. • Institutionalize the role of gender specialists or a gender sub-unit in the PPP unit. • Strategically target gender-related training, capacity building and incentives (monetary & non-monetary) at senior management. • Create an environment of external transparency by including public representatives in project planning (for instance, as members of the PPP board). • Create political will by including public representatives on the PPP board.
Appraisal & Structuring	• Governments lack technical expertise to assess gendered risks and costs during feasibility assessments. • To attract private investments, governments allocate disproportionately high social risks to the public.	• Advisory and training services – Provide i) training to project teams, and ii) standardized tools for incorporating gendered risks and costs in feasibility assessments. • Assist in allocating optimum risks to the public and private sectors.
Procurement	Government is tempted to give a direct (non-competitive) award to preferred developer with non-existent track record for committing to gender goals.	• Facilitate e-procurement to cultivate external transparency and accountability with relation to gender mainstreaming.
Contracts	• Private developers and sub-contractors may compromise on social and gender to achieve efficiency during implementation. • Contracting authority may lack the political will or priority to monitor gender targets.	• Create negative incentives for private developers by making renewal of contracts dependent on gender audits. • Create pressure on governments by leveraging international commitments and treaties on gender and labor rights in contracts.

Implementation	• The PPP unit may not be equipped to manage change and uncertainty related to gender commitments over long time horizons common for large infrastructure projects.	• Ensure that institutional arrangements for managing change relating to gender commitments are in place.

7.2 Making the structural and institutional environment gender responsive

7.2.1 Strategies and Tools discussed in the Primer

Regulatory and legal framework:

There should be a gender-sensitive assessment of the regulatory and legal framework needs to be conducted to identify gender biased regulations and laws. The Primer includes a list of questions for this. The following are some of the important ones from the list (Foerster and Vermeulen 2019, p. 46):

- Do policies and legislation related to land ownership, resettlement, displacement and compensation take women's and men's different needs, concerns and priorities into account?
- Do policies and legislation related to employment take women's and men's concerns into account (for example, mandated labor standards, equal pay for equal work, safety provisions, anti-sexual-harassment policies, mandated child-care provisions, and the prioritized hiring or promotion of women)?
- Do regulatory licensing and tariff-setting schemes in sector-specific legislation (for example, related to tariff setting) disadvantage specific groups of men or women?
- Do other relevant policies or legislation discriminate against women or contain indirect gender biases that may prevent women from benefiting equally from the PPP program, or have

unintended side effects on women?

Institutional environment:

- **Knowledge and expertise:** Hiring gender specialists in the PPP unit or including them in the contracting authority's project teams so that they can prepare, implement, and monitor gender-related goals over the course of the project life cycle.
- **Capacity building:** Providing training, awareness and advisory services for private sector (contractors and subcontractors) about policies and regulations that have changes.
- **Gender equality training:** Raising awareness regarding sexual harassment and GBV in members of the PPP unit, the line ministries and regulatory institutions.
- **Communication & engagement:** Ensuring that communication in the PPP and stakeholder engagement strategies are gender-sensitive.
- **Women's representation:** Ensuring that women are represented in institutions managing the PPPs.

7.2.2 Gaps

Regulatory and legal framework:

Although the Primer highlight the need for a gender-sensitive assessment of the country's legal and regulatory framework, there is no discussion of how The Convention on the Elimination of All Forms of Discrimination against Women, 1979,[2] and national laws that seeks to improve women's lives (those relating to gender-based violence, workplace harassment, pay equity etc) can be leveraged in contracts. The section 3.2.2 discusses this point in detail.

Institutional support:

- **Gender specialists:** While the Primer posits that gender specialists need to be hired in the PPP units or in the contracting authority, there are many questions that need to be addressed

[2]CEDAW is an international treaty on gender equality that has been ratified by 189 countries

to ensure that these specialists fully participate in infrastructure planning, and are not just tokens whose presence is intended to appease MDBs and civil society organizations.

1. What is the authority and responsibility of gender specialists or the gender sub-unit, especially at the different stages of infrastructure planning?
2. What is their relationship and scope of coordination with project teams that will collect gender-disaggregated data?
3. How do they coordinate with CSOs to learn about gendered social problems and issues?

- **Training managers**: Training on how to achieve gender targets should strategically target managers and executive managers.
- **Gender equality training:** There should be the need for reliable and valid monitoring mechanisms (which include quantitative & qualitative indicators) to assess the success of gender equality trainings.
- **Communication & Engagement:**

  1. Is there going to be a communications specialist or unit who/that ensures that internal communication in the PPP between private and public partners is gender-sensitive?
  2. The literature also lacks a discussion of how to ensure that stakeholder engagement in gender-sensitive. What are the practical steps to ensure that gender issues are not simply 'nudged' off the table or pushed down the priority list during meetings and consultations?

- **Women's representation:** The primer does not discuss strategies to ensure that women's representation in institutions is not merely going to be descriptive, and is able to substantively influence decision making. Existing literature, with regard to meaningful representation of women in groups, stresses on the significance of *women's leadership* (Thomas 2003) and the *effect of proportions* or the idea that as the number of women in a group increase, their ability to coordinate and take concerted action to change the agenda and make decisions that favor women (Kanter 1977).

7.3 Making the project environment gender-responsive

7.3.1 Strategies in the Primer

Appraisal & Structuring

- **Environmental & Social Feasibility**:

    1. Identification of risks to local population, workers and residents.
    2. Identification of different mitigation and compensation measures.
    3. Identification of potential benefits of the projects for the local community
    4. Assessment of the potential for women to get involved in design, implementation and monitoring.
    5. Assessment of the design of gender-sensitive grievance & redress mechanism.

- **Technical Feasibility:**

    1. Project design is suitable to close gender gaps.
    2. Technical features that will make the project more gender-responsive (separate facilities for men and women; recruitment of female employees etc.)
    3. Gender-specific activities can be specified in terms of outputs and measured by KPIs disaggregated by sex.

- **Financial & economic viability:**

    1. What is the affordability threholds for tarriffs or fees for men and women?
    2. Economic viability assessment that takes detailed gender-disaggregated data to calculate long-term, direct and indirect costs and benefits.

- **Business Case**: Clearly allocating risks and distributing responsibilities with regard to women's employment, training, resettlement etc.

Procurement & Contracts

- **Procurement**

    1. A procurement strategy with a clear gender focus. This could entail employing female employees in operations or ensuring gender diversity in the supply chain.
    2. Using achievement of gender goals as a selection criteria for evaluating bidders.

- **Including gender commitments in contracts**

    1. Integration of safeguard documents: This includes a clear statement on expectations related to gender benefits.
    2. Commitments related to procurement: For example, development of Code of Conduct or Supplier Diversity Plan, and a commitment to pass all gender-specific requirements to sub-contractors.
    3. Commitments related to stakeholder engagement: For example, data that will be collected to assess user satisfaction will target women and men separately.
    4. Commitments to women's employment and/or entrepreneurship in operations.
    5. Effective monitoring mechanism: (i) Collecting gender-disaggregated data, (ii) Reporting obligations of the private partner regarding performance on gender goals, (iii) Adhering to stipulations related to disclosure of documents and compliance with gender targets and allowing stakeholders to monitor performance.
    6. Delineation of a gender-sensitive grievance and redress resolution mechanism.
    7. Ensure key performance indicators (KPIs) related to gender-based technical stipulations and performance requirements are included as clear, measurable outputs.

Implementation

- Regular collection of gender-disaggregated data.
- Establishment of procedures for gender-sensitive stakeholder consultations and complaints mechanisms.

- Women's representatives should be included in all gender-related activities during operations and construction phases.

7.3.2 Identifying gaps and remedial strategies

Appraisal & Structuring

- **Standardizing gender risks in feasibility assessments**: The following is absent from the discussion on how to incorporate gender in appraisal:

    1. Conceptualization of the gendered risks and opportunities for the different assessments. *While some of these risks are contextual (thus difficult to generalize), many are likely to be sector-specific and applicable across cases.*
    2. Operationalization of these risks and opportunities into variables and measurable indicators for each feasibility assessment.
    3. Research design – The quantitative and qualitative data that need to be collected and steps to ensure that the data collected are valid and reliable. This relates to prior discussions about adopting a multidimensional lens when assessing gendered vulnerabilities, and ensuring that women's participation in consultations and meetings is meaningful and has a substantive impact.
    4. Methodology to be employed to calculate gendered costs and benefits when doing the assessments.

- **Allocating responsibility for social marketing and public awareness campaigns**: The literature lacks a discussion on how the different parties will distribute the responsibility for social marketing and public awareness campaigns which are critical for inducing behavioral change with regard to new infrastructure. This exercise needs to explicitly adopt strategies to target women.

Procurement & Contracts

- **E-procurement:** MDBs can ensure that the procurement process is conducted online, and the gender strategy for procurement, in addition to the gender-based criteria for evaluating

bidders, are clearly stated in the bidding documents and communicated to public representatives.

- **Contractual guarantees to prevent transfer of gendered risks to governments:** When PPPs have encountered unanticipated problems, the public has disproportionately borne the cost of adverse social and environmental outcomes (*History rePPPeated: How Public-Private Parternships are failing* 2018). Moreover, private partners, driven by the incentive to increase profits, may lack incentives to create an inclusive and diverse workforce, or use female ownership as a criteria to subcontract vendors instead of cost efficiency. MDBs can ensure that risks and responsibilities related to gender are not disproportionately borne by governments, by including negative incentives to ensure that private partners comply.[3]

- **Creating pressure on governments to monitor gender-related targets:**

  Leveraging articles of ratified human rights treaties (such as CEDAW, which majority of the governments have ratified) and/or clauses from national pro-women laws and policies (such as those related to gender-based violence, safety of women at the workplace) in contracts, governments are made vulnerable to real or perceived monitoring pressure by domestic and international CSOs (Avdeyeva 2007).

Implementation

- **Managing change over long time horizons:** Complex contracts associated with large infrastructure often require long-term institutional management. As discussed above, large infrastructure projects that span decades often carry social risks and externalities associated with uncertainties. The structures created for managing long-term contracts should have provisions for what a gender assessment, as part of a comprehensive E&S assessments, will entail during periods of change and renegotiation.

- **Monitoring targets over long time horizons:** Given that infrastructure PPPs may span decades, there should be mechanisms for addressing (i) violations of contractual obligations

[3]Private partners can also be incentivized through positive incentives, such as the ones regularly used to make them conform to SDG-related clauses in contracts – tax subsidies and holidays etc (Owusu-Manu et al. 2020).

(poor performance in gender audits, for instance) and (ii) gendered challenges presented in the M&E data (gender disparities in user satisfaction).

Conclusion

This desk review synthesizes the extant state of knowledge on theory, tools and best practices relating to mainstreaming gender in infrastructure, and identifies gaps that the envisioned gender toolkit should fill. *Based on the theoretical discussion on gender and infrastructure in Chapter 2, the gender toolkit should be centered in a more nuanced conceptualization of gender and social vulnerability which would allow for an inclusive approach in*:

- Understanding gendered needs, preferences, risks.
- Increasing equity & diversity in design and operations by, for instance, leveraging specialized knowledge that marginalized communities acquire as a result of their specific structural position and interactions with the ecological and geographical environments.

Chapters 3, 4 and 5 focus on the Gender Action Plan (GAP) for mainstreaming gender in infrastructure planning and implementation. With regard to data collection at project identification and feasibility stages, the gender toolkits should focus on practical recommendations for:

- Overcoming methodological and practical challenges in collecting gender-disaggregated data for the Gender Analysis due to power imbalances in society, rooted in and reinforced by gender norms.
- Devising a social marketing plan that is based on marketing principles and is informed by existing behavioral research and project-level data collection and analysis.

With regard to women in operations as employees or business owners in the supply chain, the toolkit should go beyond recommendations in the existing literature and devise practices that leverage political will and power in organizations for accomplishing gender goals. Moreover, when proposing recommendations for including women in resource monitoring associations, the toolkit

should (i) take intersectional identities into account while devising strategies for distribution of responsibilities, and (ii) ensure that women's representation and participation is meaningful.

Chapter 7 relates to gender mainstreaming in infrastructure PPPs, with a specific focus on strategies and tools discussed in the WBG's 2019 primer *Gender, Infrastructure and PPPs*. In order to align heterogenous stakeholders on gender obligations, MDBs should focus on (i) institutionalizing the role of gender specialists or a gender sub-unit in the main PPP unit, (ii) streamlining governance (creating internal and external transparency), (iii) creating political will, and (iv) creating strategically targeted, innovative incentives to induce compliance with gender obligations. The gender toolkit should build on these recommendations.

Bibliography

Adams, Ellis Adjei, Luke Juran and Idowu Ajibade. 2018. "'Spaces of Exclusion'in community water governance: A Feminist Political Ecology of gender and participation in Malawi's Urban Water User Associations." *Geoforum* 95:133–142.

Agarwal, Bina. 2000. "Conceptualising environmental collective action: why gender matters." *Cambridge journal of economics* 24(3):283–310.

Ahmad, Nilufar, Olusola Ikuforiji and Nishta Sinha. 2010. "Making Water Supply and Sanitation Work for Women and Men – Tools for Task Teams.".

Anker, Richard. 1998. *Gender and jobs: Sex segregation of occupations in the world*. International Labour Organization.

Avdeyeva, Olga. 2007. "When do states comply with international treaties? Policies on violence against women in post-communist countries." *International Studies Quarterly* 51(4):877–900.

Bank, World. 2021. "Closing the Gap: Gender, Transport, and Employment in Mumbai.".

Beegle, Kathleen, Elizabeth Frankenberg and Duncan Thomas. 2001. "Bargaining power within couples and use of prenatal and delivery care in Indonesia." *Studies in family planning* 32(2):130–146.

Bloomfield, Pamela. 2006. "The challenging business of long-term public–private partnerships: Reflections on local experience." *Public Administration Review* 66(3):400–411.

Boomsma, Christine and Linda Steg. 2014. "Feeling safe in the dark: Examining the effect of entrapment, lighting levels, and gender on feelings of safety and lighting policy acceptability." *Environment and Behavior* 46(2):193–212.

Borja-Vega, Christina and Jonathan Grabinsky. 2020. "Water fetching responsibilities reveal unequal gender dynamics: Elevates need for expansion of on-site WASH facilities.". **URL:** *https://blogs.worldbank.org/water/water-fetching-responsibilities-reveal-unequal-gender-dynamics-elevates-need-expansion-site-0*

Bunch, Charlotte and Susana Fried. 1996. "Beijing'95: Moving women's human rights from margin to center." *Signs: Journal of Women in Culture and Society* 22(1):200–204.

Carter, Simone E, Luisa Maria Dietrich and Olive Melissa Minor. 2017. "Mainstreaming gender in WASH: lessons learned from Oxfam's experience of Ebola." *Gender & Development* 25(2):205–220.

Casabonne, Ursula, Bexi Jimenex and Miriam Muller. 2018. "Roads to Agency: Effects of Enhancing Women's Participation in Rural Roads Projects on Women's Agency.".

Celis, Karen, Johanna Kantola, Georgina Waylen and S. Laurel Weldon. 2013*a*. Introduction: Gender and Politics: A Gendered World, a Gendered Discipline. In *The Oxford Handbook of Gender and Politics*, ed. Johanna Kantola Georgina Waylen, Karen Celis and S. Laurel Weldon. Oxford University Press.

Celis, Karen, Johanna Kantola, Georgina Waylen and S Laurel Weldon. 2013*b*. Introduction: Gender and politics: A gendered world, a gendered discipline. In *The Oxford Handbook of Gender and Politics*, ed. Johanna Kantola Georgina Waylen, Karen Celis and S. Laurel Weldon. OUP.

Chafetz, Janet Saltzman. 1988. "The gender division of labor and the reproduction of female disadvantage: Toward an integrated theory." *Journal of Family Issues* 9(1):108–131.

Chattopadhyay, Raghabendra and Esther Duflo. 2004. "Women as policy makers: Evidence from a randomized policy experiment in India." *Econometrica* 72(5):1409–1443.

Cleaver, Frances and Rose Nyatsambo. 2011. Gender and integrated water resource management. Cambridge University Press Cambridge.

Coffey, Diane, Aashish Gupta, Payal Hathi, Dean Spears, Nikhil Srivastav and Sangita Vyas. 2015. "Culture and the health transition: understanding sanitation behavior in rural north India." *International Growth Centre. Working Paper, April* .

Coles, Anne. N.d. Geology and Gender: Water Supplies, Ethnicity and Livelihoods in Central Sudan. In *Gender, Water and Development*, ed. Anne Coles and Tina Wallace.

Collins, Patricia Hill. 1986. "Learning from the outsider within: The sociological significance of Black feminist thought." *Social problems* 33(6):s14–s32.

Crenshaw, Kimberlé W. 2017. *On intersectionality: Essential writings*. The New Press.

Cui, Caiyun, Yong Liu, Alex Hope and Jianping Wang. 2018. "Review of studies on the public–private partnerships (PPP) for infrastructure projects." *International Journal of Project Management* 36(5):773–794.

Das, Maitreyi Bordia. 2017. *The rising tide: A new look at water and gender*. World Bank.

de Groot, Jiska, Nthabiseng Mohlakoana, Abigail Knox and Hans Bressers. 2017. "Fuelling women's empowerment? An exploration of the linkages between gender, entrepreneurship and access to energy in the informal food sector." *Energy Research & Social Science* 28:86–97.

Diamond, Jared et al. 1987. "The worst mistake in the history of the human race." *Discover* 8(5):64–66.

Divan, Vivek, Clifton Cortez, Marina Smelyanskaya and JoAnne Keatley. 2016. "Transgender social inclusion and equality: a pivotal path to development." *Journal of the International AIDS Society* 19:20803.

Elias, Faisal. 2017. "The practice of integrated water resources management in South Africa: challenges of women in water user associations." *GeoJournal* 82(6):1165–1177.

Fernández-Baldor, Álvaro, Pau Lillo and Alejandra Boni. 2015. Gender, energy, and inequalities: a capabilities approach analysis of renewable electrification projects in Peru. In *Sustainable access to energy in the Global South*. Springer pp. 193–204.

Flyvbjerg, Bent. 2017. *The Oxford handbook of megaproject management*. Oxford University Press.

Foerster, Sussane Claudia and Christine Shepherd Vermeulen. 2019. "Gender Equality in Infrastructure and PPPS: A Primer.".

Franceschet, Susan and Jennifer M Piscopo. 2014. "Sustaining gendered practices? Power, parties, and elite political networks in Argentina." *Comparative Political Studies* 47(1):85–110.

Geere, Jo-Anne and Moa Cortobius. 2017. "Who carries the weight of water? Fetching water in rural and urban areas and the implications for water security." *Water Alternatives* 10(2):513–540.

Greed, Clara. 2019. Are we still not there yet? Moving further along the gender highway. In *Integrating Gender into Transport Planning*, ed. Christina Lindkvist and ScholtenTanja Joelsson. Palgrave Macmillan.

Grimsey, Darrin and Mervyn K Lewis. 2005. Are Public Private Partnerships value for money?: Evaluating alternative approaches and comparing academic and practitioner views. In *Accounting forum*. Vol. 29 Elsevier pp. 345–378.

Group, World Bank. 2020. "Benchmarking Infrastructure Development 2020: Assessing Regulatory Quality to Prepare, Procure, and Manage PPPs and Traditional Public Investment in Infrastructure Projects.".

Guy, Mary Ellen and Meredith A Newman. 2004. "Women's jobs, men's jobs: Sex segregation and emotional labor." *Public administration review* 64(3):289–298.

Haddaway, Neal R and Gary S Bilotta. 2016. "Systematic reviews: Separating fact from fiction." *Environment international* 92:578–584.

Hanisch, Carol. 1969. "The personal is political.".

Hawkes, Sarah, Kent Buse and Anuj Kapilashrami. 2017. "Gender blind? An analysis of global public-private partnerships for health." *Globalization and health* 13(1):1–11.

Hawkesworth, Mary. 2013. Sex, Gender, and Sexuality: From Naturalized Presumption to Analytical Categories. In *The Oxford Handbook of Gender and Politics*, ed. Johanna Kantola Georgina Waylen, Karen Celis and S. Laurel Weldon. Oxford University Press.

History rePPPeated: How Public-Private Parternships are failing. 2018. Technical report. **URL:** *https://d3n8a8pro7vhmx.cloudfront.net/eurodad/pages/508/attachments/original/1590679608/How$_{P}$ubl*

Hung, Samantha. 2013. Gender Tool Kit: Transport – Maximizing the Benefits of Improved Mobility for All. Technical report.

IFC. 2018. Unlocking Opportunities for Women and Businesses – A Toolkit for Action and Strategies for Oil, Gas, and Mining Companies. Technical report The World Bank Washington, DC: .

Iversen, Torben and Frances Rosenbluth. 2006. "The political economy of gender: Explaining cross-national variation in the gender division of labor and the gender voting gap." *American Journal of Political Science* 50(1):1–19.

Jamali, Dima. 2004. "Success and failure mechanisms of public private partnerships (PPPs) in developing countries: Insights from the Lebanese context." *International Journal of Public Sector Management* .

Johnson, Oliver W, Jenny Yi-Chen Han, Anne-Louise Knight, Sofie Mortensen, May Thazin Aung, Michael Boyland and Bernadette P Resurrección. 2020. "Intersectionality and energy transitions: A review of gender, social equity and low-carbon energy." *Energy Research & Social Science* 70:101774.

Jomo, Kwame Sundaram, Anis Chowdhury, Krishnan Sharma and Daniel Platz. 2016. "Public-private partnerships and the 2030 Agenda for Sustainable Development: fit for purpose?".

Kaijser, Anna and Annica Kronsell. 2014. "Climate change through the lens of intersectionality." *Environmental politics* 23(3):417–433.

Kanter, Rosabeth Moss. 1977. Some effects of proportions on group life. In *The gender gap in psychotherapy*. Springer pp. 53–78.

Karpowitz, Christopher F and Tali Mendelberg. 2014. *The silent sex: Gender, deliberation, and institutions*. Princeton University Press.

Karpowitz, Christopher F, Tali Mendelberg and Lee Shaker. 2012. "Gender inequality in deliberative participation." *American Political Science Review* pp. 533–547.

Khan, Sarah. 2017. "What women want: Gender gaps in po-litical preferences." *Comparative Politics Newsletter* 65(1):42.

Kilic, Talip, Goedele Van den Broeck, Gayatri Koolwal and Heather Moylan. 2020. *Are You Being Asked? Impacts of Respondent Selection on Measuring Employment*. The World Bank.

Kodama, Toyoko, Sandra Meryl Ruckstuhl, Huong Mai Nguyen, Cameron Wilson, Demilour Reyes Ignacio, Gillian M Brown and Karen Hulog Jacob. 2016. *Toolkit for Mainstreaming Gender in Water Operations*.
URL: *https://www.climateinvestmentfunds.org/sites/cif*$_e nc/files/genderinwater_0 7_0 40416_w eb.pdf$

Köhlin, Gunnar, Erin O Sills, Subhrendu K Pattanayak and Christopher Wilfong. 2011. "Energy, gender and development: what are the linkages? Where is the evidence?" *Where is the Evidence* .

Leder, Stephanie, Floriane Clement and Emma Karki. 2017. "Reframing women's empowerment in water security programmes in Western Nepal." *Gender & Development* 25(2):235–251.

Leigland, James. 2018. "Public-private partnerships in developing countries: The emerging evidence-based critique." *The World Bank Research Observer* 33(1):103–134.

Lieu, Jenny, Alevgul H Sorman, Oliver W Johnson, Luis D Virla and Bernadette P Resurrección. 2020. "Three sides to every story: Gender perspectives in energy transition pathways in Canada, Kenya and Spain." *Energy Research & Social Science* 68:101550.

Lubitow, Amy, Miriam J Abelson and Erika Carpenter. 2020. "Transforming mobility justice: Gendered harassment and violence on transit." *Journal of transport geography* 82:102601.

Lundvall, Jonna Maria, Santiago Garriga, Anna Tabitha Bonfert, Emcet Oktay Tas and Maria Villegas-Otero. 2015. Bolivia-challenges and constraints to gender equality and women's empowerment. Technical report The World Bank.

Mahon, Thérèse and Maria Fernandes. 2010. "Menstrual hygiene in South Asia: a neglected issue for WASH (water, sanitation and hygiene) programmes." *Gender & Development* 18(1):99–113.

Making Information Communication Technologies and Their Applications Work for Women and Men – Tools for Task Teams. 2010. Technical report.
URL: *http://documents1.worldbank.org/curated/ru/216221468162248735/pdf/687070ESW0P1100mation0Co*

Making Transport Work for Women and Men – Tools for Task Teams. 2010. Technical report.
URL: *http://documents1.worldbank.org/curated/en/972931468152721855/pdf/687500ESW0P1100ng0Transpo*

Michelitsch, Roland, Roni Szwedzki, Jose Ignacio Sembler, Ulrike Haarsager, José Carbajo, Juan Felipe Murcia, Raphael Seiwald, Patricia Oliveira, Rocio Funes Aguilera, Maria Cabrera et al. 2017. "Evaluation of Public-Private Partnerships in Infrastructure." *Inter-American Development Bank. doi* 10:0000641.

Mirrlees-Black, Catriona. 1999. *Domestic Violence: Findings from a new British Crime Survey self-completion questionnaire*. Home office London.

Oakley, Ann. 2015. *Sex, gender and society*. Ashgate Publishing, Ltd.

Okello, Gabriel, Graham Devereux and Sean Semple. 2018. "Women and girls in resource poor countries experience much greater exposure to household air pollutants than men: Results from Uganda and Ethiopia." *Environment international* 119:429–437.

Orlando, Maria Beatriz, Vanessa Lopes Janik, Pranav Vaidya, Nicolina Angelou, Ieva Zumbyte and Norma Adams. 2018. Getting to gender equality in energy infrastructure: lessons from electricity generation, transmission, and distribution projects. Technical report.
URL: *https://www.esmap.org/node/146269*

Osei-Kyei, Robert and Albert PC Chan. 2017. "Risk assessment in public-private partnership infrastructure projects." *Construction Innovation* 17(2).

Owusu-Manu, De-Graft, Thomas Kankam Adjei, David Mensah Sackey, David John Edwards and Reza M Hosseini. 2020. "Mainstreaming sustainable development goals in Ghana's energy sector within the framework of public–private partnerships: challenges, opportunities and strategies." *Journal of Engineering, Design and Technology* .

Percoco, Marco. 2014. "Quality of institutions and private participation in transport infrastructure investment: Evidence from developing countries." *Transportation research part A: policy and practice* 70:50–58.

Pitkin, Hannah. 1967. *The Concept of Representatives*. Berkeley: University of California Press.

Prillaman, Soledad Artiz. 2017. "Strength in numbers: How women's groups close India's political gender gap." *Working Paper* .

Reig, Monica, Mila Gasco-Hernandez and Marc Esteve. 2021. "Internal and External Transparency in Public-Private Partnerships—The Case of Barcelona's Water Provision." *Sustainability* 13(4):1777.

Reynaers, Anne-Marie and Stephan Grimmelikhuijsen. 2015. "Transparency in public–private partnerships: Not so bad after all?" *Public Administration* 93(3):609–626.

Rosenberg, Meital, Daniel Erian Armanios, Michaël Aklin and Paulina Jaramillo. 2020. "Evidence of gender inequality in energy use from a mixed-methods study in India." *Nature Sustainability* 3(2):110–118.

Sachs, Tillmann, Robert Tiong and Shou Qing Wang. 2007. "Analysis of political risks and opportunities in public private partnerships (PPP) in China and selected Asian countries." *Chinese Management Studies* .

Safer, Joshua D, Eli Coleman, Jamie Feldman, Robert Garofalo, Wylie Hembree, Asa Radix and Jae Sevelius. 2016. "Barriers to health care for transgender individuals." *Current opinion in endocrinology, diabetes, and obesity* 23(2):168.

Schlozman, Kay Lehman, Nancy Burns and Sidney Verba. 1999. "" What Happened at Work Today?": A multistage model of gender, employment, and political participation." *The Journal of Politics* 61(1):29–53.

Seale, Clive. 2004. Validity, reliability and the quality of research. In *Researching society and culture*, ed. Clive Seale. Sage London pp. 71–83.

Seck, Papa. 2020. "Integrate intersecting inequalities to leave no one behind.".
URL: *https://unstats.un.org/unsd/undataforum/blog/Integrate-intersecting-inequalities-to-leave-no-one-behind/*

Sequeira, Debra and Michael Warner. 2007. Stakeholder engagement: a good practice handbook for companies doing business in emerging markets. Technical report The World Bank.

Shankar, Anita, Naira Kalra, Maryse Labriet and Luis Garcia. 2017. "THE ROLE OF COOKING IN ADDRESSING GENDER-BASED VIOLENCE IN HUMANITARIAN SETTINGS.".
URL: *https://unfoundation.org/blog/post/role-cooking-addressing-gender-based-violence-humanitarian-settings/*

Sicat, Marie, Ankai Xu, Ermira Mehetaj, Michael Ferrantino and Vicky Chemutai. 2020. "Leveraging ICT Technologies in Closing the Gender Gap.".

Smith-Lovin, Lynn and Charles Brody. 1989. "Interruptions in group discussions: The effects of gender and group composition." *American Sociological Review* pp. 424–435.

Sulser, Patricia O. 2018. "IFC book: Infrastructure PPPs in the most challenging developing countries: Closing the gap." *International Financial Law Review* .

Tamošaitienė, Jolanta, Hadi Sarvari, Daniel WM Chan and Matteo Cristofaro. 2021. "Assessing the Barriers and Risks to Private Sector Participation in Infrastructure Construction Projects in Developing Countries of Middle East." *Sustainability* 13(1):153.

Terraza, Horacio, Maria Beatriz Orlando, Carina Lakovits, Vanessa Lopes Janik and Anna Kalashyan. 2020. "Handbook for Gender-Inclusive Urban Planning and Design.".

Thara, Kaveri. 2017. "In troubled waters: water commodification, law, gender, and poverty in Bangalore." *Gender & Development* 25(2):253–268.

Thomas, Sue. 2003. "The impact of women in political leadership positions." *Women and American politics. New questions, new directions* pp. 87–110.

Thompson, Jennifer A. 2016. "Intersectionality and water: How social relations intersect with ecological difference." *Gender, Place & Culture* 23(9):1286–1301.

Unterhalter, Elaine. 2017. "A review of public private partnerships around girls' education in developing countries: Flicking gender equality on and off." *Journal of International and Comparative Social Policy* 33(2):181–199.

West, Candace and Don H Zimmerman. 1987. "Doing gender." *Gender & society* 1(2):125–151.

Wiley, Shaun and Christine Dunne. 2019. "Comrades in the struggle? Feminist women prefer male allies who offer autonomy-not dependency-oriented help." *Sex Roles* 80(11):656–666.

Winter, Sam, Edmund Settle, Kevan Wylie, Sari Reisner, Mauro Cabral, Gail Knudson and Stefan Baral. 2016. "Synergies in health and human rights: a call to action to improve transgender health." *The Lancet* 388(10042):318–321.

Yavuz, Nilay and Eric W Welch. 2010. "Addressing fear of crime in public space: Gender differences in reaction to safety measures in train transit." *Urban studies* 47(12):2491–2515.

Zeng, SX, HY Ma, He Lin, RC Zeng and Vivian WY Tam. 2015. "Social responsibility of major infrastructure projects in China." *International Journal of Project Management* 33(3):537–548.