



Gender Impact of Public Private Partnerships

Literature Review Synthesis Report

November 2012
International Finance Corporation

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Executive Summary

Background

In February 2012 Mott MacDonald was commissioned by the International Finance Corporation (IFC) to undertake an assessment of the current and potential gender impacts of public private partnership (PPP) infrastructure projects.

The IFC's overall objective for this study was to enable its Public Private Partnership Business Line (PPP BL) to measure and articulate the impact on women and girls of the PPP projects in which it is involved. The brief required an analysis of six infrastructure sectors: agri-infrastructure; health; energy, industrial, transport and water/waste.

The key questions for the research, as defined by the IFC, were:

- What are the potential impacts on women and girls of infrastructure projects?
- What are the differences, if any, in terms of gender impact, between PPP projects and traditional public works projects?
- What are the conditions/project design features which could enable PPP/privately funded infrastructure projects to have a positive gender impact without compromising on the overall economic rate of return of the project?¹

Methodology

The report is based upon a wide ranging literature review and subsequent development and testing of a means to both forecast access by women and girls to different types of infrastructure projects in different countries; and highlight mechanisms where PPP especially (and traditionally funded projects) has had or could have an opportunity within project specific circumstances to maximize the benefits for women and girls. The documentary evidence and testing has drawn upon the multi-disciplinary resources of Mott MacDonald. We have benefited from inputs from specialists from; equalities, international finance, sector specific infrastructure, international development and economics.

The first key deliverable of the project was the production of six sector-based literature review reports. The conclusions from the sector based literature reviews, and the more general review of infrastructure and gender, were that there is very little empirical evidence available on mainstreaming gender considerations into project design, especially in the case of PPP projects. Evidence is similarly scarce on actual demonstrable impacts on women and girls. Where documents do link gender to infrastructure design and delivery to gender, in the main they talk about *potential* impacts only.

Forecasting tool

This initial conclusion led to the development of a forecasting tool that would allow IFC and wider stakeholders to estimate the in country/region number of women and girls to benefit from a proposed infrastructure project.

¹ IFC (2011, A): IFC Terms of Reference: 'Gender Impact of Public Private Financing and Private Financing of Infrastructure'

The 'Female Beneficiary Estimation Tool' proposed within this report demonstrates that forecasting can be undertaken to provide an indication of the number and proportion of female beneficiaries from a project by using available datasets coupled with forecasting multipliers. It sets out a proposed methodology which takes into account gender inequality, the sector type of the infrastructure in question and also the extent to which the project has integrated gender considerations into planning and delivery. In addition, to this central tool, the report provides an additional two variants of the tool for IFC and stakeholders to consider – ranging from more to less sophisticated.

Essentially, in the absence of project specific information, the tool can act as a substitute where necessary, drawing on the best available data through its default parameters - World Bank and the United Nations Development Programme (UNDP) Gender Inequality Index. At its most sophisticated level the tool comprises the following four variables:

Variable	Use
Population	<ul style="list-style-type: none"> Total number of projected beneficiaries OR local population numbers of the project area The proportion of women in the national population (take from World Bank data) is then used as a multiplier to estimate the total number of women in the beneficiary. Note this number provides an estimate of the population of women not the estimate of women who will benefit; this is subject to the additional multipliers below.
Gender inequality adjustment	<ul style="list-style-type: none"> This is based on the literature-supported assumption that the greater the level of inequality within a country, the less likely women are to benefit from infrastructure projects. A gender inequality adjustment figure of 1 plus one-tenth of the GI Index is applied as a divisor to the number of female beneficiaries, reducing the number of female beneficiaries by approximately one-tenth of the amount of the GI Index expressed as a percentage.
Sector type adjustment	<ul style="list-style-type: none"> This based on the evidence in the literature that some infrastructure sectors are more likely to be accessed by women than others; as such, the six different infrastructure sectors are assigned different multipliers.
Gender mainstreaming adjustment	<ul style="list-style-type: none"> This last criterion reflects the level to which gender mainstreaming activities actually form part of the project plan as a percentage

This tool is, in its nature, high level and is compromised by the lack of existing quantified data on which it can draw for inputs. It is necessary to stress that it should not be used where hard evidence is available and should only be seen as an estimation of access benefits.

Ways in which to mainstream gender considerations into projects

The review set out in this report provides some thoughts on a number of gender mainstreaming mechanisms which might be incorporated within the project process should local circumstances support such an approach:

Mainstreaming mechanism	Gender outcomes
Action planning	<ul style="list-style-type: none"> Well-designed Gender Action Plans (GAPs) are instrumental in ensuring gender considerations are planned for GAPs help to reduce women's vulnerability to poverty²
Gender analysis and impact assessment	<ul style="list-style-type: none"> Easier identification of gender-specific priorities Use of social and demographic profiling (using sex disaggregated data) will help to ensure delivery of the most appropriate services
Gender involvement and consultations	<ul style="list-style-type: none"> Women's and girls' benefits are enhanced Increased independence and community voice amongst women Sensitivity is key due to socio-cultural constraints which may inhibit women's participation
Capacity building and gender mainstreaming skills	<ul style="list-style-type: none"> Increased gender awareness amongst project staff by appointment of gender specialists or integration of gender programmes for managers Actively employing women in senior decision making roles
Supporting wider activity and participation	<ul style="list-style-type: none"> Encouraging wider participation of women across project lifecycle
Supporting women into employment and other income generating opportunities	<ul style="list-style-type: none"> Targets for female employment at various project stages will help to increase economic independence of women Employment incorporating training and development will enhance women's skill set Providing more female only facilities will encourage women to remain in work Removing barriers preventing women taking up senior positions could have significant gender impacts beyond the workplace.³
Contractual mechanisms	<ul style="list-style-type: none"> Establish key performance indicators (KPIs) for benefits to females as part of contracts to ensure compliance with requirements
Allocate funding to support gender mainstreaming activities	<ul style="list-style-type: none"> Specifically allocate resources to achieving gender goals to ensure women's benefits are delivered and measured
Delivering accessible services	<ul style="list-style-type: none"> Setting usage costs at a rate affordable by women and supporting appropriate use of credit can help maximize benefits to women Provision of female specific public facilities Maximized marketing and infrastructure information can ensure that women's needs as customers are met
Monitor and evaluate against gender impacts	<ul style="list-style-type: none"> Including gender up front in social and environmental impact assessments as a priority Use of gender disaggregated data and analysis and appropriate key gender sensitive indicators

² See the ADB Website for guidance on their approach to GAPs in projects. See: <http://www.adb.org/themes/gender/project-action-plans>

³ World Bank and OECD (2004): 'Why gender matters in infrastructure'

Conclusions

The key conclusions that have been drawn from this study are:

- Gender equality and its importance for access to good quality infrastructure are firmly on the international policy agenda as testified by the range of guidance documents that have emerged in the last decade. At a policy level, gender mainstreaming is regarded as a priority and there is demonstrable commitment to promoting gender equality and taking action to address it through infrastructure development.
- At a policy level, it is also recognized that infrastructure development needs to be gender aware in order to realize gender benefits. Women's interests need to be understood and their views taken on board through active involvement and consultation. Infrastructure projects cannot be assumed to deliver benefits to women and men equally; proceeding with project development with this assumption is likely to lead to the aggravation rather than reduction of gender inequalities.
- This study has considered gender implications at a project rather than policy level by identifying evidence of benefits for women and girls and of mainstreaming gender into both PPP and traditionally financed infrastructure development. The research has shown that, despite the policy level commitment there is very little evidence of infrastructure projects taking conscious action on gender. As such impacts on women are often unplanned and unintended and there may be no gender perspective when targets are set or outcomes are monitored. This provides little emphasis on opportunity for infrastructure to be a positive enabler of gender outcomes.
- Significant guidance exists about potential impacts of infrastructure project, how to mainstream gender and indicators which could be used. This report has synthesized the existing guidance material to list potential tools for PPP projects to employ, starting with project level gender action planning.
- There are some examples of good practice in terms of gender mainstreaming in infrastructure development. However, there is a scarcity of information about actual impacts, the benefits of mainstreaming approaches and how successful they are in different sectors for PPP projects.
- Amongst guidance that presently exists, without exception, emphasis is placed on the vitality of monitoring and evaluation to ensure that gender outputs and outcomes can be measured. However, examples of evaluations being applied systematically within different sectors are often hit and miss. Within the current literature, a raft of potential indicators exist for each sector but these are not prioritized and there is little evidence of them being used in live projects to either set targets or monitor results.
- The main stumbling block with regard to assessing and evaluating gender impacts is the lack of sex-disaggregated data. This renders almost impossible proper monitoring of gender benefits and impacts. Existing guidance tends not to detail how data can be collected in the level of detail required or how data collection could be financed as part of the project delivery process. This is understandable given the sometimes very difficult conditions in which PPP infrastructure projects are seeking to attract donors and the variety of stakeholder interests. It also occurs because infrastructure projects tend to rely on data gathering about beneficiaries from other government or private sector entities that may lack resources or time to acquire the level of detail that would be useful.

- The lack of reliable empirical data has created challenges in terms of capturing and estimating gender benefits at project and spatial levels. There is no quantitative means to promote or measure benefits for women and girls in different sectors where PPP might be applied. This means that there is a conspicuous lack of forecasting tools making it difficult to pre-assess impacts of projects. The 'Female Beneficiary Estimation Tool' proposed within this report is a means to help fill this void.
- The Tool provides an indication of the number and proportion of female beneficiaries and sets out a proposed methodology which takes into account gender inequality and also the sector type of the infrastructure. This is, in its nature, high level and can be used when there is a lack of existing quantified data. It should not be used where hard evidence is available and should only be seen as an estimation of benefits.
- The literature provides little or no evidence of where and how the benefits to women and girls from PPP and traditionally funded infrastructure have been included in the business case for projects. IFIs do have internal systems that include appraising gender in relation to their own policies, for instance ADB's Initial Poverty and Social Analysis. However, outside such templates, project appraisals covered in literature on PPP projects relate to more general environmental and social impacts. Whilst gender mainstreaming activities are likely to come with a commercial cost for infrastructure projects, there are also some commercial gains which are not presently articulated. Further identification of the benefits to women and girls and relating these to the business case for infrastructure PPPs is worthy of further consideration.
- It is important that the type of impacts delivered to women by infrastructure projects are not lost in the discourse on the number of women who will benefit. This report has uncovered four main impact channels, in addition to access. These are: time; economic activity and resources; health and safety; and planning, policy and decision-making. Their importance varies from sector to sector. These impacts are not currently part of the estimation tool but this should downgrade their significance.
- There is presently only limited discourse and evidence on the overall gender impacts of PPP projects and even less about the comparative benefits of PPP versus traditionally funded infrastructure. From the evidence reviewed as part of this study, there seem to be few significant differences between PPP gender impacts and traditionally financed projects. However, PPPs do offer scope for pro-gender activity if backed by a solid government policy and conditionality in the procurement process.

1. Introduction

In February 2012, the International Finance Corporation (IFC) commissioned Mott MacDonald to assess the actual and potential gender impacts of public private partnership (PPP) infrastructure projects across six sectors.

1.1 Project overview

PPP holds considerable potential for improving infrastructure and access to essential services for people in emerging markets. However, challenges faced and posed by governments, consumers, investors and lenders mean that forming and implementing such partnerships is not an easy task. On the international stage, the IFC can play a vital role in synthesizing these interests by providing transaction advice and helping to structure and implement deals with respective government clients. Through thoroughly analyzing the project concept and objectives; reviewing potential PPP options; undertaking financial modeling; engaging with prospective investors; and preparing the contract document as well as tender assessment, the IFC can maximize opportunities for successful transactions.

To date, the role of gender in PPPs and related transaction processes has received little attention. Recognizing this, the IFC's overall objective for this study was to enable its Public Private Partnership Business Line (PPP BL) to measure and articulate the impact of the PPP projects in which it is involved on women and girls. The brief required an analysis of six infrastructure sectors: agri-infrastructure; health; energy, industrial, transport and water/waste.

The key questions for the research, as defined by the IFC, were:

- What are the potential impacts on women and girls of infrastructure projects?
- What are the differences, if any, in terms of gender impact, between PPP projects and traditional public works projects?
- What are the conditions/project design features which could enable PPP/privately funded infrastructure projects to have a positive gender impact without compromising on the overall economic rate of return of the project?⁴

1.2 Methodology

This report explores potential gender impacts of infrastructure projects delivered through PPP agreements across six sectors:

- **Agriculture infrastructure** – comprising a range of areas including infrastructure that supports: on-farm production such as irrigation and cultivation, pre-and post-harvest storage and livestock storage; the effective transportation and trade of farm produce; and the sustainability of the agri-economy market sector.
- **Energy infrastructure** – covering energy production, transmission, storage and distribution, including electricity, oil and gas, renewables, hydro and tidal power, and energy recovery from non-recyclable waste as well as power plants, electricity grids, solar panels, and wind turbines.
- **Health infrastructure** – referring to infrastructure that supports the effective delivery of health care services across all health care levels, from local clinics and health centers to major acute hospitals and specialist centers.

⁴ IFC (2011, A): Op. cit.
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- **Industrial infrastructure** – encompassing both light industry, which comprises consumer-oriented production such as the manufacture of clothing, furniture, consumer electronics and home appliances; and also heavy industry, which focuses on the capital-intensive production of raw materials for large plant production such as ships, heavy machinery and locomotives.
- **Transport infrastructure** – covering the movement of people and goods using all modes of transport from road, rail, air and marine travel to traveling by bicycle or foot, whether using private means or public transport. Also included within the transport sector are all types of travel networks which allow travel to take place and support the effective distribution of goods and services, such as roads, railways, waterways and footpaths, and associated user facilities such as bus and rail stations, ports, service and rest areas, depots and transshipment facilities, maintenance facilities and airports.
- **Water and waste infrastructure** – comprising the development, operation and maintenance of water supply and sanitation infrastructure including water resources, water treatment facilities and water distribution systems together with sewerage systems and wastewater and wastewater sludge treatment facilities.

The relevance of PPP to each of these six sectors is discussed in more detail in Appendix A.

The first key deliverable of the project was the production of six sector-based literature review reports, covering:

- The types of gender impacts associated with infrastructure projects in the sector.
- The extent to and way in which gender is mainstreamed into design and implementation within the sector.
- How infrastructure projects in the sector have contributed to positive gender impacts.
- Whether there are discernible differences between PPP projects and other publicly funded infrastructure.
- The indicators which are available to monitor and evaluate projects' impact on women and girls.
- A sector-specific matrix setting out conditions and project designs to facilitate the delivery of positive gender impacts.

The conclusions from the sector based literature reviews, and the more general review of infrastructure and gender, are that there is very little empirical evidence available on mainstreaming gender considerations into project design, especially in the case of PPP projects. Evidence is similarly scarce on actual demonstrable impacts on women and girls. Where documents do link gender to infrastructure design and delivery to gender, in the main they talk about *potential* impacts only.

1.3 This report

This synthesis report has two main objectives:

Objective One: The report reflects a combination of evidence drawn from the *review of existing literature* across all six infrastructure sectors and international policy sources and guidance documents. It draws on observed trends so as to:

- Highlight ways in which gender is being or can be incorporated into projects.
- Set out the type of impacts that women could experience when they do have access to new infrastructure.

Objective Two: The second objective and key tenet of the report has been the development of a high level forecasting tool to enable IFC project managers to estimate the number of women who could benefit from access to new infrastructure.

1.3.1 Report structure

The report is structured as follows:

Chapter Two of this report sets out the suggested '**Female Beneficiary Estimation Tool**'. This is a forecasting methodology to allow IFC project managers to estimate the number of women who will gain **access to the infrastructure** as a result of the development. The tool suggested is based on four criteria to allow a calculation which takes into account total beneficiary numbers, the gender inequality within the country in which the infrastructure is located, the infrastructure sector and the extent to which gender mainstreaming has been, or will be considered as part of project design and implementation. This chapter suggests why some sectors more than others will have greater impact on women's access to infrastructure. The ambition of the tool is to be useable where data is scarce (as is often the case in developing countries) and to provide a means to *estimate* the number of women and girls that could be impacted.

There are a number of caveats to be borne in mind when the tool is applied, which are discussed in detail in Chapter 2. Given that the tool has been developed as a proxy for reliable disaggregated data on gender guidance, it is suggested there be a pilot phase with IFC staff to identify and remedy any unanticipated glitches.

Given the lack of data available to inform a complex forecasting methodology, this report also includes options for tools which include fewer variables – one of which does not take into consideration the sector influence and one which takes into account neither the sector nor the gender mainstreaming variables. These lack the same level of sophistication as they do not make reference to the way in which different types of infrastructure can affect women to differing degrees, but they rely less on forecasting multipliers which, as mentioned above, would be sensible to pilot.

Chapter Three sets out the importance of considering gender in infrastructure projects and identifies ways in which this can be done. It discusses qualitative approaches to **gender mainstreaming** focused around the development of gender disaggregated priority indicators and a series of interventions or design features that can help infrastructure projects realise positive impacts for women and girls.

Chapter Four provides a discussion on wider gender impacts which infrastructure projects can potentially help to realise. It sets out the existing challenges faced by women and girls across the six sectors and highlights how access to infrastructure can help to overcome these. This chapter is based largely on academic hypotheses as the literature is scant in terms of 'real' case study evidence. Where there are project examples, however, these are illustrated. This chapter is necessarily qualitative due to the absence of any numeric data to support any form of quantitative calculation. It is intended to appraise IFC project managers about the **type of benefits** their projects have the potential to deliver.

2. Estimating gender impacts of infrastructure projects

This chapter outlines a proposed methodology for forecasting the impacts of infrastructure projects on women and girls.

2.1 Forecasting impacts - the challenge

Whilst there is no shortage of policy and project advice about the ways in which to mainstream gender into project delivery and the indicators that can be used to monitor it (see Chapter 3), there is a conspicuous absence of means to estimate the gender benefits that infrastructure projects can deliver. This absence is symptomatic of a variety of reasons:

- Gender discourse is firmly on the international policy agenda but it is still relatively new in terms of policy priorities. Private developers and donors are accustomed to considering environmental and social impacts, which have long been incorporated into project appraisal and reporting, and the linkages with poverty are becoming more commonly addressed. Comparatively, gender as a specific criterion is a relative newcomer to the priority list.
- Gender-disaggregated data is not easy to find and often does not exist, making it impossible to measure the gender impact of infrastructure in a cost effective way.
- The types of infrastructure and the variety of countries in which both traditionally financed and PPP projects are developed are hugely diverse. It is unlikely that any two scenarios will be the same. Gender needs and impacts for an irrigation scheme in South East Asia would be vastly different from those in Sub Saharan Africa. The divergence among countries in the same regions is likely to be equally as pronounced. Developing a tool which can accommodate such diversity whilst delivering reasonably reliable results is not an easy task.

The absence of a way in which to estimate impacts of infrastructure projects on gender poses IFC and its international communities a challenge. The literature and policy review for this study highlighted that there is no shortage of desire to promote the cause of gender equality as testified by the Convention for the Elimination of all forms of Discrimination Against Women (CEDAW), Millennium Development Goals (MDGs) and the range of publications and guidance from the World Bank, the Department for International Development (DFID), Asian Development Bank (ADB), African Development Bank (AfDB), Canadian International Development Agency (CIDA) and other international agencies alike. However, with a lack of disaggregated baseline data and very few case studies from which to learn, there exists no way of measuring success at meeting strong policy commitments towards realizing gender benefits.

The difficulties in developing a tool can be tackled to provide an *estimate* of the way in which sector based infrastructure may realize gender benefits and associated economic benefits. As described above, the present lack of sector and country specific gender disaggregated data poses many limitations with regard to specificity. However, forecasting is not rendered impossible because there are some international datasets which provide scope to at least ***estimate the number of female beneficiaries of a new infrastructure asset***. It is possible to provide a high level forecast of the number and proportion of females who will ***benefit in terms of access to the new infrastructure***.

The remainder of this chapter sets out the rationale behind and the function of a proposed '**Female Beneficiary Estimation Tool**' and provides a series of case study examples. In Appendix B we have provided text to support two further versions of the tool following discussion with IFC colleagues.

2.2 A suggested approach to forecasting impacts

Ideally for any given project there would actually be a predicted number of female beneficiaries which would negate the need to employ a forecasting tool at all. However, based on existing evidence, few infrastructure projects include a beneficiary estimate disaggregated by gender. In the absence of this data, to estimate the number of women and girls likely to benefit from a specific infrastructure project, **default parameters** need to be established. These parameters are suggested as the best available data, in the absence of project specific information.

It is suggested that default parameters are drawn from two main sources:

- The World Bank's gender statistics database⁵, which is publicly accessible, easy to use, and regularly updated. The database provides data on the proportional split of males and females in countries around the world.
- The United Nations Development Programme's (UNDP) Gender Inequality Index⁶. This index is based on five different indicators (maternal mortality; adolescent fertility; parliamentary representation; educational attainment at secondary level and above; and labor force participation) covering three dimensions (reproductive health; empowerment; and labor market). It is designed to show the loss in human development due to inequality between female and male achievements in these dimensions. More detail on this is provided in section 2.2.2 below.

The proposed tool comprises four main variables, all of which are explored further in Section 2.2:

1. **Population:** this is the starting point. 'Population' is defined as the total number of beneficiaries of the project.
2. **Gender inequality adjustment:** where gender inequality is acute, there is a higher likelihood that gender inequalities will be reinforced rather than alleviated, unless conscious action is undertaken to make sure that this is not the case.⁷ As such it is appropriate to take account of this risk within the forecasting methodology.
3. **Sector type adjustment:** The literature reviews investigated gender impacts in relation to six infrastructure sectors and found that each sector has a different relevance to women. The available evidence suggests that the benefits that women can derive from different types of infrastructure can vary considerably. It is considered that this variation among sectors is necessary to reflect in the estimation of female beneficiaries.
4. **Gender mainstreaming adjustment:** The final variable is an allowance for the extent to which a given project has or is planning to include gender mainstreaming activity as part of the planning, design, financing and implementation stages of the project.

2.2.1 Population

The tool starts with information on the total number of projected beneficiaries for the infrastructure in question. This will be available in the vast majority of cases with which the IFC is involved because effectively structured PPP contracts are dependent on this information.

It is expected that in very few instances will the number of beneficiaries be disaggregated by gender. In order to overcome this, the proportion of women in the national population can be used as a multiplier.

⁵ <http://databank.worldbank.org/Data/Views/VariableSelection/SelectVariables.aspx?source=Gender%20Statistics>

⁶ See <http://hdr.undp.org/en/statistics/gii/> it should be noted that the Gender Inequality Index faces major data limitations. The labor market dimension lacks information on incomes, employment and on unpaid work by women. The Index misses other important dimensions, such as time use. For instance, the fact that many women have the additional burden of care giving and housekeeping which cut into leisure time and increase stress and physical exhaustion. Asset ownership, gender-based violence and participation in community decision-making are also not captured, mainly due to limited data availability

⁷ DFID (2008): 'The Gender Manual'
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The dataset considered most reliable for these purposes (as indicated above) is taken from the World Bank.⁸ This data set takes the basic assumption that the gender split is '50/50' and modifies it by numerous factors, including migration, war, and selective control of reproduction.

The proportion of females in any national population (and other data such as the total female population) is available at: <http://databank.worldbank.org/Data/Views/VariableSelection/SelectVariables.aspx?source=Gender%20Statistics>.

2.2.2 Gender inequality adjustment

The gender inequality adjustment depends on the degree of gender inequality in the country. Given the evidence documented in this report (see section 3.1 below), it is assumed that the greater the level of inequality within a country, the lower the project's proportion of female beneficiaries. In order to integrate this factor into the estimation tool, the UN Gender Inequality (GI) Index⁹ (as indicated above) is useful. The Index has theoretical limits of 0 (perfect equality) to 1 (perfect inequality). For instance, in 2011, the values at each end of the inequality scale were 0.049 for Sweden and 0.769 for the Yemen.

In order to integrate this into the tool, it is recommended that a gender inequality adjustment figure of 1 plus one-tenth of the GI Index is applied as a divisor to the number of estimated female beneficiaries. **For example, the UN GI Index for the Yemen is 0.769 so the suggested gender-inequality adjustment is 1.0769.**

The gender inequality reduction changes the number of female beneficiaries by approximately one-tenth of the amount of the GI Index expressed as a percentage. Taking the extreme values in the Index, the calculation reduces the number of beneficiaries by a negligible amount (0.49 percent) in Sweden, but by 7.69 percent in the Yemen. This appears plausible when taken alongside the other elements of the formula. However, this judgment can be endorsed or revised as appropriate following the suggested tool pilot.

It should be noted that the UN GI Index does not contain values for every country. In order for the tool to have as universal utility as possible, values have been estimated for these countries. Largely this has been done by using the closest regional comparator; further detail can be found in Appendix C. It must be stressed that these are proxy values only and should be replaced if the UN GI Index is updated to fill the current gaps.¹⁰

2.2.3 Sector and gender mainstreaming adjustments

The third suggested multiplier accounts for the differences among the six infrastructure sectors. In table 2.1 below we outline the schema proposed for this and the supporting rationale, which is based upon the literature review and examples of actual projects. The key conclusion that can be drawn with regard to impacts across the six different infrastructure sectors is that certain sectors may require a higher multiplier compared to others. This is informed by the in-depth literature review into the sector specific evidence (see Chapter 4).

⁸ <http://databank.worldbank.org/Data/Views/VariableSelection/SelectVariables.aspx?source=Gender%20Statistics>

⁹ <http://hdr.undp.org/en/statistics/gii/>

¹⁰ Further it should be noted that when the tool is updated, which it will need to be as World Bank Population data and UN GI Index data is renewed, these proxy values will also need to be manually updated based on the rationale set out in the Appendix.

Table 2.1: Sector Adjustment Categorization

Sector	Proposed Access Impact	Justification
Agriculture	Medium-High	<p>Women comprise a large part of the agricultural labor force in terms of cultivating, harvesting and packaging crops. The Food and Agricultural Organization for the UN (FAO) estimates that in Asia and sub-Saharan Africa, almost 50 percent of the agricultural labor force is made up of women, with some top end estimates as high as 90 percent.¹¹ Development of agricultural infrastructure has the potential to give females significant access to impacts.</p> <p><i>However</i>, there are some limitations to these benefits of access being realized; women are much less involved in local community structures where decisions are being taken on the selection of priorities for and the location of agricultural infrastructure. For example in South Africa, WaterAid found that while 30 percent of people in the planning process were women, many felt unable to voice their opinions due to cultural reasons and a lack of information.¹² Systems designed to manage water for irrigation can often be weighted in favor of male concerns and often ignore gender differences, thereby limiting the potential for women's uptake.¹³ In addition, women generally own much less land than men (often caused by inheritance laws that are unfavorable to women).¹⁴ All of these issues could limit female access to the infrastructure improvements.</p>
Energy	Medium	<p>Development of energy infrastructure in urban and rural areas is likely to have a high impact on women who tend to be responsible for securing energy sources (typically, likely to be firewood and charcoal) for domestic purposes and basic needs such as cooking, lighting and heating and for use in cottage industries and the informal sector. They can spend a significant proportion of their time on basic survival activities¹⁵ including gathering wood, cooking inefficiently, crop processing by hand, and manual farming work, even in more urban or domesticated environments. Given the traditional role played by women in terms of domestic energy source provision, there is potential for women to be amongst the primary beneficiaries.</p> <p><i>However</i> their traditionally reduced income and poorer (or non-existent) access to credit limits females' ability to invest in connection to the electricity grid for example, thereby limiting the productivity of their labor.¹⁶ This can be an issue affecting female-headed households or where the male head of the household does prioritize spending on domestic energy. Literature largely suggests that women's energy uses and needs have been generally overlooked, especially as PPP projects are often biased towards energy provision in more of a commercial market, rather than domestic use.¹⁷ These factors could limit women's access to new energy sources.</p>
Health	High	<p>Women and girls generally have higher need for health facilities,¹⁸ especially with regard to treatment before, during and after pregnancy which lead to disproportionate need for medical attention. Women therefore have higher health costs in comparison to men due to greater use of services. Additionally, women often have poorer access to health services as they are more likely to be poor, unemployed or engaged in part-time work or household work.¹⁹ Women, as compared to men, are therefore expected to be the chief beneficiary group of improved health infrastructure.</p> <p>However, a couple of caveats need to be noted. There are some inherent barriers for women in accessing healthcare; not least amongst them is the cost of health service provision. Even if the infrastructure is available, financial means may not be sufficient to guarantee patronage for all local women. In addition, inadequate participation by women in the planning and managing of health services' programmes means that there is often an insufficient appreciation of other factors that affect women's access to health services including: timing of services, lack of time for women, distance, lack of money for transportation, restrictions on women's movement in public, lack of female staff in clinics, lack of privacy for examination, complicated or intimidating procedures, and poor facilities.²⁰ These issues could inhibit access.</p>

¹¹ FAO (2011): 'The Role of women in Agriculture'. See: <http://www.fao.org/docrep/013/am307e/am307e00.pdf>

¹² WaterAid (undated) 'Gender aspects of water and sanitation'

¹³ FAO, Sustainable Development Department, (November 2006): 'Towards Sustainable Food Security: Women and Water Resources,' prepared by the Women in Development Service (SDWW), FAO Women and Population Division. Available at <http://www.fao.org/sd/fsdirect/fbdirect/FSP003.htm>

¹⁴ The International Bank for Reconstruction and Development/The World Bank (2009, A): World Bank: 'Gender in agriculture sourcebook', Module 6: 'Gender mainstreaming in agricultural water management'.

¹⁵ Clancy, J., S. Oparaocha, and U. Roehr (2004): 'Gender Equity and Renewable Energies'

¹⁶ Thorsen, K.T et al for NORAD (2011): 'Gender Equality in Financing Energy for All: Gender-responsive energy financing can contribute to basic human rights and economic efficiency'

¹⁷ Khamati-Njenga, B and J. Clancy for ENERGIA (2003): 'Concepts and Issues in Gender and Energy'

¹⁸ WHO (2009): 'Women and Health: Today's Evidence; Tomorrow's Agenda'

¹⁹ WHO (2009): *ibid.*

²⁰ AfDB (2009, A): 'Gender Mainstreaming Checklist For the Health Sector'

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<p>Industrial</p>	<p>Low</p>	<p>There is a clear gender imbalance within the employee base of the industrial and manufacturing sector, which is predominantly male oriented. The World Bank's 2012 World Development Report on Gender Equality and Development identifies that the employee base of the manufacturing sector the world over is predominantly male. Research into gender equality in the labor market suggests that for many women in the industrial sector 'employment is casual, temporary, and flexible in nature, with poor working conditions.'²¹ The industrial sector is in a weaker position to deliver direct access impacts than the other sectors considered in this review. Even where manufacturing plants are established, access to them by women is likely to be quite limited, especially without conscious action reflected in human resources policy.</p>
<p>Transport</p>	<p>Low - Medium</p>	<p>Women's social roles as income earners, home-makers, and community managers require them to make more trips than men Their trips tend to be shorter in length, but more frequent and more dispersed during the day.²² Given women's responsibilities for fetching food, water and fuel women spend a lot of their time traveling, and this is often by foot. For example, In Africa it is estimated that 87 percent of transport takes place on foot with women contributing up to 62 percent of the household's traveling time. ²³ Given traditional female roles and their need to travel for vital goods, improvement of roads, transportation and services could see many women accessing this type of infrastructure. However, it should be noted that impact is likely to be higher for public transport projects rather than road infrastructure because, women will not be equal beneficiaries without access to a private vehicle.</p>
<p>Water</p>	<p>High</p>	<p>In developing countries women are largely responsible for managing access to water for food preparation, drinking, bathing and washing and therefore will be those most likely to benefit from better access. A recent study by UNICEF and the World Health Organization (WHO) analyzed 25 countries in sub-Saharan Africa, representing 48 percent of the region's population. It identified that women and girls bear the primary responsibility for water collection, at considerable cost in terms of their time.²⁴ Only a quarter of the population in these countries had a water connection on their premises in 2010, meaning that in 75 percent of households, water had to be collected from a source some distance from the dwelling. In 71 percent of all households without water on the premises, women or girls were found to be primarily responsible for water collection. Due to the primary responsibilities of women, the provision of water infrastructure is likely to benefit women to a large extent.</p>
<p>Waste²⁵</p>	<p>Medium</p>	<p>The differential roles of women and men are frequently evident in the household dynamics surrounding waste management. Given women's primary responsibility for cleaning, food preparation, family health, laundry, and household maintenance, women are primarily responsible for the disposal of domestic waste. ²⁶ Therefore, there is the potential for waste facilities to be frequently used by women. However, women do not always have equal input into the allocation of family finances and therefore, household resources may not be spent on taking advantage of waste infrastructure.²⁷ In addition, evidence shows that men are more likely to have access to institutions that set priorities and make decisions regarding municipal infrastructure and community consultations processes often fail to take gender inequalities into consideration and thus neglect women's preferences. These issues are likely to limit women's access to waste infrastructure.</p>

²¹ van der Meulen Rodgers, Yana. Menon, Nidhiya. (2008): 'Trade Policy Liberalization and Gender Equality in the Labor Market: New Evidence for India'. See: http://people.brandeis.edu/~nmenon/RUWAR_Chapter_Rodgers&Menon.pdf

²² World Bank (2010, A): 'Social development and infrastructure: Making work for women and men, tools for task teams'.

²³ Multilateral Development Banks (MDB) Gender Working Group (2011): 'Gender and Infrastructure Workshop for the Africa Region: Concept Note, February 13, 2011. Mainstreaming Gender Equality in Infrastructure in the Africa Region'.

²⁴ UNICEF and WHO (2012): 'Progress on Drinking Water and Sanitation 2012 Update'

²⁵ Whilst this project was commissioned to look at water and waste as one integrated sector, from the evidence review it is considered that the potential benefits to women that these infrastructure sectors can deliver is different. As such they have been subdivided for the purposes of the type adjustment.

²⁶ Woroniuk, B. and Schalkwyk, J. (1998): 'Waste disposal & equality between women and men'

²⁷ Scheinberg, A, Muller, M and Tasheva, E. on behalf of the Urban Waste Expertise Programme (1999): 'Working Document 12 - Gender and waste: Integrating gender into community waste management: Project management insights and tips' 301966/ITD/ITN/F/November 2012

Table 2.2 below converts the above assumptions about sector types into multiplier values for use in the calculation tool. Each sector has a 'base' multiplier (shown in the first column of numbers) based on the qualitative assessments above. These base multipliers are premised on the assumption that the PPP project design, development and implementation has not integrated any gender considerations, nor are there plans to do so.

There are four further columns in the table which are designed to reflect the level to which gender mainstreaming activities do form part of the project plan (see Chapter 3 for more detail).

As identified elsewhere in this report, studies that evaluate or compare the relative importance or success of different mainstreaming activities are lacking; however, the assumption has been made that the various mainstreaming methods that are proposed by a wide range of international literature will deliver positive rewards in terms of the ability of women to access new infrastructure.

Table 2.2: Gender Mainstreaming Multipliers by Sector

Sector	No evidence of gender mainstreaming	1-3 gender mainstreaming actions planned	4-6 gender mainstreaming actions planned	7-9 gender mainstreaming actions planned	>10 gender mainstreaming actions planned
Agriculture	0.85	0.90	0.95	1.00	1.05
Energy	0.80	0.85	0.90	0.95	1.00
Health	0.90	0.95	1.00	1.05	1.10
Industrial	0.60	0.65	0.70	0.75	0.80
Transport	0.75	0.80	0.85	0.90	0.95
Water	0.90	0.95	1.00	1.05	1.10
Waste	0.80	0.85	0.90	0.95	1.00

2.2.4 Demonstrating the tool's use – case study examples

To demonstrate the utility of the tool the remainder of this chapter showcases five sector specific case study examples, using real PPP projects in which the IFC has been involved. Additional case study examples can also be found in Appendix D.

Case Study: Mexico: Toluca and Tlalnepantla Hospitals

Public health care, fully or partially subsidized by the federal government, is provided to all Mexican citizens. But Mexico lags behind other comparable countries in health status and health care availability. Public hospitals account for the majority of hospital beds; most private hospitals accommodate fewer than 20 inpatients.

An improved health care system was needed in Toluca, the capital of Mexico State and centre of a rapidly growing urban area. Its geographic position and proximity to Mexico City created a major industrial zone in Toluca, but health care accommodations did not meet peoples' needs. Similarly, in Tlalnepantla, whose industrial zone is one of the largest in the country, the lack of a modern public hospital forced residents to seek care elsewhere, or manage without critical services and facilities.

The contracts for hospitals in both locations were signed in 2010. In Toluca, the contract was awarded to the Prodemex consortium, who will invest \$60 million on the construction and equipment during the one-year period following completion of the final design. In Tlalnepantla, the contract was awarded to Marhnos, a privately held group. It is expected that Marhnos will invest \$60 million in construction and equipment during the one-year period following financial closure. The new hospitals will replace outdated facilities and provide patients with improved services while creating a business model for optimal health care in the state. Hospital operations are expected to be complete by June 2012 and the two hospitals combined will benefit approximately **one million people**.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Mexico
Step 2	Population	
	Enter the total number of beneficiaries	1,000,000
	Female proportion of the nation [populates automatically]	50.68%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.45
	Gender inequality adjustment [populates automatically]	1.045
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Health
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.90
Result	Estimated number of females amongst all beneficiaries	436,586

Source: IFC 'Success Stories', Mexico: Toluca and Tlalnepantla Hospitals

http://www1.ifc.org/wps/wcm/connect/1b1acf00498390978294d2336b93d75f/SuccessStories_MexicoHospitals.pdf?MOD=AJPERES

Case Study: Egypt: New Cairo Wastewater

New Cairo City, a satellite town of Greater Cairo, is being promoted as one of the new centers to alleviate overcrowding in the city centre. New Cairo's current population of 550,000 is expected to increase to approximately 3 million by 2029. The rapid population growth and inadequate water sanitation infrastructure are placing serious strains on the city's ability to provide adequate services.

The Government has made the expansion and improvement of New Cairo's infrastructure a priority and sought IFC's help to develop and implement a model PPP that can be replicated in other infrastructure projects. PPPs are at the heart of the Government's long-term economic development strategy, together with the mobilization of private sector finance and know-how.

A consortium of Egypt's Orascom Construction Industries and Spain's Aqualia (Orasqualia) won the bid for PPP to build, operate and transfer a 250,000 m³/day treatment plant, which is expected to mobilize private investments totaling US\$150–200 million. The new wastewater treatment plan was completed in 2012, benefiting approximately **three million people**.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Egypt, Arab Rep.
Step 2	Population	
	Enter the total number of beneficiaries	3,000,000
	Female proportion of the nation [populates automatically]	49.79%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.00
	Gender inequality adjustment [populates automatically]	1.000
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Water
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.90
Result	Estimated number of females amongst all beneficiaries	1,344,329

Source: IFC 'Success Stories', Egypt: New Cairo Wastewater

http://www1.ifc.org/wps/wcm/connect/b21864804983906081ecd3336b93d75f/SuccessStories_NCWWweb.pdf?MOD=AJPERES

Case Study: Colombia: Ruta del Sol Road Concession

Like other countries in Latin America, in the last 20 years Colombia has been expanding its road network through different concession models. As a result, a number of projects have been awarded under a broad range of contractual structures. Over the years, however, many of these projects suffered construction and maintenance delays, leading to contract renegotiations and in some cases early termination. In addition, these projects attracted very limited participation from international investors and local pension funds. This situation led Colombia's National Concessions Institute (INCO) to seek assistance from IFC.

Extending more than 1,000 kilometers, Ruta del Sol was one of the most important missing pieces of Colombia's concession program. Following a failed attempt to concession it in the early 1990s, in 2007 Colombia's Ministries of Transport, Finance and Planning jointly requested IFC assistance to structure a new concession for the project and help prepare a bidding and contractual structure that could become a model for future road concessions. The project was structured into three different parts, with each part awarded to three different consortiums.

Ruta del Sol will provide better access and improved services for 10.5 million vehicles. It is important to note that we have assumed that this is the total beneficiaries in this case, although this will not necessarily be the case.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Colombia
Step 2	Population	
	Enter the total number of beneficiaries	10,500,000
	Female proportion of the nation [populates automatically]	50.82%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.48
	Gender inequality adjustment [populates automatically]	1.048
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Transport
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.75
Result	Estimated number of females amongst all beneficiaries	3,817,675

Source: IFC 'Success Stories', Colombia: Ruta del Sol

http://www1.ifc.org/wps/wcm/connect/d10f17804983918284e4d6336b93d75f/SuccessStories_RutaDelSol.pdf?MOD=AJPERES

Case Study: Albania: Ashta Hydropower Plant

Albania, once a net exporter of electricity, has been unable to keep pace with increasing domestic demand. Power outages are common. Many parts of the country, including the capital Tirana, suffer from extended daily outages. Hydropower accounts for more than 90 percent of total electricity, yet existing hydropower plants date back to the 1970s. Albania has not invested in any type of new power plant since 1985. Despite good GDP growth and a reformist government, Albania has been unable to attract international investors for large infrastructure projects.

The Ashta hydropower plant will be Albania's first major hydropower plant construction in 30 years and the Government's first large PPP in the energy sector. IFC played a key role in helping Albania structure and implement the project and in attracting a strong and reliable international investor. Verbund, Austria's largest electricity company, won the 35-year concession to build and operate the new hydropower plant and will invest more than €166 million in the project. The Government's savings on electricity imports are estimated to exceed €35 million in the first five years of plant operations. The transaction was completed in September 2008.

The project will increase Albania's power generation capacity by almost 50MW, and will improve services for **170,000 people** or 5 percent of the country's population. Furthermore, it will bring an estimated €166 million of direct foreign investment into the country.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Albania
Step 2	Population	
	Enter the total number of beneficiaries	170,000
	Female proportion of the nation [populates automatically]	49.95%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.27
	Gender inequality adjustment [populates automatically]	1.027
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Energy and Power
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.80
Result	Estimated number of females amongst all beneficiaries	66,131

Source: IFC 'Success Stories', Albania: Ashta Hydropower Plant

http://www1.ifc.org/wps/wcm/connect/e730ce00498391aa858cd7336b93d75f/SuccessStories_AshtaWEB.pdf?MOD=AJPERES

Case Study: Morocco: Guerdane Irrigation

The perimeter of Guerdane in the Province of Taroudant covers approximately 10,000 hectares and produces 50 percent of

Morocco's citrus crops. For years, private wells pumping into the Souss underground aquifer were the only source of irrigation water for some 600 citrus farmers, but due to overexploitation, the level of groundwater was decreasing by an average 2.5 meters a year. Many farms were abandoned as private wells dried up or pumping costs became unaffordable. The threat to Morocco's high value citrus industry was undeniable.

To alleviate the lack of water in the perimeter, the 1995 Watershed Management Plan of Souss-Massa allocated an average yearly volume of 45 million cubic meters of water originating from the Mohamed Mokhtar Soussi-Aoulouz dams, about 40 miles away. The government sought a private partner to construct both a 300 kilometer water irrigation network to transport the water, and a distribution system to deliver it to farmers based on the size of their citrus groves. The surface water allocated for the project met half of the water needs of the citrus farms in the perimeter.

The transaction was structured as a 30-year concession to build, co-finance, and manage an irrigation network to channel water from the dam complex and distribute it to farmers in Guerdane. The total project cost was estimated at US\$85 million, with the Moroccan government providing US\$50 million, half as a grant and half as a subsidized loan. The private partner provided the balance.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Morocco
Step 2	Population	
	Enter the total number of beneficiaries	100,000
	Female proportion of the nation [populates automatically]	51.01%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.51
	Gender inequality adjustment [populates automatically]	1.051
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Agriculture
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.85
Result	Estimated number of females amongst all beneficiaries	41,251

Source: IFC 'Success Stories', Morocco: Guerdane Irrigation

http://www1.ifc.org/wps/wcm/connect/37eff900498391a2855cd7336b93d75f/SuccessStories_Guerdane.pdf?MOD=AJPERES

2.2.5 Caveats and assumptions for the Female Beneficiary Estimation Tool

The above table and overall tool need to be read in conjunction with the following caveats:

- Project managers will be required to exercise their professional judgment as to the extent of mainstreaming activity that is being undertaken. It is assumed likely that the column on “no evidence” will be the one most regularly applied.
- All sectors in the *base case scenario* are assumed to have less access impact for women than men due to some of the financial and institutional factors highlighted in table 2.1 above.
- Across all sectors, the scale relating to evidence of gender activity increases by increments of 0.05 so as to be consistent and to retain simplicity. A more sophisticated approach is not feasible without empirical evidence.
- Only in the cases of the water, health and agriculture sectors has it been assumed that the infrastructure could have the ability to have more impact on women than men (hence the application of a multiplier that is over 1.00). It is recognized that in exceptional circumstances (notably where the gender inequality is very low) this could result in an anomaly where the projected number of female beneficiaries is higher than the number of women within the given population. In any such exceptional circumstances the number of women with access benefits would necessarily need to be capped at the population threshold.
- The mathematical calculations are a means of giving effect to qualitative assessments and should not be regarded as more precise than the general statements in the text. Future input of empirical evidence could refine the calculations and they should be revisited after the pilot phase that we suggest.
- The above tool does not seek to differentiate between PPP infrastructure projects and those that are traditionally financed. At present evidence is not available to inform a bespoke PPP tool as distinct to other types of infrastructure development.
- A final important caveat is that this tool helps to provide an answer to the question ‘how many women will benefit from access to new or improved infrastructure’. It does not, however, seek to answer the question ‘how will women benefit?’ or ‘to what extent will women benefit?’ It is essential to highlight that ‘access’ is only one of many impacts that infrastructure can realize for women and girls. This study has uncovered four other principal ‘channels’ of both direct and indirect impacts: time; economic activity and resources; health and safety; and planning, policy and decision-making (see Chapter 4). However, the tool described above does not attempt to quantify these impacts due to the present paucity of quantified data. Few empirical studies exist to demonstrate the gains in terms of alternative uses of women’s time, or social externalities from investments in infrastructural improvements. As such, without considerable improvement in baseline data collection during implementation and operation stages and the establishment of robust performance indicators, a quantified estimation of benefits is rendered very difficult.

Acknowledging some of the above caveats, and in discussions with the client, two alternative tool models have been developed which rely on fewer variables and rely on data that is more readily available at present. These are set out in Appendix B. Option 2 of the tool removes both the sector adjustment and the gender mainstreaming adjustment whilst Option 3 has no sector adjustment, but still retains the gender mainstreaming variable. These versions have been created so as to provide the IFC with alternatives during the pilot stage.

3. Mainstreaming gender into infrastructure projects

This chapter discusses the ascendance of gender mainstreaming on the global policy stage, its importance in terms of realizing gender impacts and mainstreaming actions which can be put in place during project design and delivery. It is intended as a concise overview and presents references and a wide range of tools to more detailed information.

3.1 The importance of gender mainstreaming

Infrastructure, a lack of adequate infrastructure, and projects designed to address deficiencies in infrastructure provision are often assumed to be gender neutral. However, the different responsibilities and constraints faced by men and women, in both the developed and the developing worlds, mean that demand for infrastructure facilities by gender is not the same.²⁸ Men and women have different needs for the type and physical location of infrastructure and different priorities for infrastructure services and maintenance.²⁹ Well designed, appropriately located and affordably priced infrastructure can be a powerful tool in pursuit of women and girls' access to and benefit from infrastructure projects – in this case PPP projects. However, this review has identified that in order to fully realize gender, projects need to be informed by a gender 'perspective' rather than being based on the assumption that women and men will automatically benefit from the new infrastructure equally.

'In societies where men and women do not enjoy equal influence, opportunities and resources, the default is that policies and programmes reinforce gender inequality unless active steps are taken to make sure that girls' and women's interests are addressed and women are actively involved'
(DFID)³⁰

Our findings from the literature on six infrastructure sectors are that benefits for women and girls are increased by 'gender mainstreaming' action as part of the project lifecycle. One of the key common assertions across the literature reviewed as part of this study is that, without taking conscious action throughout the project lifecycle, the realization of positive impacts for women, in terms of both numbers affected and types of benefits experienced, is likely to be minimized. Essentially, benefits are dependent on 'gender mainstreaming' action as part of the project lifecycle.

UNESCO defines gender mainstreaming as the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels (global, national, institutional, community, household). It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally, and inequality is not perpetuated.³¹

²⁸ World Bank Gender and Development Group (publication date unknown): 'Infrastructure and Gender: Gender and Development Briefing Notes'

²⁹ Multilateral Development Banks (MDB) Gender Working Group (2011): Op. cit.

³⁰ DFID (2008): Op. cit.

³¹ Economic and Social Council (ECOSOC) (1997) 'Chapter IV- Coordination Segment: Coordination of the Policies and Activities of the Specialised Agencies and Other Bodies of the United Nations' in *Report of the Economic and Social Council for 1997* 301966/ITD/ITN/F/November 2012

There is growing global consensus about the importance of mainstreaming gender in infrastructure development. Many of the key international players have developed their own guidance documents and toolkits on integrating gender into the project lifecycle. See Appendix E for examples. It should be noted, however, that despite commitments at a policy level, action at project level does not yet seem to be widespread. Measuring and understanding the differential gender impacts of infrastructure projects, in terms of both traditional finance and PPP approaches, is not habitually being recognized by governments and funders. Research by the World Bank and the Organization for Economic Co-operation and Development (OECD) suggests that many infrastructure projects do not attempt to take account of the full range of positive and negative social and economic impacts of infrastructure.³²

Indeed, this review has identified that, at present, very few infrastructure projects adopt a gender perspective when setting targets or monitoring outcomes and most do not conceptualize anticipated gender impacts. The scope for meaningful monitoring and evaluation is limited and, as such, demonstrable impacts which measure gender issues are hard to find. This is true for traditional infrastructure and for PPP delivery models.

3.2 Gender mainstreaming mechanisms

The following section provides details of ways in which gender can be mainstreamed into project planning and delivery. Good practice examples have been included wherever available but there is very **little evidence** of the way in which these techniques have yielded positive gender impacts, due to the lack of gender monitoring and evaluation accompanying projects. Whilst all of the actions specified below are applicable to PPP projects, they are by no means exclusive to PPP and evidence is mostly drawn from literature on traditionally financed projects due to the scarcity of data information which links PPP and gender. Where the review has identified some opportunities for PPP to 'make a difference' in terms of gender impacts, these are highlighted below (see sections 3.26 and 3.27 in particular).

3.2.1 Action planning

Setting objectives and action planning is highlighted as an effective way in which to deliver impacts in infrastructure projects. For example, a gender assessment carried out by the ADB on its programmes found that well designed Gender Action Plans (GAPs) contributed to the achievement of overall project objectives by reducing the vulnerability of women and their families to poverty and by enhancing the sustainability of benefits to the poor.³³ Effective GAPs and projects that have been successful in realizing gender benefits, have done this using a number of approaches which can be broadly categorized under the following themes: participation of women in project development and governance; women's economic empowerment through project design; women's safety in design; gender sensitive resettlement planning; HIV/AIDS programmes; and, capacity building for developers in gender issues.

GAPs can be instrumental in ensuring that gender considerations are understood and planned for. The literature reviewed found that effective GAPs must be supported by measurement, monitoring and evaluation. In the context of developing countries the GAP process will often require sensitive support around approach, measures and rationale for internal and external monitoring and evaluation activities.

³²World Bank and OECD (2004): Op. cit.

³³ See the ADB Website for guidance on their approach to GAPs in projects. See: <http://www.adb.org/themes/gender/project-action-plans>

3.2.2 Gender analysis and impact assessment

The importance of undertaking analysis and assessment as part of the project development and design phases, and then throughout the project life cycle is emphasized across the literature. In particular, undertaking some form of gender analysis or social impact assessment as part of initial project development processes, to identify gender-specific priorities, needs and usage of, for example, water, energy or health facilities is widely recognized.³⁴ Studies by the World Bank, the DFID and the AfDB have all shown that such analysis can help projects to ensure that the specific needs of women are taken into account, the social standing of women is increased, and that appropriate facilities delivering the most needed services are supported.

Similarly, some form of social and demographic profiling of the area where the infrastructure is to be developed is urged across the guidance. In particular, using sex disaggregated data but also including social surveys, household interviews and analysis of current available data is promoted.³⁵ This can help to ensure delivery of the most appropriate services, including those with the biggest impacts on women such as maternity services within the health sector.

The inclusion of a gender specialist, a small team with dedicated gender and social skill sets or recruiting women to act as gender or social impact advisors, as part of the project development team can be an effective way of identifying whether a project might benefit or negatively impact women.³⁶

3.2.3 Involvement and consultation

There is consensus within the literature that women's and girls' benefits from infrastructure projects are enhanced when their perspective is included in the design and planning process. Historically, projects have often been designed with little participation of stakeholders, both men and women. This means that different needs were not clearly articulated and voices of marginalized groups, of which women may be one, are not included.³⁷ On the international stage, it is now widely recognized that women need to act on their own behalf with a strong voice to ensure their views are heard and taken into account. This means ensuring the involvement of women as well as men in consultation and decision-making at all levels. The inclusion of consultation and engagement requirements in lending frameworks like the Equator Principles means that in general beneficiaries have a greater opportunity to comment and present opinions on projects. It is acknowledged that meaningful consultation requires the adoption of practical measures to ensure that project information reaches women, especially poor women who experience more limitations in terms of their time and mobility.³⁸

Consultation techniques seem to be the well referenced in terms of the benefits that they can realize. For example, in an urban upgrading project in Bolivia, gender analysis and consultation led to a multi-dimensional approach, which included building sanitation facilities and providing street lighting.

As a result, it was found that areas were safer and serviced more regularly, which subsequently reduced women's vulnerability to being victims of crime and violence.³⁹

³⁴ See, for example: AfDB Group (2009): Op. cit.; DFID (2008): Op. cit.; World Bank Institute (2004): 'Public Private Partnership, Infrastructure, Gender and Poverty'; World Bank and OECD (2004): Op. cit.

³⁵ World Bank and OECD (2004): *ibid.*

³⁶ World Bank (2009): 'Mainstreaming gender into extractive industries projects'. See: http://siteresources.worldbank.org/EXTOGMC/Resources/eifd9_gender_guidance.pdf

³⁷ Multilateral Development Banks (MDB) Gender Working Group (2011): Op. cit.

³⁸ DFID (2008): Op. cit.

³⁹ DFID (2008): *ibid.*

The boxes below provide further examples of where engagement has had tangible benefits for female beneficiaries.

Case Study: Rural water supply and sanitation project, Nepal

A World Bank funded rural water supply and sanitation project implemented between 1996–2003 improved water supplies to over 1.2 million people in Nepal. An evaluation showed that women’s active participation contributed significantly to the success of water and sanitation facilities. The project also had wider implications for women, leading to their greater participation in groups (over 49,000 became involved in 1,366 microcredit groups), new village leadership roles for women, income generation activities, and the overall status of women improving. The design was highly participatory of women from the beginning and their inclusion on water user committees was a project requirement that was closely monitored. The project development objectives specifically affirmed that adequate and sustainable water supply could only be achieved by ‘empowering and providing opportunities to women and girls as the primary beneficiaries by involving them in planning, implementation and management of the schemes’.⁴⁰

Case Study: Asian Development Bank and women’s engagement in Sri Lanka

The ADB’s work across a number of sectors in Sri Lanka provides an example of good practice where gender mainstreaming and the participation of women has had a lasting and beneficial impact on women and the community. The Bank reports that this participation was particularly important in conflict-affected areas of Sri Lanka, where men were often absent.⁴¹ As a result of being involved in making decisions about the projects, women were able to adjust their other responsibilities around these additional demands on their time. Several governmental and project staff in Sri Lanka acknowledged that engaging women improved the effectiveness and efficiency of the project implementation because women’s efforts helped keep projects on schedule. Such participation enhanced women’s ownership of small infrastructure and their commitment to contribute their labor to construction. Women’s participation also had the potential to contribute to the sustainability of benefits, particularly when community based organizations (CBOs) received training, access to services and support from government agencies. The Bank concluded that involving the women in decision making ensured that their priorities for infrastructure were met, which directly contributed to the goal of improved living conditions.⁴²

⁴⁰ World Bank (2010, B): Making Infrastructure work for women and men: A Review of World Bank infrastructure projects (1995 – 2009)

⁴¹ World Bank (2010, B): *ibid.*

⁴² ADB (2010) 'Gender Equality Results in ADB projects 2010: Regional Synthesis of Rapid Gender Assessments in Indonesia, Mongolia, Sri Lanka, and Viet Nam' 301966/ITD/ITN/F/November 2012
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Case Study: National Rural Water Supply and Sanitation Project, Peru

In Peru, the World Bank is funding the National Rural Water Supply and Sanitation Project until completion in 213. The project provides access to water pumps directly benefiting women through saving them travel time to obtain water. A review found that involving women in project planning, construction and maintenance was very effective: 'women outperformed men in the quality of their construction work and in their efforts to maintain the pumps' and were 'more effective in mobilizing the community to carry out maintenance tasks, and were strong advocates for timely results from project contractors'⁴³. In addition, the review found involvement in construction has directly benefited women through enabling them to be vocal advocates and influence their community's participation. Their involvement in management decisions and important financial roles has enhanced their skills and financial capacity. As the report notes, 'women played important roles in managing the water user associations and safekeeping the money collected for the operating costs of the water systems'.⁴⁴

A word of caution about engagement techniques during infrastructure development should be noted. There are examples where attempts to involve women have not been successful due to socio-cultural constraints. Research undertaken on behalf of DFID on water projects in northern India⁴⁵ observed that there are structural barriers (bespoke to different areas and conditions) which inhibit some women from uniformly, effectively and strategically participating in water management. These constraints are deeply impacted by the social variables of class, caste, age and ethnic background, which vary in their degrees of intensity in specific local situations. These are not issues that projects alone can, or indeed should be expected to address directly. Institutional factors are frequently beyond the control of partners. It is in such circumstances that GAP approaches formulated to meet project level circumstances and build stakeholder consensus and ownership can be beneficial. The demonstration of the potential impact upon women and girls in an economic context has the potential to focus efforts on overcoming institutional and other barriers. See below.

3.2.4 Capacity building and gender mainstreaming skills

For gender issues to be comprehensively understood and appropriate action taken to increase and capture the benefits for women and girls, international guidance points to the importance of the skills, knowledge and commitment of staff involved in project development and implementation. The vast majority of the existing toolkits advise the appointment of gender specialists. For instance, the AfDB, in its advisory note on mainstreaming gender into water and sanitation infrastructure advocates full integration into the project team and sets out plans for awarding gender specialists a very high profile role in project development from the mission statement, through to implementation and evaluation.⁴⁶

Other advisory notes go further and promote gender capacity building through, for example, the integration of gender training programmes for managers or making conscious efforts to employ women in the senior decision making positions. It is not always feasible, however, for developers to meet these objectives independently; it is much more likely to be dependent on commitments across all partners involved.

⁴³ World Bank (2010, B): Op. cit.

⁴⁴ World Bank (2010, B): *ibid.*

⁴⁵ See, for example, the work of DFID, Research for Development and the Institute for Development Studies: 'Gender Issues in Management of Water Projects'. See: <http://www.dfid.gov.uk/r4d/Project/5184/Default.aspx>; and Joshi, D. and Fawcett, B.: 'Water Projects and Women's Empowerment'. See: <http://www.dfid.gov.uk/r4d/PDF/Outputs/R65752.pdf>

⁴⁶ AfDB (2009, B): Checklist for gender mainstreaming in the water and sanitation sectors'

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3.2.5 Supporting wider activity and participation

Amongst the gender mainstreaming literature from key organizations such as the World Bank, the OECD and the IFC were suggestions for encouraging wider participation across and beyond the project cycle by women. Encouraging wider participation could include supporting complementary measures and projects as part of infrastructure projects during the development stages that extend beyond the construction and management elements.⁴⁷ In the health sector, such measures could include delivery of gender specific health services, for example, as part of PPP arrangements to deliver a new hospital.⁴⁸ In the energy sector, the use of “small packaging” of energy services, for instance through prepaid electricity cards, ready boxes and small gas cylinders, promotes energy access to all and especially women from households with small incomes.

Alternatively, engaging with small scale or informal providers to deliver complementary services could increase the accessibility of water and energy services to women. For instance, providing women with sufficiently flexible credit arrangements to provide additional access⁴⁹ or means to service providers has led to some success. In particular, in the energy sector some projects try to provide credit and business training for women to establish start-ups or be service providers related to energy access, processing technologies and off grid solutions.

3.2.6 Supporting women in employment and other income-generating opportunities

A key area where PPP infrastructure projects are considered to be able to deliver gender impacts is in supporting employment and other income generating opportunities amongst women. There are three key routes by which this work can be undertaken:

- By supporting women to enter employment
- By supporting them once in employment, including qualitative improvements in employment in working terms and conditions; and
- By supporting them to participate as part of supply chains and wider economic activity.

3.2.6.1 Encouraging women's employment

There is scope within PPP arrangements to support and promote the employment of women at various stages in the project process – from design and development, through construction, to operation and maintenance. While many organizations committed to benefits for women and girls are reluctant to specify that direct targets or quotas should be used, almost all recommend using techniques designed to promote female candidates in the recruitment process and employment of women in infrastructure projects. Involvement of women in PPP infrastructure developments has the potential to increase the economic position and social standing of women through training, employment, career development and improved participation.⁵⁰

⁴⁷ World Bank Institute (2004): Op. cit.

⁴⁸ IFC (2011, B): 'Key trends in the evolution of healthcare PPPs' in 'Handshake: IFC's quarterly journal on public-private partnerships', Issue 3 (October 2011), pp.18-20

⁴⁹ World Bank Institute (2004): Op. cit.

⁵⁰ See: World Bank and OECD (2004): Op. cit.; IFC and Global Reporting Initiative (2009): 'Embedding Gender in Sustainability Reporting: A Practitioner's Guide'; World Bank (2010, B): Op. cit.

Some development organizations **do** urge the use of targets for female employment, particularly in construction jobs (including supervisory and management roles), recommending that they are inserted into concession contracts with clearly defined penalties for not meeting performance targets. It is a matter for local judgment whether targets and quotas are appropriate to the project in question.

Women's employment can be encouraged through inter alia:

- Inclusion of non-discrimination and equal opportunity measures in recruitment and employment policies and procedures.
- Involvement of women on interview panels
- Consultation with women on the project in question and the active promotion of opportunities for them to get involved including via training, apprenticeship opportunities and employment.
- Design and offer of gender sensitive training in skills associated with jobs arising during the various project phases. The potential to add on a work trial or job interview guarantee can be appealing.
- Targets of quotas for the employment of women during different phases of the PPP infrastructure project as appropriate. Targets should be balanced against the potential availability of women with the correct skills and experience, as well as the various inputs for creating the necessary abilities in unskilled workers. In particular, training women to have maintenance skills is a useful way of creating employment opportunities.
- Provision of support from trained advisers so that women who do access jobs can make a successful transition to their new employed or sector circumstances.

The challenge of the above, and indeed much of this section, is that there is little immediate added value specific to the PPP business case. Nonetheless, the outcomes do benefit women and girls in the short term and their wider communities in the medium-long term.

Case Study: The 2005 Pakistan earthquake – reconstruction and supplementary primary care

A key success of the project was the *provision of female health providers* in the district. The PPP element provided the flexibility to allow the project to recruit additional staff (including a 53 percent increase in the number of qualified professionals) with a special focus on female health providers and strengthening community-based outreach to address gender constraints in a traditional society.

In transport, there is evidence of positive action being taken to maximize impacts for women in terms of economic activity. In the World Bank financed Peru Rural Roads II Project (2001 – 2006)⁵¹ a successful approach to providing employment opportunities for women in road maintenance was developed through the modification of job description employment experience requirements. They were modified to include women's experience in agriculture and household management and the requirements for literacy were dropped.

Providing women-only facilities for workers as required can be one key strategy for improving women's capacity to remain in work. It is commonly suggested amongst the literature that developers seek to devise work plans, construction schedules, and worker residences that enable women to work according to existing social norms. Examples include ensuring safe housing, separate worker dormitories, female working groups, women only working practices, and the provision of gender relations training.⁵²

⁵¹ World Bank (2010, B): Op. cit.

⁵² IFC and Global Reporting Initiative (2009): Op. cit.; and World Bank and OECD (2004): Op. cit.
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Such measures more readily enable women to take up positions in the construction section, and have the potential to provide greater economic advantages for women through employment and training.

The development of relevant and appropriate health programmes is also widely acknowledged amongst International Financial Institutions (IFIs) and other development bodies as being an important part of ensuring the safety of women in the work environment. Many, including the World Bank, the UN and DFID have advocated, for example, HIV and AIDS awareness programs, highlighting the risks and offering advice on remaining safe are provided to workers on a range of infrastructure projects in, for example, the transport sector.

Guidance by IFIs and other development organizations, including the IFC, the World Bank, the OECD and DfID suggests the provision of employment which incorporates training and development to allow women with low skill levels to take up employment develop their technical skills and take advantage of career development opportunities. There are opportunities for this as part of construction and operational phases, each providing distinct opportunities to mainstream gender by providing for the equal development of women into supervisory and managerial positions. This latter point is particularly important, and removing barriers that prevent women from taking up senior positions could have significant wider gender impacts beyond the workplace.⁵³

The literature also suggests that skills provision could be further supplemented by encouraging female staff to join professional networks and associations. For example, in the energy sector, staff could be encouraged to join groups that actively support women, such as ENERGIA, the Women in Fuel Cells Network, Women in Renewable Energy and Development, Women of Wind Energy, and the Women's Council on Energy and the Environment.⁵⁴

3.2.6.2 Women's participation in the wider supply chain

PPP financed infrastructure projects are also able to support the economic opportunities of women through the wider supply chain, and the contracts that often accompany major infrastructure provision and maintenance. Ensuring that supply and associated contracts awarded to, or are at least available to female headed businesses can support wider economic activity and income generation by local women.⁵⁵

Setting targets (or even quotas, though, again, much of the literature is reluctant to talk in terms of quotas) or seeking to promote procurement from female headed companies can secure employment and skills development for women and, more importantly, provide livelihood opportunities for women through market infrastructure within the design and procurement stages. Examples of this are common across a range of sectors.

In the health sector, the development of a National Referral Hospital in Lesotho under a PPP contract was able to secure indirect benefits for local women as part of the supply chain. The project set performance monitoring targets for local participation, including local women and local businesses run by women.

⁵³ World Bank and OECD (2004): Op. cit.

⁵⁴ See, for example. ENERGIA: <http://www.energja.org/> ; Women in Renewable Energy and Development: <http://tech.groups.yahoo.com/group/WomenInRenewableEnergyandDevelopment/> and the Women's Council on Energy and the Environment: <http://www.wcee.org> . See the Energy Sector Report for further details on these organizations.

⁵⁵ World Bank and OECD (2004): Op. cit.; IFC and Global Reporting Initiative (2009): Op. cit.; World Bank (2010, B): Op. cit. 301966/ITD/ITN/F/November 2012
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In this case the private sector partner was also contracted to provide many of the fittings and facilities for the hospital as part of the PPP agreement. As such, the private partner was able to source items such as bed screens and curtains hand sewn by local women.⁵⁶

Supporting women to become energy, health or other sector based entrepreneurs by providing access to financial services and micro-credit can help to further women's strategic interests, while their participation, employment and career ambitions may well be enhanced.⁵⁷

3.2.7 Contractual mechanisms and their potential

The contractual stage is potentially a vital stage of the project cycle for gender mainstreaming. It is at the contractual stage that the key opportunities to ensure the inclusion of special conditions directed towards increasing and measuring the benefits for women and girls present themselves.

The contract might is a key mechanism for securing commitment to achieving such benefits if stakeholders are supportive. Greater participation by women in labor markets can also be developed through the contractual stage of PPP and the delivery of services can mean that women's needs as customers are better met.⁵⁸

The World Bank and other IFIs make clear that incorporating 'borrower responsibilities' that include social safeguards into relevant legal documents can improve benefits for women and girls. For example, provision for mitigating negative impacts and promoting positive benefits for women can help to establish legally binding requirements to ensure that projects maximize positive impacts on women.⁵⁹ Clauses that outline project requirements help to address 'decent work' expectations and also allow monitoring to determine how women and men are treated as employees. In particular, contract clauses need to address human resource policy requirements, working conditions and terms of employment, workers organizations, non-discrimination and equal opportunity with explicit references to women. The provision of such clauses allows project proponents and the main contractors to pass obligations down the supply chain which can in turn affect women working on the project in a more indirect capacity.

Another way of securing and measuring commitment to gender development is to establish key performance indicators (KPIs) for benefits to women and girls as part of contracts. This helps ensure gender performance objectives are passed down to project teams, delivery organizations and further through sub contracts. By passing compliance requirements through project performance contracts, developers make meeting output based targets conditional for payment. Transparent and fair 'fine and reward' structures can also play a role in performance with regard to gender.⁶⁰ Such mechanisms require key stakeholder commitment from the outset as well as negotiation and sometimes training and increased budgets.

⁵⁶ IFC (2011, C): 'The private partner: Helping Lesotho's government care for its people' in 'Handshake: IFC's quarterly journal on public-private partnerships', Issue 3 (October 2011), p.33

⁵⁷ Private Infrastructure Development Group (2012): Development Finance Institutions and Infrastructure: A Systematic Review of Evidence for Development Additionality; IFC and Global Reporting Initiative (2009): Op. cit.

⁵⁸ IFC and Global Reporting Initiative (2009): Op. cit.; Pugh, G (date unknown): 'Outcomes based accountability: A brief summary'

⁵⁹ World Bank (2010, B):Op. cit.; World Bank and OECD (2004): Op. cit.; IFC and Global Reporting Initiative (2009): Op. cit.

⁶⁰ World Bank and OECD (2004): Op. cit.; AfDB (2009, B): Op. cit.

3.2.8 Allocate funding to support gender mainstreaming activities

A key issue identified in much of the gender mainstreaming literature is the importance of allocating resources to ensure that benefits for women and girls (and the measurement of such) can be incorporated into project delivery. In particular, the literature urges developers and funders to specifically allocate resources to achieving gender goals, for example by allocating funds for the desired outcomes identified in gender assessments and gender audits as part of infrastructure projects. This will help to ensure women's benefits are more likely to be delivered and measured, and the efficiency of project delivery is enhanced through labor markets and consumers balanced between men and women.

In addition, the World Bank and OECD recommend using gender budgets and gender audits to analyze budgetary allocations to establish who is benefiting from services such as water.⁶¹

Dedicated funding can be provided to support the following benefits for women and girls:

- Funds or other incentives (such as subsidized childcare) to enable women to participate in employment, training, or engagement activities throughout the project life cycle.⁶²
- Funds for compensation to ensure that adverse impacts of infrastructure project developments do not disproportionately financially disadvantage women, or female headed households.⁶³
- Grants or credit to support access to new infrastructure (such as cooking equipment, or piped water installation, business start-up support etc.).⁶⁴ Such moves may also support women's strategic interests, increasing their access to and control of key resources and boosting participation, employment and their role in community decision-making.⁶⁵

3.2.9 Delivering accessible services

Infrastructure developments typically involve the delivery of a higher quality service for users, in exchange for a charge. Piped water, health cover, access to electricity, and use of a highway may all represent a higher quality of service for end users – generating many of the benefits discussed throughout this report. Many require a contribution from users, through direct payment or tolls, taxation, the purchase of insurance, metered payments, monthly installments, or credit agreements.⁶⁶

⁶¹ World Bank and OECD (2004): Op. cit.

⁶² IFC and Global Reporting Initiative (2009): Op. cit.; and World Bank and OECD (2004): Op. cit.

⁶³ World Bank Institute (2004): Op. cit.; AfDB (2009, B): Op. cit.

⁶⁴ World Bank Institute (2004): Op. cit.

⁶⁵ IFC and Global Reporting Initiative (2009): Op. cit.

⁶⁶ Private Infrastructure Development Group (2012): Op. cit.; World Bank Institute (2004): Op. cit.

However, user charging can alienate women from the use of infrastructure, particularly where direct control of household budgets lies with men. Therefore setting usage costs at a rate affordable by women, female headed households, or female-only parent families and supporting appropriate use of credit and other mechanisms where necessary and possible can help to ensure that access to infrastructure development and their benefits are maximized.⁶⁷ This however may be difficult to promote in the project's business case as its benefits to the PPP operator will be in the long term through a more balanced and stronger economic development process.

However, there are other measures that can contribute to women's effective use of new infrastructure. The first of these is the provision of specific facilities for women where this is necessary for them to make use of the new infrastructure. For example, it may be necessary to provide female only waiting areas or carriages as part of a new railway development.⁶⁸ Here the business case is a little simpler – without such rolling stock the operator is likely to lose a considerable proportion of the customer base.

Targeted marketing will also help to ensure awareness of new infrastructure, facilities and systems among women and girls. Marketing directed specifically at women household members could be a key element of a marketing strategy. This will ensure that all consumers have the information they require to make full use of infrastructure, and thus maximize the use of the new development.⁶⁹

The literature generally suggests that developers work to ensure that women have the information they require to make informed choices about using newly developed infrastructure. For example, maximizing information provided to women about energy sources, technologies and equipment, and addressing the information barriers that many women face with regards to literacy and technological know-how) can ensure that women's needs as customers are met and that their access to appropriate energy sources is maximized.⁷⁰

3.2.10 Monitor and evaluate against gender impacts

This is perhaps the most obvious and significant activity that can contribute to effective capture and promotion of infrastructure benefits to women and girls. Without fail, across all the guidance documents reviewed as part of this study, the vital importance of evaluation is highlighted. Many documents make calls for gender to be included upfront in the social and environmental impact assessment and the majority includes this as a priority for reporting. The IFC, for example, promotes the integration of gender through a 2009 practitioner's guide to sustainability reporting.⁷¹

Pivotal to this is sex disaggregated data and analysis and appropriate key gender sensitive indicators (see below). Performance cannot be measured unless there is a baseline against which to assess change and data needs to be regularly collected throughout the implementation.

⁶⁷ World Bank Institute (2004): 'PPP, Gender and Poverty in Infrastructure'; World Bank Institute (2004): Op. cit.; IFC and Global Reporting Initiative (2009): Op. cit.

⁶⁸ ADB (August 2011): 'Gender equality: Bridging the gap' (See Transport Sector Report for more details on the application of this measure.)

⁶⁹ IFC and Global Reporting Initiative (2009): Op. cit.

⁷⁰ World Bank Institute (2004): Op. cit.; IFC and Global Reporting Initiative (2009): Op. cit.

⁷¹ IFC and Global Reporting Initiative (2009): Op. cit.

3.2.10.1 Gender-specific indicators

Indicators are plentiful in the documents reviewed as part of this study and again there is consistency across the sectors. Both general advisory notes as well as sector specific guidance contain long lists and recommend monitoring of the same types of issues. The list is too extensive to include here, and neither is it the purpose of this report to provide a summary of indicators which are commonly available from other international sources. See separate sector reports for a more detailed look at indicators. The objective of this study is, instead, to add value by highlighting essential indicators that IFC project managers can look to integrate into delivery.

To cut through the plethora of possible measures and tools, it is sensible to first set out an impact typology framework. The guidance notes that already exist sub-divide inputs under headings, choosing different terminology to categories the impacts which they recommend should be monitored. Taking good practice from these leads to the four-point typology set out below:

<ul style="list-style-type: none"> ▪ Input indicators essentially relate to the pro-active and contractual steps that development partners can take to ensure the integration of women into the design and implementation of infrastructure projects. Examples include the number of engagement events for women held to inform design; the numbers of women trained for construction or operational activities; the overall institutional set-up and extent of inclusion of gender sensitized staff; and the numbers of female individuals or women's groups involved in research and planning. <p>These input indicators tend to be absolute and do not necessarily rely on a baseline. They are entirely project specific, which makes them easier to measure. They provide a way of assessing the extent to which gender is mainstreamed from the outset. This allows comparison to later assess whether this was successful or not. These indicators can be both qualitative and quantitative.</p>
<ul style="list-style-type: none"> ▪ Process indicators tend to be aligned to the implementation phase. Like input indicators, they are project specific and not being used as a way to measure change from existing scenarios. They could include, for instance, the extent to which there is a participatory approach to construction and operation. An example of this is the involvement of women in planning committees and decision-making. Process indicators can be both qualitative and quantitative in nature.
<ul style="list-style-type: none"> ▪ Output indicators measure impacts. They tend to be more, although not exclusively, quantitative in nature and can only be assessed during or following implementation. Conceptually, they are amongst the easiest to understand and the most sector-specific, unlike the two indicator concepts above which are applicable to infrastructure development in general. Output indicators, critically and mostly (although not always) measure change from the baseline situation; in this way they can gauge project additionality in terms of progress towards improved conditions for women. <p>Examples of output indicators are numerous. They include for instance general ones such as numbers of female beneficiaries of the project having access to the infrastructure, to the more specific such as the increase in number of immunizations and vaccinations or, those above or relevant to all sectors, such as the number of women receiving prenatal healthcare (health); the number of women employed on the project, daily time saved (particularly of interest for transport, water, and energy sectors) and, the number of women owning businesses.</p>
<ul style="list-style-type: none"> ▪ Outcome indicators can only be measured in the operational phase; they are useful in measuring indirect and longer term results. In terms of measuring outcomes, the CIDA considers that outcomes should be determined three to five years after donor funding has ended, so as to allow an assessment of whether or not the project is likely to achieve sustainable results.⁷² <p>At the project level, examples of outcome indicators include increases in female employment, as a result of the infrastructure being in place; reduction in female mortality rates; and increase in school attendance and school enrolments. Many outcome indicators that appear within current guidance documents adopt a wider definition of outcomes and suggest monitoring additional income in the impact areas, increased involvement in community decision-making and improved status of women. However, these outcomes tend to be beyond the responsibility of a single project. Whilst development of an infrastructure asset can influence and act as a key enabler of such outcomes, it is not possible to assign a causal relationship.</p>

⁷² CIDA (1997) 'Guide to Gender-Sensitive Indicators'
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3.2.10.2 Relevance to PPP

The above box highlights that measuring the gender sensitivity of projects can be a complex and multi-stage process. The role of this paper, however, is to advise the IFC how best to simplify monitoring procedures but at the same time retain maximum gender effects. IFC project managers need also to be mindful about what works and is most appropriate for PPP specifically. In this context, as illustrated in Appendix F below, the key difference that PPP has the potential to make compared to traditionally financed infrastructure projects hinges on the scope (sensitively applied) to incorporate incentivized performance indicators within contracts. Currently incentives focus on performance and quality rather than socio-economic objectives like gender equality and it will be a considerable innovation if gender based contract incentives are adopted. Indicators therefore, need to be characterized by their relevance, measurability and their applicability to the project level and their acceptability to stakeholders. In this sense, of the four indicator categories above, outcome indicators are least helpful as they are unlikely to lend themselves to inclusion in contractual deals.

Below, the plethora of indicators in existence is narrowed into a manageable priority list; with overall input and process indicators (on which outputs largely rely) and with core output indicators per sector. Some of these will rely on original research while others can be calculated using standardized approaches adapted to local circumstances with appropriate and documented assumptions. In each case there will be cost implications that may be a barrier to establishing the base-line and monitoring.

Table 3.1: Priority indicators

KEY INDICATORS	
Input indicators	
<ul style="list-style-type: none"> ■ Number and proportion of men and women employed on the project during development, design and construction phases, including further disaggregation by role and seniority ■ Number and proportion of men and women employed on the project during maintenance and operation, including further disaggregation by role and seniority. ■ Women enrolled in project level training and educational programmes as part of operation and maintenance 	
Process indicators	
<ul style="list-style-type: none"> ■ Women engaged in types of consultation activities and gender targeted engagement events held. ■ Use of gender disaggregated data in the project base-line and commitment to gender disaggregated analysis ■ Use of gender analysis and gender specialists to undertake Social Assessment or Gender Impact Assessment at the project level. ■ Preparation of a GAP associated with the project 	
Output indicators	
Agriculture	<ul style="list-style-type: none"> ■ Numbers and proportions (and trend changes) of women in the impact area in paid employment in the agricultural sector ■ Number and proportions of women with land assets within the impacted area
Energy	<ul style="list-style-type: none"> ■ Level of, and change in energy system use and awareness among women e.g. level of satisfaction, patterns of use, access rates, and extent of service coverage ■ Number and proportion (and trend changes) of women working in jobs in the energy sector e.g. number of women employed within oil and gas companies at different levels ■ Real and percentage reduction in the amount of time and/or money spent by women obtaining energy supplies (such as firewood, charcoal)
Health	<ul style="list-style-type: none"> ■ Increase from baseline in the proportion of live births attended by a trained medical professional within the study area ■ Women and girls accessing professional medical advice on key issues in locale e.g. sexual health
Industrial	<ul style="list-style-type: none"> ■ Numbers and proportions (and trend changes) of women in paid employment in the industrial heavy manufacturing sector ■ Number and proportions (and trend changes) of women appointed to and/or progressing into senior positions in this sector. ■ Number of local businesses run by women engaged in the project delivery and in wider supply chain activity.
Transport	<ul style="list-style-type: none"> ■ Number and/or percentage of trips taken by public transport by women living in the impact area ■ Travel time savings for women and girls ■ Number (and trend changes) of women working in jobs in the transport sector
Water & waste	<ul style="list-style-type: none"> ■ Number and proportion (and trend changes) of women within the designated study area living in households with access to piped water, or with general access to piped water ■ Number and proportion (and trend changes) of women living in households with access to sanitation and/or waste disposal facilities, or with general access to waste disposal ■ Amount of time spent by female family members (women, girls) on water collection and waste disposal or processing per day or week.

Output indicators, which arguably are the most important because they can require action to be taken to realize benefits, are entirely dependent on the collection and analysis of sex-disaggregated data.

Without this, the assessment of whether private partners have met their contractual gender obligations cannot be assessed. The potential for gender benefits to be amplified under PPP projects due to output based results contracted cannot be exploited without the data to assess whether results have indeed been attained.

3.3 Concluding observations

Whilst evidence is fairly slim in terms of actions presently being taken to ensure infrastructure reflects the needs of and meets the interests of women, the potential mechanisms which exist to help make this possible seem plentiful. However, evaluation of the success, even where there is take up, of these different strategies is similarly lacking. In addition, a final point of consideration is the appetite of PPP partners to integrate any of the above actions into any of their development processes. Mainstreaming activity has its own commercial impacts which partners will be mindful of and which may act as a deterrent to embracing gender aspects more fully in project planning. Positive commercial impacts associated with social development objectives are rarely articulated, which is even less the case with gender, so these can go unnoticed by developers.

In Appendix G we have identified some of the potential commercial impacts connected with the strategies mentioned in this chapter. It is a high level analysis and is another area in which more research is required in order to provide PPP partners with more clarity about the cost implications.

4. Wider gender impacts

This chapter is dedicated to discussing the full range of benefits to women and girls that might be experienced through the implementation of different types of infrastructure. It is sub-divided into challenges and impacts of four key channels:

1. Time;
2. Economic activity and resources;
3. Health and safety; and
4. Infrastructure planning, policy and decision-making are discussed. Reference is drawn to the six infrastructure sectors reviewed in this study.

Examples are drawn primarily from rural areas as this is where the literature is most plentiful. However, many of the examples are applicable in areas where rapid urbanisation is prevalent and the challenge of access to infrastructure is similar to rural areas.

4.1 Infrastructure challenges

4.1.1 Time

Across the developing world, studies have consistently revealed a phenomenon referred to as ‘women’s overburden’. Women’s time constraints, length of workday, domestic chores (including responsibility for water and/or fuel collection), child and elderly care responsibilities, and HIV/AIDS and the other long term health impacts combine with the need to engage in income generation, often resulting in this overburden.⁷³ The absence of adequate infrastructure is a major contributory factor in the overburdening of women in developing countries.

The challenges caused by a lack of, or poor quality infrastructure, are particularly prevalent in the **water sector**. In developing countries women are largely responsible for managing access to water for food preparation, drinking, bathing and washing. A recent study by UNICEF and the WHO analyzed 25 countries in sub-Saharan Africa, representing 48 percent of the region’s population. It identified that women and girls bear primary responsibility for water collection, at considerable cost in terms of their time.⁷⁴ This task consumes considerable amounts of time; research in Egypt by the FAO indicated that 30 percent of women walk over an hour a day to fetch enough water for their family. In parts of Africa, this can increase to as much as eight hours,⁷⁵ similar to parts of Pakistan where three quarters of the day can be spent fetching water.⁷⁶

The FAO considers that the detrimental impact of poor access to and mismanagement of water resources falls disproportionately on women,⁷⁷ suggesting that the time spent having to manage water supply inhibits women’s ability to enjoy the same opportunities as those afforded to men.

Inappropriately located water facilities or poor agri-infrastructure can significantly limit participation in community life, as well as the ability to attend school, and expand their knowledge and skills.⁷⁸

⁷³ Jennings, M. and Gaynor, C. on behalf of the World Bank Institute, Finance and Private Sector Development (2004): ‘Public Private Partnerships, Infrastructure, Gender and Poverty’

⁷⁴ UNICEF and WHO (2012): Op. cit.

⁷⁵ FAO, Sustainable Development Department, (November 2006): Op. cit.

⁷⁶ Bokhari, J, UN (2006): ‘Pakistan: Initiative of One, relief for all – Women’s leadership in the Banda Golra Water Supply Scheme’, in *Gender, Water and Sanitation Case Studies on Best Practices*

⁷⁷ FAO, Social Development Department, (November 2006): Op. cit.

⁷⁸ The International Bank for Reconstruction and Development/World Bank (2009, B): World Bank. Module 9: ‘Gender in rural infrastructure for agricultural livelihoods’.

Girls can often be required to leave school whilst women have reduced opportunities to engage in income generating activities from which the whole household could have benefited. When combined, these factors compromise economic participation, social interaction, empowerment, health and inclusion in public life of females.

Lack of quality **transport infrastructure** can be a significant constraint on women's time. In Africa women contribute up to 62 percent of the household's traveling time. Moreover it is estimated that the transport burden of a woman is to carry a load of 20 kilograms over a distance of 2.5 to 6.8 kilometers per day.⁷⁹

In the **energy sector**, many women spend a significant proportion of their time on basic activities⁸⁰ including gathering wood, cooking inefficiently, crop processing by hand, and manual farming work. In simple terms, when women's time and income is freed up as result of no longer having to collect fuel and having to use inefficient fuel sources to cook and heat their homes, that time can be redirected towards income-generating tasks, improving agricultural productivity and the development of micro-enterprises to build assets and improve family well-being.⁸¹

4.1.2 Economic activity and resources

It is well established that women are at greater risk of, and suffer disproportionately from, the effects of poverty. The United Nations Women's Programme (UNWP) estimates that women make up 70 percent of the worlds poor and the average wage gap between men and women globally was 17 percent in 2008.⁸²

Women bear a disproportionate burden of the world's poverty. Statistics indicate that women are more likely than men to be poor and at risk of hunger because of the systematic discrimination they face in education, health care, employment and control of assets. Poverty implications are widespread for women, leaving many without even basic rights such as access to clean drinking water, sanitation, medical care and decent employment. Being poor can also mean they have little protection from violence and have no role in decision making.⁸³

Infrastructure is explicitly linked to poverty. The Global Poverty Project, an international poverty campaign group, suggests that 'infrastructure – physical resources like roads, telecommunication networks, schools and drains – is necessary for a society to function: people can't access healthcare if there are no hospitals; trade can't take place if there are no roads on which to transport goods to markets. Infrastructure facilitates the basic functions of a society that are necessary to transport resources and people, produce and trade goods, provide essential services and ultimately reduce poverty.'⁸⁴ The World Bank also recognizes infrastructure as 'not just about growth, but equally about poverty reduction and reaching the Millennium Development Goals'.⁸⁵ Creating a level playing field by reducing gender inequalities with regard to poverty is key.

⁷⁹ Multilateral Development Banks (MDB) Gender Working Group (2011): Op. cit.

⁸⁰ Clancy, J., S. Oparaocha, and U. Roehr (2004): Op. cit.

⁸¹ Havet cited in Khamati-Njenga, B and J. Clancy for ENERGIA (2003): 'Concepts and Issues in Gender and Energy'

⁸² UNWP website. See: http://www.unifem.org/gender_issues/women_poverty_economics/

⁸³ UNIFEM (2010) <http://www.unifemcar.org/>

⁸⁴ Global Poverty Project (undated): 'Poverty and Infrastructure' See: <http://www.globalpovertyproject.com/infobank/infrastructure>

⁸⁵ World Bank Institute (2004): Op. cit.; and Shafik, N. for the World Bank Transport Sector Forum (2004): 'World Bank Guidelines for Social Analysis in the Transport Sector'

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The UNDP suggests that the economic contribution of women is largely unrecognized and unremunerated, with much of women's labor taking place within the so-called 'care economy'. This is unpaid work, undertaken in the domestic sphere, and driven by the need to support the current labor force, the need to care for the previous generation of workers, and raise the next generation. Most of women's contribution to national economies takes place in this hidden area of production, which includes caring for children, the sick and the elderly; voluntary work in the community; and subsistence production.

Women, more often than not, experience a greater degree of poverty than men and, all too often, a level playing field simply does not exist. Inherent, underlying issues, often due to cultural, religious or political traditions, can put women at a disadvantage in accessing infrastructure facilities or enjoying the benefits to the same extent as men.

Lack of control over land and property limits and differences in wage earnings are commonplace challenges for women in the **agricultural sector**. When women do earn wages, they are often lower than men's. Even though women comprise a large part of agricultural labor force in terms of cultivation, harvesting and packaging, economically women are 'left behind' because of restricted terms of land ownership and access to credit to invest in infrastructure.⁸⁶ Women generally own much less land than men, which is often caused by inheritance laws that are unfavorable to women.⁸⁷ This limits their productivity and ability to own agricultural businesses. In Malawi for example, the country's constitution does not allow women to acquire land in a divorce or with the death of the husband, except where the woman has a legal document proving that her husband has agreed to joint ownership or can prove that she contributed financially to the upkeep of the property, which most women in the rural areas cannot do.⁸⁸

Women can also be disadvantaged in employment in other areas. There is a clear gender imbalance, for example, within the employee base of the **industrial and manufacturing sector**, which is predominantly male oriented. For example, the World Bank's 2012 World Development Report on Gender Equality and Development identifies that the employee base of the manufacturing sector the world over is predominantly male.

There is, therefore, considerable scope for strategic infrastructure investment to promote, facilitate and measure the benefits from infrastructure for women and girls. However, it should be noted that many organizations have suggested that simply developing infrastructure is not enough. In addition to perpetuating poverty where infrastructure does not exist, poverty also affects how much access people have to infrastructure where it does exist. This is especially true for women, who make up two thirds of the world's poorest and who have the least access to economic infrastructure as a result of social and cultural norms. It is widely established that infrastructure developments must be gender sensitive and address poverty to ensure that it benefits those who most depend on it.⁸⁹

⁸⁶ Multilateral Development Banks (MDB) Gender Working Group (2011): Op. cit.

⁸⁷ The International Bank for Reconstruction and Development/The World Bank (2009, A): Op. cit.

⁸⁸ AfDB (2009, C): 'Appraisal Report, Agriculture Infrastructure Support Project, Malawi'.

⁸⁹ Global Poverty Project (undated): Op. cit.

4.1.3 Health and safety

In the **health sector** a lack of adequate health facilities has serious consequences for the female population. Achieving gender equity in health remains a high national and international priority.

The UN and the WHO have recognized that reducing gender inequalities is in no small part dependent on improving the health and personal safety of women and girls, and that better health can only come from greater equality between men and women. The MDGs⁹⁰ reflect this. Measuring and promoting benefits to women and girls from infrastructure development under PPP and more widely complement this.

Health inequalities tend to accompany gender inequalities. Indeed, the WHO notes that health infrastructure and services often fail to meet the needs of women and girls who generally 'face higher health costs than men due to their greater use of health care, yet they are more likely than their male counterparts to be poor, unemployed or else engaged in part-time work or work in the informal sector that offers no health benefits'.⁹¹

In particular, the World Bank notes that one of the most persistent gender gaps remains that of premature mortality. Females are more likely to die, relative to males, in many developing countries than their rich counterparts. The World Bank estimates that these deaths equal 3.9 million women and girls under 60 per year.

A key issue for women is securing universal access to healthcare. There are, however, many barriers to effective health care for women; not least amongst them is the cost of health service provision, including the cost of the infrastructure – from equipment to local clinics to hospitals. As outlined above, financing health care has been a preoccupation of governments for decades and a significant area of up-front cost is infrastructure. The literature reviewed in this assignment suggests that very little emphasis is placed on infrastructure as an enabler for positive gender outcomes within the health sector and its potential contribution to ensuring the right levels of health care for women is not widely acknowledged.

4.1.4 Infrastructure planning, policy and decision-making

Across many cultures in the developing world, and in parts of the developed world, women are excluded from processes and institutions which have an impact on their lives. Traditionally, men have the power to decide on the planning, design and implementation of infrastructure.

⁹⁰ And particularly, MDG3 aims to promote gender equality and empower women – primarily through education, leading to indirect health benefits. UN (2010): 'Millennium Development Goals. Goal 3: Promote Gender Equality and Empower Women. Fact Sheet'. See: http://www.un.org/millenniumgoals/pdf/MDG_FS_3_EN.pdf, as well as <http://www.un.org/millenniumgoals/gender.shtml> and http://www.who.int/topics/millennium_development_goals/gender/en/index.html; and MDG5 aims to improve maternal health – and specifically reduce by three quarters the maternal mortality ratio and achieve universal access to reproductive health (particularly in relation to the divide between urban and rural areas, where levels of care are often considerably lower). See: UN (2010): 'Millennium Development Goals. Goal 5: Improve Maternal Health. Fact Sheet'. See: http://www.un.org/millenniumgoals/pdf/MDG_FS_5_EN_new.pdf

⁹¹ WHO (2009): Op. cit.
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This issue is a common problem in the **agricultural sector**, in which many women labor, formally and informally.⁹² Women are much less involved in local community structures where decisions are being taken on the priorities and location of agricultural infrastructure. For instance, systems designed to manage water for irrigation can often be weighted in favor of male concerns and often ignore gender differences in land ownership, labor and usage.⁹³ Participation in Water User Associations (WUAs) in many communities is limited to those who own land for crops.

Irrigation projects often do not make provision for more small-scale agricultural activities such as water use for livestock, small gardening and aquaculture or dry fishing, which are more relevant to women.⁹⁴

Even where women are permitted to sit on committees, this does not necessarily translate into meaningful participation in the process. For example in South Africa, WaterAid found that while 30 percent of people in the planning process were women, many felt unable to voice their opinions for cultural reasons and due to a lack of information.⁹⁵ Coupled with this, national and international policy makers and planners, as well as agricultural service deliverers, are more inclined to perceive of farmers as male rather than as female.⁹⁶ A result of this lack of female voice is that, valuable knowledge of women gained through their agricultural labor is not being used for the benefit of infrastructure projects, potentially compromising productivity.

Lack of participation in planning and decision-making is a salient issue in the **energy sector**. Literature suggests that women's energy uses and needs have been generally overlooked in energy sector policies. It is common for women to depend on non-commercial biomass energy such as firewood and charcoal for basic needs such as cooking, lighting and heating and for use in cottage industries and the informal sector. However, these fuels are generally neglected in energy policies, as are small-scale, management-intensive activities carried out primarily by women. In contrast, energy products used in the formal and informal sectors dominated by men such as petrol, diesel and electricity are well regulated and generally receive high priority in energy policies. Men also dominate the formal energy sector in senior decision-making positions and women are significantly under-represented professionally.⁹⁷

In the **health sector**, inadequate participation by women and men in the planning and managing of health services' programmes means that there is often an insufficient appreciation of other factors that affect women's access to health services including: timing of services, lack of time for women, distance, lack of money for transportation, restrictions on women's movement in public, lack of female staff in clinics, lack of privacy for examination, complicated or intimidating procedures, and poor facilities.⁹⁸

Exclusion from the planning process also means that physical differences in strength between men and women can risk being ignored. For example, as women are generally excluded from design, accessing **water** can also be hindered by designs of pump mechanisms that are unwieldy and difficult to use, particularly for women. Where infrastructure technology is not designed with women's needs in mind, women may be unable to make use of it, for example by being unable to reach or use the pump handles). Similarly, infrastructure projects designed by men can more easily ignore security aspects, which tend to be more important to women.

⁹² FAO (2011): Op. cit.

⁹³ FAO, Social Development Department, (November 2006): Op. cit.

⁹⁴ Multilateral Development Banks (MDB) Gender Working Group (2011): Op. cit.

⁹⁵ WaterAid (undated): Op. cit.

⁹⁶ Ministry of Foreign Affairs of Denmark – Danida (2008): 'Gender equality in infrastructure'.

⁹⁷ Khamati-Njenga, B and J. Clancy for ENERGIA (2003): Op. cit.

⁹⁸ AfDB Group (2009): Op. cit.

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4.2 Infrastructure and gender impacts

Gender mainstreaming to overcome some of the challenges summarized above is not yet commonplace in either traditional or PPP projects. That said it must be highlighted that good practice is emerging. There is some evidence which points to proactive steps being taken to mainstream gender in certain sectors; and to achieve the realization of gender benefits across the project life cycle. The remainder of this chapter summarizes hypotheses in existing literature of the impacts that could accrue to women and, where available sets out the evidence that exists to support this. It necessarily draws primarily on examples from traditionally financed infrastructure schemes, as the documented linkages between PPP and gender are few. Impacts are categorized into the same channels as the challenges in the previous sections.

4.2.1 Time

One of the most significant impacts of infrastructure investment can be reclamation of time originally 'lost' to essential day to day activities from travel to gather resources. For example, improvements to rural water systems and agricultural irrigation reduce the amount of time women spend on arduous tasks such as fetching water and tending family crops. One of the greatest benefits that transport infrastructure projects can provide to women is through increasing their access to markets and places of employment.

It is widely evidenced that the availability of modern **energy** services can significantly free girls' and women's time spent on survival activities, such as gathering wood, fetching water, cooking inefficiently, crop processing by hand, and manual farming work.⁹⁹ When women's time and income is freed up, they can be reallocated to income-generation, improving agricultural productivity and the development of micro-enterprises to build assets and improve family well-being, whilst school attendance can be easier for girls.¹⁰⁰ Access to electricity supports transformation processes such as cooling to preserve food and medicines as well as pumping, grinding and milling which also help save time and manual labor.

Similarly, **agricultural infrastructure** investment can change women's lives by alleviating the time constraints placed on them as a result of their labor-intensive and extensive list of subsistence responsibilities. For example, water management projects aimed at providing multiple-use water services, for irrigation, livestock and domestic water purposes, will decrease the time women spend on fetching water for the household. Better access to the local market, will have a similar positive effect on female time. The more time is saved by adequate infrastructure, the more time can be spent on income-generating activities, social interaction, family life, education and rest, which release both economic and social benefits.

There is further tangible evidence of direct impacts in the **water and waste** sector. A study by WaterAid in Ethiopia highlighted that a community-managed integrated water, sanitation and hygiene project increased the amount of water available for domestic uses from less than 10 liters a day per person to 18-22 liters. The research also looked at the length of time women spend providing water for the family, showing that it had reduced from around eight hours to between five and twenty minutes. The women reported that their domestic chores were easier to carry out now that the amount of water used was not so severely restricted.¹⁰¹

⁹⁹ Clancy, J., S. Oparaocha, and U. Roehr (2004): Op. cit.

¹⁰⁰ Havet cited in Khamati-Njenga, B and J. Clancy for ENERGIA (2003): Op. cit.; Clancy, J., M. Skutsch and S. Batchelor for DFID (2003): 'The Gender - Energy- Poverty Nexus: Finding the energy to address gender concerns in development'

¹⁰¹ Blagborough, V, WaterAid (2001): 'Looking Back: The long-term impacts of water and sanitation projects'

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Similarly a Rural Water Supply and Sanitation Project in Morocco undertaken in six provinces by the World Bank (which aimed to improve girls' school attendance, through reducing the traditional burdens on their time) showed that convenient access to water reduced the time for fetching water by 50 to 90 percent.¹⁰²

One of the main arguments put forward to align water and waste infrastructure projects, particularly related to drinking water supply, is that greater access to water enhances income generating opportunities for women due to the time they save by not having to fetch water.

4.2.2 Economic activity and resources

One of the key potential impacts of infrastructure development for women is increasing the productivity of their labor. Opportunities for undertaking income-earning activities or employment can be realized both directly and indirectly as the following examples highlight.

Direct economic impacts

The literature reviewed highlights that there are direct employment opportunities that exist across all the six sectors reviewed as part of this study. Good **water** supply, for example, can provide additional income generating opportunities in activities which require plentiful, clean water such as brewing, running teashops and laundering clothes. Such trades can become a reliable and sustainable source of income for women.

In Ghana, women potters had both time and resources to be able to increase their production and trade due to improved water services. Water became available for cola nut and palm oil processing and for distilling Akpeteshie, a local alcoholic drink.¹⁰³ In India, Gujarati women's economic productivity was increased by time saved due to a new water supply system.¹⁰⁴ In Bangladesh, Honduras and Kenya there have been examples of women, either acting individually or as a collective, setting themselves up as vendors at wells with efficient pumps, and charging fees for the collection of water. The money made can then be used to fund community projects.¹⁰⁵

Health infrastructure can also help to provide direct employment and skills development as many new facilities are staffed with greater numbers of women. At present 'in their roles as informal health-care providers at home or in the community, women are often unsupported, unrecognized and unremunerated.'¹⁰⁶ Health infrastructure can increase opportunities in terms of more roles for women as: midwives; skilled health workers from nursing to physicians; unskilled roles including in catering, cleaning, laundry services and maintenance; and other professional roles including management and administration.¹⁰⁷

¹⁰² World Bank (2003): 'Implementation Completion report on a Loan in the Amount of US \$10 Million Equivalent to the Kingdom of Morocco for a Rural Water Supply and Sanitation Project', Report No. 25917.

¹⁰³ Dr Fisher, Julie, 2006: Water Supply and Sanitation Collaborative Council (WSSCC), Gender and Water Alliance (GWA), Water, Engineering and Development Centre (WEDC), United Nations Children's Fund (UNICEF) 'For Her It's the Big Issue. Putting women at the centre of water supply, sanitation and hygiene'

¹⁰⁴ James, A.J et al (2002) 'Transforming time into money using water: a participatory study of economics and gender in rural India' in *Natural Resource Forum* 26, pp. 205-217.

¹⁰⁵ Water Supply and Sanitation Collaborative Council (WSSCC) and Water Engineering and Development Centre (WEDC) (March 2004) 'Water, Sanitation and Hygiene (WASH) Evidence Report- For Her It's A Big Issue: Putting Women at the Centre of Water Supply, Sanitation and Hygiene,' supported by UNICEF, Gender Water Alliance (GWA) and the Norwegian Ministry of Foreign Affairs

¹⁰⁶ WHO (2009): Op. cit.

¹⁰⁷ WHO (2009): Op. cit. p.39

In the **agricultural sector**, infrastructure projects provide an opportunity for women to engage in paid work; it helps to enable better quality products that can attract higher fees and generate income providing direct possibilities for women to make a living out of agriculture.

There are many examples of how **energy** projects contribute directly and indirectly to women's income and employment. Some indicative examples are:

- Women's groups in Ghana use LPG for fish preservation, giving them a better quality product than when using wood, and enabling them to reach export standards, considerably improving their income.¹⁰⁸
- Provision of credit enables women to own and profit from larger-scale, more efficient processing technologies.¹⁰⁹
- Access to electricity allows access to information and knowledge and more lighting for study to make women more employable.
- Energy technologies can benefit women, through reducing inefficiencies of their labor, for instance by mechanizing transformation processes.

The industrial sector is, perhaps, at present a case in itself due to the male predominance within the workforce. As identified above, 2012 research by the World Bank highlighted the employee base of the manufacturing sector in both Bangladesh and Sweden is less than 30 percent female. The extractive industries are even more male-oriented – for example, the employee base for the mining industry in Bangladesh, Mexico and Sweden is comprised of less than 20 percent females.¹¹⁰

Research into gender equality in the labor market suggests that for many women in the industrial sector (as well as in employment more generally) 'employment is casual, temporary, and flexible in nature, with poor working conditions.' Many women are placed at an economic disadvantage as a result of employers seeking to keep costs down, particularly in developing countries.¹¹¹ The industrial sector, therefore, is probably more weakly placed to deliver direct employment impacts than the other sectors considered as part of this review.

Indirect impacts

As well as direct employment, positive economic activity and employment impacts can also be realized through infrastructure implementation. In the main, this is as a result of the direct time savings that women can experience which, in turn, can create more time for income-earning activities, increase school attendance and reduced drop-out rates for girls in primary and secondary education.¹¹² Essentially, time savings induced by infrastructure can bring returns in the form of increased women's engagement in market-based activities and greater productivity.¹¹³

¹⁰⁸ Mensah cited in Clancy, J., M. Skutsch and S. Batchelor for DFID (2003): 'The Gender - Energy- Poverty Nexus: Finding the energy to address gender concerns in development'

¹⁰⁹ Cecelski, E. for ENERGIA (2000): 'The Role of Women in Sustainable Energy Development'

¹¹⁰ World Bank (2012): 'World Development Report 2012: Gender, Equality and Development', Figure 5.7

¹¹¹ van der Meulen Rodgers, Yana. Menon, Nidhiya. (2008): Op. cit.

¹¹² Clancy, J., M. Skutsch and S. Batchelor for DFID (2003): Op. cit.

¹¹³ OECD, DAC Network on Gender Equality (GENDERNET) (April 2011): 'Women's Economic Empowerment Issues Paper' 301966/ITD/ITN/F/November 2012
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Better and quicker access is one of the greatest benefits that **transport infrastructure** projects can provide to women; as a result of increasing their access to markets and places of employment women can also benefit from increasing their own productivity and the overall productivity of the household and community.¹¹⁴ Improving rural roads, transportation facilities and services increases rural women's mobility and can increase their productivity and income by easing access to markets and reducing post-harvest loss of perishable goods.¹¹⁵ The impacts assessment of a World Bank rural roads project in Peru identified that 43 percent of women reported that the project enabled them to obtain additional income, including from opportunities provided by road maintenance needs and other project activities (such as training and assistance with planning and resource mobilization).¹¹⁶ Increased access to transport has also been shown to affect women's education and studies have shown linkages between school enrolment of girls and increased road access.

In the **water and sanitation** sector, studies have also found that gender sensitive projects can boost school attendance. In Morocco the Rural Water Supply and Sanitation Project previously mentioned above which succeeded in reducing time for fetching water by 50 to 90 percent¹¹⁷ saw an increase in school attendance by from 30 to 51 percent over four years,¹¹⁸ attributed in part to the lesser time spent on water collection. WaterAid Bangladesh found that a school sanitation project, which included providing separate facilities for boys and girls increased school attendance amongst girls by an average of 11 percent from 1992 to 1999.¹¹⁹

4.2.3 Health and safety impacts

The provision of health infrastructure in itself, and its subsequent effective management (the right hospitals and health centers, providing the right services in the right places) can play a significant role in delivering direct benefits to women and improving female health.¹²⁰

In terms of indirect impacts, the **waste and water sectors** have a similarly important role to play in delivering health benefits. The WHO includes provision of waste and water as a key component of wider 'public health' and attributes it, alongside high quality health care provision, with significant reductions in worldwide mortality over the past fifty years.¹²¹ Easy access to safe water is known to improve maternal health, since pregnant and nursing women no longer have to struggle with heavy loads of water several times a day.¹²²

¹¹⁴ OECD, DAC Network on Gender Equality (GENDERNET) (April 2011): *ibid.*

¹¹⁵ OECD, DAC Network on Gender Equality (GENDERNET) (April 2011): *ibid.* p.24.

¹¹⁶ World Bank (2010, C) 'Social development and infrastructure: Making water supply and sanitation work for women and men, tools for task teams'

¹¹⁷ World Bank (2003): *Op. cit.*

¹¹⁸ Water and Sanitation Program (2010): 'Water and Sanitation Program: Technical Paper - Financing On-Site Sanitation for the Poor – A Six Country Comparative Review and Analysis'

¹¹⁹ WaterAid (undated): *Op. cit.*

¹²⁰ WaterAid (undated): *ibid.*

¹²¹ Powles, John and Comim, Flavio (2012): 'Public health infrastructure and knowledge'. See: http://www.who.int/trade/distance_learning/gpgh/gpgh6/en/index1.html

¹²² Beach et al (1999) 'Assessment of combined ivermectin and albendazole for treatment of intestinal helminth and Wucheraria bancrofti infections in Haitian schoolchildren', in *American Journal of Tropical Medicine and Hygiene*, P.479-486

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A study in Sri Lanka and Malaysia found that reductions in maternal mortality ratios and communicable disease were linked strongly to general improvements in **sanitation**. Government human development programmes in Malaysia, aimed at underprivileged groups, were based on a synergy of health care with education, water and sanitation programmes. Women's involvement was important and gender equity was seen to be a priority. As a result, female life expectancy has increased from 58 to 69 years and maternal mortality has decreased by 70 percent.¹²³

4.2.4 Infrastructure planning, policy and decision-making

Improving involvement in policy and decision-making, not only in a specific sector but also in the wider community, is another indirect impact of infrastructure development. Infrastructure that helps women to carry out everyday chores more efficiently, such as the supply of piped water or using improved stoves, frees time for educational opportunities, productive work, and participation in community life and decision making.¹²⁴

Increased participation in the labor market, as a result of better infrastructure, can economically empower women, giving them greater independence and self-sufficiency.

Autonomy for women contributes to social cohesion as women are respected more by male members of the community. The uptake of any economic and management opportunities for women created by infrastructure projects encourages recognition within communities that women can play an important role and therefore aid in shifting traditionally held gender values. This can change women's position in society, which offers subsequent potential for them to enhance their role in decision-making and gain more equality with men in community structures. Furthermore, there is scope in infrastructure projects for implementation activities such as resettlement planning and other management planning to give special consideration to empowering women, through participation and compensation entitlements.

¹²³ Pathmanathan, I, et al, World Bank (2003) 'Investing in maternal health: learning from Malaysia and Sri Lanka' available at <http://www.worldbank.org/publications/pdfs/15362frontmat.pdf>

¹²⁴ OECD, DAC Network on Gender Equality (GENDERNET) (April 2011): Op. cit. 301966/ITD/ITN/F/November 2012
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5. Conclusions and next steps

This chapter outlines the key conclusions for this work with regards to identifying, demonstrating, forecasting, measuring and maximizing the opportunities for positive gender impacts.

5.1 Conclusions

The key conclusions to be drawn are as follows:

- Gender equality and its importance for access to good quality infrastructure are firmly on the international policy agenda as testified by the range of guidance documents that have emerged in the last decade. At a policy level, gender mainstreaming is regarded as a priority and there is demonstrable commitment to promoting gender equality and taking action to address it through infrastructure development.
- At a policy level, it is also recognized that infrastructure development needs to be gender aware in order to realize gender benefits. Women's interests need to be understood and their views taken on board through active involvement and consultation. Infrastructure projects cannot be assumed to deliver benefits to women and men equally; proceeding with project development with this assumption is likely to lead to the aggravation rather than reduction of gender inequalities.
- This study has considered gender implications at a project rather than policy level by identifying evidence of benefits for women and girls and of mainstreaming gender into both PPP and traditionally financed infrastructure development. The research has shown that, despite the policy level commitment there is very little evidence of infrastructure projects taking conscious action on gender. As such impacts on women are often unplanned and unintended and there may be no gender perspective when targets are set or outcomes are monitored. This provides little emphasis on opportunity for infrastructure to be a positive enabler of gender outcomes.
- Significant guidance exists about potential impacts of infrastructure project, how to mainstream gender and indicators which could be used. This report has synthesized the existing guidance material to list potential tools for PPP projects to employ, starting with project level gender action planning.
- There are some examples of good practice in terms of gender mainstreaming in infrastructure development. However, there is a scarcity of information about actual impacts, the benefits of mainstreaming approaches and how successful they are in different sectors for PPP projects.
- Amongst guidance that presently exists, without exception, emphasis is placed on the vitality of monitoring and evaluation to ensure that gender outputs and outcomes can be measured. However, examples of evaluations being applied systematically within different sectors are often hit and miss. Within the current literature, a raft of potential indicators exist for each sector but these are not prioritized and there is little evidence of them being used in live projects to either set targets or monitor results.
- The main stumbling block with regard to assessing and evaluating gender impacts is the lack of sex-disaggregated data. This renders almost impossible proper monitoring of gender benefits and impacts. Existing guidance tends not to detail how data can be collected in the level of detail required or how data collection could be financed as part of the project delivery process. This is understandable given the sometimes very difficult conditions in which PPP infrastructure projects are seeking to attract donors and the variety of stakeholder interests. It also occurs because infrastructure projects tend to rely on data gathering about beneficiaries from other government or private sector entities that may lack resources or time to acquire the level of detail that would be useful.
- The lack of reliable empirical data has created challenges in term of capturing and estimating gender benefits at project and spatial levels.

There is no quantitative means to promote or measure benefits for women and girls in different sectors where PPP might be applied. This means that there is a conspicuous lack of forecasting tools making it difficult to pre-assess impacts of projects.

- The 'Female Beneficiary Estimation Tool' proposed within this report is a means to help fill this void. The Tool provides an indication of the number and proportion of female beneficiaries and sets out a proposed methodology which takes into account gender inequality and also the sector type of the infrastructure. This is, in its nature, high level and can be used when there is a lack of existing quantified data. It should not be used where hard evidence is available and should only be seen as an estimation of benefits.
- The literature provides little or no evidence of where and how the benefits to women and girls from PPP and traditionally funded infrastructure have been included in the business case for projects. IFIs do have internal systems that include appraising gender in relation to their own policies, for instance ADB's Initial Poverty and Social Analysis. However, outside such templates, project appraisals covered in literature on PPP projects relate to more general environmental and social impacts. Whilst gender mainstreaming activities are likely to come with a commercial cost for infrastructure projects, there are also some commercial gains which are not presently articulated. Further identification of the benefits to women and girls and relating these to the business case for infrastructure PPPs is worthy of further consideration.
- It is important that the type of impacts delivered to women by infrastructure projects are not lost in the discourse on the number of women who will benefit. This report has uncovered four main impact channels, in addition to access. These are: time; economic activity and resources; health and safety; and planning, policy and decision-making. Their importance varies from sector to sector. These impacts are not currently part of the estimation tool but this should downgrade their significance.
- There is presently only limited discourse and evidence on the overall gender impacts of PPP projects and even less about the comparative benefits of PPP versus traditionally funded infrastructure. From the evidence reviewed as part of this study, there seem to be few significant differences between PPP gender impacts and traditionally financed projects. However, PPPs do offer scope for pro-gender activity if backed by a solid government policy and conditionality in the procurement process.

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Appendix A. Public private partnerships

A.1. What is a public private partnership?

A public private partnership (PPP) is a contractual arrangement between a public body (often, though not always a service provider) and a private sector entity (ranging in size from a small individual company to a large consortium). The contractual agreement is used to deliver facilities, infrastructure and services designed to meet the needs of a population, whilst at the same time sharing the costs and risks of delivery and operation.

PPPs emerged to meet the considerable deficiencies of and demand for developments in key infrastructure sectors, particularly in the developing world where infrastructure is hugely underprovided. An estimated 884 million people in developing countries are without safe water; 1.6 billion are without electricity; 2.5 billion have no sanitary facilities; and nearly 1 billion lack access to an all-weather road.¹²⁵ Africa ranks particularly poorly in terms of infrastructure density at about 10 percent of that of industrialized countries. Meeting Africa's infrastructure needs is estimated to require around US\$93 billion a year.¹²⁶

The public sector's ambition to address the issues of under investment has led to an increasing focus on the potential of private investment.¹²⁷ PPPs provide a route to improve infrastructure maintenance and management where costs can not readily be met by the public sector alone, due either to a lack of skills, unacceptable levels of risk and/or, most commonly, lack of available finance. Private sector investment and expertise offers a means to bridge the gap faced by the public sector and offers accelerated development.¹²⁸

In developing countries, PPPs have been recognized by IFIs as vehicles to effectively mitigate risks. Whilst keen to invest money in large infrastructure projects, IFIs often impose strict criteria necessitating private sector involvement to share the commercial and delivery responsibilities.

PPP contracts work differently from traditional financing as they focus on 'outputs' rather than 'inputs'. In a PPP contract the public sector entity will specify the 'outputs' they expect the contractor to provide (such as a level of maintenance for roads) and the contractor proposes (through the bidding process) how they will provide the output.

Essentially, under a PPP the contractor is paid a service fee, which is agreed in advance, over the lifetime of the contract. These payments are intended to reimburse the private sector contractor for the up-front costs of the infrastructure and provide a profitable return on investment.

As part of the contract agreement, the public sector entity monitors the outputs and are often able to adjust service fees based on performance, for example through fee deductions should the contractor fail to provide the outputs as specified in the contract. This provides an incentive for the contractor to carry out works on time and to budget, provide the highest standards of construction and maintenance works, and provide a high quality service.

Beyond this, the definition of PPP becomes more complex. Across different countries, and particularly across different infrastructure sectors, different models have emerged and continue to evolve.

¹²⁵ World Bank (2010, B): Op. cit.

¹²⁶ Multilateral Development Banks (MDBs) Gender Working Group (2011): Op. cit. This figure compares to 25 percent in Latin America and 50 percent in Central and East Asia.

¹²⁷ Spratt, S. and Ryan Collins, L. for the Private Infrastructure Development Group (2012): 'Development Finance Institutions and Infrastructure'

¹²⁸ Yew, E.T (Feb 17, 2011): 'The renaissance of railways in Asia pacific megacities'
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A.2. What forms do PPP contracts take?

For the most part, PPPs are based around a type of ‘concession’ contract, which can be applied to both existing and planned infrastructure. Where an asset (the infrastructure in question) is already in place, these most commonly involve the retention of asset ownership by the public sector, with the private partner being responsible for any new investment, as well as the operation and maintenance of existing assets.

For new infrastructure facilities, the private sector partner often takes responsibility for design, construction and operation of the asset over a fixed long term period (often between five and 50 years). Contracts generally involve the private partner financing construction of a facility and being repaid over time through a service charge to the public partner, revenues from the facility, or a combination of the two.¹²⁹

However, a vast range of concession contracts exist and the variety of arrangements are detailed in the appendices to this report.

Table A.1: Common types of PPP arrangements in infrastructure

Model	Description
O&M – Operations and Maintenance	A public partner (e.g. a government agency) contracts with a private partner to provide and/or maintain a specific service. Under O&M, the public partner retains ownership and overall management of the public facility or system.
OMM – Operations, Maintenance and Management	A public partner contracts with a private partner to operate, maintain, and manage a facility or system providing a service. Under OMM, the public partner retains ownership of the public facility or system, but the private party may invest its own capital. Generally, the longer the contract term, the greater the opportunity for increased private investment because there is more time available in which to recoup any investment and earn a reasonable return.
DB – Design-Build	DB is when the private partner provides design and construction of a project to the public body. The public sector partner owns the assets and has the responsibility for operation and maintenance. This type of PPP can reduce time, save money, provide stronger guarantees and allocate greater project risk to the private sector. It also reduces conflict by having a single entity responsible to the public owner for the design and construction.
DBM – Design-Build-Maintain	A DBM is similar to a DB, but includes maintenance of the facility for a fixed period by the private sector partner. The public sector partner owns and operates the assets. The benefits are similar to DB with maintenance risk being allocated to the private sector partner.
DBO - Design-Build-Operate	With DBO, a single contract is awarded for the design, construction, and operation of a capital improvement. Title to the facility remains with the public sector unless the project is a design-build-operate-transfer (DBOT) or design-build-own-operate (DBOO). A DBO approach maintains the continuity of private sector involvement and can facilitate private-sector financing of public projects supported by user fees generated during the operations phase.
DBOM - Design-Build-Operate-Maintain	The DBOM model is an integrated partnership that combines the design and construction responsibilities of design-build procurements with operations and maintenance. Project components are procured from the private sector in a single contract with financing secured by the public sector. The public agency maintains ownership and retains a significant level of oversight of the operations through terms defined in the contract.
DBFOM - Design-Build-Finance-Operate-Maintain	With the DBFOM approach, the responsibilities for designing, building, financing, operating and maintaining are bundled together and transferred to private sector partners. There are a wide variety of DBFOM arrangements, in particular in the degree to which financial responsibilities are transferred to the private sector. They are often

¹²⁹ Nikolic, IA and Maikisch, H. on behalf of the World Bank: Health Nutrition and Population (2006): ‘Public private partnerships and collaboration in the health sector: An overview with case studies from recent experience’, pp.2-3
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Model	Description
	financed by 'debt leveraging revenue streams' such as direct user fees or tolls, lease payments, or vehicle registration fees. They are also often supplemented by public sector grants in the form of money or contributions in kind, such as right-of-way.
DBFOMT - Design-Build-Finance-Operate-Maintain-Transfer	The DBFOMT partnership model is the same as a DBFOM except that the private sector owns the asset until the end of the contract when the ownership is transferred to the public sector.
BOT – Build-Operate-Transfer	Under BOT arrangements, the private partner builds a facility to the specifications agreed to by the public body, operates the facility for a specified time period under a contract or franchise agreement, and then transfers the facility to the public body at the end of the contract. In most cases, the private partner will also provide some, or all, of the financing, so the length of the contract or franchise must be sufficient to enable the private partner to realize a return on its investment. At the end of the franchise period, the public partner can assume operating responsibility, contract the operations to the original franchise holder, or award a new contract or franchise to a new private partner. A build-transfer-operate (BTO) model is similar to the BOT model except that the transfer to the public owner takes place at the time that construction is completed, rather than at the end of the franchise period.
BOO Build-Own-Operate	Under a BOO contract, the contractor constructs and operates a facility without transferring ownership to the public sector. Legal title to the facility remains in the private sector, and there is no obligation for the public sector to purchase the facility or take title.
BBO - Buy-Build-Operate	A BBO is a form of asset sale (by the public sector partner) that includes a rehabilitation or expansion of an existing facility. The public body sells the asset to the private sector, which then makes the improvements necessary to operate the facility in a profitable manner.
LDO - Lease-Develop-Operate or BDO - Build-Develop-Operate	Under these partnership arrangements, the private party leases or buys an existing facility from a public agency; invests its own capital to renovate, modernize, and/or expand the facility; and then operates it under a contract with the public agency.
Developer Finance	The private sector partner finances the construction or expansion of a public facility in exchange for the right to build residential housing, commercial units, and/or industrial facilities at the site. The private developer contributes capital and may operate the facility under the oversight of the public body. The developer gains the right to use the facility and may receive future income from user fees.
Lease/Purchase	A lease/purchase is an installment-purchase contract. Under this model, the private sector finances and builds a new facility, which it then leases to a public agency. The public agency makes scheduled lease payments to the private party. The public agency accrues equity in the facility with each payment. At the end of the lease term, the public agency owns the facility or purchases it at the cost of any remaining unpaid balance in the lease. The facility may be operated by either the public agency or the private developer during the term of the lease.
Sale/Leaseback	Under sale/leaseback, the owner of a facility sells it to another entity, and subsequently leases it back from the new owner. Both public and private entities may enter into sale/leaseback arrangements. Usually, under this arrangement, the public body sells the facility, leases it back and continues to operate it, transferring certain risks to the new owner.
Turnkey	A public body contracts with a private investor to design and build a complete facility in accordance with specified performance standards and criteria agreed between the agency and the investor. The private developer commits to build the facility for a fixed price and absorbs the construction risk of meeting that price commitment. Private partners often use fast-track construction techniques (such as design-build) facilitating fast and cost effective construction.

Source: Source: United States National Council for Public Private Partnerships. See: <http://www.ncppp.org/howpart/ppptypes.shtml>

PPPs often involve a combination of contracts where private companies or consortia enter into long-term contracts with the government to finance, build, maintain and/or manage new projects. In many examples a consortium may finance construction of facilities that are then leased by public partners.¹³⁰

PPPs often involve additional service or supply contracts (for example, for cleaning or catering services), involving other suppliers, as part of the consortium approach. PPPs often include **all** non-specialist services (such as all non-clinical services in a new hospital facility) as well as finance, build and maintenance contracts. In some parts of the world (and most commonly in developing countries) PPPs include both specialist and other services, whereby the private sector also provides associated professional services (such as complex engineering, or healthcare personnel).

The sheer variety of possible partnerships in itself is evidence that there is not a universal optimum approach to combined public-private delivery. PPP structures come in many forms and are an evolving concept which must be adapted to the individual needs and characteristics of each sector, project and project partner.¹³¹ The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) emphasizes that there is no one PPP model that can satisfy all conditions concerning a project's geographical, technical and financial characteristics. Clear government policy guidelines are necessary concerning the most appropriate type of partnerships for different types of projects.¹³²

A.3. Benefits and drawbacks of PPP arrangements

Partnerships between the public and private sectors offer a range of significant benefits in terms of delivery and value for money, as well as some drawbacks that must be mitigated by the partners involved. Some of the long term financial outcomes of particular kinds of PPP arrangements are only now becoming apparent and the potential benefits and drawbacks are outlined below.

PPP has many **advantages** in terms of infrastructure delivery. For example:

- PPP can provide the only access to new sources of private financing for up front capital investments¹³³ and may be **the only viable means** of delivering much-needed infrastructure improvements in resource-poor environments. The high levels of private investment, eliminates **large up-front public investment and reduced government spending** securing greater return on public investment and expenditure.
- PPPs can deliver **higher quality and more efficient infrastructure** informed by private sector expertise and technological innovation. The quality and reliability of service can be better under a PPP (which is incentivized to perform) than under a public procurement.
- Efficiency benefits can also apply to implementation phase of the project. Private sector interests can be more likely to make **upgrades during maintenance activities**¹³⁴ driven by operational efficiency as a result of the competitive market environment. The private entity has more incentive to maintain the infrastructure (as they are receiving profit from it) than the public entity, as in the public entity case the funding of maintenance would be seen as an added cost that would need to be budgeted for.

¹³⁰ Nikolic, IA and Maikisch, H. on behalf of the World Bank: Government of Assam (2010): 'PPP Models', p.3 See: <http://assamppp.gov.in/pppmodels.pdf>

¹³¹ Ridolfi, R. on behalf of the European Commission (2004): 'Resource book on PPP case studies', p.7

¹³² UNESCAP. See: http://www.unescap.org/ttdw/ppp/trainingmaterials/PPP_Primer.pdf

¹³³ IFC (2010): 'IFC Support to Health Public-Private Partnerships', p.5

¹³⁴ IFC (2010): *ibid.*

- “The combination of the PPP contract, and controls by investors and lenders offer the project company, should ensure that management inefficiency and other remediable performance failures are detected and dealt with swiftly, compared to public-sector procurement where such failures are more easily buried.”¹³⁵
- PPP infrastructure projects can be more **sustainable**, particularly where the private sector is responsible for the operation and maintenance of the assets and is seeking to maximize rate of return following asset transfer at the end of the contract.
- The private sector bears a significant **share of the risks** associated with project delivery. Partnering can reduce or more evenly allocate risks. For example, the private partner may be better able to manage cost and schedule overruns
- PPPs provide more **predictable budgetary management** over a fixed period of time through fixed cost contracts

However, there are also a number of **potential drawbacks** as set out below:

- PPP contracts can be highly **complex** to implement and administer, particularly when compared with standard routes for service procurement. PPPs are often comprised of a number of interlocking agreements, required to deliver an infrastructure project from start to finish.
- Many PPP agreements incur **underlying fiscal costs** to the public sector body, often as a result of the needs for the private partner to operate to a profit.
- Contract negotiations between parties and arriving at a viable project deal may require **long time scales** as compared to traditional financing routes.
- PPP schemes often require **close regulatory oversight** to ensure performance and delivery adheres to appropriate standards. This needs to be resourced by public sector partners.
- PPPs can result in significant **contingent liabilities** on the public body in the medium and long term, imposing actual and potential future costs as a result of the agreement, which in turn create obligations similar to public debt for financing infrastructure investment.

A.4. The relevance of PPP to different infrastructure sectors

PPP agreements operate across a range of sectors to a greater or lesser degree. In some sectors, such as energy, transport and health care, PPPs have been used as part of a package of infrastructure finance tools since the 1980s. In other sectors, such as water and waste processing, PPPs are newer, but have quickly shown to provide benefits over and above more traditional forms of infrastructure funding. Yet in others – such as in agriculture, agri-industry and in heavy industrial manufacturing – the PPP approach is more embryonic and showing itself to be a source of a different kind of impact on local populations.

In the **energy sector**, the private sector has been typically engaged through a form of PPP known in the sector as Power Purchase Agreements (PPAs), which hand responsibility and risk of construction and operation of a power generation facility to the private sector on the basis that they possessed the assets and expertise to do so.

PPP has hastened the introduction of large scale electricity projects to developing countries, particularly given the greater financial constraints and knowledge gaps in developing governments. Understandably therefore, the power sector attracts a significant proportion of all private participation in infrastructure, with some estimates suggesting that as much as 44 percent of private investment is in the power sector.¹³⁶

¹³⁵ Yescome, E.R (2007): ‘Public-private partnerships: Principles of policy and finance’

¹³⁶ United Nations Economic Commission for Africa (UNECA) (2011): ‘High-level Workshop on Public-Private Partnerships Implementation in the Energy Sector in Africa: Challenges, Best Practices and New Trends’
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With the demand for electricity remaining huge in the southern hemisphere, the need for PPP is expected to remain critical.

Since the early 1990s, many governments, in the developed world in particular, have adopted models where the private sector receives a concession contract to fund, design, build, and operate **transport infrastructure**. Road transport was one of the first areas where PPP arrangements were introduced and many countries have been using PPPs for decades in the form of BOT or DBFO to provide and maintain toll roads. In rail operations there are more opportunities to provide both large and small contracts that cover both services and infrastructure related contracts.¹³⁷

PPPs in the **health sector** tend to differ from typical infrastructure PPP projects in two key ways. First, the bulk of expenditure is in the operational, rather than the construction phase¹³⁸ and, second, private revenue contributions are often relatively low meaning financing must be available on the part of the public sector, post-construction, to ensure the benefits of the new infrastructure are delivered.¹³⁹

PPPs in the health sector take a variety of forms and cover a range of projects, including:

- Primary care clinics;
- Specialized clinical services such as dialysis and cataract treatments;
- New public secondary and tertiary hospitals;
- Clinical laboratory and diagnostic services; and,
- Other support services.¹⁴⁰

PPPs have been applied in the **water and waste sector** since the 1980s, gaining momentum in the 1990s.¹⁴¹ It is generally believed that PPPs in water and waste deliver improved service quality, expanded coverage at affordable rates, no fiscal burden on the government, freeing up public resources for other ends, improved efficiency, increased cost-effectiveness due to free market competition, innovation and technology to meet specific output requirements such as remote and hard to reach areas or pro-poor targeting. In addition to these, PPPs are perceived to provide better access to finance and credit for capital investments in the sector, a greater incentive for the maintenance of hardware, improved flexibility with regard to tailored service delivery, and more accountability towards users.¹⁴²

Despite the importance of **agri-infrastructure** for the competitiveness and growth of agri-businesses, development of private sector participation, including PPPs, lags behind other sectors such as power, telecommunications, and water and sanitation. Agri-infrastructure is typified by high risk and low or uncertain returns for private investors including low population densities, scattered and remote locations, and weather volatility. Recently PPPs in agricultural infrastructure have emerged on a pilot basis, but no model has been found to be widely applicable and replicable. Most existing examples are in the field of irrigation.¹⁴³ Many challenges in the sector lie in OMM where resource and political will are lacking, leading to inefficiency and poor quality standards.¹⁴⁴

¹³⁷ Yew, ET, (Feb 17, 2011): 'The renaissance of railways in Asia Pacific megacities'

¹³⁸ IFC (2011, B): Op. cit.

¹³⁹ Stowell, Lindsay and Loening (2011): 'PPP basics: Is your project affordable?' in 'Handshake: IFC's quarterly journal on public-private partnerships', Issue 3 (October 2011), p.14

¹⁴⁰ IFC (2010): Op. cit.

¹⁴¹ Budds, J. (2000): 'PPP and the poor in water and sanitation - interim findings: An interim review of documents'

¹⁴² Gassner, K, Popov, A, and Pushak, N (2009): 'Does private sector participation improve performance in electricity and water distribution?' in *Trends and Policy Options*, No. 6; Ridolfi, R. on behalf of the European Commission (2004): Op. cit.; and Nyachhyon, B L. on behalf of Economic Policy Network (2006): 'Policy Paper 15: Prospects and constraints of public private partnership for urban waste management'

¹⁴³ It should be noted in this respect that projects involving WUAs, as 'the only' private element of an irrigation project, are excluded from the scope of this report. This is because the overall study focuses on PPPs which include private *firms* rather than an assembling of users, and projects in which private parties were also involved in design and construction (WUAs rather tend to be

PPPs within the **industrial sector** also often take different forms. Where PPP agreements typically involve the public sector reaching out to the private sector to deliver infrastructure, the industrial sector is dominated by the private sector and is generally run on a commercial basis, with risk and cost management already factored in. As such, PPPs in this sector are generally focused around support provided by the public sector to ensure that components of the economy deemed essential for growth remain productive and competitive in more open global markets.

In developed regions PPPs (such as the flagship PPP-based 'Factories of the Future' programme in Europe) are being developed in order to help manufacturing companies remain competitive by assisting them to add value through their processes.

In summary, despite the current limited examples in some sectors, PPP does offer opportunities. There is evidence to suggest that many problems associated with human health, wealth and wellbeing are the result of poor infrastructure development, design, operation, maintenance and management;¹⁴⁵ all of which can often be neglected in traditionally funded projects due to lack of funding¹⁴⁶. If well-designed and well-executed, PPPs have the potential to break this cycle; private parties can bring in the needed management and institutional capacity, as well as a strong incentive for project sustainability while the public partner can play a part in ensuring that community, societal and economic interests are reconciled.¹⁴⁷

If implemented correctly, PPPs provide benefits for:

- ***Private sector contractors, through profitable and secure revenue streams, reduced repayment periods, and expanded market access;***
- ***Public sector bodies, through effective service delivery or infrastructure provision (without the need for huge upfront funding); and***
- ***Consumers and service users, by providing access to a previously unavailable or improved service.***

preoccupied with operation and maintenance).

¹⁴⁴ World Bank (2007): 'Emerging public-private partnerships in irrigation development and management'; Préfol, B. et al. (2006): 'Public-private partnership in irrigation and drainage: Need for a professional third party between farmers and government. In: *Irrigation and Drainage*, 55: pp. 253-263.

¹⁴⁵ World Bank (2007): Op. cit.; Préfol, B. et al. (2006): Op. cit.

¹⁴⁶ Préfol, B. et al. (2006): Op. cit.

¹⁴⁷ World Bank (2007): Op. cit.; Préfol, B. et al. (2006): Op. cit.

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Appendix B. Female Beneficiary Estimation Tools - Variations

This appendix sets out two possible variations of the tool which is outlined in Chapter 2 of this report

B.1. Option Two - no adjustments

Option 2 includes neither the sector nor the gender adjustments and is based only on the gender inequality multiplier as set out below.

B.1.1. Population

As with the tool proposed in the main body of this report, Option 2 starts with information on the total number of projected beneficiaries for the infrastructure in question. This is expected to be available in the majority of cases with which the IFC is involved because effectively structured PPP contracts are dependent on this information. Option 2 also uses the World Bank's dataset on the proportion of women in the national population as a multiplier in order to estimate the number of females amongst the total number of project beneficiaries. See:

<http://databank.worldbank.org/Data/Views/VariableSelection/SelectVariables.aspx?source=Gender%20Statistics>.

B.1.2. Gender inequality adjustment

Option 2 uses the gender inequality adjustment in the same way as the tool described earlier in the report. It is based on the same assumptions that that the greater the level of inequality within a country, the lower the project's proportion of female beneficiaries.

B.1.3. Case study examples

The following selected case studies use Option 2, using real PPP projects in which the IFC has been involved.

Case Study: Mexico: Toluca and Tlalnepantla Hospitals

Public health care, fully or partially subsidized by the federal government, is provided to all Mexican citizens. But Mexico lags behind other comparable countries in health status and health care availability. Public hospitals account for the majority of hospital beds; most private hospitals accommodate fewer than 20 inpatients.

An improved health care system was needed in Toluca, the capital of Mexico State and centre of a rapidly growing urban area. Its geographic position and proximity to Mexico City created a major industrial zone in Toluca, but health care accommodations did not meet peoples' needs. Similarly, in Tlalnepantla, whose industrial zone is one of the largest in the country, the lack of a modern public hospital forced residents to seek care elsewhere, or manage without critical services and facilities.

The contracts were signed in 2010. In Toluca, the contract was awarded to the Prodemex consortium, who will invest \$60 million on the construction and equipment during the one-year period following completion of the final design. In Tlalnepantla, the contract was awarded to Marhnos, a privately held group. It is expected that Marhnos will invest \$60 million in construction and equipment during the one-year period following financial closure. The new hospitals will replace outdated facilities and provide patients with improved services while creating a business model for optimal health care in the state. Hospital operations are expected to be complete by June 2012 and the two hospitals combined. The two hospitals combined will benefit approximately **one million people**.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Mexico
Step 2	Population	
	Enter the total number of beneficiaries	1,000,000
	Female proportion of the nation [populates automatically]	50.68%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.45
	Gender inequality adjustment [populates automatically]	1.045
Result	Estimated number of females amongst all beneficiaries	485,095

Source: IFC 'Success Stories', Mexico: Toluca and Tlalnepantla Hospitals

http://www1.ifc.org/wps/wcm/connect/1b1acf00498390978294d2336b93d75f/SuccessStories_MexicoHospitals.pdf?MOD=AJPERES

Case Study: Egypt: New Cairo Wastewater

New Cairo City, a satellite town of Greater Cairo, is being promoted as one of the new centers to alleviate overcrowding in the city centre. New Cairo's current population of 550,000 is expected to increase to approximately 3 million by 2029. The rapid population growth and inadequate water sanitation infrastructure are placing serious strains on the city's ability to provide adequate services.

The Government has made the expansion and improvement of New Cairo's infrastructure a priority and sought IFC's help to develop and implement a model PPP that can be replicated in other infrastructure projects. Public-private partnerships are at the heart of the Government's long-term economic development strategy, together with the mobilization of private sector finance and know-how.

A consortium of Egypt's Orascom Construction Industries and Spain's Aqualia (Orasqualia) won the bid for a public-private partnership (PPP) to build, operate and transfer (BOT) a 250,000 m³/day treatment plant, which is expected to mobilize private investments totalling US\$150–200 million. The new wastewater treatment plan was completed in 2012, benefiting approximately **three million people**.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Egypt, Arab Rep.
Step 2	Population	
	Enter the total number of beneficiaries	3,000,000
	Female proportion of the nation [populates automatically]	49.79%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.00
	Gender inequality adjustment [populates automatically]	1.000
Result	Estimated number of females amongst all beneficiaries	1,493,699

Source: IFC 'Success Stories', Egypt: New Cairo Wastewater

http://www1.ifc.org/wps/wcm/connect/b21864804983906081ecd3336b93d75f/SuccessStories_NCWWweb.pdf?MOD=AJPERES

Case Study: Indonesia: Central Java IPP

Indonesia's economic recovery following Asian financial crisis in 1997 led to a large increase in the demand for power, both for industrial and residential use. In 2005, demand for electricity was expected to grow by over eight percent per year. The government of Indonesia estimated that \$31.4 billion in investments would be required to meet the country's power needs by 2013.

The demand for electricity in Indonesia has grown quickly in the last decade. Facing greater consumption by industry, increasing residential demand, and a push to bring electricity to rural areas, the government aims to dramatically expand power generation and transmission capacity. In 2005, it designated a proposed new coal-fired power plant in Central Java as a top priority and moved to implement new regulations to attract private investment. IFC was transaction advisor to PT Perusahaan Listrik Negara (PLN) in this project, which will boost capacity using the cleanest commercial coal-fired generation technology available.

A consortium consisting of J-Power, Itochu Corporation and Adaro Power won the bid for a 25-year contract to build, own, operate and transfer the new facility, which will use ultra-super critical technology. The project includes a 2,000 MW power plant and transmission facilities which are expected to improve access to electricity to **7.5 million people** and mobilize over \$3 billion in investment. The project was the first to be implemented under the country's new PPP and guarantee regulations, laying the groundwork for future private infrastructure projects. The plant is expected to start operations in 2016.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Indonesia
Step 2	Population	
	Enter the total number of beneficiaries	7,500,000
	Female proportion of the nation [populates automatically]	50.14%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.50
	Gender inequality adjustment [populates automatically]	1.050
Result	Estimated number of females amongst all beneficiaries	3,579,973

Source: IFC 'Success Stories', Indonesia: Central Java IPP

http://www1.ifc.org/wps/wcm/connect/aaf1fb804a1b07068e30ffdd29332b51/SuccessStories_CentralJava.pdf?MOD=AJPERES

B.2. Option 3 - gender mainstreaming adjustment only

Option 3 of the tool does not include the sector adjustment but it does retain the gender mainstreaming variable.

B.2.1. Population

As with Options 1 and 2 the tool starts with information on the total number of projected beneficiaries for the infrastructure in question and uses the World Bank dataset on female population proportions forecast the number of female beneficiaries.¹⁴⁸ The gender equality adjustment is also used in the same way as previously, using the UN Gender Inequality (GI) Index¹⁴⁹ as a multiplier.

B.2.2. Gender mainstreaming adjustment

Option 3 then integrates the gender mainstreaming adjustment, using the base multipliers as shown in the table below:

Table F.2.1 Gender Mainstreaming Multipliers

	No evidence of gender mainstreaming	1-3 gender mainstreaming actions planned	4-6 gender mainstreaming actions planned	7-9 gender mainstreaming actions planned	>10 gender mainstreaming actions planned
Gender Mainstreaming Adjustment	0.80	0.85	0.90	0.95	1.00

B.2.3. Case study examples

The following selected case studies demonstrate the use of Option 3, using real PPP projects in which the IFC has been involved.

¹⁴⁸ <http://databank.worldbank.org/Data/Views/VariableSelection/SelectVariables.aspx?source=Gender%20Statistics>

¹⁴⁹ <http://hdr.undp.org/en/statistics/gii/>
301966/ITD/ITN/F/November 2012
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Case Study: Mexico: Toluca and Tlalnepantla Hospitals

Public health care, fully or partially subsidized by the federal government, is provided to all Mexican citizens. But Mexico lags behind other comparable countries in health status and health care availability. Public hospitals account for the majority of hospital beds; most private hospitals accommodate fewer than 20 inpatients.

An improved health care system was needed in Toluca, the capital of Mexico State and centre of a rapidly growing urban area. Its geographic position and proximity to Mexico City created a major industrial zone in Toluca, but health care accommodations did not meet peoples' needs. Similarly, in Tlalnepantla, whose industrial zone is one of the largest in the country, the lack of a modern public hospital forced residents to seek care elsewhere, or manage without critical services and facilities.

The contracts were signed in 2010. In Toluca, the contract was awarded to the Prodemex consortium, who will invest \$60 million on the construction and equipment during the one-year period following completion of the final design. In Tlalnepantla, the contract was awarded to Marhnos, a privately held group. It is expected that Marhnos will invest \$60 million in construction and equipment during the one-year period following financial closure. The new hospitals will replace outdated facilities and provide patients with improved services while creating a business model for optimal health care in the state. Hospital operations are expected to be complete by June 2012 and the two hospitals combined. The two hospitals combined will benefit approximately **one million people**.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Mexico
Step 2	Population	
	Enter the total number of beneficiaries	1,000,000
	Female proportion of the nation [populates automatically]	50.68%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.45
	Gender inequality adjustment [populates automatically]	1.045
Step 4	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D15 and select from the drop down list]	No evidence of gender mainstreaming
	Gender mainstreaming adjustment [populates automatically]	0.80
Result	Estimated number of females amongst all beneficiaries	388,076

Source: IFC 'Success Stories', Mexico: Toluca and Tlalnepantla Hospitals

http://www1.ifc.org/wps/wcm/connect/1b1acf00498390978294d2336b93d75f/SuccessStories_MexicoHospitals.pdf?MOD=AJPERES

Case Study: Egypt: New Cairo Wastewater

New Cairo City, a satellite town of Greater Cairo, is being promoted as one of the new centers to alleviate overcrowding in the city centre. New Cairo's current population of 550,000 is expected to increase to approximately 3 million by 2029. The rapid population growth and inadequate water sanitation infrastructure are placing serious strains on the city's ability to provide adequate services.

The Government has made the expansion and improvement of New Cairo's infrastructure a priority and sought IFC's help to develop and implement a model PPP that can be replicated in other infrastructure projects. Public-private partnerships are at the heart of the Government's long-term economic development strategy, together with the mobilization of private sector finance and know-how.

A consortium of Egypt's Orascom Construction Industries and Spain's Aqualia (Orasqualia) won the bid for a public-private partnership (PPP) to build, operate and transfer (BOT) a 250,000 m³/day treatment plant, which is expected to mobilize private investments totaling US\$150–200 million. The new wastewater treatment plan was completed in 2012, benefiting approximately **three million people**.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Egypt, Arab Rep.
Step 2	Population	
	Enter the total number of beneficiaries	3,000,000
	Female proportion of the nation [populates automatically]	49.79%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.00
	Gender inequality adjustment [populates automatically]	1.000
Step 4	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D15 and select from the drop down list]	No evidence of gender mainstreaming
	Gender mainstreaming adjustment [populates automatically]	0.80
Result	Estimated number of females amongst all beneficiaries	1,194,959

Source: IFC 'Success Stories', Egypt: New Cairo Wastewater

http://www1.ifc.org/wps/wcm/connect/b21864804983906081ecd3336b93d75f/SuccessStories_NCWWweb.pdf?MOD=AJPERES

Case Study: Indonesia: Central Java IPP

Indonesia's economic recovery following Asian financial crisis in 1997 led to a large increase in the demand for power, both for industrial and residential use. In 2005, demand for electricity was expected to grow by over eight percent per year. The government of Indonesia estimated that \$31.4 billion in investments would be required to meet the country's power needs by 2013.

The demand for electricity in Indonesia has grown quickly in the last decade. Facing greater consumption by industry, increasing residential demand, and a push to bring electricity to rural areas, the government aims to dramatically expand power generation and transmission capacity. In 2005, it designated a proposed new coal-fired power plant in Central Java as a top priority and moved to implement new regulations to attract private investment. IFC was transaction advisor to PT Perusahaan Listrik Negara (PLN) in this project, which will boost capacity using the cleanest commercial coal-fired generation technology available.

A consortium consisting of J-Power, Itochu Corporation and Adaro Power won the bid for a 25-year contract to build, own, operate and transfer the new facility, which will use ultra-super critical technology. The project includes a 2,000 MW power plant and transmission facilities which are expected to improve access to electricity to **7.5 million people** and mobilize over \$3 billion in investment. The project was the first to be implemented under the country's new PPP and guarantee regulations, laying the groundwork for future private infrastructure projects. The plant is expected to start operations in 2016.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Indonesia
Step 2	Population	
	Enter the total number of beneficiaries	7,500,000
	Female proportion of the nation [populates automatically]	50.14%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.50
	Gender inequality adjustment [populates automatically]	1.050
Step 4	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D15 and select from the drop down list]	No evidence of gender mainstreaming
	Gender mainstreaming adjustment [populates automatically]	0.80
Result	Estimated number of females amongst all beneficiaries	2,863,978

Source: IFC 'Success Stories', Indonesia: Central Java IPP

http://www1.ifc.org/wps/wcm/connect/aaf1fb804a1b07068e30ffdd29332b51/SuccessStories_CentralJava.pdf?MOD=AJPERES

Appendix C. Countries with no gender inequality value - assumptions

As described in the report, the gender inequality values are taken from a UN data source - the UN Gender Inequality (GI) Index. See: <http://hdr.undp.org/en/statistics/gii/>

This data source is considered the most reliable information to use for this purpose. However, for certain countries gender inequality data is not available and assumptions have had to be made in order to ensure that the tool can be applied to infrastructure projects in as many countries as possible around the world.

In order to make the most sensible assumptions on gender inequality, those countries for which there is no data have been grouped and been paired with countries with similar characteristics, mainly based on geographical proximity. These assumptions on regional comparators are set out in the tables below. The left hand columns highlight the nation for which the UN GI Index does not contain a value. The right hand column highlights the country considered sufficiently comparable so as to allow the use of the same GI value in the tool.

As documented in the report, these are proxy values only and should only be used where the UN Index does not provide the relevant data.

Arab World	Assumptions
Egypt, Aran Rep	Equal to Syria
Occupied Palestinian Territory	Equal to Jordan
Caribbean	Assumptions
Antigua and Barbuda	Equal to Jamaica
Dominica	Equal to Jamaica
Grenada	Equal to Jamaica
St Kitts and Nevis	Equal to Jamaica
St Lucia	Equal to Jamaica
St Vincent and the Grenadines	Equal to Jamaica
Suriname	Equal to Jamaica
Eastern Europe and Former Soviet Union	Assumptions
Belarus	Equal to Russia
Bosnia and Herzegovina	Equal to Russia
Montenegro	Equal to Russia
Serbia	Equal to Russia
Turkmenistan	Equal to Russia
Uzbekistan	Equal to Russia

Islands in the Pacific and Indian Oceans	Assumptions
Comoros	Equal to Papua New Guinea
Fiji	Equal to Papua New Guinea
Kiribati	Equal to Papua New Guinea
Marshall Islands	Equal to Papua New Guinea
Micronesia, Fed Sts.	Equal to Papua New Guinea
Nauru	Equal to Papua New Guinea
Palau	Equal to Papua New Guinea
Samoa	Equal to Papua New Guinea
Seychelles	Equal to Papua New Guinea
Solomon Islands	Equal to Papua New Guinea
Timor-Leste	Equal to Papua New Guinea
Tonga	Equal to Papua New Guinea
Tuvalu	Equal to Papua New Guinea
Vanuatu	Equal to Papua New Guinea

Sub-Saharan Africa	Assumptions
Angola	Average of SSA countries for which data is available 150. This value is 0.608.
Djibouti	Average of SSA countries for which data is available (0.608)
Equatorial Guinea	Average of SSA countries for which data is available (0.608)
Eritrea	Average of SSA countries for which data is available (0.608)
Ethiopia	Average of SSA countries for which data is available (0.608)
Guinea	Average of SSA countries for which data is available (0.608)
Guinea-Bissau	Average of SSA countries for which data is available (0.608)
Madagascar	Average of SSA countries for which data is available (0.608)
Nigeria	Average of SSA countries for which data is available (0.608)
Sao Tome and Principe	Average of SSA countries for which data is available (0.608)
Somalia	Average of SSA countries for which data is available (0.608)

It is suggested that one SSA country is a unique in its characteristics as compared to those in the table above – this is Cape Verde as it is more developed than the other countries listed in this nature. As such, the tool assumes that the gender inequality in Cape Verde is the same as it is in Portugal.

Finally, there is also a list of countries for which it is not easy to find a comparator. In place of the tool's proxy value for these nations is the average of all¹⁵¹ the GI values.

¹⁵⁰ The SSA countries for which data is available are: Benin; Botswana; Burkina Faso; Burundi; Cameroon; Central African Republic; Chad; Congo; Congo Democratic Republic; Cote D'Ivoire; Gabon; The Gambia; Ghana; Kenya; Lesotho; Liberia; Liberia; Malawi; Mali; Mauritania; Mozambique; Niger; Rwanda; Senegal; Sierra Leone; Sudan; Swaziland; Tanzania; Togo; Uganda; Zambia; Zimbabwe.

¹⁵¹ 'All' refers to the current values in the UN GI Index; it does not include the proxy values that have been developed as part of these assumptions.

Country	Assumptions
Andorra	Average of all countries gender inequality index
Brunei Darussalam	Average of all countries gender inequality index
Hong Kong	Average of all countries gender inequality index
Liechtenstein	Average of all countries gender inequality index
Monaco	Average of all countries gender inequality index
San Marino	Average of all countries gender inequality index
Dem Rep Korea	Average of all countries gender inequality index

Appendix D. Further case study examples: Option 1

Case Study: Brazil: Hospital du Suburbio

Brazil is a country characterized by widely diverging income levels which can vary greatly across different regions, cities and neighbourhoods. Consequently, access and quality of health care is also inequitable. Citizens with high income levels have access to high quality private health services, whereas those with the lowest incomes can only rely on public services which are often poorly equipped and serviced, as well as overwhelmed with demand.

Located in one of the poorest districts of Salvador, the Hospital do Subúrbio is the first state hospital construction in the area in 20 years. The transaction closed in May, 2010 and the hospital construction was completed in June 2010. The hospital will treat an estimated 175,000 people annually and benefit approximately one million.

A consortium composed by Promedica, a leading Brazilian regional healthcare company, and Dalkia, a French company specializing in facilities management and nonmedical services, won the bid. The concessionaire will be responsible for equipping, maintaining and operating both clinical and non-clinical services at the hospital for a term of ten years, and has committed to meet the highest technology standards. Promedica & Dalkia is expected to invest approximately US\$ 32 million to equip the hospital over the life of the concession, with investments totalling US\$22 million in the first year alone.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation.

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Brazil
Step 2	Population	
	Enter the total number of beneficiaries	1,000,000
	Female proportion of the nation [populates automatically]	50.80%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.45
	Gender inequality adjustment [populates automatically]	1.045
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Health
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.90
Result	Estimated number of females amongst all beneficiaries	437,604

Source: IFC 'Success Stories', Brazil: Hospital do Subúrbio

http://www1.ifc.org/wps/wcm/connect/b4450500498391bf85dcd7336b93d75f/SuccessStories_BahiaHospital.pdf?MOD=AJPERES

Case Study: Moldova: Radiology and Diagnostic Centre

Moldova, a small country of 4.2 million with a per capita GDP of \$1,100, has struggled since the break-up of the Soviet Union in 1991. Although it is one of Europe's poorest countries, it has made serious efforts to improve health care for its citizens. Moldova's Ministry of Health has implemented several key reforms in recent years, including the introduction of national health insurance and reducing surplus hospital capacity. However, its health system remains under-funded, under-equipped, and poorly managed. In 2010, for example, there were only three centres in the country providing MRI scan services; only one of these uses the latest technology. To address these problems, the Moldovan Ministry of Health turned to IFC to attract private sector investors through PPPs in the health sector. Its first health PPP transaction will modernize diagnostic imaging and radiology services for public patients at the Republican Hospital in Chisinau, thereby addressing an important gap in existing healthcare services.

Magnific, a Moldovan healthcare services provider, won the 12-year concession to renovate, construct, equip and operate a new diagnostic imaging and radiology center. The transaction mobilized \$7 million in private sector investment and is expected to benefit over **100,000 people annually**. The concession, Moldova's first PPP, lays the groundwork for further private sector participation in the health sector and other public services. The agreement was signed in November 2011.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Moldova
Step 2	Population	
	Enter the total number of beneficiaries	100,000
	Female proportion of the nation [populates automatically]	52.56%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.30
	Gender inequality adjustment [populates automatically]	1.030
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Health
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.90
Result	Estimated number of females amongst all beneficiaries	45,934

Source: IFC 'Success Stories', Moldova: Radiology and Diagnostic Imaging Center

http://www1.ifc.org/wps/wcm/connect/76b91e804a1b1c638e8effdd29332b51/SuccessStories_MoldovaHealth.pdf?MOD=AJPERES

Case Study: India: Andhra Pradesh Radiology Project

In Andhra Pradesh, a state on the south-eastern coast of India, access to advanced diagnostic services is limited as it is in the rest of the country. Few government hospitals outside the metropolitan areas are able to offer specialized services like CT or MRI scans and access to tertiary healthcare and advanced diagnostic services is particularly skewed. In an effort to solve this problem, the state has recently introduced an insurance program to cover catastrophic health expenditures for families living below the poverty line, but few public hospitals have enough funds to purchase modern diagnostic equipment, or attract specialists to manage the equipment and administer complex scans. As a result, public hospital participation in the insurance program has been disappointing.

To help the state government improve access to and availability of advanced diagnostics services, IFC assisted the government of Andhra Pradesh in structuring a novel PPP model for upgrading radiology services at four teaching hospitals attached to public medical colleges in Kakinada, Kurnool, Vishakhapatnam, and Warangal. The project took eight months and was completed in 2010.

The project was awarded to the consortium of Wipro GE Healthcare Limited, an international equipment manufacturer, and Medall Healthcare Private Limited, a chain of diagnostic services, after a competitive bid. The winning bidder proposed an average price per scan which was nearly 50 percent less than the prevailing market rate, enabling the government to provide services to a larger number of underserved patients within the allocated budget.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	India
Step 2	Population	
	Enter the total number of beneficiaries	100,000
	Female proportion of the nation [populates automatically]	48.37%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.62
	Gender inequality adjustment [populates automatically]	1.062
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Health
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.90
Result	Estimated number of females amongst all beneficiaries	41,000

Source: IFC 'Success Stories' India: Andhra Pradesh Radiology project

http://www1.ifc.org/wps/wcm/connect/3106af00498390ec8354d3336b93d75f/SuccessStories_APHospitals.pdf?MOD=AJPERES

Case Study: Indonesia: Central Java Power Plant

Indonesia's economic recovery following Asian financial crisis in 1997 led to a large increase in the demand for power, both for industrial and residential use. In 2005, demand for electricity was expected to grow by over eight percent per year. The government of Indonesia estimated that \$31.4 billion in investments would be required to meet the country's power needs by 2013.

The demand for electricity in Indonesia has grown quickly in the last decade. Facing greater consumption by industry, increasing residential demand, and a push to bring electricity to rural areas, the government aims to dramatically expand power generation and transmission capacity. In 2005, it designated a proposed new coal-fired power plant in Central Java as a top priority and moved to implement new regulations to attract private investment. IFC was transaction advisor to PT Perusahaan Listrik Negara (PLN) in this project, which will boost capacity using the cleanest commercial coal-fired generation technology available.

A consortium consisting of J-Power, Itochu Corporation and Adaro Power won the bid for a 25-year contract to build, own, operate and transfer the new facility. The project includes a 2,000 MW power plant and transmission facilities which are expected to improve access to electricity to **7.5 million people** and mobilize over \$3 billion in investment. The project was the first to be implemented under the country's new PPP and guarantee regulations, laying the groundwork for future private infrastructure projects. The plant is expected to start operations in 2016.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Indonesia
Step 2	Population	
	Enter the total number of beneficiaries	7,500,000
	Female proportion of the nation [populates automatically]	50.14%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.50
	Gender inequality adjustment [populates automatically]	1.050
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Energy and Power
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.80
Result	Estimated number of females amongst all beneficiaries	2,863,978

Source: IFC 'Success Stories', Indonesia: Central Java IPP

http://www1.ifc.org/wps/wcm/connect/aaf1fb804a1b07068e30fdd29332b51/SuccessStories_CentralJava.pdf?MOD=AJPERES

Case Study: Liberia: Liberia Electricity Corporation

Liberia is Africa's oldest republic, but became better known in the 1990s for its long-running civil war. The conflict, which lasted nearly 14 years and ended in 2003, left the country in economic ruin and its infrastructure devastated. The country's prior generation capacity of approximately 180 MW and accompanying distribution network was totally lost. As a result commercial electricity services in the country were non-existent. The state power company, Liberia Electricity Corporation (LEC), had no infrastructure, no fuel source, and no customers.

In April 2010, IFC concluded the design and tendering of a five-year management contract for LEC, the electricity utility in the capital city of Monrovia. Manitoba Hydro International (MHI) of Canada was awarded the management contract and took over LEC operations in July 2010. The European Union, Norway, USAID and the World Bank will provide approximately US\$50 million in donor funds for the operator to greatly expand and improve electricity services in Monrovia over the five years.

A minimum of 33,000 new connections are expected to be setup during the contract, which should result in an additional **150,000 people** in Monrovia having electricity for the first time since the war.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Liberia
Step 2	Population	
	Enter the total number of beneficiaries	150,000
	Female proportion of the nation [populates automatically]	49.73%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.67
	Gender inequality adjustment [populates automatically]	1.067
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Energy and Power
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.80
Result	Estimated number of females amongst all beneficiaries	55,927

Source: IFC 'Success Stories', Liberia: Liberia Electricity Corp

http://www1.ifc.org/wps/wcm/connect/f0089d80498390df8324d3336b93d75f/SuccessStories_LEC.pdf?MOD=AJPERES

Case Study: Maldives: Solid Waste

The Republic of Maldives is known for its white-sand beaches, pristine environment, and thriving marine ecosystem. But its waste management practices were threatening both the environment and its tourism industry. In 2011 the municipal government of Malé turned to IFC to introduce best practices in solid waste management, with participation from private-sector investors.

Tatva Global Renewable Energy (Maldives) Private Limited, an Indo-German consortium, won a 20-year concession to build and operate an integrated waste management system for the Greater Malé region. The transaction mobilized \$50 million in private investment that will improve waste collection, transportation and disposal; reduce marine and air pollution; and generate power through a 2.7MW waste-to-energy plant. The project will benefit **120,000 people**, process up to 70 percent of the country's solid waste, and reduce annual greenhouse gas emissions by 16,000 tons.

Using the information available in the IFC PPP 'Success Stories' overview in addition to the World Bank sources mentioned above, there is enough data available to populate the default gender beneficiary's calculation:

Gender Impacts Tool		
Step 1	Nation Selection	
	Enter nation [click D7 and select from the drop down list]	Maldives
Step 2	Population	
	Enter the total number of beneficiaries	120,000
	Female proportion of the nation [populates automatically]	49.61%
Step 3	Gender Inequality Adjustment	
	Gender inequality index [populates automatically]	0.32
	Gender inequality adjustment [populates automatically]	1.032
Step 4	Type Adjustment	
	Enter project type [click D16 and select from the drop down list]	Waste
Step 5	Gender Mainstreaming Adjuster	
	Enter level of gender mainstreaming [click D18 and select from the drop down list]	No evidence of gender mainstreaming
	Type adjustment for beneficiaries [populates automatically]	0.80
Result	Estimated number of females amongst all beneficiaries	46,151

Source: IFC 'Success Stories', Maldives: Solid Waste

http://www.ppiaf.org/sites/ppiaf.org/files/publication/SuccessStories_MaldivesWaste.pdf

Appendix E. Examples of mainstreaming guidance at policy level

E.1. Infrastructure and gender benefits – the policy level

The following table highlights the mainstreaming toolkits and guidance that have been developed over recent years by IFIs and other international organizations. The World Bank has taken many steps to progress gender equality objectives, publishing a range of Tools for Task Teams¹⁵² to mainstream gender into its projects, its gender action plan 'Gender Equality as Smart Economics',¹⁵³ and most recently launching its World development Report into Gender Equality and Development¹⁵⁴ detailing the patterns and progress and setting out four priorities for action.

- DFID in the UK introduced The Gender Manual in 2008,¹⁵⁵ with the aim to ensure issues of gender and women's rights are integrated in all of its areas of work.
- The AfDB¹⁵⁶ has developed a Checklist for Gender Mainstreaming in the Infrastructure Sector with the purpose of ensuring that planning, design, implementation, monitoring and evaluations are gender sensitive. And also published specific sector material which addresses gender.¹⁵⁷
- In March of 2012, USAID launched 'Gender Equality and Female Empowerment' its central policy for mainstreaming gender into its international development activity.¹⁵⁸
- In 2010 the ADB published Gender and Development in ADB Operations.¹⁵⁹ This has been supplemented with a toolkit for ADB practitioners working in Law and Policy.¹⁶⁰ Both aim to mainstream gender considerations, and their implications for project development, financing and delivery.
- AUSAid, the Australian Government's international development organization, have developed a 'Guide to Gender and Development'¹⁶¹ which was prepared to facilitate gender planning in AUSAID development programs.

There is also a growing bundle of published material which is sector specific, with a mixture of advice on strategy, policy and also project implementation. For example, in the health sector the WHO has been proactive in embracing the agenda¹⁶²; in water, irrigation and agriculture the International Fund for Agricultural Development (IFAD) has published material on the importance of considering gender in water systems.¹⁶³

In the transport sector, the European Commission (through its Directorate General for Development) has developed a toolkit for mainstreaming gender in transport projects¹⁶⁴; whilst in the energy sector,

¹⁵² World Bank (2010, A): Op. cit.; World Bank (2010, C): Op. cit.; World Bank (2010, D): 'Making Urban Development Work for Women and Men'; World Bank (2010, E): 'Making Transport Work for Women and Men'; and World Bank (2010, F) 'Making Information and Communication Technologies and Their Applications Work for Men and Women'.

¹⁵³ World Bank (2006): 'Gender Equality as Smart Economics: A World Bank Group Gender Action Plan (Fiscal Years 2007-10'

¹⁵⁴ World Bank (2012): Op. cit.

¹⁵⁵ DFID (2008): Op. cit.

¹⁵⁶ AfDB (2009, C): ' Checklist for Gender Mainstreaming in the Infrastructure Sector'

¹⁵⁷ AfDB (2009, C): *ibid.*; AfDB (2009, B): Op. cit.; and AfDB (2009, A): Op. cit.

¹⁵⁸ USAID (2012): 'Gender Equality and Female Empowerment'

¹⁵⁹ ADB (2010, B): 'Gender and Development in ADB Operations'

¹⁶⁰ ADB (2010, C): 'Gender, Law, and Policy in ADB Operations: A Tool Kit'

¹⁶¹ AUSAid (unknown date): 'Guide to Gender and Development' See:

http://www.usaid.gov.au/Publications/Pages/4618_5376_6036_6271_8110.aspx

¹⁶² WHO (2011), 'Human Rights and Gender Equality in Health Sector Strategies'

¹⁶³ IFAD (December 2007): 'Gender and water: Securing water for improved rural livelihoods'

¹⁶⁴ European Commission, Directorate General for Development (date unknown): 'Toolkit on Mainstreaming Gender Equality in EC Development Cooperation', Chapter Three: Transport

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organizations such as the UNDP, the World Bank and the OECD have all embraced the gender sensitive nature of infrastructure provision. Moreover, organizations such as Energia are working to contribute to the empowerment of women in rural and urban areas through a specific focus on energy.¹⁶⁵

There appears to be widespread recognition that in order to ensure men and women benefit equally, and that gender inequality is not perpetuated, a strategy for ensuring that female concerns and experiences are an integral dimension throughout the project lifecycle, from design through to implementation, monitoring and evaluation is required.¹⁶⁶

¹⁶⁵ See <http://www.energia.org>

¹⁶⁶ Economic and Social Council (ECOSOC), (1997): Op. cit.
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Appendix F. What differences can PPP make?

As mentioned previously in this report, the relative scarcity of evidence in terms of gender impacts of infrastructure projects is magnified in the case of PPP. In general, coordination between infrastructure development, PPP agreements and delivery of gender objectives seems weak. There is also little to indicate that infrastructure being developed through PPPs, and their associated impacts, would differ significantly in that sense from traditionally funded projects.

However, lack of certified data should not necessarily be taken to mean that there are no impacts, or potential for impacts, specifically as a result of PPP-financed infrastructure. Indeed the specific ways in which PPPs are structured may well offer additional opportunities to deliver benefits to women and girls. Some of these options are explored below.

F.1. Potential positive impacts of PPP delivery

F.1.1. Contractual conditionality for output-based results

PPP projects differ from traditional infrastructure financing models because of the ability of the public partner to set performance based indicators and to pass these down the supply chain to the private partner and its construction or maintenance contractors. Because PPP projects can use mechanisms such as deductions and penalties if the contractor fails to perform or meet targets, the public sector retains a level of control. PPP contracts carry more immediate and clearly defined compliance criteria and penalties, and are therefore more likely to be followed resulting in beneficial gender outcomes.

Following on from the preceding chapter (which categorizes impacts), PPP models - especially at the project level - neatly align with performance monitoring by (long term) outputs and/or outcomes rather than by inputs or process indicators; they also offer a more formal and incentivized way in which to monitor these outputs.

The project conditionalities that can be inserted into finance agreements during assessment and structuring of PPP agreements could require gendered output-based results as part of the contractual requirement. By taking an approach to delivery that assesses performance by focusing on results – project outputs and outcomes – PPPs can be used to deliver more effective, transparent and effective infrastructure. A focus on outputs can also become a way of securing strategic and cultural change: by moving organizations away from a focus on ‘efficiency’ and ‘process’ as the arbiters of value in delivery, and towards making better outcomes the primary purpose of the infrastructure intervention.¹⁶⁷

Also, because PPPs involve the raising of private finance, the agenda of lenders (particularly those partly supported by funding from the IFIs) can require gender analysis as part of the social due diligence approval and monitoring processes related to lending. Indeed tools for this have already been developed through, for example, the Global Reporting Initiative IFC’s practitioner’s guide to embedding material gender issues in sustainability reports.¹⁶⁸ PPP models offer a route to systematically integrate reporting against gender indicators. Realistically however, given the difficult investment conditions faced by some PPP schemes, it is questionable as to how many and how complex contract conditions can be. It is a matter for the local project to decide where women and girls’ equality sits within the scheme’s priorities.

The additional benefits that can be delivered through formalization of output-based results monitoring are particularly pertinent with regards to the health sector, in terms of improved health outputs and outcomes.

¹⁶⁷ Pugh, G (undated): Op. cit.

¹⁶⁸ IFC and Global Reporting Initiative (2009): Op. cit.
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For example, PPP delivered Toluca and Tlalnepantla Hospitals in Mexico provided two new 120 bed hospitals to meet the changing health needs of local populations.¹⁶⁹

Case Study: Rural roads project, Peru

As a result of the Peru rural roads project, women's empowerment and economic independence largely increased whereby 'the project enabled them to obtain additional income, including from opportunities provided by road maintenance needs and other project activities' In addition, improved access to services generated a 7 percent increase in primary education enrolment amongst young girls, and also facilitated greater access to employment opportunities for women through the creation of 6,000 new jobs, of which 24 percent were taken up by women.

Case Study: Water sanitation, Nepal

In June 2004, a water supply and sanitation project was established in Nepal through the collaboration of the World Bank and the Nepalese government, to implement a sustainable sanitation infrastructure and safe drinking water supply. As a wholly participatory project, it aimed at 'empowering and providing opportunities to women and girls as the primary beneficiaries by involving them in planning, implementation and management of the schemes' Following intrinsic gender analysis and inclusive strategies, there has been a demonstrable increase in women's participation in new leadership positions within village communities 'as members in their local water user committees and health groups, and as treasurers for rotating credit schemes'. Through this, women's empowerment and status within local communities has enhanced, particularly following this increase in income generating opportunities.

F.1.2. CSR and IFI requirements driving gender considerations

Increasingly, private companies have corporate social responsibility (CSR) policies which may explicitly include commitments to addressing gender in all of their operations. In such cases, the private partner in PPP projects will need to ensure that the project is developed in alignment with these policies in order to protect themselves from reputational risk in the face of consumer scrutiny.

From the research undertaken as part of this study, almost all PPP projects have IFI involvement. This adds another layer of accountability because the IFIs have specific gender safeguarding and development requirements for the lifetime of the project which the PPP finance arrangements are conditional upon. These requirements are more likely to promote women's participation in project development, maximization of employment and economic opportunities for women, consideration of women's safety in design, gender sensitive resettlement planning, HIV/AIDS programmes and other best practice approaches.

¹⁶⁹ IFC (2011, D): 'Success stories. Mexico: Tlalnepantla hospitals' 301966/ITD/ITN/F/November 2012
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Even when IFIs are not directly involved, funding sometimes comes from private sector banks, the largest of which are signatories to the Equator Principles,¹⁷⁰ (EP) a credit risk management framework for determining, assessing and managing environmental and social (including gender) risk in project finance. Any such financiers will ensure the ongoing monitoring of the project's compliance with the EP in order to protect themselves from reputational risk, meaning gender considerations are thought about from the outset of the development process and on an ongoing basis.

F.2. Risks involved in PPP delivery

Aside from the potential positives there are some potential risks associated with PPP delivery which are necessary to highlight. There are certain general risks associated with PPP delivery models, related to the complexity of contracts and the long term commitments of many PPP agreements:

- PPP contracts can be highly complex to implement and administer, particularly when compared with standard routes for service procurement.
- Many PPP agreements incur underlying fiscal costs to the public sector body. Debates over value for money, particularly of UK Public Finance Initiative (PFI) projects focused on social infrastructure (including schools and hospitals), continue to prevail.
- Contract negotiation between parties and arriving at a viable project deal may require long time scales, potentially delaying much needed investment and development.
- PPP schemes may require close regulatory oversight to ensure performance and delivery adheres to appropriate standards.
- PPP schemes can often yield contingent liabilities on the public body in the medium and long term. Many of the risks, while borne by the private sector, are underwritten by public sector guarantees (should returns fall short of those anticipated).¹⁷¹

However, there are also specific gender-based risks, where the PPP model risks disadvantaging women.

The principal concern is a risk that to drive up efficiency, fewer jobs for women are created or maintained than might be the case in a government operated project. Unless careful quality controls are in place, private-sector 'efficiency' may actually consist of employing fewer women at lower salaries, or resulting in other action which realizes inadvertent negative impacts for females.

Resettlement, for example, poses a significant risk to women, as the lack of involving them in resettlement planning processes and decision making can result in a less appropriate resettlement location. As the ADB points out, many women in developing countries don't have property rights or land entitlements, as a result of which they often don't qualify for compensation schemes: 'although men and women have equal rights to registering land in Vietnam and Lao PDR, customary attitudes prevail and land is registered in the name of men alone as heads of household.'¹⁷²

Price increase due to the need for the private sector to secure a profit margin can have an adverse impact on women's access to essential infrastructure, as intra household power structures don't necessarily allow for sufficient power or bargaining power to allocate more household resources to water, fuel or healthcare.

¹⁷⁰ EPs can be found on the following website <http://www.equator-principles.com/>

¹⁷¹ UNESCAP http://www.unescap.org/tdw/ppp/trainingmaterials/PPP_Primer.pdf, p.23-24; Nikolic, IA and Maikisch, H. on behalf of the World Bank: Health Nutrition and Population (2006): Op. cit.; HM Treasury (2000): 'Public private partnerships: the Government's approach'

¹⁷² Tinker and Summerfield in ADB (2003): "Gender Checklist: Resettlement", p.4
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It can mean that girls and/or women actually have to travel *further* to get access to non-paid goods, with a *higher* risk for health and hygiene.¹⁷³

Furthermore, the perceived commoditization of services provided through PPP agreements can often run counter to ingrained cultural or social beliefs. Implementing PPPs in the water and waste sector, for example, have been known to spark resistance among specific groups and communities in developing countries, and particularly within certain indigenous communities, which can affect uptake of services and impact upon local views of project activity.

'When looking at water as a commodity to be turned into a product for delivery to clients, a range of challenges can be identified along every step of the value chain – from the source all the way down to the moment it comes out of the tap. The mere idea that water can be considered a commodity is challenged by various communities worldwide, arguing that their ancestors have never had to pay for water and thus nor will they. Water is viewed as a common good, to be managed and share by those who depend on it'.¹⁷⁴

¹⁷³ Koolwal, G and van de Walle, D. (2011): "Better Access to Water Raises Welfare, But Not Women's Off-Farm Work", Economic Premise, No.67

¹⁷⁴ Trawick, P. (2003): "Against the privatization of water: An indigenous model for improving existing laws and successfully governing the commons" in World Development 31(6): 977-996

Appendix G. Commercial impacts of mainstreaming gender

G.1. Gender mainstreaming in PPP projects – commercial impact

It is important to realize that gender mainstreaming measures will not be cost neutral. The table below considers how the measures outlined above could impact upon project delivery and commercial viability. In particular, the potential benefits (economic and otherwise) to projects are considered alongside the likely commercial impact (focused primarily on costs, but incorporating other aspects of commercial viability as appropriate).

Table 5.2: Special conditions and their commercial impact – can only apply on a bespoke basis

Special conditions – interventions to mainstream gender into PPP projects	Potential benefits to project delivery	Benefit score	Potential commercial impacts	Commercial impact score
Gender Action Planning	None for project delivery per se but essential if desired gender benefits are to be realized	Neutral	Increased engagement cost	3
Gender analysis and impact assessment	None for project delivery per se but is essential to understand potential different impact of project on different genders	Neutral	Increased engagement cost	2
Involvement and consultation	Stakeholder consultation (both men and women) in affected communities is already a requirement of many multilateral agencies. Impact of increased participation (by women) in consultation could be to achieve more desirable outcomes for women	Moderate positive	Increased engagement cost	2
Capacity building and gender mainstreaming skills	Greater recognition of intended social/gender specific outcomes of project and potential social impacts of project	Moderate positive	Increased engagement cost	2
Supporting wider activity and participation	Reflects need for increasing participation of women in engineering, construction and management, which depends on a host of educational and cultural factors.		Wider economic and social issue than PPP infrastructure	3
Supporting women into employment and other income-generating opportunities	Economic, efficient and effective workforce.	Moderate positive	Increased recruitment and training costs offset by labor market efficiency	2
Contractual mechanisms	None for project delivery per se but is essential if desired gender benefits are to be realized (e.g. multi-lateral agency funding requirements to include need for gender mainstreaming to secure funding in addition to other social and environmental requirements? KPIs to include measures to promote gender equality/participation?	Moderate positive	Increased operational cost to collect data and monitor	2
Allocate funding to support gender mainstreaming activities	Encourages wider benefits beyond project through promotion of gender mainstreaming	Moderate positive		3
Support wider access to finance	N/a			3
Delivering accessible services	Already the aim of infrastructure projects, but increased targeted marketing to women could increase the achievement of desirable outcomes for women	Moderate positive	Increased engagement cost	2

Special conditions – interventions to mainstream gender into PPP projects	Potential benefits to project delivery	Benefit score	Potential commercial impacts	Commercial impact score
Supporting skills development and training	Believe this is a wider employment issue rather than a project issue	Moderate positive		3
Monitor and evaluate against gender impacts	None for project delivery per se but is essential if desired gender benefits are to be measured and demonstrated	Neutral	Increased operational cost to collect data and monitor	3

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