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INTEGRATING GENDER IN COST-BENEFIT AND COST-EFFECTIVENESS ANALYSIS

Final Report

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Integrating Gender in Cost-Benefit and Cost-Effectiveness Analysis

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ACRONYMS

CBA	Cost-Benefit Analysis
CEA	Cost-Effectiveness Analysis
ENPV	Economic Net Present Value
ERR	Economic Rate of Return
GBV	Gender-Based Violence
GDP	Gross Domestic Product
IDB	Inter-American Development Bank
IPV	Intimate Partner Violence
IRR	Internal Rate of Return
MCC	Millennium Challenge Corporation
M&E	Monitoring and Evaluation
NPV	Net Present Value
USAID	United States Agency for International Development

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EXECUTIVE SUMMARY

Introduction

Incorporating gender considerations in international development programming has the potential to accelerate positive normative and economic changes at the country and project levels. In addition to the intrinsic value of advancing gender equality, gender mainstreaming can result in significant economic gains. An International Monetary Fund report concluded that closing gender gaps in the labor market could boost GDP, from a five-percent increase in the United States to a 34-percent gain in Egypt (Elborgh-Woytek et al., 2013). Similarly, investing in gender equality in education has long-term impacts such as reducing high fertility rates, lowering child mortality rates, and improving women's labor force participation and earnings (Klasen, 1999). On average, when 10 percent more girls go to school, a country's GDP increases by three percent (USAID, 2015). Reducing gender gaps shows huge potential for accelerating economic development.

As this report demonstrates, there are significant interactions between gendered norms, gender gaps, and international development projects. Integrating gendered impacts in cost-benefit or cost-effectiveness analyses (CBA or CEA) presents opportunities for gender advocates to build rigorous evidence about the impact of advancing gender equality and for CBA practitioners to capture a more accurate picture of project impacts.

This report is for those involved in the identification, design, appraisal, approval, financing, budgeting, management, monitoring, and evaluation of international development projects. It is also relevant for decision-makers who design and evaluate institutional policies on gender mainstreaming, project approval, budget allocation, and quantitative analysis.

Mainstreaming gender into CBA requires collective effort by practitioners and researchers of CBA, gender advocates, and institutions who design, finance, implement, or evaluate projects. This document discusses the interaction among gender gaps, cultural norms, and projects. Furthermore, the report examines technical aspects of integrating gender into CBA as well as the challenges to this process. It also highlights the role of institutions in facilitating progress toward mainstreaming gender into CBA, concluding with a list of specific recommendations for policy makers and practitioners.

Like any other tool, CBA has limitations in its applicability. Not every project can be evaluated solely based on the results of a CBA. This report identifies limitations in knowledge and lack of evidence about the way projects interact with gender issues as the main barrier for mainstreaming gender in CBA. Furthermore, it highlights the role of monitoring and evaluation (M&E) in addressing this gap, when provided with the required support, resources, and institutional capacities. Despite the current knowledge limitations, and provided the right level of institutional

flexibility is in place, there are ways to use CBA that would satisfy all stakeholders and provide decision-makers with rigorous information.

Literature Review Summary

Figure 1. Channels of Interaction in Health and Agriculture and Influencing Factors for GBV

Sector	Channels of interaction and influencing factors
Agriculture	• Asset ownership • Pre-project access and use of resources • Access to income • Division of labor • Decision-making • Access to credit • Mobility
Health	• Educational & socioeconomic effects of improved health • Provider issues • Utilization of available care
Gender-Based Violence	• Asset ownership • Income • Education

Literature indicates many channels through which gender gaps and cultural norms can change the outcome of a project. Understanding these channels can help practitioners make better assumptions about the way existing gaps, cultural norms, and development projects interact. For example, malaria can be contracted by both men and women and the same can be said for almost every illness and disease. However, in addition to the usual flu-like symptoms, malaria in pregnant women can cause significant developmental delays in the baby as well as complications in pregnancy. Additionally, though antimalarial medicines are more effective than bed nets, antimalarial medicines are known to increase birthweight, which may lead to higher rates of obstructed labor. In a setting with a high incidence of unaided home births this could increase maternal mortality, especially if other risk factors for obstructed labor are endemic to the area. Here both the health effects and treatment of malaria are gendered, which drastically changes the gender breakdown of costs and benefits of malaria prevention interventions.

Technical Aspects of Integration

From a technical standpoint, mainstreaming gender into CBA comes with three adjustments to conventional practice:

1. Disaggregation of stakeholders by gender;
2. Identification of additional impacts; and
3. Quantification and monetization of the additional impacts.

Disaggregation by gender only requires knowledge of how the existing impacts differ based on the gender of the stakeholder and the gender composition of each stakeholder group. This process may uncover oversights made in the estimation of direct welfare impacts in the gender-blind analysis

or shed light on a stakeholder group that was otherwise excluded from the analysis. The welfare impacts estimated in the absence of gender disaggregation are expected to reflect a weighted average of the impact on all genders. Therefore, such discoveries in gender disaggregation reflect estimation errors in the gender-blind analysis. Gender disaggregation of stakeholders can therefore provide a better understanding about the project's impact and result in a more accurate picture of costs, benefits, and the net impact of the project. For instance, the benefits of a community health project can be greater for women than men if norms may limit women's access to centralized health care.

Identifying and including additional impacts that are distinct from direct welfare impacts is more complicated. For instance, the society may place a value on having the same number of girls and boys at schools, irrespective of their performance. While such gender equality objectives can be the main benefit for gender projects or policies, their inclusion into the cost-benefit framework is a challenge in two ways:

1. They can easily overlap with direct welfare impacts and result in double-counting of benefits or costs. For instance, in the case of girls' education, when girls are marginalized in school enrollment, the expected net increase in lifetime earnings resulting from better education is expected to be higher for girls compared to boys. This estimation of direct welfare impacts must reflect how benefits of an education intervention differ by gender. If it is impossible to estimate the gap in expected return on education between boys and girls due to lack of data or evidence, then the analyst may choose to include "improved gender" equality as an alternative way to reflect the benefits rather than as a complementary value.
2. Even after such impacts are identified and have passed the double-counting check, including them in the analysis requires quantification and, for CBA, monetization. These may include distributional impacts, such as those included in the analysis of tax policies. Distributional impacts reflect the value members of the society, or donors, place on the benefits earned by a stakeholder group beyond the value of direct welfare gains enjoyed by the members of that stakeholder group. The valuation of such impacts is not a straightforward process.[1] Alternatively, one can consider finding the most cost-effective intervention to achieve a given level of equality. Cost-Effectiveness Analysis (CEA) makes it easier to utilize a quantitative framework and efficiently achieve the target without the need to put a value on distributional impacts.

Once such additional distributional impacts are identified, there are three steps to integrate them into the model:

1. Select an indicator;
2. Establish evidence of the change in the indicator that can be attributed to the project; and

[1] See Harberger, Arnold C., "On the use of distributional weights in social cost-benefit analysis," *Journal of Political Economy* 86.2, Part 2 (1978): S87–S120, for an explanation and commentary on distributional weights.

3. Assign a monetary value for the assumed change.

Monetization may not be required in the case of CEA for direct investment in gender, where the benefits of the project can be included in the form of an effectiveness measure such as "percentage gained in participation of women in labor force." In either case, the choice of indicator can be challenging when dealing with gender gaps and cultural norms. There are many trade-offs to consider such as quantifiability, representativeness, ability to monetize, and ability to monitor efficiently. For instance, an indicator may not be a good proxy for the impact but easy to quantify. A good example is using admission to hospital to measure the level of gender-based violence (GBV). This measure is already quantified and is easy to monitor using the hospital's administrative records. However, many cases of GBV do not result in hospital admission.

Indicators are also used for M&E. Oftentimes, the indicators used for M&E are different from the ones used in CBA. This provides the flexibility for each team, CBA and M&E, to choose the indicators that best meet their specific needs. However, this difference limits the ability to verify CBA assumptions after the project and use the project as an opportunity to learn and improve the design of future projects.

As discussed, the integration of gender impacts into CBA or CEA starts with disaggregation of stakeholders by gender, and can continue into the inclusion of distributional impacts. This integration may require the use of new metrics, estimation of attributable effect of the intervention, and valuation of the change in the case of CBA. The table below illustrates whether tools, techniques, and evidence are available to assist the implementation of each of the mentioned steps.

Figure 2: Tools, Techniques, and Evidence

	TOOLS	TECHNIQUES*	EVIDENCE
Disaggregation of stakeholders by gender	✓	✓	✗
Inclusion of distributional impacts	✓	~	✗
Metrics	✓	~	✗
Change attributable to interventions	✓	✓	✗
Value of change	✓	✓	✗

* The symbol ~ indicates some work can be done but not critically blocking the integration path.

Issues on the availability and limitations of tools and techniques are not found to be specific or unique in mainstreaming gender in CBA. This study finds the "lack of knowledge and evidence" to make informed assumptions about gendered impacts, their extent, and their monetized value as the main barrier to gender mainstreaming in CBA. This is a similar situation to the one faced by analysts and project developers when trying to integrate environmental impacts into CBA. Two of the main developments that accelerated the integration of environmental impacts into CBA, which are also relevant for the integration of gendered impacts, are:

1. **Use of the order of tangibility.** The objective in this approach is to arrive at a defensible conclusion without diluting the model with intangible impacts and measures. A good example is determining if a conservative set of benefits for a gender project outweigh all the costs. If successful, there will no longer be a need to include and monetize intangible impacts that can undermine the validity of the entire analysis.
2. **Use of benefit (value) transfer.** In the absence of information or funds for conducting primary research on the gendered impacts of a project, using benefit (value) transfer enables analysts to make reliable assumptions about the degree or value of gendered impacts based on the results of other reliable primary studies. This process requires an adjustment mechanism that factors for the contextual differences between the project around which the primary study is conducted and where the project is being implemented. The ability to use benefit transfer depends on the existence of relevant primary studies with an adequate level of contextual details. No matter the rigor of the primary studies, external use of their results will depend on the degree of contextual details available.

Institutional efforts undertaken to mainstream gender include the adaptation of institutional goals and policies, introduction of new institutional units and procedures, provision of resources and staff training, and creation of a culture with higher responsibility, clarity, and accountability with respect to gender. While institutions have a common understanding of the importance of mainstreaming gender, efforts to date have had little impact on widespread integration of gender in CBA. Practitioners of CBA lack evidence and knowledge, which limits the degree to which they can integrate gender and leaves many doubts on whether CBA can be used to assess the feasibility of gender projects at all. To bridge this gap, it is critical for institutions to provide the required resources, introduce new procedures, and alter their project cycle in a way that allows them to facilitate inclusion of gender in CBA and address the gap in evidence over time. Furthermore, institutions can restructure the way data is collected and shared to better facilitate gender mainstreaming in CBA.

Recommendations

Below is a list of recommendations for policy makers and practitioners.

1. **Provide flexibility at the project design and approval stages**, rather than mandating the use of specific criteria, such as economic rate of return (ERR) and approval thresholds for those criteria. This will enable the cost-benefit analysts to use alternative structures to assist the decision-making process when only limited evidence is available. Such approaches include the estimation of a threshold value for a key assumption, such as reporting the minimum value of preventing a case of GBV above which the project is feasible or the use of a conservative subset of benefits, or costs, to arrive at defensible conclusions.
2. **Promote learning**, including the following:

    a. Require the CBA teams to identify and report knowledge gaps on gender considerations of each projects.
    b. Provide the resources that enable the M&E teams to use the learning opportunities in each project to fill the knowledge gaps in gender for future projects.
    c. Provide the operational flexibility required to make changes in the design of ongoing projects based on the learning outcomes at midline.
3. **Develop indicators** to measure the level of a gender gap or state of a cultural norm in a way that is:
    a. Quantifiable;
    b. Representative;
    c. Comparable across countries and cultures; and
    d. Able to be monitored efficiently.
4. **Finance research** in:
    a. Estimating the value of changing the state of gender gaps and cultural norms in different countries and cultures;
    b. Understanding how interventions interact with cultural norms and gender gaps; and
    c. Determining the magnitude of impact that can be associated with specific interventions in alternative settings.
5. **Record and publish data** that permit others to use learning outcomes in their decision-making and analytical processes. Knowledge about the role of gender in CBA improves the quality of assumptions about the social impacts of projects. Therefore, it is not recommended to set up any additional databases to focus on gender issues, but rather to enhance the existing databases of social impacts to include:
    a. Gender disaggregated data;
    b. Information on effectiveness and impact of gender projects; and
    c. Contextual information about the prevailing gender gaps and cultural norms in every study site.
6. **Include stakeholder impact assessment** as a mandatory part of economic analysis. Stakeholder impact assessment is a natural step for gender mainstreaming in CBA; however, many organizations have it as an optional component when it comes to economic analysis.

Recommendations for Practitioners

1. **Establish a stronger link between the analyses performed before and after the project**, highlighting the knowledge gaps that the monitoring and evaluation process or additional research can potentially fill for future use, by posing such question as these:
    a. For a given intervention and cultural setting, how do the impacts of the project differ by the gender of the stakeholder?
    b. Which gender gaps or cultural norms are affected by the intervention? By how much?

    c. What is the value of the impact on gender gaps and cultural norms? Which stakeholders receive, or pay for, this value?
2. **Use experimental and quasi-experimental design**. Design projects in such a way that the evaluation process can result in learning about the impact of each component in alternative settings. Evaluation of multi-component projects reveals limited information about the effectiveness of each component unless an experimental design is used. In an experimental design, various combinations of components can be implemented randomly in different locations. This will also facilitate learning about the synergies among the components and how the contextual characteristics affect the effectiveness of each component.
3. **Adopt creative ways to accommodate the knowledge gap** but integrate gender impacts into CBA without relying on poor evidence. For instance, estimate a threshold value for a key assumption (such as reporting the minimum value of preventing a case of GBV above which the project is feasible) or use conservative subsets of benefits or costs to arrive at conclusions. This way one can avoid including assumptions that lack evidence, which could undermine the validity of the entire model.
4. **Collect data with contextual details** that facilitate its use for other projects. The results of a primary study that relates to cultural norms and gender gaps is rarely valid externally, meaning that one cannot assume the same values are still relevant if the same project is being implemented elsewhere or at another time. To use the results of an evaluation and transfer them to another location (benefit transfer), M&E data must include sufficient details about the cultural norms and prevailing gender gaps. Such details are used to construct benefit transfer functions or in a meta-analytical framework. In the absence of such information, the external use of the results will be very limited.

I. INTRODUCTION

Background & Purpose

Incorporating gender considerations in international development programming has the potential to accelerate positive normative and economic changes at the country and project levels. In addition to the intrinsic value of advancing gender equality, gender mainstreaming can result in significant economic gains. An International Monetary Fund report concluded closing gender gaps in the labor market could boost GDP, from a five-percent increase in the United States to a 34-percent gain in Egypt (Elborgh-Woytek et al., 2013). Similarly, investing in gender equality in education has long-term impacts such as reducing high fertility rates, lowering child mortality rates, and improving women's labor force participation and earnings (Klasen, 1999). On average, when 10 percent more girls go to school, a country's GDP increases by three percent (USAID, 2015). Reducing gender gaps shows huge potential for accelerating economic development.

Integrating gender in cost-benefit analysis (CBA) or cost-effectiveness analysis (CEA) presents opportunities for gender advocates to build rigorous evidence for the impact of advancing gender equality and for CBA practitioners to capture a more accurate picture of project impacts. Better data contributed to improving equality, women's rights in education, and sexual and reproductive health, whereas sectors with less evidence available have experienced less progress (Buvinic and Levine, 2016). Similar to incorporating many other social impacts, CBA cannot capture the full range of impacts related to gender, such as those that are difficult to measure, attribute, or monetize. These limitations, however, change over time as evidence accumulates and new techniques and tools are developed. Even given the presence of such limitations, CBA can present compelling evidence for the value of including gender in project design and analysis. For CBA practitioners, inclusion of gender or other relevant demographic groups presents a more nuanced and accurate analysis of project potential and results.

This report is for those involved in the identification, design, appraisal, approval, financing, budgeting, management, monitoring, and evaluation of international development projects. It is also relevant for decision-makers who design and evaluate institutional policies on gender mainstreaming, project approval, budget allocation, and quantitative analysis.

Mainstreaming gender into CBA requires collective effort by practitioners and researchers of CBA, advocates of gender mainstreaming, and institutions who design, finance, implement, or evaluate projects. Various technical aspects and gaps of this process are discussed in this document. Furthermore, the role of institutions in facilitating progress is highlighted, including a

summary list of specific recommendations. The discussions in this document apply to all interventions, including direct investment in gender.[2]

Definition & Use of Cost-Benefit Analysis

Cost-benefit analysis as a concept refers to a direct comparison of costs and benefits of an activity to assess its feasibility. If the benefits are greater than the costs over a given time frame, then the activity is considered feasible. Cost-benefit analysis has a more restricted definition in the context of project or policy analysis: 1) it compares the monetary value of costs and benefits, 2) it does not take the perspective of any specific stakeholder but rather estimates the cost and benefits for the society as a whole,[3] and 3) it uses tools and principles of welfare economics to arrive at social value of resources consumed and services provided.[4] From one institution to another, economists and policy makers may even add more restrictions to this definition by specifying its technical details (e.g., the criteria to be reported) and key parameters (e.g., the discount rates to be used). See Annex B (Cost-Benefit and Cost-Effectiveness Analysis Overview) for a more detailed discussion of CBA and CEA.

In this document, the terms "cost-benefit analysis" and "CBA" refer to both cost-benefit and cost-effectiveness analyses and, where required, differences between the two are highlighted from a technical and institutional standpoint.

Relevance of Gender & Cost-Benefit Analysis

Adverse cultural norms and gender gaps in many low-income countries have resulted in opportunities for enhancing the impact of development programs by better understanding the way projects interact with these gaps and cultural norms or directly targeting them as the main objective of the project. Among the gender issues that have been identified are high rates of maternal deaths, limited participation in labor force, lack of education, early marriage, teenage pregnancy, and the inability to own productive assets.[5] Gender equality features prominently in the Sustainable Development Goals (SDG 5 and integrated in other goals), and all international development

[2] "Direct investment" refers to projects with the main objective of changing a gendered cultural norm or closing a gender gap.
[3] In some approaches, such as the integrated approach (see Jenkins, 1997), practitioners continue the analysis to estimate net impacts from the perspectives of each stakeholder involved.
[4] Throughout history alternative theoretical approaches have been used for assigning monetary value to non-market or distorted-market goods and services. Arnold Harberger's method (1971) is considered the most academically accepted welfare economics approach to arrive at social values.
[5] See an infographic at https://www.usaid.gov/infographics/50th/why-invest-in-women for more info.

institutions are now interested in documenting evidence for how their interventions are expected to close existing gender gaps.

Knowledge about the gender considerations is mostly needed at the identification and design stages of a project's life, where an adequate understanding of gender gaps and cultural norms can improve the design of the project and help decision-makers make more informed decisions on budget allocation, project approval, and project management. There are, however, significant limitations in our knowledge about the way projects interact with gender issues. This is identified here as the main barrier for mainstreaming gender in quantitative tools used to identify projects and assess their feasibility, such as cost-benefit and cost-effectiveness analyses (CBA and CEA).

Gender is "a socially defined set of roles, rights, responsibilities, entitlements, and obligations of females and males in societies. The social definitions of what it means to be female or male vary among cultures and change over time" (USAID 2012, p. 3, n. 2). This is distinguished from the term *sex*, which is a biological distinction. However, in practice *sex* and *gender* are used interchangeably when discussing disaggregation of data and its use.

Please see Annex A for a more detailed discussion of the definition of term *gender*.

Gender considerations become important in CBA when: 1) the impact of the project is significantly different based on the gender of the participant, 2) the existing gender gaps and cultural norms require the addition of new impacts beyond what is normally perceived to be the costs and benefits of a project of its type, and 3) when the project changes the state of a prevailing gender gap or cultural norm, intentionally or not.

Limitations & Criticism

Like any other tool, cost-benefit analysis comes with limitations in applicability. Not every project can be evaluated solely based on the results of its cost-benefit analysis. Many advocates of gender mainstreaming consider cost-benefit analysis a tool incapable of incorporating gender impacts, arguing that one cannot place a dollar value on, or even quantify, many of the gender impacts. This argument regarding the inability to quantify or monetize an impact has repeatedly surfaced since the practice of cost-benefit analysis started. Placing a dollar value on the benefits of constructing a hydro dam, improving a highway, or reducing the prevalence of a disease has challenged the application of cost-benefit analysis on public and social projects in the past. Even today, the dollar value placed on CO_2 emissions is the subject of many debates about projects that significantly reduce or increase CO_2 emissions, such as solar or coal electricity generation plants, respectively.

While theoretical debates on various details of cost-benefit analysis will continue, history has proven that over time techniques develop and human knowledge accumulates, resulting in continuous expansion in the depth and breadth of what goes into cost-benefit analysis. For instance, using the value of time saved for passengers and the reduction in vehicle operating costs enabled the application of cost-benefit analysis to transport projects, resulting in better allocation

of funds and sizable savings for the society. Other examples include the creation of indicators and measures such as QALY and DALY,[6] which enabled practitioners to quantify the health status of individuals and to perform quantitative analysis on the efficiency of alternative interventions in public health.

In the absence of quantitative measures on the impact of a project, the decision-making process has to rely on qualitative measures that may not satisfy the information required to compare project options, optimize project design, and manage performance during implementation. As discussed later in this report, despite the current limitations on knowledge, there are ways to use CBA for such projects that would satisfy all stakeholders and rigorously assist the decision-makers.

Structure of the Report

The report continues to Section II with a summary of the literature review conducted prior to the preparation of this report (please see Annex C for the full literature review). Two key sectors are covered in the literature review: agriculture and health. This section also summarizes studies examining GBV. Section III discusses the technical aspects of gender integration in CBA, followed by a detailed discussion on the existing barriers and suggested solutions to overcome them in Section IV. Section V summarizes the role of institutional policies and practices in gender mainstreaming related to CBA. Section VI provides recommendations for policy makers and practitioners.

There are four annexes to this report: A) glossary of terms, B) cost-benefit and cost-effectiveness analyses overview, C) complete literature review, and D) references.

[6] Quality-adjusted life years (QALY) and disability-adjusted life years (DALY). See Gold et al. (2002).

II. LITERATURE REVIEW SUMMARY

This section presents a summary of the literature review prepared prior to this final report. The literature review addressed three broad topics:

1. **How projects shape and are shaped by gender gaps and cultural norms.** The objective in this section is to identify where in literature: 1) disaggregating stakeholders by gender has helped uncover valuable information, and 2) additional impacts are introduced or valued that are not typically included in conventional cost-benefit models. The review covers two sectors, health and agriculture, that illustrate themes and key findings that can feed into a CBA. Furthermore, this section summarizes a wide range of studies examining gender-based violence (GBV).

2. **Common metrics and measurement techniques used to understand, incorporate, and monitor gendered effects that could be used in a CBA model.** This section discusses the common metrics used to quantitatively measure gender gaps and cultural norms, valuation techniques for CBA, and a collection of estimated values for agriculture and health projects. Furthermore, it summarizes the values estimated for the cost of GBV.

3. **Institutional policies and practices that affect how CBAs are conducted.** This section addresses gender policies, practical guidelines, and procedures that organizations established to implement policies, as well as key factors that influence the effectiveness of institutional policies.

Below is a summary of the key findings from the literature review under topics one and two, with findings from the third topic summarized at the beginning of Section V. Institutional Aspects of Integrating Gender in CBA. The full literature review, including citations, is presented in Annex C.

Channels of Interaction

This section analyzes how cultural norms and gender gaps interact with international development policies and projects and analyzes examples of gender effects that could potentially be incorporated into CBA. There are two main areas of consideration here: 1) that cultural norms and gender gaps may affect the success of policies and projects in achieving their stated goal, and 2) that policies and projects themselves may influence cultural norms or gender gaps, even when this effect is not a primary goal. With the first point in mind, this section discusses how past policies and projects have accounted for cultural norms within their design phase. With respect to the second point, this section gives a summary of studies of the unintended gender consequences of past policies and projects.

This section examines policies and projects in two areas: agriculture and health. It also discusses policies from several other areas as regards their interactions with GBV.

Agriculture

Seven channels of interaction were found in the literature that can affect projected outcomes of projects or the distribution of the costs and benefits between genders:

- **Asset ownership:** Asset ownership, specifically inequality in asset ownership, is a result of many prevailing gender norms and gaps but can also affect the outcome of projects. Projects can shape this through distributing assets, changing the productivity of an existing asset, and can also use asset ownership as a prerequisite to participation.
- **Pre-project access and use of resources:** Men and women oftentimes have access to different resources with varying productivity. This can include different control over resources within the household (resources are not pooled) and/or different access or norms regarding participation in formal or informal labor. Reallocation of resources is an issue for stakeholder analysis within the CBA.
- **Access to income:** Increasing the income of the household should not be assumed to provide equal access to that income because of the aforementioned lack of pooling of income. Individuals may have different implied ownership of the income or different physical access to the income (depending on if it is made in cash or into a bank account). This emphasizes the need to disaggregate stakeholders by gender in CBA.
- **Division of labor:** While there is considerable heterogeneity in the tasks that different cultures' social norms designate as the responsibility of one particular sex, segregation of work generally occurs. A project should engage the appropriate gender(s) for the tasks they aim to affect and also be conscious of how the project affects time use and allocation between genders.
- **Decision-making:** There are two aspects to this channel. (1) Research has found a direct relationship between asset control and access to and power/participation in decision-making. (2) Men and women generally have different priorities and roles in making decisions, and therefore understanding the roles and priorities can help projects better predict and shape activity outcomes.
- **Access to credit:** Women generally have lower access to credit, which is made worse by the inequality in asset ownership discussed above. Women also have less collaterals to offer. CBAs can capture this by using a higher cost of borrowing for women.
- **Mobility**: Women's ability to participate in, and ultimately benefit from, many aspects of a project will be limited in cultures where it is not socially acceptable for women to move around freely outside the home, to make decisions about where to go, or to speak to a man to whom she is not related. These are not new costs and benefits to the project, but they do require gender-disaggregated modeling to account for the increased barriers women face in accessing aspects of the project's activities.

Health

Some health issues are inherently gender-specific, such as cervical cancer, but the majority of health issues are not. For instance, malaria can be contracted by both men and women, and the same can be said for almost every illness and disease. Still, these seemingly gender-blind health issues can still have strong gender components, both in terms of determinants and consequences, which need to be identified to incorporate the proper costs and benefits of interventions for both genders separately into a cost-benefit analysis.

For instance, while anyone can contract malaria, malaria in pregnant women can cause, in addition to the usual flu-like symptoms, significant developmental delays in the baby as well as complications in pregnancy. In terms of malaria prevention in pregnant women, a project can offer either antimalarial drugs or insecticide-treated bed nets to pregnant women, perhaps at a reduced cost. The medicines are more effective than the bed nets, particularly if there is assurance that the drugs will be taken, but antimalarial medicines are known to increase birthweight, which may lead to higher rates of obstructed labor. In a setting with a high incidence of unaided home births, this could increase maternal mortality, especially if other risk factors for obstructed labor are endemic to the area (Garner, Kramer, and Chalmers, 1992). Here both the health effects and treatment of malaria are gendered, which drastically changes the gender breakdown of costs and benefits of malaria prevention interventions.

Themes that emerged from the literature on the interaction between projects and gender include:

- **Educational and socioeconomic effects of improved health:** Economic theory suggests a relationship between better health outcomes, higher educational attainment, and higher socioeconomic status. While the evidence of these relationships is promising in terms of health projects having additional long-term benefits, these effects are not often measured or included in project appraisal.
- **Provider issues:** A common and significant barrier that women face in accessing health care is negative provider attitudes toward women and low regard for their health concerns. For example, health providers may not believe a woman's description of her symptoms, and therefore delays in diagnosis are common among women.
- **Use of available care**: Despite efforts by development projects to increase the availability of comprehensive care for many health issues, projects will often face significant inertia in the use of the provided formal facilities as a result of prevailing gender inequalities and norms.
    - **Traditional healers:** Traditional healers will be approached before "skilled health workers," especially for health care for women and children. The predisposition to use traditional healers over available health programs can lead to delays in diagnosis and treatment.
    - **Social stigma**: There are also firmly held traditional beliefs about the nature of illness and disease itself. These can create gendered social stigma associated with the disease,

particularly sexually transmitted diseases and other health issues with culture-specific relevance.

- **Accessibility**: Distance to a facility is often a significant factor in a pregnant woman's decision for in-facility delivery, particularly in rural settings where geographical features and road quality are added barriers, with increased distance resulting in lower rates of in-facility deliveries.
- **Cost and willingness to pay**: Much of the literature about the differences in health-seeking behaviors between men and women eventually returns to the issue of cost and ultimately women's lower willingness to pay for their health care.
- **Power dynamics**: This varies widely based on the context. However, some themes include prioritizing men's health over others in the household and the potential for discord within households about treatment for children, which may lead to the mother's paying for child health care. Women may also be blamed for poor health outcomes in their family. The relative status of women in some societies may also expose them to greater disease risk, such as for HIV.

Gender-Based Violence

The effect of projects and policies on GBV are discussed here in these aspects: asset ownership, education, and income, as well as risks caused by the project.

- **Asset ownership:** Schulte et al. (2014) identified six studies showing that asset ownership protects women from intimate partner violence (IPV) in low- and middle-income countries, but it is not clear if increasing asset ownership improves the situation for women already experiencing IPV. Asset ownership also may, more broadly, increase women's relative bargaining and decision-making power.
- **Income**: Poverty is routinely associated with GBV, so one can hypothesize that actions that economically disempower households increase GBV. While organizations do not typically aim to disadvantage women, they should be aware that any actions that empower one sex relative to another alter bargaining power within relationships, and therefore alter decision-making. Since a wide range of projects have the potential to affect the distribution of assets and wealth between men and women, it stands to reason that a wide variety of projects would benefit from the incorporation of gender effects into cost-benefit analysis.
- **Education:** The World Bank (2014) found a strongly negative association between education level and physical and sexual IPV, but the direction of causation could not be determined. One study examined the effects of an education project on the incidence of child marriage and found that traditional education and practical skills training decreased the rate of child marriage (Amin et al., 2016). This study is important because while child marriage is a form of GBV itself, it is associated with an increased risk of physical IPV, sexual IPV, and economic deprivation. Research still needs to be done to determine the effect and magnitude of education projects on GBV in a broader context.

Projects may also have the potential to affect incidence of GBV. For example, a transportation project that increases the time women are out of the house exposes women to the possibility of street violence. Even data collection projects may expose women to violence if their intimate partner does not agree with their participation in data collection. There do not appear to be any studies that formally measured increases in risks caused by projects.

From another perspective, GBV may affect the success of a project. GBV perpetrated against women involved with a project can decrease productivity through presenteeism (working while in poor health, mental and/or physical) and absenteeism. Taking a broader definition of GBV, projects are affected when the social and economic freedom of women is restricted, as is discussed in the section on agriculture projects. Lack of mobility, including lack of mobility caused by fear of violence, reduces female employment in projects and likely reduces the use of some project services.

Metrics and Valuation

This section discusses the methods used to quantify gender gaps and assign values to their social consequences. Similar to the previous section, many examples come from agriculture and health projects.

Studies on project impacts frequently use a combination of treatment effect models and results from focus group discussions to determine gender interactions with projects. These ex-post examinations of projects focus on measuring the change in a variable after the project from the pre-project baseline. While this does not measure prevailing gender inequalities in a society with regard to that variable, it can provide information about how the project may have affected genders differently.

Studies measuring the cost of GBV are also discussed. In general, studies on GBV do not discuss projects and policies; rather, they measure the cost of GBV in a selected region. In other words, these studies provide the cost of prevalence at its current level but do not measure the degree by which projects affect GBV incidence or costs. Making assumptions about the impact of a project on prevalence or depth of a gender gap to conduct CBA would thus remain a challenge for project planners and evaluators.

Agriculture

Most of this literature uses a mixed methods approach, involving both qualitative and quantitative methods. Qualitative data often rely on interviews and focus group discussions associated with the project, with some relying heavily on the results of the latter. Most studies, however, are quantitatively driven and use qualitative data for additional context. Quantitative studies use statistical methods of regression analysis to mimic an experimental research design, namely treatment effect models using the project as the treatment and drawing data from questionnaires

administered during the project. An important issue, particularly for agriculture projects, is non-random selection for participation. This is especially prevalent in agriculture projects because they often have pre-qualifying conditions for participation in the project that can result in systematic differences between participants and controls. When this is the case more complicated regression techniques are incorporated, the most commonly used in the reviewed studies being propensity score matching or weighting. The observable characteristics used in propensity score matching are collected in the same survey data from the project as the variables of interest. Researchers use these same methods to determine the effect of the project on its stated agriculture-related goals as well as to identify effects of the project on any gender issues in question.

Direct studies on gender-related variables of interest still rely on questions from project surveys or focus groups. Some variables can be captured in a single question, for instance how much milk is produced before and after the project. However, for many variables the questionnaires will often ask the same question about multiple specific examples of that variable, each of which can be responded to in a "yes/no" fashion. This seems to be the case for many variables studied as gender issues in agriculture projects. For example, in the case of mobility, a questionnaire could ask whether a woman is allowed to go somewhere unaccompanied, which requires a yes or no answer, but would ask this for a number of different places. Using a separate regression for each question, patterns can emerge from many questions.

Health

While a mixed methods research approach is also common in the literature on health projects, these studies use much more diverse methods. Qualitative data in research on health projects is often used to offer a more complete picture of the complexity of the subject and to incorporate participatory methods given the community-focused nature of many health topics. Quantitative data can range from simple summary statistics in support of the qualitative data to treatment effect models or other methods, such as logistic regression and odds-ratio calculations that are common in medical papers. In contrast to research on agriculture, health studies use less individual-level data than aggregate measures. Data used in analysis of health projects are not restricted to project surveys because some interventions can be at the provider level or on a nationwide scale.

Many of the health metrics that relate to gender differentials in health outcomes of illnesses are not gender-specific. For instance, anyone may contract tuberculosis, but many researchers are interested in the delay in diagnosis by gender. Health projects cover a diverse group of issues, but in most cases gender mainstreaming is about disaggregating impact by gender rather than introducing new indicators.

Gender issues in health projects oftentimes revolve around the gendered nature of health itself. Women have different, and higher, health needs on account of gender-specific health issues. Most notably are the increased health care requirements of pregnancy and delivery, but other seemingly non-gendered health issues often have gendered aspects as well. Given the gender-specific nature

of these impacts there is no differential to measure in outcome, but they have a significant impact on women's health nonetheless.

As for studying gender-related variables of interest directly, research often constructs and uses composite measures, like an index, for a given topic. Many aspects of health and gender are complicated and multifaceted, and composite measures incorporate multiple variables into one summary statistic. Indices can be constructed using simple aggregation, or by more sophisticated statistical methods such as factor analysis.

Costs of Gender-Based Violence

Since there are no studies quantifying the change in GBV rates caused by a policy or project when such changes are not the primary goal, this section reviews the literature surrounding the measurement of the cost of GBV. Though most studies only calculate costs, one study is unique in measuring the cost of physical IPV and then using it to evaluate a project intended to reduce IPV (Michaels-Igbokwe et al., 2016).

This section also focuses on the lessons learned from measurement studies so far, including the methodology most commonly used. Unlike other sections of this review, this section focuses more on studies in developed countries for several reasons. First, certain kinds of GBV are widespread in developed countries, with common causes as in developing countries, and the methodologies used across countries are surprisingly similar. Second, there are many more studies done on developed countries than on developing countries, and lessons learned from developed countries can be applied to understanding GBV developing countries.

Out of the 69 studies collected for this review, 21 studies used US data, but some of these only analyzed the health costs of IPV. The methods used in this subset of studies would not be possible in many developing countries because it would be difficult to obtain the detailed health data that is required. This review focuses on studies that examined the total cost of GBV, because the methods are applicable to studies in developing countries. The section concludes by examining some of the indicators used to determine the prevalence of GBV in developing countries.

Measuring the Costs

As there are already several reviews of the types of costs that can be included in a study of GBV, this review does not include an in-depth description of how to deal with each type of cost. Main findings from the literature about measuring the costs of GBV include the following:

1. Though many articles claimed to examine GBV, what was measured usually was a part of the impact of IPV.

2. Though guides tend to advocate econometric methods such as propensity score matching, all studies but one used a bottom-up accounting approach.

3. Costs were not categorized consistently.

4. There was a consensus that all estimates were gross underestimates.

Prevalence and Indicators

Prevalence rates differ from country to country. One report claimed that two out of 10 of full-time salaried women are victims of IPV in the US and worldwide, but in Ecuador seven out of 10 women surveyed had been a victim of IPV at some point. Though it is expected that rates differ between countries, differences in calculation method also cause variation in reported rates. Studies of IPV tend to include indicators of physical and sexual abuse, but not of other types of abuse such as economic deprivation. Studies that choose to include more than the most common indicators necessarily report higher prevalence rate. There is a lack of research on economic deprivation and on other types of work-related GBV, "including gender-based discrimination, stigmatization, exploitation and abuse, and labor and sex trafficking" (Schulte et al., 2014).

Overwhelmingly, indicators used to capture the level of GBV in a society are discrete indicators, but some studies report the total cost of some service when discrete units are not available. For example, a KPMG (2014) study in South Africa included the total amounts spent on GBV reported by various government departments. A study in Ecuador included the amount of money donated by international programs to support local capacity-building efforts. These measures are problematic because some of these costs are related to the prevention of gender-based violence. According to avoidance cost theory, the cost paid to avoid an event reflects the cost of that event to society, so that avoidance costs can be used to approximate direct costs (Abdalla, 1994). The issue here is that since these studies include direct costs and avoidance costs, some costs are effectively double-counted.

III. TECHNICAL ASPECTS OF INTEGRATION

Integration of gender into cost-benefit analysis uncovers details in how a project interacts with cultural norms and gender gaps, leading to: 1) a more accurate measure of impacts, 2) inclusion of additional impacts that could otherwise be ignored or misrepresented in the analysis, 3) alterations in the project design to maximize impact or better comply with policies related to gender, and 4) highlighting knowledge gaps that can be addressed by minor changes or additions to project design with the objective of using the learning opportunities that every project offers.

For effective integration, an analyst needs to answer three key questions: 1) how can impacts be different by gender? 2) what additional impacts can be introduced based on the interactions of the project with gender gaps? Is there a need for additional distributional impacts? and 3) how can one effectively quantify and monetize these impacts? Answering these questions is required for a sound integration of gender into cost-benefit analysis.

Oftentimes, cost-benefit models developed by international development institutions stop at estimating the social value of the project and report only the economic net present value (ENPV) or the economic internal rate of return (EIRR).[7] However, cost-benefit models can go further and assess the impact by each stakeholder. In the integrated approach developed by Harberger, Jenkins, and Kuo,[8] this step is referred to as "stakeholder analysis." However, in many institutions it is either not promoted or only an optional component.

In stakeholder analysis, stakeholders are defined as subsets of the affected society. Examples include the targeted beneficiaries, local government, and project labor. Figure 2 shows a hypothetical example of a project that intends to increase farm yields by introducing an improved (new) fertilizer. For the project to achieve its objectives, a partnership must take on the costs associated with the introduction of the technology and provide the required training to farmers and fertilizer producers. Furthermore, a minimum number of fertilizer producers must start producing the newly introduced fertilizers. Some stakeholders are also affected by the project without having a say in it. These stakeholders are the producers of the old fertilizer, who will experience a decrease in profits, and the local government, who will see a change in the amount of subsidy provided to farmers and tax collected on the sales of produce.

[7] See Annex B (Cost-Benefit and Cost-Effectiveness Analysis Overview) for a brief discussion on ENPV and EIRR, among other investment criteria.

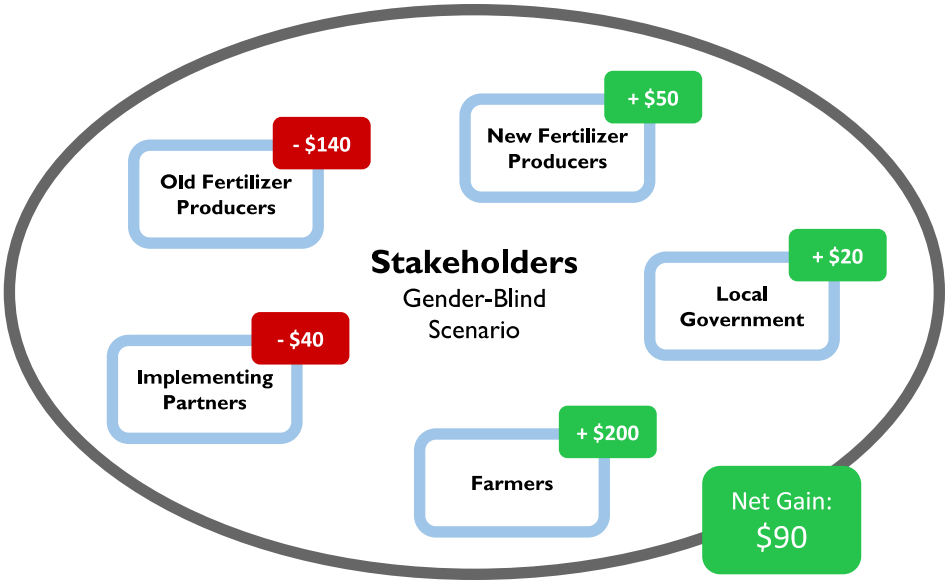
[8] Jenkins, Kuo. "Harberger (2011)." Cost Benefit Analysis for Investment Decision (2011).

Figure 3. Costs and Benefits of Introducing a New Fertilizer

Stakeholder	Impact	Net impact ($)
Implementing partners	Cover all the costs associated with introduction and training	- $140
Farmers who adopt new fertilizer	Experience increase in yield	+ $200
Producers of newly introduced fertilizer	Earn profit on the operation	+ $50
Producers of the old fertilizer	Lose the profit they used to earn	- $40
Government	Experience increase in tax revenue and reduction in agricultural subsidies	+ $20
Net social impact	Cover all stakeholders	+ $90

This hypothetical project is expanded in this section for better illustration of concepts. Please see Figure 3 to better visualize the relationship between the project's net economic value and the net impact on each stakeholder.

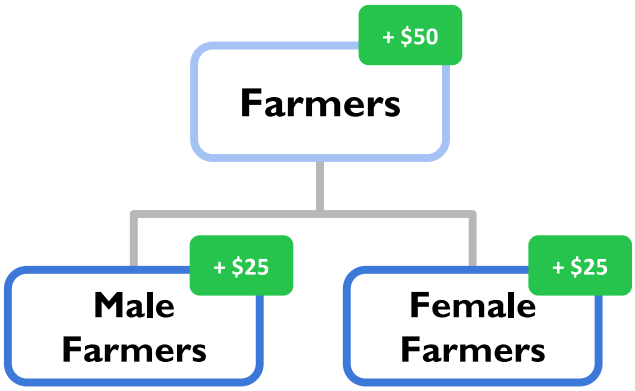
Figure 4. Introduction of a New Fertilizer (Gender-Blind)



Disaggregation of Stakeholders by Gender

The most basic step toward mainstreaming gender entails the disaggregation of each stakeholder by gender. Direct beneficiaries of the project—farmers, in this case—are always the first to attract the attention of the individuals concerned with gender impacts. At the surface, one would consider the disaggregation process to simply mean that the number of female farmers and male farmers must be identified and the net impacts be split following the same ratio. This idea is illustrated in Figure 4, if 50 percent of the farmers are female and 50 percent are male.

Figure 5. Disaggregating Stakeholders by Gender



However, in practice this process is not often as easy. First, female and male participants may have varying levels of flexibility in adopting a new approach and therefore the effectiveness for each farmer of a specific gender may be higher than the effectiveness of the project on the farmers of a different gender. For instance, if the adoption of the new fertilizer requires upfront investment in some form of equipment, farmers can only opt for it if they have access to some form of credit or savings. Cultural norms prohibit access to finance or even ownership of assets for female farmers in many countries (Arun, 1999).

Second, increased wealth for a farmer translates to increased expenditure in the present or future. Expenditure can be associated with a range of commodities and services from capital investment in the business, education, and food for the children, or even alcohol and tobacco. Evidence shows that, depending on the culture, gender has a significant role in determining the way additional income is spent (Santos et al., 2014; van den Bold et al., 2015). In most cultures, increased income for women results in higher expenditure for the well-being of the children, compared to the same increase in income for men. Therefore, there is room to differentiate between the social value of a dollar of increased income for male farmers and the same additional dollar earned by female farmers.

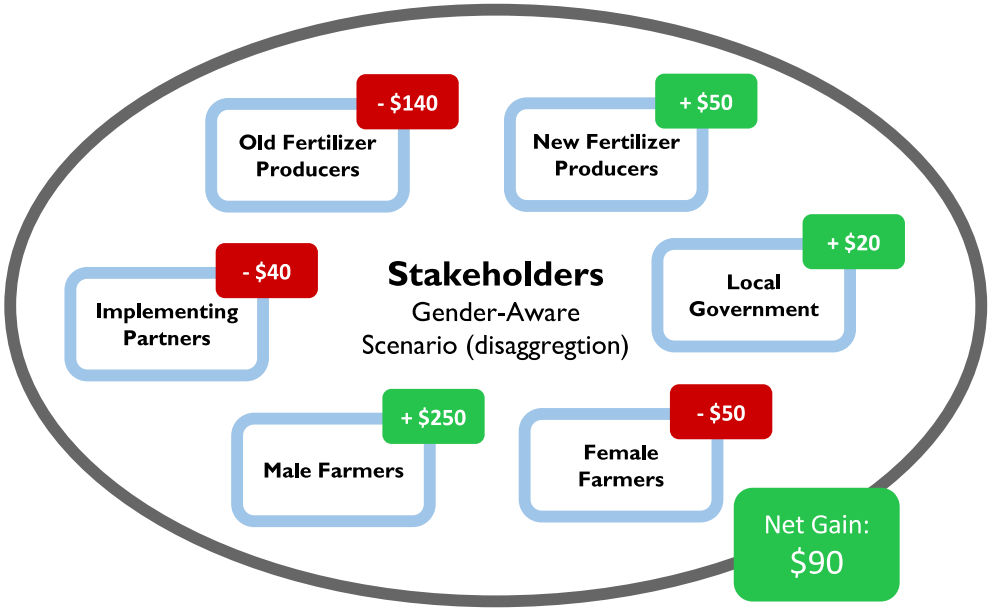
While the first issue concerns the disaggregation of impact by gender, the latter falls directly under distributional impacts. The first one may not change the total value of the project but rather highlights how impact is different by gender. Failing to account for the distributional impacts can result in underestimation or overestimation of the project's net benefit or effectiveness. This information is critical not just for individuals who assess and approve the project, but also for those who design it. For instance, lack of access to formal credit, which is required to adopt the use of new fertilizer, can be addressed by adding a micro-credit scheme to the project for female farmers.

Assuming female farmers are not able to adopt the new fertilizer because they have no or limited access to credit, it would be logical to assume that only male farmers will join the program as beneficiaries.

A Gendered Approach

When an intervention significantly increases the efficiency of operation for one gender, male farmers in this case, in a free market it can lead to a net loss for the other gender, who continues with the conventional methods. In such a case, female farmers who cannot join the program as a result of cultural norms or gender gaps will be pushed out of the market. Although this results in more output being produced, this may be an undesirable allocation of resources. Disaggregation of impact by gender is the first step, which should not change the net impact of the project if the initial economic analysis is done correctly. For this step, female and male farmers replace farmers in the analysis (see Figure 5).

Figure 6. Disaggregation by Gender (Scenario 1: Competing Female Farmers)

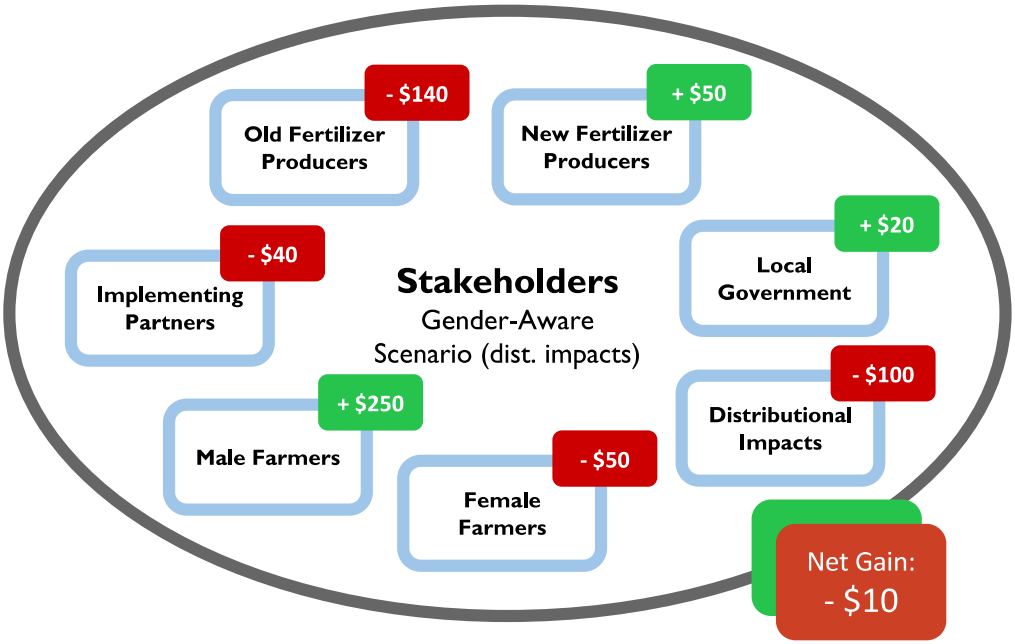


In this scenario, the results of the cost-benefit analysis make the same recommendation about the project, meaning the gender-blind analysis had the correct estimate for the net impact on farmers. However, it is often not the case that gender-blind and gender-aware analyses would generate the same results. When disaggregating impacts by stakeholders, analysts often find mistakes in calculating aggregate welfare impacts or failure to include a stakeholder group to begin with. Experience uncovers some differences, such as the gap between the benefits for female and male beneficiaries in a rural sanitation project. A water and sanitation project can result in significant time savings for women as they must spend more time, compared with me, walking to access sanitation services. Other examples include significant time savings for women resulting from a

street lighting project that improves the security measures and allows women to take shorter routes that were unsafe prior to the project.

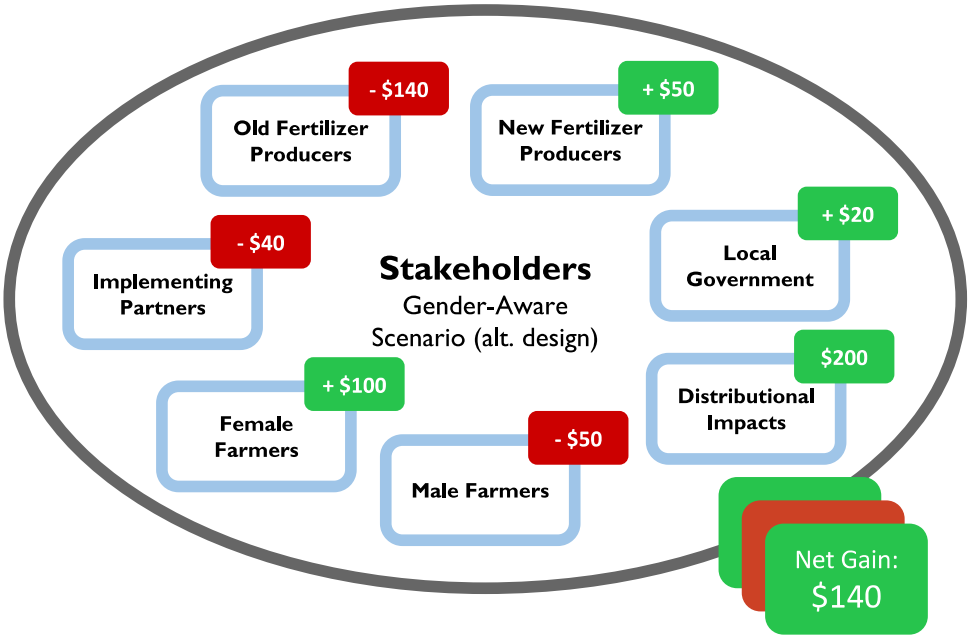
Integration of distributional impacts, however, can change the results of the analysis significantly. Imagine a case where there exists an external social cost resulting from reduced income for female farmers that equals to 200 percent of the reduction. For every $1 reduction in income for female farmers, there is $2 of external social costs. This value can either come from primary studies or be estimated based on the cost of existing policies that target the income of female farmers. An example is a policy that costs more than 200 percent of its impact in increasing the income for female farmers. Figure 6 shows the addition of this impact to the cost-benefit model.

Figure 7. Additional Impacts (Scenario 2: Distributional Impacts)



Now consider an alternative scenario, where some other form of design consideration enables only the female farmers to join the program, putting the male competition into an inferior position. This second scenario is illustrated in Figure 7. A gender-neutral approach would see these two scenarios as quite similar. While this alteration in design will result in efficiency losses, the distributional impacts can more than cover them.

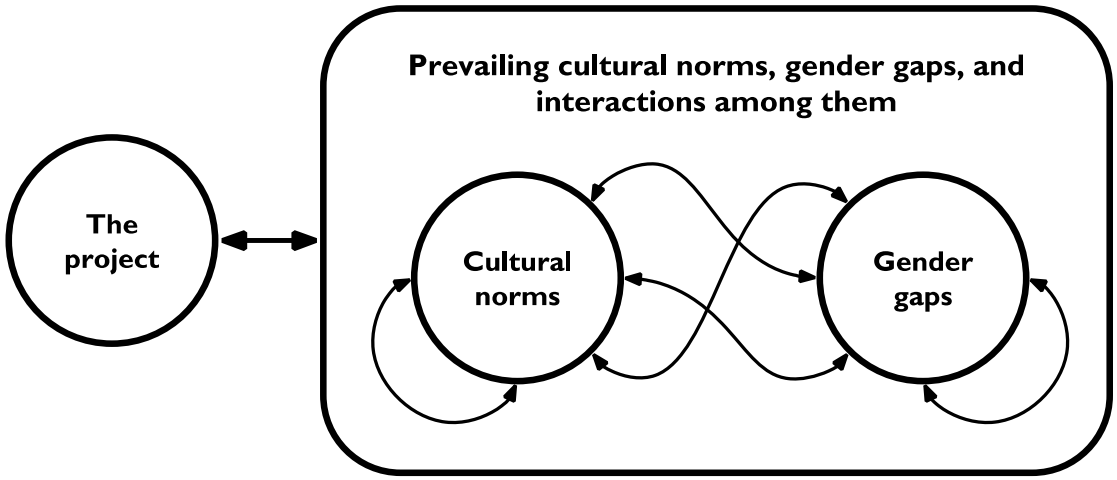
Figure 8. Additional Impacts (Scenario 3: Design Alteration)



These three scenarios illustrate the conditions in which a project interacts with a cultural norm and how its design can widen or close a gender gap. Placing a monetary value on the distributional impact is perhaps one of the most challenging concepts to address before gender can become a part of mainstream cost-benefit analysis. Furthermore, it is important to measure the cost associated with closing a gap and identifying the stakeholder(s) who pay for it. The same analysis can be performed on other stakeholders, such as the fertilizer producers.

Disaggregation of impact by gender and introduction of additional impacts within the cost-benefit analysis framework requires a deep understanding of the cultural norms and gender gaps in every given location. The context can be significantly different from one region to another even within the same country. Furthermore, it is a mistake to only look for specific gender gaps or cultural norms in isolation to draw conclusions about what to expect from an intervention. There are significant interactions among different cultural norms and gender gaps. For instance, in many cultures asset ownership and financial management of the household are not accepted as roles that women can have. However, it is wrong to assume that these adverse cultural norms coexist in every case, as there are examples where women are not allowed to own assets but can manage household income. The relationship between the project, cultural norms, and gender gaps is illustrated in Figure 8.

Figure 9. Interactions Among Norms, Gender Gaps, and a Project



Evident in this concept is the way gendered indicators such as Women's Empowerment in Agriculture Index (WEAI) are designed. WEAI builds a measure of empowerment based on several different status indicators such as role in decision-making and economic activities. These measures use a combination of gender gaps and cultural norms to draw conclusions about the state of women's empowerment, aiming to capture the interactions and multi-dimensional aspects of the way different cultural norms and gender gaps interact.

For proper integration of gender into cost-benefit analysis: 1) cultural norms and gender gaps must be studied in detail, and 2) the way an intervention interacts with cultural norms and gender gaps must be analyzed to draw conclusions on how to disaggregate impact by gender and what impacts to add. For ease of reference throughout the rest of this report, the ways gender considerations alter the cost-benefit framework are categorized as such:

1) Disaggregation of included impacts by gender; and

2) Addition of distributional impacts.

The remainder of this section focuses on technical aspects of quantifying and monetizing gendered impacts.

Quantifying and Monetizing Impacts

As explained earlier, gender disaggregation of stakeholders may uncover mistakes made in the estimation of the aggregate impact. In the case where a stakeholder group was ignored in the original analysis prior to gender mainstreaming, the model should adjust to include additional welfare impacts. Therefore, the discussion in this section is not only limited to distributional impacts but also includes direct welfare benefits and costs.

Impacts must be quantifiable before one can incorporate them into a cost-benefit analysis framework. To include an impact, the following steps are undertaken:

1. An indicator is selected that can be used to measure the impact;
2. Evidence is collected about the amount of change (reduction or increase) in the selected indicator that can be attributed to the project; and
3. A value is assigned to the change in the indicator caused by the project.

The third step, valuation, may be omitted in a cost-effectiveness study; however, the previous steps are necessary regardless of whether a cost-benefit or a cost-effectiveness framework is being constructed. Regarding the first manner in which gender mainstreaming alters cost-benefit analysis, disaggregation of stakeholders by gender, an impact is already included in the model and therefore the indicator and valuation mechanism are already in place. The only remaining challenge is to find evidence and draw conclusions on how, if, the amount of change in the selected indicator would be different by gender. This would not only need a breakdown of participants by gender but also a good understanding of how cultural norms and gender gaps can result in differences in the expected change by gender.

The integration becomes more challenging when gender mainstreaming entails the introduction of new impacts and stakeholders, which in most cases requires additional indicators. These indicators, called gendered indicators, have become the focus for many institutions. Most institutions have added new indicators that focus on gender to the standard set of indicators to monitor during project implementation. However, these indicators are not always appropriate for integrating gender into cost-benefit analysis.

A group of these indicators from the US Department of State's Master Indicator List (2013) is presented in Figure 9. The presentation here splits the indicators into three categories based on the population or unit from which the information can be obtained: organization, project, or population. Furthermore, the indicators are compared based on their suitability from a cost-benefit analytical perspective:

1. Difficulty: Is it possible to estimate the indicator in the given location?
2. Representativeness of impact: Is the indicator a good proxy for the impact?
3. Reliability: Is there enough evidence with respect to attributable change?
4. Ability to monetize: Is it possible to monetize the change in the indicator's value?

Indicators are most likely to be suitable for a cost-benefit framework when they indicate that some impact has occurred. To understand this fully, it is useful to think about indicators used in monitoring and evaluation as belonging to three types—process, outcome, and impact. Process measures indicate whether a project was implemented as intended, outcome measures indicate whether a project met its stated objectives, and impact measures indicate the long-term impact of project (Centers for Disease Control and Prevention [CDC], n.d.).

Figure 10. Indicators from the US Department of State's Master Indicator List (2013)

Indicator	Difficulty	Representativeness of Impact	Reliability	Ability to Monetize
Within an organization/government				
% of budget devoted toward a gender-related issue/project	*Low*, can be done within organization	Somewhat representative of how involved an organization is in gender issues Poorly representative of the gender impact of the organization	*Low*, inefficiency increases budgets, projects may not be effective	*Low* potential, the impact of policies on women is uncertain
Whether a gender policy is present; # of gender policies			*Low*, enforcement varies between organizations	*Variable*, depending on enforcement and evidence
# of employees trained in a gender issue			*Low*, effectiveness varies between organizations	*Variable*, depending on evidence
Within a project				
# of women working on a project	*Low*, employee records already kept	Moderate proxy for gender gap	*Medium*, work culture varies, women's control over income varies, hours supplied vary	*Medium* potential, wages representative of a *part* of impact, more evidence needed on income effects
Whether a gender-related contractor requirement is present	*Low*, requirement easy to verify	Moderately representative of intention to change a gender gap	*Low*, enforcement varies between contractors	*Variable*, depending on enforcement and evidence
Within a population				
# or % of pop. that agrees with a statement (e.g., "IPV is unacceptable")	*Medium to high*, relies on survey data	Representative of attitudes toward women	*Medium to high*, depending on statement (can be confusing, uninformative, etc.)	*Low* potential, relationships between beliefs and actions must be understood
# or % of women who experienced an event (e.g., IPV)	*Low to high*, may be able to rely on existing records, may require survey data	Representative of impact on women	*Medium to high*, depending on IPV definition	*Medium to high* potential, indicators are well suited toward measuring an impact
# or % of women in a state: in poverty, in child marriage, in school, etc.		Representative of status of women	*Medium to high*, most statistics accurately reflect situation	
# or % of women receiving a service: counseling, treatment, etc.		Representative of impact of a policy or service	*Low to high*, some types of services vary in quality	

Reviewing Millennium Challenge Corporation (MCC, 2015), USAID (2013), and Inter-American Development Bank (IDB, 2014) documents on indicators, many of the indicators listed are process measures. These indicators seem to reflect the need for accountability within organizations, measuring the quality of a project or the number of women reached by the project (MCC, 2015; USAID, 2013). Some of them are outcome measures, designed to measure the short-term success of program (MCC, 2015; USAID, 2013; IDB, 2014). For example, "the percentage of target population that views Gender-Based Violence (GBV) as less acceptable after participating in or being exposed to [US Government] programming" (USAID, 2013) is an example of an outcome measure. It can easily be used to set project targets and can be measured as soon as a program is complete.

On the other hand, the indicators suitable for a cost-benefit analysis framework are typically impact measures. A reduction in IPV injuries is an impact measure because it cannot be observed immediately after the project, so it is not a suitable indicator for determining the success of a project upon completion. To use this as an indicator, donors would have to track project participants after the completion of the program. Impact indicators offer donors an opportunity to go beyond the short-term success of programs and evaluate their long-term success. Learning about the long-term impacts of projects is highly relevant in regard to cost-benefit analysis, where projects are ideally evaluated based on potential impacts and not just potential outcomes.

Once a suitable measure is selected, one needs to ask the question of whether there exists enough evidence to make reliable assumptions for how the project can change the status of the indicators—reduce or increase it, and by how much. This is a forecasting exercise, and the ability of the analyst to do so will not only rely on deep understanding of the project design, cultural norms, and gender gaps, but also require historical data and evidence from prior projects in a comparable context. The attributable change caused by the project is the gap between the status with the project and the expected status without it, where the latter is often referred to as the counterfactual. Identifying the change that is attributable to the project is a key challenge in the integration of gender impacts into cost-benefit analysis. Direct investment in gender is a new sector in the area of social programs and there have not been many opportunities to conduct primary studies on their quantitative impact. Solutions to resolve this challenge are presented in the following section.

The third step of the impact integration process is the valuation of the estimated change in the selected indicator. This step is not required in a cost-effectiveness framework, where the impact being discussed is the main objective of the project and the study aims to measure how cost-effective the intervention is compared to other means of achieving the same objective. In a cost-benefit framework, however, the impact must be monetized. If the impact being considered falls under distributional impacts, rather than direct welfare impacts, the valuation process can be

cumbersome. Economists have debated the best methodology for the valuation of distributional impacts.[9]

The impact of closing a gender gap or changing a cultural norm can be captured as a direct welfare impact for a stakeholder. However, like many other social impacts, such impacts do not have a market in which the values are revealed. In the presence of markets, suppliers' behavior reflects the cost of service provision and demanders' behavior reflects the value of consumptions. As the two groups meet, the interaction results in an equilibrium market price and quantity of production/consumption at which, in theory, the value of marginal consumption and marginal cost of production or service provision are equal.

When there are no markets and therefore no market price to reveal the value of a service, alternative means are used for assigning a value to a non-market good or service. These methods are not unique to gender impacts and have been developed and been in use for decades. Bateman and Turner (1992) provided a comprehensive summary of valuation techniques, divided into supply side and demand methods. These methods are presented in Figure 10.

Figure 11. Demand-Side and Supply-Side Valuation Methods (Bateman and Turner, 1992)

Demand-Side Methods	Contingent Valuation Method (CVM) Travel Cost Method (TCM) Hedonic Pricing Method (HPM)
Supply-Side Methods	Dose-Response Method or Marginal Production Function (DRM) Recovering (Reproduction or Replacement) Cost Method (RCM) Opportunity Cost Method (OCM) Preventive Expenditure (or Avoided Cost) Method (PEM)

An indicator that represents a gender gap or an adverse cultural norm, such as prevalence of intimate partner violence, can be valued through multiple channels. For instance, violence against women results in medical expenses, time away from family and work, and short-term and long-term depression. These are not alternative ways of looking at the same impact but are rather complementary measures of impact. To place a value on each of these impacts a different valuation method may be used based on data availability and ease of measurement. Figure 11 presents suggested valuation methods for each of the impacts mentioned in this example.

[9] For an explanation and commentary on distributional weights, see Harberger, Arnold C. "On the use of distributional weights in social cost-benefit analysis." *Journal of Political Economy* 86.2, Part 2 (1978): S87–S120.

Figure 12. Valuation Methods for Complementary Channels of Impact from IPV

Impact	Possible valuation methods
Medical expenses	Direct market based (if private health care is used) Indirect public health expenditure (if public health care is used)
Time away from work	Opportunity Cost Method (OCM) Dose-Response Method or Marginal Production Function (DRM)
Time away from family	Contingent Valuation Method (CVM)
Depression	Preventive Expenditure (or Avoided Cost) Method (PEM) Recovering (Reproduction or Replacement) Cost Method (RCM) Opportunity Cost Method (OCM) Dose-Response Method or Marginal Production Function (DRM)

Estimation of values discussed above requires resource-intensive primary studies, which demand more cost and time than the typical budgets available for conducting cost-benefit analysis. As such, economists almost always rely on the results of other studies—secondary sources. Two issues make it very difficult to find secondary studies on gender impacts:

1. Gender issues are a relatively new subject for impact assessment literature and the number of available high-quality studies are limited.
2. Gender gaps, cultural norms, and cultural values are very different from one region to another, making it difficult to generalize the results of a study to another context.

On the bright side, gender issues interact with projects in almost every sector and if primary valuation studies are conducted in one region, on gender-based violence for instance, the results are easily transferrable to other projects in the same region.

IV. THE GAP: EVIDENCE, TOOLS, OR TECHNIQUES?

The application of cost-benefit and cost-effectiveness analysis in social programs and public projects has always been subject to resistance and criticism. Practitioners argue that there is limited quantitative evidence to construct defensible forecasting models that include gender impacts, and project sponsors question the ability of these tools to capture the true value of benefits, particularly in the process of assigning a monetary value to impacts.

To illustrate, consider a project that aims to promote gender parity in the formal labor market through subsidizing female students at the tertiary level. While the cost associated with the project is the amount of subsidy, it is challenging to measure the benefit of improved gender parity in dollars. First, there is limited evidence available to inform the practitioners about the effectiveness of such subsidies on future participation of female student in the formal labor market. Second, there may not be a commonly agreed-upon and straightforward process for assigning a dollar value to such changes in the formal labor market. Even if one manages to make a strong case showing that the project is expected to result in a two-percent gain in the share of women in formal labor markets, putting a dollar value on this gain in gender parity remains a challenge.

While cost-effectiveness analysis can address the second problem by dropping the need for assigning a dollar value on impact, the first problem would remain for social impacts regardless of what tool, cost-benefit or cost-effectiveness analysis, is being utilized. However, through time, commonly agreed-upon frameworks are constructed with the developments in economic theory and accumulation of knowledge about the impact of social projects. Research and development results in: 1) development of new metrics such as DALY and QALY in measurement of health impacts (Gold et al., 2002), 2) development of new frameworks such as the Mincerian earning function for assigning a monetary value to the impact of education projects based on household survey data (Heckman et al., 2006), and 3) accumulation of quantitative evidence that support attribution, prove causality, and provide a quantitative measure of the expected impact. This report argues that the main gap in the integration of gender into cost-benefit analysis is in the third part, existence of quantitative evidence to support attribution and provide a quantitative measure of expected impact in different contexts.

Research is required to answer three questions before a cost-benefit analyst can successfully integrate gender into its model.

1. For a given intervention and cultural setting, how do the impacts of the project differ by the gender of the stakeholder?
2. What gender gaps or cultural norms are affected by the intervention? By how much?
3. What is the value of the impact on gender gaps and cultural norms?

For instance, if answering the first question about a transport project reveals that it is expected to reduce gender-based violence by making streets safer for women, the analyst would need know: 1) how many incidents of gender-based violence will be avoided because of this project? and 2) what is the average cost, or value of averting, an incident of gender-based violence?

The challenges discussed here with respect to the gaps in our knowledge about the way gender gaps and cultural norms interact with projects are very similar to some of the barriers we encounter when trying to integrate environmental impacts into cost-benefit analysis. Our knowledge is considerably limited about the way projects affect the environment, and valuation of impacts on ecological assets and services is not a straightforward task. Given the similarities, there is room for learning from the effective steps professionals have made in mainstreaming environmental impacts into cost-benefit analysis. This is not to say that environmental impacts are now fully integrated into cost-benefit analysis, but the authors believe that the integration of environmental impacts is at a more advanced stage compared to gender.

Ecological assets and services, similar to some gender impacts, are composed by many values. In the valuation of environmental impacts, the concept of total economic value (TEV) is introduced, which assumes that the total value is composed by many that are complementary, some of which are intangible (Organisation for Economic Co-operation and Development [OECD], 2006). To illustrate the use of this concept in the valuation of gender impacts, it is applied to the cost of GBV as an example in this section. It is argued that the degree of tangibility of a cost is an important consideration in deciding which costs to include in a study. Furthermore, the concept of benefit transfer—in which values obtained from previous studies are used in a similar setting (Boutwell and Westra, 2013)—is also discussed in regard to gender impacts. Lastly, alternative solutions are discussed for constructing a cost-benefit model that integrates gender impacts and at the same time stays away from quantifying or monetizing important but non-tangible impacts.

Example: Application of Total Economic Value for GBV

Studies on gender-based violence (GBV) vary widely in terms of completeness, even among those that attempt to measure the total economic value of intimate partner violence (Duvvury et al., 2004). There is a clear trade-off between comprehensiveness and cost of the study, but there also exists an important trade-off between comprehensiveness and the reliability of the estimates, especially when including intangible costs. The value of pain and suffering, for example, appears to be a large and important component, but the accuracy of the estimates of these values cannot be determined (Australian Domestic and Family Violence Clearinghouse [Australian DFV Clearinghouse], 2001).

Indirect effects can also be difficult to estimate because they often occur over the long term. Second-generation effects—effects concerning the children of victims—are difficult to track and difficult to attribute to violence. These include reductions in productivity caused by behavioral problems and disabilities, either as a result of witnessing violence or as a result of pregnancy

complications caused by violence (KPMG, 2012). These losses are lifelong, but even if they could be tracked, it cannot be said with certainty which portion of the loss is caused by intimate partner violence.

As a result of the complicated nature of measuring indirect and intangible costs, the most commonly estimated costs will be direct and tangible. However, there is some disagreement about the overlap between these terms. Some publications equate direct and tangible costs (KPMG, 2012), but others do not (Day et al., 2005). It should be noted that though intangible costs tend to be indirect, this is not necessarily the case. Pain and suffering is caused directly by violence but is intangible.

The Tangible and Intangible Costs of Gender-Based Violence

In Figure 12, we define six types of costs in the style of Day et al. (2005), though the actual costs are taken from Day et al. (2005) or KPMG (2012). *Direct tangible costs* are actual expenses paid, by the victim or otherwise, as a direct result of intimate partner violence. These are estimated by calculating the costs of goods and services consumed. *Indirect tangible costs* have monetary value in the economy, but there is no monetary transaction. An example of this is a reduction in earnings. *Direct intangible costs* have no monetary value but are a direct result of intimate partner violence, while *indirect intangible costs* have no monetary value and are an indirect result of intimate partner violence, such as the second-generation effects discussed previously.

The table also separates out costs that are difficult to attribute, difficult to measure, or both. "Difficult to measure" means that a cost is technically difficult to measure—financial difficulties are not considered. For example, lost earnings as a result of death are considered difficult to measure because they need to be approximated.

A disclaimer is that this is only an example of how costs might be categorized—some authors may argue that certain costs belong in a different category. Part of the difficulty is that some of these costs have both a tangible component and an intangible component. Take, for example, "reduced participation in public life due to fear of violence." A woman's avoidance of a public area out of fear of violence has a monetary value in the economy if it restricts her from taking certain jobs or increases her travel time because she avoids certain areas. In the first case, the value of the reduction in participation in public life could be approximated by foregone earnings, and in the second, it could be approximated using the travel cost method. In this way, this impact of GBV can be thought of as tangible but difficult to attribute. However, the impact is intangible for a woman who avoids certain public spaces, although this does not result in an increase in travel cost or a difference in employment. Figure 12 assumes that the impact is tangible, and the psychological cost of fear is included separately, under intangible costs.

Figure 13. Total Economic Value (Costs) of Gender-Based Violence

Direct	
Tangible, attributable and measurable	• Medical costs (immediate care and prescriptions, disability from injuries) • Costs of foster care, child removed because of violence • Violence education programs in schools • Replacement of destroyed property • Private legal costs • Public administrative costs (criminal and family court costs, police, coroner, crisis accommodation, perpetrator programs, interpreters, employment programs) • Private administrative costs (privately funded hotlines, Red Cross and Red Crescent, community support groups, church-run support groups) • Incarceration costs • Funeral costs • Employer costs (searching, hiring, and training replacements; anti-violence programs; on-site medical; overtime paid to cover shifts; relocation; separation pay; benefits; insurance premiums; complaint/grievance processing; litigation; court time; compensation)
Tangible, difficult to attribute or to measure	• Medical costs (long-term mental health treatment, mental health treatment of children, chronic health issues, treatment for sexually transmitted illnesses, abortions, pregnancy complications) • Special education costs of children, result of pregnancy complications • Special education costs of children, result of witnessing violence
Intangible	• Loss of freedom for incarcerated perpetrators • Reduction in quality-adjusted life years • Reduction in disability-adjusted life years • Pain and suffering of victims and children • Emotional pain of losing a loved one • Loss of life value exceeding lost earnings
Indirect	
Tangible, attributable, measurable	• Loss of earnings due to absenteeism, for victim or perpetrator • Lost tax revenue • Deadweight loss from taxation for services
Tangible, difficult to attribute or to measure	• Loss of earnings due to presenteeism, for victim or perpetrator • Reduced educational attainment, victim, for perpetrator and children • Lost earnings because of death • Reduced participation in public life because of injuries • Reduced participation in public life out of fear of violence, for victims and non-victims
Intangible	• Effects of poor lifestyle choices because of poor mental or physical health • Psychological cost of fear, to victims and women in society • Volunteer hours • Lost home production • Lost time because of treatment, job search, etc. • Loss of employee morale because of GBV in the workplace

Deciding Which Impacts to Include

It is important to note that using as many of these costs as possible in an analysis is not the recommended strategy. In many cases, even gross underestimations can be informative, given that the direct tangible costs of GBV are in fact quite large. Michaels-Igbokwe et al. (2016) took a conservative approach and used only tangible costs related to physical IPV in their evaluation, but this conservative measure of benefits alone justified a community outreach project designed to reduce domestic violence. In the case where projects can be justified using tangible costs, including difficult-to-measure intangible costs casts doubt on the accuracy of the estimates without changing the recommendations provided by CBA. The exception to this is when projects are being compared to each other; in that case, including intangible costs in the evaluation of one project may change the ranking of projects. Whenever possible, cost-benefit should use the same types of costs to evaluate projects that are being compared to each other.

Cost selection is obviously informed by data availability, but it may also be informed by the type of program being evaluated. Consider Michaels-Igbokwe et al. (2016) again. The project focused on reducing physical and sexual IPV, so that it was appropriate to include the tangible costs of physical IPV. But since the study did not focus on other types of IPV and therefore did not collect data on other types of IPV (Abramsky et al., 2012), the inclusion of costs related to these types of IPV would be inappropriate. In other cases, intangible costs may be highly relevant, but these cases may occur more in developing countries, where the available data more easily facilitates the measurement of indirect costs. For example, a body of US studies measure changes in dysfunctional behavior in children caused by witnessing domestic violence (Levendosky et al., 2013).

Benefit Transfer

As mentioned previously, benefit transfer is a method used when some of the values necessary to perform cost-benefit analysis are unavailable. The method involves the transfer of values from a previous study or previous studies, where the context of the previous work is believed to be similar (Boutwell and Westra, 2013). Clearly, this method has great potential for use in international agencies that work across several countries, since the data needed to properly evaluate a policy may not always be available. There is potential to transfer more than benefits—costs and rates can also be transferred.

One document, commissioned by the International Finance Corporation at the World Bank, discusses the transfer of indicator values, though no calculations are performed. The document includes a list of countries without a gender inequality index value, and for each country, the most similar country is given. For example, countries without a gender inequality index in the Caribbean are assumed to have the same value as Jamaica, for which a value is available (MacDonald, 2012). This is a crucial part of benefit transfer methods—deciding which existing value is the most appropriate one to apply to the current study.

At least one study on the cost of GBV in developing countries transfers a value to perform calculations. Roldós and Corso (2013) measured the cost of IPV in Ecuador but did not have data on the average number of days missed from work because of an incident of IPV. Instead, they used the average number of days as obtained in an American study (CDC, 2003). There is an obvious dissimilarity between these countries—one is developing and the other is not—but the time needed to recover from an injury should not vary drastically between them. In this case, transferring between dissimilar countries should not affect the reliability of the estimates. Costs, on the other hand, are likely to vary between countries, and therefore the selection of the country from which the costs will be transferred must be carefully selected.

This simple example only involves the transfer of a single value, but benefit transfer methods can be generalized to more complex cases. For example, a researcher may wish to calculate the benefits of a project that reduces cases of physical intimate partner violence, but the cost of services (medical or otherwise) is not available. In this case, the missing cost values could be obtained from a similar country or region. Another researcher may wish to calculate the total cost of intimate partner violence within a country, but detailed prevalence and incidence information (by age for example) is not available. In this case, prevalence and incidence data could be applied from a similar country.

Resources for Use in the Transfer of Values, Developing Countries

Figure 13 contains examples of resources and databases that could be used to transfer values to a current study or project evaluation. This list is non-exhaustive. A caution is that in terms of IPV, care *must* be taken to verify whether the definition of GBV used to develop the database is consistent with the prevalence rate of interest. For example, IPV prevalence rates may capture physical and sexual abuse but not emotional or economic abuse, which can also be considered as IPV (Schulte et al., 2014).

Databases tend to include most developing countries and some developed countries, but in the case where a country of interest is missing, the value from a similar country could be used. Resources where the data are not public and resources that only include developed countries are excluded.

Figure 14. Resources for Use in the Transfer of Values, Developing Countries

Type of Value	Source
Causes of death (by gender)	WHO, 2012
IPV rates, non-partner sexual violence rates (women only)	WHO, 2015
Gender Development Index (GDI)*	UNDP, 2015a
Gender Inequality Index (GII)*	UNDP, 2015b

Type of Value	Source
Various indicators: education, employment, entrepreneurship, health, development (some by gender, some women only)	OECD, 2016
Detailed education statistics (by gender)	UNESCO, 2016
Various indicators: agency, economic and social context, economic opportunities, education, health, public life and decision-making (some by gender, some women only)	World Bank, 2016
Various indicators: time use, employment, education, health, public life and decision-making, GBV rates (IPV, female genital mutilation, non-partner sexual violence, child marriages, and adolescent births) (some by gender, some women only)	United Nations Statistics Division (UNSD), 2016**

*These two databases include examples of transfer methods. In countries where sex-disaggregated data are not available for some variables, global averages are used in some parts of the calculation.
**This database is derived from various sources rather than being collected by the UNSD alone.

For primary studies to be useful as inputs in a benefit transfer framework, they must include a range of contextual details that reflect the conditions in which the results were obtained. Access to these contextual details enables the analyst to determine if value transfer makes sense from one context to another and, if it does, to properly adjust values for the differences between the project and study sites. Some of the contextual details that are important for the transfer of gendered impacts are the prevailing cultural norms, current level of gender gaps, and income at the household level. While gender gaps and income are already in quantitative scales, cultural norms require identification and quantification.

Alternative Ways of Dealing with Lack of Evidence

Even given all of the tools discussed above, there are still many cases where there is a lack of reliable evidence for the degree or value of costs or benefits. Furthermore, there are many instances where the resources available to the practitioners do not justify the effort required to conduct the studies, such as advanced benefit transfers, in order to make reliable assumptions about its impact or value. Alternatively, one can change the structure of a cost-benefit framework in a way that avoids quantifying or monetizing an impact but yet assists the decision-makers in a quantitative way. Two cases are discussed below.

Going back to the total economic value (cost) example with regards to gender-based violence, there is often a range of impacts that can be sorted in decreasing order of tangibility. In such a case, if all impacts, both tangible and intangible, are included, the study will become subject to criticism, and the usefulness for decision-making is lost. There are many cases, however, where a conservative measure of benefits, or costs, can satisfy the decision-making process. For instance,

if the sum of tangible benefits for a project that aims to reduce GBV more than covers its costs, then including the intangible will have no impact on the overall decision. In such a case, there is no need to involve the intangible benefits in a quantitative framework. However, this approach is incompatible with the institutional setup of many organizations in which projects of different natures are compared and ranked.

Another way to avoid the need to monetize an important impact is to restructure the cost-benefit model and estimate a threshold value for it around which the recommendation changes. To illustrate, consider an intervention that aims to close the gender gap in progression at secondary school. Once the cost-benefit model is constructed, one can estimate the cost of achieving a specific outcome, such as the cost of reducing the gender gap by 50% or cost per unit of additional year of schooling for female students. This cost would be the threshold measure, and the decision-makers can decide whether the benefit, either closing the gender gap by 50% or having an additional year of schooling for female students, is worth as much. In this approach, the analyst stays away from choosing a value for the measure of outcome and leaves the evaluation to the decision-makers. Furthermore, this approach satisfies the expectations of a wider set of stakeholders as the question is whether the perceived value is more or less than a threshold, rather than coming up with a specific value.

The approach discussed above is also difficult to use in many institutional settings where the prescribed methodology requires the practitioners to produce specific outputs such as the EIRR or ENPV from the cost-benefit process.

V. INSTITUTIONAL ASPECTS OF INTEGRATING GENDER IN CBA

After the Fourth Conference on Women in 1995, the Beijing Declaration and Platform for Action tasked UN organizations, member states, and civil society with the promotion of women's empowerment and gender equality. Organizations such as USAID, IDB, the World Bank, and the United Nations sought to reach this goal through the approach of gender mainstreaming. Many international organizations have a guiding policy to advance gender integration and equality through their work. In general, such policies establish an organization's purpose, strategy, and operational responsibilities for implementation. To achieve the goals laid out in their gender strategies, many organizations also released guidelines for implementation that establish the institutional units, processes, roles, and responsibilities for implementation.

Literature suggests that there has been progress on gender mainstreaming, though many challenges remain. Since the Beijing Conference, international organizations have adapted their structures, resource allocations, and strategic priorities to advance the goal of gender equality through gender mainstreaming. Factors found to influence gender mainstreaming and the practices surrounding integrating gender in programming include:

- **Approach to implementing mainstreaming**, such as alignment with other organizational objectives and timing
- **Clarity of responsibility and accountability** for implementation, both internal and external
- **Organizational culture**, including leadership support and active or passive staff support or resistance to changes
- **Institutional processes and structures,** such as creation of a gender unit, sufficient budgeting, and appropriate expertise and knowledge management structures
- **Staff training and resources** to implement policies in their day-to-day work
- **Assessment and measurement** that promotes integration of gender throughout the program cycle

In addition to the evidence base and CBA techniques, institutional factors also affect an organization's willingness and ability to integrate gender into CBAs. Key factors are explored more below.

Institutional Goals

The processes, priorities, and incentive systems embedded in these policies drive implementation of practices, including for the potential engendering of CBA. For example, the Millennium Challenge Corporation (MCC) frames its gender objectives within its mandate to reduce poverty and increase economic growth. MCC's policy states that the organization

> recognizes that many countries with high levels of gender inequality also experience high levels of poverty and that gender inequality can be a significant constraint to economic growth and poverty reduction. Therefore, in order to maximize the impact of Compacts on economic growth and poverty reduction, MCC requires that eligible countries analyze gender differences and inequalities to inform the development, design, implementation, monitoring, and evaluation of programs funded by MCC. (MCC, 2012, 1)[10]

Through this primarily instrumental view of gender integration into development work—of how gender equality increases the effectiveness of economic development programs—the organization bounds how it approaches, analyzes, and prioritizes gender issues. In this context, the organization is less likely to directly target the closing of gender gaps unless it is clear that it will affect economic growth or poverty reduction (Personal discussion October 6, 2016).

In contrast, USAID's Gender Equality and Female Empowerment Policy (2012) committed USAID to pursuing the following three outcomes:

1. Reduce gender disparities in access to, control over, and benefits from resources, wealth, opportunities, and services (economic, social, political, and cultural).

2. Reduce gender-based violence and mitigate its harmful effects on individuals.

3. Increase capability of women and girls to realize their rights, determine their life outcomes, and influence decision-making in households, communities, and societies.

The broader nature of these outcomes provides the foundation and mandate for USAID programs to fund projects that target gender inclusion and equality as their primary goal, in addition to integrating gender analysis and sensitivity into projects without an explicit gender focus. For example, the goal of the Promote program in Afghanistan is "to advance opportunities for Afghan women to become political, private sector, and civil society leaders and . . . increasing women's contributions to Afghanistan's development" (USAID Promote, n.d.). Program elements include an explicit focus on women's roles and participation in government, leadership, education, civil society, and the economy.

Project Cycle

CBA is used in different capacities across the life of a project, to assess the feasibility of the project when identifying, designing, and securing financing for the project and to evaluate its impact after the completion. Gender mainstreaming into CBA comes with technical, theoretical, and procedural adjustments that are typically introduced through policies. Examples of such policies are compiling

[10] MCC uses five-year country Compacts as the agreement between partner countries and MCC. Multiple projects and programs can exist within a given Compact.

mandatory gender assessment reports, including a chapter on gender impacts in the project design documentation, requiring some form of approval from specific units in charge of gender issues, and having gender guidelines on how M&E indicators are selected. Addressing the largest barrier to mainstreaming gender in CBA—filling the knowledge gap—requires adjustments that allow for accumulation of knowledge over time through research, learning, and sharing of information.

Institutional policies oftentimes mandate gender **assessments or analysis** for activity design, but the depth, quality, and timeliness of analysis may vary, affecting the ability of project designers to identify and understand gendered impacts. Consequently, the variations in these analyses affect how analysts understand the potential gendered effects of projects.

A comprehensive feasibility study can include a detailed assessment of gender along other contextual factors, since the evidence on how gender gaps and cultural norms interact with the project are scarce. This makes it difficult to have a thoroughly gendered design and a CBA model to validate that design. However, this process can highlight knowledge gaps that separate research or the M&E process can help address.

Project **design** is critical to provide the impetus for further gender analysis. First, an engendered design (including gender-aware activities and impacts) shapes the nature of M&E data collected and what data are available to conduct a CBA. For example, MCC's M&E Policy (2012) states:

> When pre-compact gender analysis, ERR analysis, or program design work leads to the formulation of specific hypotheses on gender impacts or explicitly links performance to gender-specific outcomes, reasonable and cost-effective efforts should be made to incorporate these gender dimensions into the activity's evaluation. When linked to program design, evaluations also should examine intra-household dynamics of male and female beneficiaries as it relates to resource access and use, the cost-effectiveness of delivering gender-differentiated interventions, differential impacts on men and women, and how gender integration enhances income growth.

Second, experimental or quasi-experimental project designs create the opportunity to generate further evidence on gender effects through impact evaluations. Creating a small number of alternative designs, where each option comes with a different combination of sub-components, and assigning them randomly to the affected population drives M&E to contribute to three critical learning outcomes:

1) Measure of the effectiveness of each component or combination of components;

2) Understanding of the interactions among components; and

3) Identification of the contextual characteristics that affect the effectiveness of each option.

In simple terms, this process helps figure out "what works where."

Experimental design has its own challenges in practice. At an institutional level, many policy makers would consider it discriminatory, and at a technical level, it requires a more detailed economic and statistical analysis.

M&E affects the nature and availability of data to feed into a CBA after the project as well as the potential for learning and evidence generation to inform future design and analysis. Indicators and data collection process also must ensure sufficient quality data for a gendered CBA. For example, a study of a household may ignore age or gender variations within that household or assume that the head of household is male, which can be built into surveys explicitly or within the biases of enumerators (Buvinic and Levine, 2016).

M&E teams often are not provided the required time, funding, and human resources to conduct such level of analysis. There can also be a disconnect between the data collected through M&E and the data used in CBA. Furthermore, M&E may focus on the key objectives of the project and a predefined set of indicators. This approach to M&E does not allow for verifying the CBA assumptions. Such a disconnect between CBA and M&E makes it impossible to use the M&E opportunities to learn and bridge the knowledge gap.

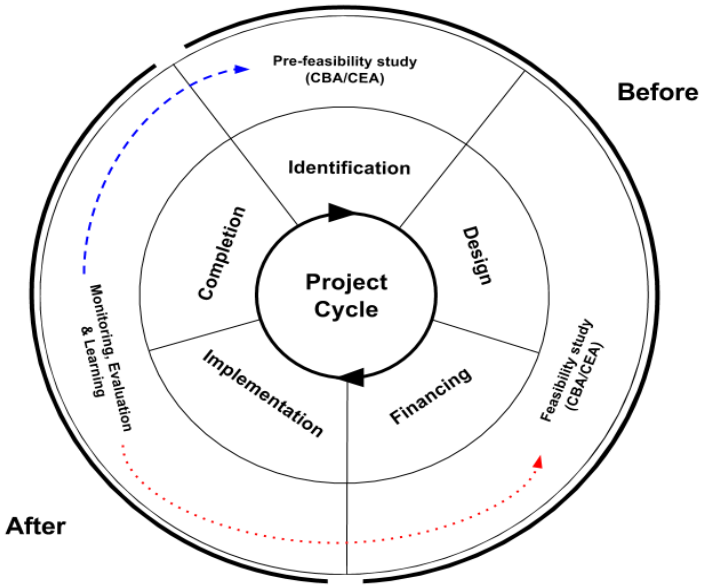
MCC references two challenges to collecting data: the difficulty of intra-household disaggregation and the associated costs of collecting such data (Seitz and Adato 2012, 29). There are efforts to build evidence about gendered impacts using experimental designs. For example, the IDB has undertaken several impact evaluations of projects regarding violence against women (IDB, n.d.). Data needs, use, and expectations are discussed further below.

As identified above, a lack of sufficient evidence is the largest constraint on integrating gendered impacts into CBA. To address this gap, **learning** within and across institutions is necessary to generate, consolidate, and make accessible the evidence to inform project designs and analysis, including CBAs. Learning should be integrated throughout the project cycle, from using a pre-feasibility study to inform and shape design, to using monitoring data to adapt the project implementation, and finally to integrating M&E and CBA data needs.

Much like integrating gender itself, prioritizing and implementing learning activities throughout the project cycle requires priorities and resources (including budget as well as staff time and expertise). This is discussed further in the section below on Inter-Organizational Challenges.

To illustrate project cycles, Figure 14 shows a typical cycle with some modifications to highlight the alignment of CBA and M&E with various stages of the project cycle. Stages start with identification and continues to design, financing, implementation, and completion. The quantitative tools used to assist the decision-making process across the project cycle are divided into feasibility tools (mostly used “before” the implementation) and monitoring, evaluation, and learning tools (used “after” implementation begins). Institutional policies on mainstreaming gender affect the way feasibility assessments, monitoring, evaluation, and learning will occur and also affect the opportunities for conducting CBAs on gender.

Figure 15. Project Cycle



The M&E learning outcomes at the mid-term can help optimize the current project being implemented to maximize impact through revising the design and updating the feasibility study for a project (the dotted line in Figure 14). This enables the project to capitalize on lessons learned and to be integrated into existing work. In addition, M&E data at completion can inform the CBA and design process of future projects (the dashed line).

As noted, lack of evidence and knowledge is the main barrier in the integration of gender into CBA. To be more specific about how institutions can help bridge the knowledge gap through alterations in project cycle, a list of recommendations are presented below.

1. Facilitate better coordination between project design, M&E, and CBA for learning through:
   i) Integrating gender in project design so it flows through to M&E and quantitative analysis;
   ii) Enabling the CBA team to highlight knowledge gaps that challenge the integration of gender into CBA, such as the evidence required for identifying impacts, attributing change caused by the project, and assigning a monetary value to them; and
   iii) Promoting the use of experimental or quasi-experimental project design to address the existing knowledge gaps, through processes such as randomized allocation of project components to beneficiary groups, and to learn about the effectiveness of each component in isolation.
2. Allow for course correction during implementation through M&E, including use of mid-term results to maximize the net impact for the remainder of the project.
3. Provide the M&E team with the required resources to collect the necessary evidence to address knowledge gaps. M&E for learning often requires the use of more resources in survey design, data collection, and data analysis.
4. Share evidence to contribute to a growing body of knowledge about gendered impacts of international development projects.

Need, Use, and Expectations of Data

In addition to the project cycle guidelines and practices, another factor that influences how organizations address and measure gender impacts is the policies on data collection, analysis, and comparability as well as perceptions of data needs. USAID approaches this challenge between countries and programs by mandating that USAID Missions track nine key indicators related to gender to measure trends over time and introduce comparability across Missions (USAID, 2013, 20–21; also see Figure 8). While these processes establish clear standards for quality, comparability of findings, and the nature of assumptions, they do not promote collection or use of a new type of data, such as data that specifically addresses a knowledge gap about the interactions between a particular project and gender.

Many organizations do not track data that can fully inform gender-sensitive programming or gendered impacts. Data2x is an initiative to map and advocate for improved tracking of gender data.[11] Data2x's 2014 data mapping exercise showed the sectoral divisions in the availability of gender data, with more available data in areas such as education and sexual and reproductive health and less available data in areas such as economic participation (including informal employment) and violence against women (Buvinic and Levine, 2016). An additional challenge is a lack of agreement on how to measure some gender indicators. In Goal 5 of the SDGs, which focuses on advancing gender equality, only three of the 15 indicators are measured broadly across countries and have agreed measurement standards (Rogers, 2016).

Collecting useful and sufficient gender data requires more time and resources. This could range from disaggregation at a minimum to a more developed definition, which can be broadened to include both genders:

> Good evidence on women and girls, above all, is of high quality—that is, data is **reliable**, **valid and representative**, and **free of gender biases**. Good evidence also has **good coverage**, in terms of concepts, definitions and measures. Lastly, good evidence on women and girls has the desirable features of **complexity**, where data from different domains in women's lives (for instance, health and employment) can be cross-referenced and cross-tabulated, and **granularity**, where the data can be disaggregated into smaller units by race and ethnicity, age and geographical location, as well as sex. (Buvinic and Levine, 2016, emphasis added)

Such data are important to identify and understand gender gaps and impacts, as well as to measuring progress toward achieving goals. However, this requires staff expertise, time, funds, and other resources to collect and analyze.

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[11] Data2x defines gender data as "data that is disaggregated by sex, like primary school enrollment rates for girls and boys, or data that pertains to women and girls, such as maternal mortality rates." See http://data2x.org/resources/faqs/

Institutional Culture

Much like an institution's values and culture affect its ability to translate policy changes into practice, they will also likely affect if or how organizations approach integrating gendered impacts into CBAs. It is beyond the scope of this activity to conduct an in-depth investigation into how institutional culture shapes individual and organizational receptiveness to integrating gender into projects and CBA. However, it is important to note that how gender is ranked relative to competing priorities affects the resources and focus given to gender issues, including integration in CBA. Emily Courey Pryor, Executive Director of Data2x, said, "We measure what we value, and if it's not part of the mindset that women's unpaid work in the home has an economic value in addition to other benefits, and we therefore do not measure that work, then we cannot see how women drive the economic productivity of nations" (Rogers, 2016). In other words, if gender is prioritized less than other issues, it will go unaddressed regularly in program design, M&E, and data collection within organizations, which would then choose to use resources for other ends.

Inter-Organizational Challenges

As noted above, the challenge of compiling and accessing sufficient evidence related to gender impacts is the largest constraint in integrating gender into CBA. Donors oftentimes have their own knowledge management systems, with databases that can be focused on gender as shown the in the table below.

Figure 16: Donor Knowledge Management Databases

Institution	Database(s)
USAID	Development Experiences Clearinghouse Development Data Library
MCC	Evaluation Catalog Open Data List
World Bank	Gender Data Portal
Inter-American Development Bank	Data Catalogue (see: Gender)
Organisation for Economic Co-operation and Development	Gender Data Portal
European Union	European Institute for Gender Equality: Gender Statistics
United Nations	Gender Statistics

Institution	Database(s)
	Evidence and Data for Gender Equality Project

However, in addition to efforts toward generating and using evidence within organizations, there is also significant opportunity to contribute to and benefit from databases that store evidence from multiple donors and organizations. The EDGE Project (Evidence and Data for Gender Equality), a partnership of UN Women and the United Nations Statistics Division, seeks to unify gender indicators in coordination with with National Statistical Offices, regional commissions, and international agencies, including the Asian Development Bank, the African Development Bank, the Food and Agriculture Organisation of the United Nations, the International Labour Organisation, the Organisation for Economic Co-operation and Development, and the World Bank. Through developing comparable data on health, education, employment, entrepreneurship and asset ownership, EDGE aims to coordinate efforts to build an evidence base on gendered impacts.

In September 2016, UN Women, the Bill and Melinda Gates Foundation, the Government of Australia, and Data2x (UN Foundation) launched the Making Every Woman and Girl Count program. The program works to pilot gender data collection within 12 countries, building the systems and capacity to collect reliable data at the national level (Lieberman, 2016).

Some of the other organizations compiling evidence on social data, including gender, are the following:[12]

- International Center for Research on Women: ICRW seeks to advance women's equality through conducting empirical research.
- WomanStats Project: The project aims to develop a gender database as well as develop indices and measures to understand the situation and status of women.
- Oxfam Great Britain: Oxfam GB's database includes impact evaluations and effectiveness reviews related to women's empowerment.
- WORLD Policy Analysis Center (WORLD) and the Maternal and Child Health Equity (MACHEquity): These research programs include data on laws and policies affecting gender equality.
- International Initiative for Impact Evaluation (3IE): Using evidence from impact evaluations and systematic reviews, 3ie works to bring together evidence about what works in development and why.

[12] This is far from a comprehensive list. Data2x's gender data mapping exercise also lists other resources by sector: health, education, economic opportunities, political participation, and human security.

- The Abdul Latif Jameel Poverty Action Lab (J-PAL): A network of professors and universities, J-PAL works to build a reliable evidence base for policy making and has ongoing or conducted 818 randomized evaluations in 73 countries, some of which include gendered goals or aspects.

VI. RECOMMENDATIONS

Many institutional policies and practices on gender mainstreaming are already being implemented by various organizations. The recommendations for policy makers and practitioners below intend to highlight the gaps that specifically affect gender mainstreaming in CBA.

1. **Provide flexibility at the project design and approval stages**, rather than mandating the use of specific criteria, such as economic rate of return (ERR) and approval thresholds for those criteria. This will enable the cost-benefit analysts to use alternative structures to assist the decision-making process when only limited evidence is available. Such approaches include the estimation of a threshold value for a key assumption, such as reporting the minimum value of preventing a case of GBV above which the project is feasible or the use of a conservative subset of benefits, or costs, to arrive at defensible conclusions.
2. **Promote learning**, including the following:
    a. Require the CBA teams to identify and report knowledge gaps on gender considerations of each projects.
    b. Provide the resources that enable the M&E teams to use the learning opportunities in each project to fill the knowledge gaps in gender for future projects.
    c. Provide the operational flexibility required to make changes in the design of ongoing projects based on the learning outcomes at midline.
3. **Develop indicators** to measure the level of a gender gap or state of a cultural norm in a way that is:
    a. Quantifiable;
    b. Representative;
    c. Comparable across countries and cultures; and
    d. Able to be monitored efficiently.
4. **Finance research** in:
    a. Estimating the value of changing the state of gender gaps and cultural norms in different countries and cultures;
    b. Understanding how interventions interact with cultural norms and gender gaps; and
    c. Determining the magnitude of impact that can be associated with specific interventions in alternative settings.
5. **Record and publish data** that permit others to use learning outcomes in their decision-making and analytical processes. Knowledge about the role of gender in CBA improves the quality of assumptions about the social impacts of projects. Therefore, it is not recommended to set up any additional databases to focus on gender issues, but rather to enhance the existing databases of social impacts to include:
    a. Gender disaggregated data;
    b. Information on effectiveness and impact of gender projects; and
    c. Contextual information about the prevailing gender gaps and cultural norms in every study site.

6. **Include stakeholder impact assessment** as a mandatory part of economic analysis. Stakeholder impact assessment is a natural step for gender mainstreaming in CBA; however, many organizations have it as an optional component when it comes to economic analysis.

Recommendations for Practitioners

1. **Establish a stronger link between the analyses performed before and after the project**, highlighting the knowledge gaps that the monitoring and evaluation process or additional research can potentially fill for future use, by posing such question as these:
    a. For a given intervention and cultural setting, how do the impacts of the project differ by the gender of the stakeholder?
    b. Which gender gaps or cultural norms are affected by the intervention? By how much?
    c. What is the value of the impact on gender gaps and cultural norms? Which stakeholders receive, or pay for, this value?
2. **Use experimental and quasi-experimental design**. Design projects in such a way that the evaluation process can result in learning about the impact of each component in alternative settings. Evaluation of multi-component projects reveals limited information about the effectiveness of each component unless an experimental design is used. In an experimental design, various combinations of components can be implemented randomly in different locations. This will also facilitate learning about the synergies among the components and how the contextual characteristics affect the effectiveness of each component.
3. **Adopt creative ways to accommodate the knowledge gap** but integrate gender impacts into CBA without relying on poor evidence. For instance, estimate a threshold value for a key assumption (such as reporting the minimum value of preventing a case of GBV above which the project is feasible) or use conservative subsets of benefits or costs to arrive at conclusions. This way one can avoid including assumptions that lack evidence, which could undermine the validity of the entire model.
4. **Collect data with contextual details** that facilitate its use for other projects. The results of a primary study that relates to cultural norms and gender gaps is rarely valid externally, meaning that one cannot assume the same values are still relevant if the same project is being implemented elsewhere or at another time. To use the results of an evaluation and transfer them to another location (benefit transfer), M&E data must include sufficient details about the cultural norms and prevailing gender gaps. Such details are used to construct benefit transfer functions or in a meta-analytical framework. In the absence of such information, the external use of the results will be very limited.

ANNEX A. GLOSSARY OF KEY TERMS

Gender

Gender is "a socially defined set of roles, rights, responsibilities, entitlements, and obligations of females and males in societies. The social definitions of what it means to be female or male vary among cultures and change over time" (USAID Gender Equality Policy, 2012, p. 3, n. 2).

This definition generates two important points. First, more than being a physical distinction, gender is part of one's identity—male, female, or something beyond the binary conceptualization of gender identity. In addition to self-perception of one's identity, how others perceive one's gender also affects the gendered roles, responsibilities, and rights demanded of or accorded to a person based on social norms. While acknowledging that gender is not binary and exists on a spectrum, this study examines gender as male and female due to the availability of evidence and the need to focus the project, particularly given the exploratory nature of this review to understand the potential for including gender in cost-benefit analysis.

Secondly, gender norms influence how international development projects aid in individuals' access to and experience of interventions. The literature shows common trends in how norms affect participation and impact in the areas of health and agriculture (see Channels of Impact in Section III).[13] As USAID's definition indicates, gendered norms are not fixed, and so there is also the opportunity for projects to change what they consider adverse gender norms. For example, the International Center for Research on Women's (ICRW) Gender Equity Movement in Schools (GEMS) project in India targets school children and helps shape how they perceive gender roles and norms. Through engaging boys and girls in discussions and group exercises about the gendered division of work, gender-based violence, and relationships has affected participant attitudes toward traditional "women's work" and the acceptability of violence.

Gender Equality

Gender equality "concerns women and men, and it involves working with men and boys, women and girls to bring about changes in attitudes, behaviors, roles and responsibilities at home, in the workplace, and in the community. Genuine equality means more than parity in numbers or laws on the books; it means expanding freedoms and improving overall quality of life so that equality is achieved without sacrificing gains for males or females" (USAID, 2012, 3).

[13] Other identities also affect a person, such as ethnicity, economic class, caste, or disability status, but these are outside the scope for this study to examine.

Gender Mainstreaming

Gender mainstreaming "is 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. 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. The ultimate goal is to achieve gender equality" (UN, 1997, as quoted in Moser and Moser, 2005, 12).

Gender-Based Violence and Intimate Partner Violence

Gender-based Violence (GBV) is defined broadly "as violence that is directed at an individual based on his or her biological sex, gender identity, or perceived adherence to socially defined norms of masculinity and femininity. It includes physical, sexual, and psychological abuse; threats; coercion; arbitrary deprivation of liberty; and economic deprivation, whether occurring in public or private life" (USAID, 2009). **Intimate Partner Violence (IPV)** is a subset of GBV, describing cases in which the violence is perpetrated by an intimate partner.

ANNEX B: COST-BENEFIT AND COST-EFFECTIVENESS ANALYSIS OVERVIEW

This section provides a brief overview of cost-benefit and cost-effectiveness analyses. While this annex is prepared mainly for an audience with limited or no experience in conducting or using cost-benefit analysis, it also contains discussions on institutional approaches and practical challenges that practitioners of cost-benefit analysis may find useful.

General Definitions

In its general definition, cost-benefit analysis refers to the comparison of costs and benefits of a decision, whether it is purchasing a simple commodity or making a major investment in a project. As a tool in applied economics, cost-benefit analysis refers to the direct comparison of the monetary value of all costs and benefits of a project or policy from a social perspective. The three underlined terms are explained in greater detail below.

For a cost-benefit model, comparing the value of costs and benefits is only possible if they are in the same unit of value. Currency is the most commonly used unit of value in cost-benefit models, but using currency in the analysis requires the ability to place a monetary value on every impact of a project or a policy, which can be problematic in many situations.

A cost-benefit model must comprehensively cover all costs and benefits. To achieve this, a finite framework is set up in which the opportunity cost of every input is considered a cost even if existing assets are used for the activity. Similarly, the value of assets that will have leftover value after the project will be included in the model as a benefit, often referred to as the "residual value." This way the project or policy becomes an independent entity and can be evaluated in isolation from its owners.

The costs and benefits of an activity can be different from alternative perspectives. If a project receives a substantial amount of subsidy on one of the inputs, the cost of that input is shared between the owner and the government, in which case the owner does not see the total cost that the economy pays for the purchase of that input. The most common perspective used in the cost-benefit analysis of international development projects is the perspective of the beneficiary country. Some practitioners take this a step further and conduct a detailed analysis on the net impact on each stakeholder.

Other important theoretical considerations in cost-benefit analysis is the alternative investment criteria and cost-effectiveness analysis, which are discussed below.

Time Value of Money and Alternative Investment Criteria

As the life of projects and policies spans over multiple years with varying levels of costs and benefits, timing becomes important. If the benefits are realized further in the future, their value is less than the benefits that can be obtained today; similarly, it is preferred to have costs in the future rather than earlier. This concept is referred to as the "time value of money" and reflects the idea that money can generate value or time and one prefers to have it earlier. This opportunity cost is technically introduced to cost-benefit models as a discount rate. Using the discount rate, future values are discounted to arrive at their values today, making them comparable with other values in present time.

If all the net cash flows[14] of a project are discounted to their equivalent in present time, they can be added to each other and provide the analyst with the net present value of the project. The Net Present Value (NPV) is a popular investment criterion that recommends the undertaking of the activity when above zero and rejects the activity when negative. Alternatively, one can estimate the discount rate that would equate the NPV to zero, which is referred to as the Internal Rate of Return (IRR). Assuming that the costs are mostly in present terms and benefits are spread throughout the future for a typical project, a good project that has a high NPV must also have a high IRR.

Other investment criteria include benefit-cost ratio and payback period, which have a more limited application but are often reported in cost-benefit analyses. For a more detailed discussion on alternative investment criteria, please see Glenn Jenkins, Chun-Yan Kuo, and Arnold C. Harberger (2011).

Cost-Effectiveness Analysis

Compared to cost-benefit analysis (CBA), cost-effectiveness analysis (CEA) intends to estimate the cost per unit of benefit. In such a setting, the benefit does not need to be measured in monetary units. Popular examples of the use of CEA are in the health sector, when the objective is clearly set and alternative means of achieving it are compared. For instance, if the objective is to reduce the incidence of malaria, alternative interventions can be compared with varying costs and varying levels of effectiveness. Table 15 summarizes the cost-effectiveness of alternative approaches to protect a person for a year from malaria.[15]

[14] Net cash flow of a year refers to the difference between the benefits and the costs of that year.
[15] White, Michael T., et al. "Costs and cost-effectiveness of malaria control interventions-a systematic review." Malaria Journal 10.1 (2011): 1.

Figure 17. Financial Cost of Protecting a Person for a Year (White et al., 2011)

Intervention	Financial Cost of Protecting a Person for a Year (2009, in USD)
Insecticide-Treated Nets (ITN)	2.2
Indoor Residual Spraying (IRS)	6.7
Intermittent Preventive Treatment (IPT) in infants	0.6
Intermittent Preventive Treatment (IPT) in children	4.03
Intermittent Preventive Treatment (IPT) in pregnant women	2.06

For a more detailed discussion on the advantages and weaknesses of CEA, please see Jenkins et al. (2011).

Application

These feasibility analysis tools—CBA and CEA—are throughout the life of a project. One can split the project cycle into the period prior to implementation and the period after implementation (see Figure 16). CBA and CEA can be conducted at all these stages for varying purposes and to different degrees of accuracy. A major difference is that any kind of such analysis prior to implementation is more or less a forecasting exercise, where inputs to the analysis are basically expectations about the future. Alternatively, once implementation begins, the actual values can be observed and assumptions can be verified.

Figure 18. Stages of Project Cycle before and after Implementation

Period	Stages of the Project
Before implementation	Identification Design

Period	Stages of the Project
	Financing and approval
After implementation	Implementation Monitoring

Prior to implementation, CBA and CEA are used to identify projects by comparing alternative approaches, analyzing alternative locations, and ranking mutually exclusive projects against a limited budget. Once a project is identified, a more detailed CBA or CEA is conducted on the proposed design to ensure consistency and financial and socioeconomic feasibility. This part of the analysis can also include detailed risk assessment, environmental impact assessment, and stakeholder analysis.

After the implementation begins, proper monitoring and evaluation can help verify the assumptions of the analysis conducted prior to implementation. This enables decision-makers to identify avenues for improving the implementation of the ongoing project and making more accurate assumptions in similar future projects. Unfortunately, the linkage between the analysis conducted prior to and after implementation is rather weak in the area of international development, where, if at all done, different institutional units work on CBA/CEA and monitoring and evaluation, making it difficult to realize the potentials for learning and improvements. This challenge is discussed in more details below.

Value

Conducting a rigorous CBA or CEA prior to implementation takes a significant amount of time and resources, only to result in a forecasting model. Therefore, there always exists resistance in every institution against the practice of rigorous CBA or CEA, seeing it as yet another resource-consuming step in project approval with no significant value added. However, this is not entirely true, as its absence indicates that the chances of approving bad project and rejecting good projects increase significantly. The costs associated with accepting a bad project can simply be greater than the costs associated with conducting rigorous CBA on all the institution's projects.

As highlighted by Andrew Warner (2010), conducting CBA will also enhance institutional knowledge over time, resulting in better project designs and ultimately increasing impact. The study also highlights the need for maintaining rigor and ensuring that CBA and CEA practice meets a set of minimum standard across the institution.

Practical Challenges

In practice, there are various institutional and technical challenges that has limited the application of CBA and CEA in many projects or in many institutions. A summary of these challenges is presented below.

- As discussed earlier, conducting rigorous CBA is perceived by many as a resource-intensive and time-consuming step that only results in an imperfect forecasting model. This challenge concerning funding and time requirements increases when quality becomes important and measures are put in place to ensure every CBA meets a minimum set of standards. Unfortunately, the benefits of conducting CBA for the organization is the more efficient use of funds and spread in the future. This way, the benefits of doing CBA are difficult to identify and measure while the costs are direct and tangible.
- Quantifying, monetizing, and attributing impacts to a project are not always a straightforward process. Many social impacts, such as the feeling of empowerment, are difficult to quantify, let alone to monetize. Such technical challenges call for continuous research and data analysis in an environment where new types of projects are being proposed and new impacts are being discovered in existing types of projects every year.
- A technical difficulty that challenges many institutions and practitioners is the choice of the investment criteria. Alternative criteria come with varying advantages and disadvantages, with some requiring additional assumptions (such as the discount rate in the case of NPV) and others being poor measures of the project's overall impact in absolute terms (such as IRR and payback period). At the same time, some criteria are much easier to communicate and are preferred by decision-makers (such as rate of return, IRR or ERR). The decision to recommend particular criteria to use across an institution's projects or not is itself a difficult decision to make. On the one hand, it is recommended to maintain rigor and comparability across projects through standardization, and on the other hand standardization takes away the flexibility required to deal with limited evidence in many areas, such as gender impacts, where one could arrive at a defensible conclusion using a conservative set of benefits.
- Institutions need to decide about the variables in the analysis that are prescribed as policies or variables that remain within the domain of the project. It is recommended to use policy for variables that come with a significant degree of uncertainty. Examples include the social cost of carbon and economic opportunity cost of capital. Such variables, if left to the project's domain, may eventually become adjustment mechanisms to help the analysts and decision-makers adjust the analysis to arrive at the conclusion they prefer.
- While in theory one can assume that, if all projects go through rigorous CBA, the result of CBAs can efficiently dictate the investment options and budget allocation across the organization, this is practically impossible for two reasons. First, many sources of funds are earmarked and cannot float from one sector to another, and second, the type of feasibility study conducted on each sector can be different not only in terms of being CBA or CEA, but

also in terms of the model structure that may change to facilitate alterations that enable analysts to conduct quantitative modeling when challenged with lack of evidence.

- In many infrastructure projects, the period in which a financing institution directly interacts with the project is limited to the investment or loan repayment periods. Therefore, assumptions that are made regarding how the local government or local operators will maintain and operate the assets are hard to verify and questionable (Carter and Olmstead 2016).

ANNEX C. LITERATURE REVIEW

0 Introduction

Many institutional policies and organizational units have been put in place to mainstream gender in the day-to-day operations of the organizations that design, finance, or implement international development projects. These actions have been mostly successful in increasing awareness and promoting research to better understand the way gender gaps and cultural norms interact with such projects. However, the practice is yet to exhibit significant changes in the quantitative analysis performed for project identification and design.

Cost-benefit analysis (CBA) and cost-effectiveness analysis (CEA) are the main quantitative tools used for assessing the overall feasibility of an intervention on its own or in relation to other interventions, respectively. CBA and CEA can assist decision-makers with quantitative evidence about the viability of the project from alternative perspectives as well as compare different options for achieving the desired goals.

While the role and use of these tools in decision-making and design of project varies significantly from one organization to another, it is fair to say that evidence-based quantitative analysis is now an objective for all players in international development. However, there are legitimate concerns about the ability of these tools, in their conventional setup, to capture social values such as gender impacts.

USAID commissioned this study to examine the opportunities, barriers, and potential approaches to integrating gender impacts into CBA. The goal is to enable practitioners to incorporate gender gaps and norms into the routine analytical work, rather than leaving gender impact assessment as another bureaucratic step in the process of project approval or a set of standardized indicators to be monitored with no clear use other than reporting. The study involves a comprehensive review of literature on the interaction of international development projects and gender gaps and norms, and a final report discussing approaches for addressing the lack of quantitative evidence and limited knowledge regarding the way projects interact with gender gaps and cultural norms.

This document presents the three themes in results of the literature review:

Section 1: Institutional policies and practices that affect how CBAs are conducted. This section addresses 1) organizational policies on gender, 2) practical guidelines and procedures, and 3) critical studies on effectiveness of the institutional policies.

Section 2: How projects shape and are shaped by gender gaps and related cultural norms. The objective in this section is to identify where in literature: 1) disaggregating stakeholders by gender has helped uncover valuable information, and 2) additional impacts are introduced or valued that are not typically included in conventional cost-benefit models. The review covers two

sectors, health and agriculture, that illustrate themes and key findings that might feed into a CBA. Furthermore, this section summarizes a wide range of studies examining gender-based violence (GBV), particularly those discussing intimate partner violence (IPV), GBV directed toward an intimate partner.

Section 3: Common metrics and measurement techniques used to understand, incorporate, and monitor gendered effects that could be used in a cost-benefit model. Though this review concentrates primarily on projects that do not target closing a gender gap or changing a cultural norm as a primary goal, this review does discuss such projects briefly before concluding. It discusses the common metrics used to quantitatively measure gender gaps and cultural norms, valuation techniques for cost-benefit analysis, and a collection of estimated values for agriculture and health projects. Furthermore, it summarizes the values estimated for the cost of GBV.

Section 4: Going forward. This section presents next steps and the topics that will be covered in the final report.

This document does not specifically discuss *gender projects*—projects that are designed to close a gender gap. It does discuss some projects that target women for biological reasons, and these should not be confused with gender projects. For example, a project that aims to improve birth outcomes by providing prenatal care to women does not actually close a gender gap in the sense that men do not need prenatal care. On the other hand, a project that aims to send more girls to school because their enrollment rate is observed to be less than that of boys—such as The Girls' Education Project by DFID (2013)—is a gender project. While these projects are no doubt important to international development agencies, including them in this report does not add to the discussion of the integration of CBA into international development projects. This is because there is no real difference in the strategies used to identify or measure a gender impact, whether that impact is the primary, secondary, or tertiary goal of a project. The only small difference is that when a project targets men and women, the impacts must be disaggregated by gender; this step is unnecessary for gender projects, which only target women in the first place.

As a part of this project, meetings were organized with major donor institutions, their implementing partners, and think tanks.[16] A key finding from these meetings and the literature review is that the main barrier to better integration of gender considerations into cost-benefit analysis, or other quantitative analysis performed on a project, is the lack of quantitative evidence and limited knowledge regarding the way projects interact with gender gaps and cultural norms. This finding, together with a list of proposed approaches to fill the gaps, will be discussed in detail in the final report.

[16] Including the World Bank, MCC, USAID, IDB, CGD, IDG, and GRADE.

Glossary

Gender

This literature review draws on the USAID definition of **gender** as a "socially defined set of roles, rights, responsibilities, entitlements, and obligations of females and males in societies. The social definitions of what it means to be female or male vary among cultures and change over time" (USAID Gender Equality Policy, 2012, p. 3, n. 2).

Gender-based Violence (GBV) is defined broadly "as violence that is directed at an individual based on his or her biological sex, gender identity, or perceived adherence to socially defined norms of masculinity and femininity. It includes physical, sexual, and psychological abuse; threats; coercion; arbitrary deprivation of liberty; and economic deprivation, whether occurring in public or private life" (USAID, 2009).

Gender Equality

Gender equality "concerns women and men, and it involves working with men and boys, women and girls to bring about changes in attitudes, behaviors, roles and responsibilities at home, in the workplace, and in the community. Genuine equality means more than parity in numbers or laws on the books; it means expanding freedoms and improving overall quality of life so that equality is achieved without sacrificing gains for males or females" (USAID Gender Equality policy, 2012, 3).

Gender Mainstreaming

Gender mainstreaming "is 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. 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. The ultimate goal is to achieve gender equality" (UN, 1997, as quoted in Moser and Moser, 2005, 12).

1 Institutional Policies and Practice

After the Fourth Conference on Women in 1995, the Beijing Declaration and Platform for Action tasked UN organizations, member states, and civil society with the promotion of women's empowerment and gender equality. Organizations including USAID, IDB, the World Bank, and the United Nations sought to reach this goal through the approach of gender mainstreaming. Moser and Moser (2005, 12) identified six components common to most gender mainstreaming policies:

1. Mainstreaming gender throughout work as well as gender-focused actions/interventions (the dual-track approach)
2. Gender analysis
3. A common responsibility of all staff to support gender mainstreaming, with the support of gender experts
4. Training on gender
5. Focus on women's decision-making and empowerment
6. Monitoring and evaluation

Though less common, institutions may also implement gender mainstreaming with:

7. Inter-organizational cooperation;
8. Budget support; and/or
9. Knowledge management and resources for implementation.

A wide range of research publications, conferences and forums, and policy documents are available from each organization. The literature in this section is separated into three categories: 1) organizational policies on gender, 2) practical guidelines and procedures, and 3) critical studies on effectiveness of the institutional policies.

Organizational Policies on Gender

To implement gender mainstreaming, many international organizations have a guiding approach to advance gender integration and equality through their work. In general, such policies establish an organization's purpose, strategy, and operational responsibilities for implementation. Table 16 presents gender policies and guidelines for some organizations.

Figure 19. Gender Policies of Major Donors

Organization	Key Policy Documents on Gender Integration
United States Agency for International Development	Gender Equality and Female Empowerment Policy (2012) Automated Directives System 205 (2013)

Organization	Key Policy Documents on Gender Integration
Millennium Challenge Corporation	Gender Policy (2006, updated 2011) Gender Integration Guidelines (2011)
World Bank	Gender Strategy, 2016-2023
Inter-American Development Bank	Operational Policy on Gender Equality in Development (2010) Integration Guidelines for Operational Policy on Gender Equality in Development (2013)
United Nations	Beijing Declaration and Platform for Action (1995) United Nations Millennium Declaration (2000)

Implementation of Gender Policies

To achieve the goals laid out in their gender strategies, many organizations released guidelines for implementation that establish the institutional units, processes, roles, and responsibilities for implementation. The documents and key institutional units for USAID, MCC, the World Bank, and IDB are presented in Table 17.

Figure 20. Implementation Guidelines and Units of Major Donors

Organization	Documents on Gender Policy Implementation	Institutional Unit
United States Agency for International Development	Automated Directives System 205 (2013)	Office of Gender Equality and Women's Empowerment (GenDev)
Millennium Challenge Corporation	Gender Integration Guidelines (2011)	Gender and Social Inclusion
World Bank	Gender Strategy, 2016–2023	Gender and Development Unit
Inter-American Development Bank	Integration Guidelines for Operational Policy on Gender Equality in Development (2013)	Gender and Diversity Division

Organization	Documents on Gender Policy Implementation	Institutional Unit
United Nations	Varies by program/department (see, for example, UNDP Gender Equality Strategy, 2014–2017)	UN Women

Evidence on Gender Mainstreaming Effects

Literature suggests that there has been progress on gender mainstreaming, though many challenges remain. Since the Beijing Conference, international organizations have adapted their structures, resource allocations, and strategic priorities to advance the goal of gender equality through gender mainstreaming.[17] Figure 19 below summarizes key findings related to factors that influence gender mainstreaming.

Figure 21. Factors of Success in Gender Mainstreaming

Theme	Key Findings
Approach	• Dual track can allow for complementarity between projects (Van Eerdewijk and Dubel, 2012), but distributed responsibility for mainstreaming can dilute accountability (Moser and Moser, 2005) • Demonstrated relevance of gender to achieving objectives (Buvinic, 2004; James-Sebro, 2005 as summarized in Mehra and Gupta, 2006) • Integration of men and women increases effectiveness (James-Sebro, 2005) • Including both human rights and efficiency justifications advances gender mainstreaming (Bijleveld et al., 2010; UN Women, 2014) • There is less resistance when integrating gender into new projects/initiatives (Buvinic, 2004)
Responsibility and Accountability	• There should be a clear gender policy, including explicit roles and responsibilities (James-Sebro, 2005; Bijleveld et al., 2010) • Gender considerations can be deprioritized relative to other organizational objectives (van Eerdewijk and Dubel, 2012; Mikkelsen et al., 2002) • Few organizations have clear incentives for gender mainstreaming (or sanctions for not doing so) (Moser and Moser 2005; UN Women, 2014) • External actors can add pressure to address gender mainstreaming and equality (Derbyshire, 2012; UN Women, 2014)
Organizational Culture	• Leadership support and/or "champions" are critical to success (Buvinic, 2004; Derbyshire, 2012; UN Women, 2014; James-Sebro, 2005; Mehra and Gupta, 2006)

[17] See, for example, "What is wrong with data on women and girls?" Buvinic and Levine, 2015. The question of how to get good data will be explored further in the next report.

Theme	Key Findings
	• Alignment of organizational mission/values (such as social justice) with gender mainstreaming objectives facilitates integration (Derbyshire, 2012) • Organizations should proactively hire and promote women, though many struggle to achieve gender equality in their own workplace (James-Sebro, 2005; Moser and Moser, 2005) • Staff resistance, whether passive or active, is common and impedes implementation (Moser and Moser, 2005)
Institutional Processes & Structures	• Provide predictable and sufficient budget/financing along the policy chain (Buvinic, 2004; Bijleveld et al., 2010; UN Women, 2014; James-Sebro, 2005; Mehra and Gupta, 2006) • Have a clear role for the gender unit, including hands-on work with other teams, as well as access to top leadership (Bijleveld et al., 2010; Mehra and Gupta, 2006) • Gender experts should be available throughout the organization, including both regional and sectoral experts (Buvinic, 2004; James-Sebro, 2005; UN Women, 2014; Mehra and Gupta, 2006) • Establish knowledge management structures (Bijleveld et al., 2010; Mikkelsen, 2002)
Staff Training & Resources	• Training should be available to all staff, with clear relevance to day-to-day work, and should create opportunities for follow-up (such as mentoring, building practice teams) (Moser and Moser 2005, James-Sebro 2005, Bijleveld et al., 2010; UN Women, 2014; Mikkelsen et al., 2002) • High staff turnover inhibits understanding of and sensitization to gender mainstreaming approach, concepts, and responsibilities (Moser and Moser, 2005) • Resources should be tailored to staff responsibilities and "hands-on" work (Mehra and Gupta, 2006)
Assessment and Measurement	• Gender assessments should be done, be updated, and demonstrate relevance of addressing gender to the appropriate sector and level (such as policy vs. project intervention) (Mikkelsen et al., 2002) • Organizations should track both implementation of gender mainstreaming and its effectiveness in advancing gender equality (UN Women, 2014; Mehra and Gupta, 2006) • Few evaluations exist linking gender mainstreaming to reducing gender gaps (Brouwers, 2013; Moser and Moser, 2005) • Clear, visible gender targets and assessments increase likelihood of integration of gender and its consideration in decision-making (van Eerdewijk and Dubel, 2012) • Indicators at all levels largely focus on inputs and outputs rather than outcomes and impact (Moser and Moser, 2005; Bijleveld et al., 2010) • "Hard data" help build the case for addressing gender (UN Women, 2014), but what data that do exist on gender has major gaps and quality challenges (Buvinic and Levine, 2015)

Theme	Key Findings
	• Challenges of measurement include building a consensus on indicators and measurement challenges (such as for changes in attitudes, norms, or status) (Moser and Moser, 2005; Bijleveld et al., 2010)

Measuring Progress of Gender Mainstreaming: Processes and Results

Overall, as seen above, there is still limited evidence about how gender mainstreaming approaches and policies have affected implementation and progress toward achieving gender equality. The most common method of gender mainstreaming coming out of the Beijing Conference—a "dual track" approach to integrate gender throughout all actions as well as some targeted projects focused on reducing gender gaps—has been criticized for diffusing responsibility and accountability and making gender invisible within organizations (Moser and Moser, 2005; UN Women, 2014). However, others (van Eerdewijk and Dubel, 2013) note that this dual-track approach presents opportunities for complementarity.

Organizations measure gender mainstreaming in various ways, but a pervasive challenge is the lack of evaluations in linking gender mainstreaming implementation to its objective of increasing gender equality. As noted above, many evaluations of gender mainstreaming effectiveness focus on organizational policies and processes rather than impact on reducing inequalities between men, women, boys, and girls. For example, the World Bank's corporate scorecard (World Bank, 2016) includes three indicators related to gender:

1) Gender integrated in country strategies (in percentage)
2) Projects with gender-informed analysis, action, and monitoring (in percentage)
3) Projects reporting on gender results during implementation (in percentage)

Similarly, the IDB also tracks indicators more focused on processes than outcomes. A sample of indicators from the Gender Action Plan (2014–2016) includes:

- Main Objective: Support the successful implementation of the Bank's Gender Policy by expanding and improving the quality of the interventions of the IDB and its partners that seek to promote gender equality and women's empowerment.
    - Percentage of sovereign guarantee loans, including gender-related results matrices, also include gender analysis and actions in their design
    - Percentage of country strategies with gender-related results in their results matrices also include gender analysis and actions in the country strategy document
- Objective 2.1 Analytical studies and synthesizing existing research
    - Number of analytical studies on priority gender issues initiated
    - Number of sector-specific gender technical briefs or guides published

2 Channels of Interaction

This section analyzes how cultural norms and gender gaps interact with international development policies and projects. There are two main areas of consideration here: 1) that cultural norms and gender gaps may affect the success of policies and projects in achieving their stated goal, and 2) that policies and projects themselves may influence cultural norms or gender gaps, even when this is not a primary goal. With the first point in mind, this section discusses how past policies and projects have accounted for cultural norms within their design phase. Regarding the second point, this section gives a summary of studies of the unintended gender consequences of past policies and projects. This section examines policies and projects in two areas: agriculture and health projects. Lastly, policies from several other areas are discussed in regard to their interactions with GBV. The intention of this section is to examine examples of gender effects that could potentially be incorporated into CBA.

Agriculture Policies and Projects

The goal of many agriculture projects is to increase incomes from agriculture through various means or to improve nutrition by increasing or improving agricultural production, as will be seen in the examples provided at the end of this section. In the case of nutrition projects, it is often stated as part of the design to target women and effect certain gender goals as a means to their goal of nutrition (van den Bold et al., 2015), while projects aimed at agricultural production may not involve a specific design element involving gender (Johnson et al., 2015). This is not to say that the primary goal of an agriculture project should be to improve gender issues—agriculture interacts with gender through many mechanisms, and some of these can be considered in design to both improve project outcomes and avoid unnecessary negative impacts to the lives of women. At first glance it may not seem obvious how, for instance, a project that provides irrigation pumps could lead to increased family breakups (Njuki et al., 2014); however, as the discussion below will illustrate, the pre-existing inequalities in the pre-project society can perturb forecasted benefits and costs of the project when they are not accounted for in project appraisal. The relevant inequalities and any cultural norms that may underpin them create a process through which an unequal distribution of benefits and costs may propagate and systematically disadvantage one group. In order to incorporate gender into project analysis more accurately, project designers not only need to understand the effect these pre-existing inequalities and gender gaps can have on project outcomes, but also the means through which they operate. The following areas to consider provide insight into relevant inequalities, as well as the cultural norms they arise from, that have been shown to affect the interaction of agriculture projects with gender.

Common Areas to Consider for Impact Channels for Agriculture Projects

Channels of interaction are discussed under seven areas that can affect projected outcomes of projects as well as the distribution of the costs and benefits between the genders: asset ownership,

pre-project access and use of resources, division of labor, decision-making, access to income after project, credit, and mobility.

Asset ownership

Asset ownership, specifically inequality in asset ownership, will also be mentioned in relation to other gender gaps and inequalities listed below, because fundamentally it is a result of many prevailing gender norms and gaps but can also affect the outcome of projects. Assets influence the livelihood strategies available to an individual and can also be influenced by their chosen livelihood strategy. Assets can also aid in coping with unanticipated shocks, providing liquidity to smooth consumption and respond efficiently (Doss 2014). Economic theory suggests that bargaining power and decision-making within the household is closely linked to which partner formally owns which assets (Doss et al., 2006). For these reasons, it is important to acknowledge that the existing conditions of any area where a project wishes to operate are likely already unequal and, without understanding the role of asset ownership in the mechanisms that produce the benefits of the project, project participation can sometimes reinforce these inequalities. The prevailing inequality in asset ownership has been seen to affect projects through more than one mechanism, such as the following:

- **Projects that distribute assets directly** will obviously manipulate the distribution of assets based on who in the household receives formal ownership from the project (Johnson et al., 2015). Cases where women are targeted to receive agricultural assets directly have shown that women have limited ability to maintain full ownership over the assets. Assets may be considered jointly owned even if they are solely in the woman's name (Quisumbing and Shalini, 2014), or some, but not all, assets transfer fully to the husband (van den Bold, et al., 2015). Both of those cases are improvements over both the status quo in those areas and the case of transferring assets blindly to "head of household," in which case the husband may take sole ownership (Johnson et al., 2015, Quisumbing, et al., 2015).
- **Projects that affect the productivity of an existing asset** change the value of the asset, implicitly manipulating the distribution of assets by value. Projects can affect the productivity of assets through inputs to production, such as fertilizer or irrigation pumps (Njuki et al., 2014; Smale, 1994), or through outputs by increasing linkages to formal markets (Quisumbing and Shalini, 2014). Who owns the assets at the outset affects whether inequality is increased or decreased through this mechanism, but it is also possible to see changes in ownership as a result of increases in productivity (Quisumbing and Shalini, 2014). The latter case will be discussed in more detail in the next section.
- **Projects that involve asset-based pre-conditions for participation** may inadvertently exclude women systematically. Land requirements are the obvious example in agriculture, especially in cases where land tenure rules explicitly preclude women from owning land (Tsikata and Awetori Yaro, 2013). Projects that distribute livestock but put no formal requirements on assets may still have implicit requirements if the livestock require grazing land (Johnson, et al., 2015). Market-based approaches will be discussed in more detail later.

It is also important to acknowledge that sometimes a project simply cannot mitigate its effect on the prevailing gender disparity. For instance, in focus group discussions from the Manica smallholders project, women observed: "the decision-making process was a cultural practice, whereby men made all final decisions, and that this could not be altered by registering the cow in the name of a woman" (Johnson et al., 2015). In some cases, social norms of ownership will prevail.

Pre-project access and use of resources

A woman will often have use rights, or even total control, over a relatively unproductive asset in the household. This could be the case when the only available options for use of the asset are use within the home for subsistence or sale to neighbors or another informal local market (Njuki et al., 2014; Johnson et al., 2015; Quisumbing and Shalini, 2014).

Some projects have been associated with the control over an existing asset transitioning from an individual of one gender to one of the other gender within the household post-project, which creates the possibility of unintended gender impacts even if the project itself is successful in raising agricultural production or incomes (Gurung, Bhandari, and Paris, 2016; Johnson et al., 2015; Quisumbing and Shalini, 2014; Quisumbing, et al., 2015; Smale, 1994;). This is the case alluded to above, in the section on asset ownership and projects that increase the productivity of assets.

Two social norms that are common in these examples have been highlighted in literature as possible drivers of the outcomes.

1. **There is a "separate purses" structure of the household**. There is rarely pooling of resources, such as income, and it is possible that increased household total resources can also involve drastic shifts in resource allocation within the household (Njuki et al., 2011).
2. **Cultural norms dictate that work outside the home and in formal markets is the men's domain** (Arun, 1999; Gurung, Bhandari, and Paris, 2016; Johnson et al., 2015; Njuki et al., 2014; Quisumbing and Shalini, 2014; Smale, 1994). A project whose aim is to increase productivity of existing assets in some way, for instance through improved methods or links to formal markets, will ultimately formalize the endeavor leading men to reassert control over the asset and rescind the informal use rights afforded to women (Quisumbing and Shalini, 2014). Further effects of gender roles and mobility will be discussed in later sections, as the present discussion is limited to how this influences the effect a project has on the intra-household allocation of resources.

As mentioned, the project itself could be successful and the total benefit of the project unaffected by this reallocation, making this largely an issue for stakeholder analysis. However, in order for stakeholder analysis to account for this issue at the project appraisal stage, stakeholders must be disaggregated by gender, and both the occurrence and effect of the transfer need to be incorporated. The above discussion on norms provides insight into determinants of the transfer, and below are some examples of how intra-household reallocation can change the costs and benefits accrued to stakeholders.

- The access enjoyed by women pre-project provided a livelihood strategy to which they lose access after commercialization and/or intensification of the asset by the project. As mentioned with regards to assets ownership, conditions in a society are often unequal before a project even begins, leaving women with few or no avenues to substitute livelihood strategies when they lose access to resources they previously had use rights over as a result of the project (Tsikata and Awetori Yaro, 2013).
- The perverse case of decreased childhood nutrition despite increased household agricultural production is a possibility when women lose access to assets that were previously used for subsistence (Quisumbing and Shalini, 2014; Johnson et al., 2015; Gurung, Bhandari, and Paris, 2016).

Access to income after the project

Separate from decisions regarding use of income is the issue of access to income. Increasing the income of the household should not be assumed to provide equal access to that income because of the aforementioned lack of pooling of income (Njuki et al., 2011). This emphasizes the need to disaggregate stakeholders by gender in CBA. Examples of where men's sole control of income lead to their increased spending on tobacco, alcohol, and mistresses, which leads to increased family breakups (Njuki et al., 2014), as well as unauthorized use of income by wives leading to beatings (Johnson et al., 2015) show how different the benefit of increasing income of the household can be experienced between the genders. Two issues affecting access to income post-project are:

1. **The implied ownership of the income**. Evidence from both qualitative and quantitative results support the possibility that use rights of income is connected to the ownership of the asset producing the income (Johnson et al., 2015; Quisumbing and Shalini, 2014). Sometimes gender norms dictate that all income simply belongs to men, regardless of source (Johnson et al., 2015), while other times it is due the source of the income being from formal markets in conjunction with the aforementioned cultural norm that dictates the formal market is the men's domain (Arun, 1999; Gurung, Bhandari, and Paris, 2016; Johnson et al., 2015; Njuki et al., 2014; Quisumbing and Shalini, 2014; Smale, 1994).
2. **Physical access to the income**. A large part of this is determined by whether the payment for goods is made in cash or into bank accounts. However, it appears to differ from culture to culture as to which affords more equal access, cash or bank deposits, although bank deposits are more commonly associated with lower access to income for women (Johnson et al., 2015).

Division of labor

While there is considerable heterogeneity in the particular tasks that social norms of different cultures and regions designate as the responsibility of one particular sex, segregation of work generally occurs. Men and women are often both generally involved in agricultural production, but tasks may differ between the genders. For instance, in many cultures maternal health of livestock is considered women's work, while building and maintaining structures (stalls, troughs, etc.) is considered men's work (Johnson et al., 2015). This breakdown of tasks will differ

substantially from area to area: many cultures consider milking to be women's work, while in some cultures milking is effectively ungendered. In terms of crops, women are often responsible for similar day-to-day tasks as men but are often tending to subsistence crops rather than to cash crops (more on this below) (Njuki et al., 2014; Smale, 1994). Women will often grow garden plots on their husbands' fallow land, while prime farmland is used for the cash crops (Tsikata and Awetori Yaro, 2013). As the above examples illustrate, many of the tasks that are central to a project's implementation are gendered, which further calls attention to the need for adjustment by gender in CBA. Consider the following examples of how both the outcome of the project and the distribution of benefits can be affected by local gender roles:

- **Projects need to engage the relevant gender for the task the project aims to affect**. Projects that involve training in new methods will suffer if the person responsible for the tasks is not reached, and it cannot be assumed that husbands and wives will pass the relevant information between themselves (Johnson et al., 2015; Quisumbing, et al., 2015).
- **Project designers may disproportionately alter time use and allocation between the genders**. This could be a disproportionate increase, as in the case for women involved with one project to introduce intensive methods to smallholders (Johnson, et al., 2015), or decrease, as in the case for women and a market-based approach to distribute irrigation pumps (Njuki et al., 2014).
    - Increased time demands may have benefits associated with them, in addition to the costs associated with time, as increasing a woman's role in an income-generating activity may increase hrt ability to participate in decision-making with respect to the income and assets involved (Quisumbing and Shalini, 2014).
    - Lowered time demands should not be taken at face value as a benefit, as lack of economic development in the area combined with low female mobility may constrain a woman's ability to find alternate income-generating uses for that time, leaving her with a lower standing in the household (Gurung, Bhandari, and Paris, 2016). In this context, it is important to recall the economic value of time is relative to the value of its next best use.
    - The above-mentioned division of labor can be a double-edged sword. An increased time spent on agriculture by women may result in decreased time spent on care and feeding of children (Quisumbing and Shalini, 2014) as there are only so many hours in the day. This is particularly the case for time spent breastfeeding, as physical realities rather than cultural norms make it impossible to allocate this task to another member of the household.

Decision-making

Decision-making will be broken down into two aspects, the right to be involved in the decision being made, and the systematic differences between the genders in what is chosen when decisions are made.

Projects that transfer assets have been shown to affect decision-making power in the household for women. Increases in decision-making power and participation are associated with projects that transferred assets to women (Quisumbing and Shalini, 2014; Santos et al., 2014). Additionally, projects that result in decreased access to assets, for instance through transfers in intra-household ownership resulting from the project, have been shown to decrease decision-making power and participation (Gurung, Bhandari, and Paris, 2016). This is an additional benefit or cost to women from asset transfers, an externality that can be incorporated into analysis.

Projects may benefit in achieving goals from incorporating systematic differences in decisions made by gender, as well as understanding the cultural underpinnings of these differences, into analysis to better predict outcomes. Mirroring gender roles in division of labor between men and women, men will prefer to re-invest in the business while women will prefer to improve the situation of the children, with regards to the use of income generated by the project (Santos et al., 2014). Men's agriculture participation is often geared toward cash crops and formal markets, while women's participation in agriculture in many cases will be associated with subsistence crops for use within the home, only selling surplus in local or informal markets (such as to neighbors) (Arun, 1999; Gurung, Bhandari, and Paris, 2016; Johnson et al., 2015; Njuki et al., 2014; Quisumbing and Shalini, 2014; Smale, 1994). As such, women often prefer crops that give a sustained harvest over longer periods of time, while men prefer crops that are ready all at once (Njuki et al., 2014), regardless of productivity differences. This arrangement also tends to leave women with very little cash on hand, which contributes to their inability to purchase inputs (Smale, 1994). Physical and social differences lead women to make different choices from men: women tend to prefer smaller treadle pumps because they are lighter and less physically demanding, also because they are pedaled by hand so women do not have to defy social norms in baring their legs to use the pump (Njuki et al., 2014).

Access to credit

In most of the examples discussed so far, there has been a particular lack of access to credit for women, beyond simply the lack of access to credit owing to poverty level, which is yet to be discussed (Arun, 1999; Njuki et al., 2014; Smale, 1994; Gurung, Bhandari, and Paris, 2016). The lack of access to credit is made worse by the inequality in asset ownership discussed above: women also have less collateral to offer. As a whole, this leads to more binding budget constraints for women than men. This can manifest in project outcomes, as in the following examples:

- Among female-run farms, women who managed to invest in irrigation systems identified informal high interest lending and pawning gold items as the main sources of funds for the investment, rather than formal banks (Arun, 1999).
- Lowered fertilizer uptake by women, due to lack of credit, which results in low productivity of garden plots and lack of surplus food to sell (Smale, 1994).
- In the case of KickStart irrigation pumps, both the extensive and intensive margins are affected, as women are both much less likely to buy a treadle pump at all, and the few

pumps they do purchase tend to be smaller and cheaper than the more popular models (Njuki et al., 2014).

- Agribusiness ventures, such as commercial aquaculture, require large investments, but women in this case only have access to credit through NGOs that only offer small loans, as opposed to other sources of credit available to men. The drastic switch from rice farming to commercial aquaculture largely excluded female-headed households, contributing to increased income inequality (Gurung, Bhandari, and Paris, 2016).

Incorporating this credit scarcity into project analysis is important if a project hopes to engage women and predict project outcomes. This can be captured by a higher cost of lending for women in a gender-disaggregated CBA.

Mobility

Women's ability to participate in, and ultimately benefit from, many aspects of a project will be limited in cultures where it is not socially acceptable for women to move around freely outside the home, to make decisions about where to go, or to speak to a man to whom she is not related (Quisumbing, et al., 2015; Quisumbing and Shalini, 2014). Although these are not new costs and benefits to the project, they do require gender-disaggregated modeling to account for the increased barriers women face in accessing aspects of the projects activities. For instance, consider the following examples:

- Projects may include linkages to inputs or storage facilities for agricultural goods, such as cold storage for dairy, which require leaving the homestead to access. In cases of low mobility, women sometimes have to rely on a husband or son or hire a man to purchase inputs (Smale, 1994). In other cases, women's participation is high when they are a short distance from project facilities but very poor at longer distances, as a result of low female mobility, while men's participation remains uniform (Johnson et al., 2015, Quisumbing, et al., 2015; Quisumbing and Shalini, 2014).
- Projects may create jobs downstream from the production of the agricultural good, perhaps in services or in intermediate processing facilities. Low female mobility results in projects being unable to engage women in these jobs, so a larger portion of this benefit accrues to men (Quisumbing and Shalini, 2014; Tsikata and Awetori Yaro, 2013).
- Projects may include linkages to formal goods markets in which to sell the final product. Similar to hiring inputs or services, women may have to rely on a husband or son or hire a man to sell goods in formal markets (Arun, 1999).

It is interesting to note that a woman's ownership itself of an agricultural asset provided or affected by the project has been associated with increased mobility for project participants (Quisumbing and Shalini, 2014). It is unclear what mechanisms underlie this relationship: it is possible that asset ownership provides rights beyond the use of the asset, or perhaps the women felt responsible for the asset to the degree that they were willing to push social boundaries in order to accomplish their task (Quisumbing, et al., 2015; Quisumbing and Shalini, 2014).

Health Policies and Projects

The stated goal of health projects is generally to improve a specific health outcome, often by improving quality or access to care through local systems or by providing care directly. Gender awareness is often incorporated in the design of projects, perhaps in response to prevailing gender differentials in health outcomes (Le Cœur, et al., 2009, Long, et al., 1999; Yamasaki-Nakagawa, et al., 2001; Zwarenstein, et al., 1998) and the struggles many projects have encountered in engaging women in meaningful numbers in many areas of this topic (Karcher, et al. 2006; Mushi, et al., 2003; Otchere and Kayo, 2007). The prevalence of gender-aware design in health projects likely decreases the incidence of unintended gender impacts but the projects often have difficulties defining and delivering full potential benefits to women in particular, as evidenced by the aforementioned struggles projects face with low female participation. With the exception of the research on improved educational outcomes from improved health (Barofsky, Anekwe, and Chase, 2015; Cutler, et al. 2010; Lucas, 2010), which is discussed in more detail below, incorporating gender into cost-benefit analysis largely involves the disaggregation of the costs and benefits by gender as well as allowing the calculation of costs and benefits to differ by gender according to the different cultural norms and gender gaps that determine how gender interacts with the project. Gender gaps and inequalities lead to complicated cultural and contextual processes that often define barriers to women's access to health interventions and can also affect the project's success toward its intended goals. The following discussion provides examples of gender issues and inequalities that have been shown to interact with health projects and drive differences in costs and benefits by gender.

Common Areas to Consider for Impact Channels for Health Projects

Channels of interaction discussed here include gendered components of health issues, educational and socioeconomic effects, provider issues, and use of available care.

Gendered components of health issues

Some health issues are inherently gender-specific. For instance, cervical cancer is a female health issue. This is not to say that gender-specific health issues only affect members of one gender, as they will have society-wide implications from their management and treatment, and there is often a role for both genders in the improvement of the issue. The gendered aspect of health issues is that some conditions are physically only possible in one gender and so interventions will likely need to target that gender. In these cases, there is less value in gender disaggregation of costs and benefits, but there is still a role for the understanding of gender gaps and inequalities in order to incorporate the barriers they create for women in accessing services for these types of health issues.

However, the majority of health issues are not gender-specific. For instance, malaria can be contracted by both men and women, and the same can be said for almost every illness and disease. Still, these seemingly gender-blind types of health issues can still have strong gender components, both in terms of determinants and consequences, which need to be identified to incorporate the

proper costs and benefits of interventions for both genders separately into a cost-benefit analysis. These components can be through biological channels as well as sociological channels.

For instance, while anyone can contract malaria, malaria in pregnant women can cause, in addition to the usual flu-like symptoms, significant developmental delays in the baby as well as complications in pregnancy. In terms of malaria prevention in pregnant women, a project can offer either antimalarial drugs or insecticide-treated bed nets to pregnant women, perhaps at a reduced cost. The medicines are more effective than the bed nets, particularly if there is assurance that the drugs will be taken, but antimalarial medicines are known to increase birthweight, which may lead to higher rates of obstructed labor. In a setting with a high incidence of unaided home births, this could increase maternal mortality, especially if other risk factors for obstructed labor are endemic to the area (Garner, Kramer, and Chalmers, 1992). Here both the health effects and treatment of malaria are gendered, though the disease itself is not, and this drastically changes the breakdown of costs and benefits of malaria prevention interventions for women, as compared to men.

Educational and socioeconomic effects

Economic theory suggests a relationship between better health outcomes, higher educational attainment, and higher socioeconomic status. A number of health-related interventions have provided researchers the opportunity to study this relationship. Below are some examples:

- Studies of malaria eradication programs have supported this relationship by demonstrating causal links between lower incidence of childhood malaria, higher educational attainment, and higher probability of employment as adults (Cutler, et al. 2010).
- While the existence of this relationship is not gender-specific, heterogeneity in results by gender is a common finding, with higher returns for health improvement for women (Barofsky, Anekwe, and Chase, 2015; Lucas, 2010). This is likely a result of the prevailing male-female differential in educational attainment in the areas, resulting in higher marginal gains from additional years of schooling for women.
- Studies of education subsidies have also shown evidence of this relationship working in the other direction: programs offering education subsidies resulted in higher educational attainment, which also lowered rates of HIV and other sexually transmitted infections when combined with a government-sponsored HIV curriculum (Duflo, Dupas and Kremer, 2015).

While the evidence of these relationships is promising as support of additional long-term benefits of health projects, these effects are not often measured or included in project appraisal. As mentioned above, this benefit is more relevant for women givem the aforementioned prevailing differentials observed in educational attainment.

Provider issues

A common and significant barrier that women face in accessing health care is negative provider attitudes toward women and low regard for their health concerns. For instance:

- Focus group discussions of projects often reveal that women feel that they are treated poorly when they go to hospitals, as if they are children or fools (Kyomuhendo, 2003; van Rijsbergen and D'Exelle, 2013).
- Health providers tend not to believe women's description of their symptoms, which also leads women to doubt themselves and their symptoms (Vlassoff and Bonilla 1994).
- Delays in diagnosis are common for women, even in situations where there have been no differences in the health-seeking behavior between men and women, and provider-side delay in diagnosing women is a significant contributing factor (Long, et al. 1999).

The effect of provider actions on the care received by women can be incorporated into calculation of benefits by gender.

Use of available care

In spite of efforts by development projects to increase the availability of comprehensive care for many health issues, projects will often face significant inertia in the use of the provided formal facilities as a result of prevailing gender inequalities and norms. In order to accrue the benefits of an intervention the service must be used, and so the discussion of differences by gender in utilization rates of interventions is central to any integration of gender into cost-benefit analysis. Low utilization rates of formal care, once these facilities are made available, is a multifaceted issue and the rest of this section is devoted to a discussion of relevant cultural norms that have affected project utilization for women.

Traditional healers

A large proportion of births in low- and middle-income countries take place in the home, away from facilities equipped to deal with complications, and if there is outside help, it is from "traditional birth attendants" rather than "skilled birth attendants" (Ahluwalia, Schmid, and Kanenda, 2003; Ahmed and Jakaria, 2009; Gabrysch et al., 2011; Godlonton and Okeke, 2016; Joshi and Sivaram, 2014; Kyomuhendo, 2003; McPherson et al., 2006; Masters et al., 2013; Rishworth, et al. 2016; Sargent, 1990; van Rijsbergen and D'Exelle, 2013). Projects whose goals are to improve maternal and child health often try to either increase the number of in-facility deliveries (Ahluwalia, Schmid, and Kanenda, 2003; Kyomuhendo, 2003; McPherson, et al., 2006; Joshi and Sivaram, 2014; Sargent, 1990) or train and promote the use of skilled birth attendants in home births (Ahmed and Jakaria, 2009; Arun, 1999; Godlonton and Okeke, 2016). However, projects continually struggle with low rates of use of these services. Below are some experiences of projects in the area of maternal and child health and the inertia they face in the utilization of their services:

- **Cultural beliefs about birth do not encourage the use of in-facility deliveries or other key maternal services**.
    - The idea that death during childbirth is often regarded as a sad but normal event is a key underlying factor for the high rate of home births in the face of concerted efforts and good government policies to support in-facility deliveries (Kyomuhendo, 2003).

    - Where a man would show courage in battle or by hunting, facing the pain of delivery is often seen as a woman's chance to be courageous and a low use of assistance is part of this courageousness (Sargent, 1990).
- **When women do use assistance in home-based delivery, it is often in the form of traditional birth attendants, or traditional healers, rather than skilled birth attendants**.
    - When asked why a skilled birth attendant was not present at their delivery, the primary reason women gave was that it did not seem necessary (McPherson, et al., 2006).
    - Even when women are willing to see a skilled birth attendant for antenatal care, they still will not use one for delivery. In one study, 91% of pregnant women in the coverage area used the services of a skilled birth attendant at some point in the pregnancy for antenatal care but only 29% had one present at their birth (Ahmed and Jakaria, 2009).
    - Conditional cash transfer schemes show very modest results in increasing the use of skilled birth attendants, although there was significant heterogeneity in the effect, which showed uneducated and rural women were more likely to increase their use of skilled birth attendants (Joshi and Sivaram, 2014).
- **Results of analyzing preferences implied a very low weight attributed to the level of technical quality of the provider** when differentiating between women whose most recent birth was in any level of formal facility compared to those who delivered outside a facility (van Rijsbergen and D'Exelle, 2013). This is consistent with home birth as it is the lowest possible technical quality.

Related to this clear cultural preference for unaided home birth, it is impossible to ignore that one of the most pressing issues concerning the health of women in these countries is the high rate of maternal mortality.

The issues of traditional practices and the use of traditional healers over skilled health workers extend beyond maternal care and into many other health issues that are not by nature gender-specific. Many projects targeting a specific disease or illness with the goal of reducing the prevalence and spread by increasing early diagnosis and providing effective treatments also report issues with traditional healers being consulted before skilled health workers, such as in the following examples.

- Evidence from Nepal on tuberculosis diagnosis shows that women use traditional healers at a higher rate than men and stay with traditional healers for a given health issue longer than men before moving on to care at an outreach program or public health facility, despite public in-facility care being provided for free (Yamasaki-Nakagawa et al., 2001).
- Focus group discussions regarding health-seeking behavior for malaria treatment revealed that the majority of respondents' first response to a child with convulsions from fever is to take them to village elders for traditional treatments. These treatments include scarification, inducing vomiting, shaking the child, and religious rituals (Tolhurst and Nyonator, 2006).

The predisposition to use traditional healers over available health programs can lead to delays in diagnosis and treatment. Long delays in diagnosis and treatment can have adverse effects on

patients in general and can hamper overall efforts for disease control, ultimately reducing the ability of the project to achieve its goal. However, delays in diagnosing women in particular can also have adverse effects on the well-being of children, as the health and welfare of children is closely linked to that of the mothers (Long et al., 1999).

Social stigma of disease

There are also firmly held traditional beliefs about the nature of illness and disease itself. These can create an undue social stigma associated with the disease, which is particularly harmful to women and may result in women's delaying or foregoing care.

- Denial and concealment of tuberculosis symptoms is more prominent among women than men in Vietnam. The cultural belief is that there are four different types of tuberculosis: (1) those caused by hard work with inadequate food and rest, which mainly affects men, (2) those caused by worries and "thinking too much," which mainly affects women, (3) heritable cases, also believed to be incurable, and (4) the contagious type. These characterizations depict women with tuberculosis as defective in some way: either they are worriers or they have a congenital disease. These beliefs affect marriage prospects, for themselves and for their children, and lead to social isolation of women diagnosed with tuberculosis. These beliefs contribute to women's denial of the possibility of tuberculosis, in hopes the illness is merely a bad cold, which results in delayed and lower utilization of available programs to diagnose and treat tuberculosis (Johansson et al., 2000).
- HIV-related stigma and implicit disclosure of HIV status from participating in a program to prevent mother-to-child transmission is discussed as a major contributing factor to both low participation as well as high rates of attrition (Chinkonde et al., 2009).
- Public perceptions of where HIV infection was acquired among people seeking treatment differed by gender. Women are widely perceived to have acquired infection from their spouse while men are perceived to have acquired infection outside the marriage. Both women and men would stand to benefit from lessening of HIV-related stigma, because if men were diagnosed earlier, HIV transmission to spouse could be avoided, as could the higher proportion of spousal death reported by women seeking treatment (Le Cœur et al., 2009).
- Traditional gender roles and socio-cultural norms related to sexual behavior result in STDs being more stigmatizing for women. As a result, women are more likely to tolerate pain and illness, and less likely to report symptoms if their illness is stigmatized. Combined with the practice of treatment based on reported symptoms because of the high cost of the diagnostic testing recommended by the WHO, women are less likely to receive care (Go et al., 2002)

Accessibility of care

Distance to a facility is often a significant factor in a pregnant woman's decision for in-facility delivery, particularly in rural settings where geographical features and road quality are also barriers, with increased distance resulting in lower rates of in-facility deliveries (Masters et al., 2013; Gabrysch et al., 2011).

- Distance is a determinant in delays in receiving emergency obstetric care when a complication has been recognized, as is the lack of planning for travel arrangements (van Rijsbergen and D'Exelle, 2013; McPherson, et al., 2006; Ahluwalia, Schmid, and Kanenda, 2003; Masters et al., 2013).
- Recent government bans on traditional birth attendants, such as those in Malawi and Ghana, have shown that at least part of the low utilization of trained skilled birth attendants is still due to the lack of accessibility, despite availability. This is especially an issue in rural areas, as skilled birth attendants prefer to reside in urban areas (Godlonton and Okeke, 2016; Rishworth, et al. 2016).
- While the issue of distance to a facility is often brought up in the context of maternal care, projects organizing community-level transport systems for pregnant women report the transport systems are also being used in other cases of medical emergency (Ahluwalia, Schmid, and Kanenda, 2003). This implies it may be a factor involved in seeking treatment for other types of illness.

Cost, willingness to pay, and health-seeking behavior

A lot of evidence presented in the literature about the differences in health-seeking behaviors between men and women eventually returns to the issue of cost and ultimately women's lower willingness to pay for their own health care. The analysis of costs of services and willingness to pay is already a central component in cost-benefit analysis, and differences in health-seeking behavior between men and women can be captured with a disaggregation by gender. Below are some examples from past projects demonstrating how a low willingness to pay for women's health care manifests as differences in observed health-seeking behavior:

- A contributing reason women will use traditional healers over available formal care is that traditional healers will offer outcome-contingent contracts (Johansson et al., 2000).
- Studies revealing preferences over obstetric care choices give evidence that wealth did not correlate strongly with preferences for in-facility delivery, even though it correlated strongly with use, implying financial barriers to in-facility birth (van Rijsbergen and D'Exelle, 2013).
- The cost of transportation is an important factor in obstetric care decisions, especially for rural women, and both pregnant women and mothers-in-law state that fathers-in-law were the influential decision-maker when it came to issues of cost and transport related to the use of skilled birth attendants (McPherson, et al., 2006).
- Notably, while distance to a facility was a significant issue for all pregnant women, this preference was mitigated by the presence of complications in the current pregnancy, implying a significantly higher willingness to pay when faced with immediate issues of mortality and morbidity (van Rijsbergen and D'Exelle, 2013).
- Malaria prevention projects offering insecticide-treated bed nets to pregnant women, for which cost sharing and subsidy schemes have been the topic of much economic research on price effects on use, offer evidence that there is no difference in usage rates between women who received free bed nets and women who paid some amount of the cost of bed nets. However, any increase in cost drastically reduced demand for the bed nets. Altogether, this heavily implies that women face financial barriers despite preferences for preventative malaria care (Cohen and Dupas, 2010).

Power dynamics

- **Generally, men's health is prioritized over the health of other members of a household: the man is considered more important and therefore more deserving of care** (Johansson et al., 2000). This is likely a driving cause in inequality of health outcomes between men and women.
    - Wives are responsible for caring for husbands if they get sick, but the husband has no responsibility to care for a sick wife (Johansson et al., 2000).
    - In general, the responsibility to care for sick members of the family increases the workloads of women disproportionately, to the point that she may be unable to complete her other duties. If a wife becomes sick, a female relative or female neighbor, rather than her husband, may care for her, but she is unlikely to be taken to formal facilities like hospitals for care (Vlassoff and Bonilla, 1994). Interestingly, this may imply that projects providing easier access to care can lighten this burden on women's responsibilities, even when women are not accessing the care themselves.
- **Discord between husbands and wives often arise when there is disagreement over the appropriate course of treatment for children.** Projects whose goals are to improve child health outcomes often target mothers for interventions since it is their role in the family to care for children, but the use of these interventions is lowered because women lack of authority in the household. Any program targeting mothers to improve child health outcomes must also consider both the degree to which a mother is able to influence decisions in the household and whether she has access to income to pay for interventions if they are not provided for free. If the mothers cannot influence decisions or have no access to income for payment, projects must start targeting fathers as well (Tolhurst and Nyonator, 2006; Tolhurst et al., 2008).
    - In focus group discussions both men and women agree it is the woman's responsibility to care for the children and the man's responsibility to pay for the children to get treatment when they are sick. However, in practice the women often bear the burden of payment either partially or fully (Tolhurst and Nyonator, 2006; Tolhurst et al., 2008). Women also face lower opportunities for income-generating activities, own fewer assets, and face lower availability for credit as compared to men, so they are often constrained financially in their choices for care if their husband does not fulfill his acknowledged responsibility to pay.
    - Without agreement from their husbands, wives either have to incur financial hardships or make concessions in the care of their children, including settling for partial care options for children (Tolhurst and Nyonator, 2006; Tolhurst, et al., 2008).
    - Though they have less authority in decision-making and less access to income for paying health care, women are often blamed for poor health outcomes in children (Tolhurst and Nyonator, 2006).
- **The low status of women in society exposes them to more risk for HIV infection**.
    - Many women feel unable to compel condom use from their husbands; they are concerned it would have a negative effect on their marriage or that they would be accused of having extramarital affairs (Chinkonde et al., 2009).

- Women are expected to accept infidelity from their husbands as a social norm, increasing their potential exposure to HIV. Focus group discussions reveal that if husbands found out the wife had an STD they would react by beating their wives, while women were expected to simply accept the fact if they found out their husbands had an STD (Go et al., 2002).
- Women who experience intimate partner violence are at an increased risk of HIV infection, even after controlling for their own risk behavior (Dunkle, et al., 2004).

Projects, Policies, and GBV

There is little research regarding the consequences of policies and projects related to GBV when the policy was not designed with the primary goal of reducing GBV. According to a 2005 literature review commissioned by the World Bank, studies before that time focused on laws that intentionally target women (Bott et al., 2005). A search of modern literature reveals that this is still the case. However, a number of more recent documents, reviewed below, discuss the possibility that policies and projects may affect GBV rates even when causing a gender effect is not the primary goal. There are some cases of organizations modifying projects to mitigate a gender effect that is strongly suspected to exist.

Effects of Projects and Policies on GBV

The effect of projects and policies on GBV are discussed here through asset ownership, education, and income, as well as risks caused by the project.

Asset ownership, education, and income

There is a strong suspicion that policies and projects that improve the economic standing of women reduce GBV. A national policy to increase export manufacturing in Taiwan is one such case. The policy led to a spike in female labor force participation because of the use of at-home factories. It is believed that this has given young women and their families more bargaining power when choosing a spouse, decreasing the likelihood of bad marriage matches (Clark and Clark, 2008). This is an example of a policy that did not specifically target women but likely had a strongly positive gender effect. The policy also occurred on such a large scale that its effects have been relatively easy to identify.

In general, the interaction between policy and GBV has been less clear. Schulte et al. (2014) identified six studies showing that asset ownership protects women from intimate partner violence (IPV) in low- and middle-income countries, but it is not clear if increasing asset ownership improves the situation for women already experiencing IPV. Similarly, studies of the aforementioned export policy in Taiwan focused on young women who were not already married (Clark and Clark, 2008). However, there is some hopeful evidence—a Peruvian land titling program that increased female land ownership resulted in an immediate drop in birth rates, indicating that already-married women experienced an increase in bargaining power (Field, 2003).

Education is another area where the role of projects and policies is somewhat unclear. The World Bank (2014) found that education level had a strong, negative association with physical and sexual IPV, but the direction of causation could not be determined. One study examined the effects of an education project on the incidence of child marriage and found that traditional education and practical skills training decreased the rate of child marriage (Amin et al., 2016). This study is important because while child marriage in itself is not a form of GBV, it is associated with an increased risk of physical IPV, sexual IPV, and economic deprivation (Parsons et al., 2015). This study is unlike others in this section in that the project was designed to reduce GBV, but it still provides some evidence about the effects of more general education projects. Research still needs to be done to determine the effect and magnitude of education projects on GBV in a broader context.

There do not seem to be many studies formally measuring an increase in GBV following the completion of a project, though this has most certainly occurred. Using the studies above and the fact that poverty is routinely associated with GBV (KPMG, 2014), one can hypothesize that actions that economically disempower households increase GBV. While organizations do not typically aim to disadvantage women, they should be aware that any actions that empower one sex relative to another alter bargaining power within relationships, and therefore alter decision-making (Schulte et al., 2014). Since a wide range of projects have the potential to affect the distribution of assets and wealth between men and women, it stands to reason that a wide variety of projects would benefit from the incorporation of gender effects into cost-benefit analysis.

Risks caused by projects

Projects may also have the potential to create GBV because women are participating in an activity that they did not participate in before, and that activity carries some risk (MacDonald, 2012). A transportation project that increases the time women are out of the house exposes them to the possibility of street violence. By definition, only employed women can be exposed to workplace GBV. Even data collection projects may expose women to violence if their intimate partner does not agree with their participating in data collection (Moser, 2007).

There do not appear to be any studies formally measuring increases in risks caused by projects. However, there are some examples of projects modified to reduce the risk of causing harm. A public sanitation project in Bosnia also increased street lighting because it was suspected that this modification would reduce the threat of violence against women who visited the facilities (MacDonald, 2012). Researchers collecting IPV data in Pakistan recognized that victims attending interviews could not maintain privacy because a family member would often attend, most frequently a mother-in-law. The interview procedure was modified with this in mind. In one set of interviews, the interviewers would ask the mother-in-law to bring them a glass of water in order to ask and answer certain questions in her absence. In another set of interviews, the interviewers allowed the participants to answer yes/no questions by holding up a keychain, so that answers could not be overheard (Moser, 2007). Failure to account for or to mitigate these effects during

project design could easily affect the accuracy of predictions generated through cost-benefit analysis.

Effect of GBV on Projects

The preceding paragraphs discuss the effect of projects on GBV. From another perspective, there is some acknowledgment that GBV affects the success of projects. Some of the mechanisms by which it does so have already been discussed in detail in previous sections. An obvious mechanism is that GBV perpetrated against women involved with a project can decrease productivity through presenteeism and absenteeism (KPMG, 2014). Taking a broader definition of GBV, the progress of projects is hindered when the social and economic freedom of women is restricted, as discussed in the section on agriculture projects. Lack of mobility, especially when caused by fear of violence, reduces female employment in projects and likely reduces the utilization of some services that projects provide (MacDonald, 2012). Returning to transportation, for example, fear of violence could discourage women from accessing public transportation.

Summary of Studies

Figure 20 summarizes the lessons learned from existing studies of policies and projects without the primary goal of changing GBV rates. Projects that intentionally target GBV are discussed later in this review.

Figure 22. Lessons Learned from Existing Studies of Policies and Projects

Sector	Subsector/ Category of Project or Policy	Project or Policy Details	Relationship or Cultural Norm	Consequence and Probable Impact or Impact	Citation
n/a	Data collection	**Objective:** Collect statistics on intimate partner violence **Implementation:** Survey victims of intimate partner violence in Pakistan	Women have low mobility in several countries, and it may be uncommon for them to be allowed to attend interviews unescorted. In Pakistan, the mothers-in-law of victims commonly attended interviews.	Women are not able to keep their answers secret. This may cause them interpersonal problems within their family and expose them to further violence.	Moser, 2007
Agriculture	General	**Objective:** Increase food security **Implementation:** Any	Intimate partner violence may be associated with poor food security in developed and developing countries.	When food security increases (decreases), intimate partner violence may decrease (increase).	Schulte et al., 2012
Economic Empowerment	Poverty alleviation	**Objective:** Increase income in low-income families. **Implementation:** Any	Surveys in developing and developed countries routinely show that poverty is associated with intimate partner violence.	When poverty decreases (increases), intimate partner violence may increase.	KPMG, 2014
Economic Empowerment	Employment of women	**Objective:** Increase employment of women (any field). **Implementation:** Any	Women's employment exposes them to workplace harassment and cultural backlash. Women who have their own income have the option to leave abusive partners.	Employment of women may increase or decrease gender-based violence overall, depending on magnitude of effects (which depend on culture).	Schulte et al., 2012

Sector	Subsector/ Category of Project or Policy	Project or Policy Details	Relationship or Cultural Norm	Consequence and Probable Impact or Impact	Citation
			Women may face backlash at home.		
Economic Empowerment	Poverty alleviation	**Objective:** Secure property rights and access to credit markets for the poor **Implementation:** Reformulate the land titling policy in Peru, including requiring joint land titling for married couples, allowing both partners to receive access to government-provisioned credit.	In Latin America in the 1980s, it was uncommon for women to hold land titles, so that it was unlikely to occur without requirements.	Women who gained land titles in Peru in the 1990s experienced improved employment prospects and had access to government-provisioned credit. This decreased fertility and is believed to have decreased gender-based violence as well.	Field, 2003
Trade	Export policy	**Objective:** Increase economic growth via an increase in exports **Implementation:** Increase manufacturing of exportable goods in Taiwan through in-home factories	Since women have lower mobility on average (it is less safe for them to travel and they have to take care of other family members), the cost of working outside of the home is larger.	The introduction of in-home factories led to a massive spike in female labor force participation rates, including that of unmarried women. The increased economic power of women likely led to better marriage matches and decreased the incidence of intimate partner violence for young women.	Clark and Clark, 2008

3 Metrics and Valuation

This section discusses the methods used to quantify gender gaps and assign values to their social consequences. As in the previous section, many examples come from agriculture and health projects. Studies on project impacts frequently use a combination of treatment effect models and results from focus group discussions to understand gender interactions with projects. These ex-post examinations of projects focus on measuring the change in a variable after the project from the pre-project baseline. While this does not measure prevailing gender inequalities in a society with regard to that variable, it can provide information about how the project may have affected genders differently. Studies measuring the cost of GBV are also discussed. In general, the studies on GBV do not discuss projects and policies; rather, they simply measure the cost of GBV in a selected geographic region. In other words, these studies provide the cost of prevalence at its current level but do not measure the degree by which projects affect GBV. It would thus remain a challenge for project planners and evaluators to make assumptions about the impact of a project on prevalence or depth of a gender gap in order to conduct CBA.

Agriculture

The majority of this literature uses a mixed methods research approach, involving both qualitative and quantitative methods. Qualitative data often rely on interviews and focus group discussions associated with the project, with some relying heavily on the results of the latter (Njuki et al., 2014). Most studies, however, are quantitatively driven and use qualitative data for additional context (Quisumbing et al., 2015; Quisumbing and Shalini, 2014; Santos et al., 2014; van den Bold et al., 2015). These quantitative studies use statistical methods of regression analysis to mimic an experimental research design, namely treatment effect models using the project as the treatment and drawing data from questionnaires administered during the project. An important issue, in particular for agriculture projects, is non-random selection for participation. This is especially prevalent in research involving agriculture projects because agriculture projects often have pre-qualifying conditions for participation in the project, and this may result in systematic differences between participants and controls. When this is the case more complicated regression techniques are incorporated, the most commonly used in the reviewed studies being propensity score matching or weighting (Quisumbing et al., 2015; Quisumbing and Shalini, 2014; Santos et al., 2014; van den Bold et al., 2015). The observable characteristics used in propensity score matching are collected in the same survey data from the project as the variables of interest. Researchers use these same methods to determine the effect of the project on its stated agriculture-related goals as well as to identify effects of the project on any gender issues in question.

As for directly studying gender-related variables of interest, these still rely on questions from project surveys or focus groups. Some variables can be captured in a single question, for instance how much milk is produced before and after the project. However, for many variables the questionnaires will often ask the same question about multiple specific examples of that variable,

each of which can be responded to in a "yes/no" fashion. Respondents will often answer for themselves, and sometimes for other family members. This seems to be the case for many variables studied as gender issues in agriculture projects. For example, in the case of mobility, a questionnaire could ask whether a woman is allowed to go somewhere unaccompanied, which requires a yes or no answer, but would ask this for a number of different places. Using a separate regression for each question, patterns can emerge from many questions.

Figures 21–24 present summarized lists of indicators and results from research studies on gender issues related to agriculture projects. Importantly, these values are nearly all changes in the metric from either control or baseline. This will not give an estimate of the overall size of the gender gap in question, only the effect of the project.

Figure 23. Asset Ownership

Project Details	Metrics	Impact of Project				Analysis of Results	Citation
		Household	Men	Women	Joint		
Objective: Improve nutrition for children **Implementation**: Provided communal garden for learning, distributed seeds and tools to women **Region**: Burkina Faso	Value of household durables (francs)[a]		2352 (4181)	65.62 (3398)		Women had some ability to maintain ownership of assets of the project, although some transferred to husband.	van den Bold et al., 2015
	Value of agriculture assets (francs)[a]		-3388 (3499)	2133 (592)			
	Value of small animals (francs)[a]		29352 21437)	1973 (6418)			
	Land cultivated (hectares)[a]		0.27 (.24)	-0.45 (0.41)			
Objective: Increase smallholder yields and improve linkages to formal markets (beyond local) **Implementation:** Training in best practices, established input supply points, linked smallholders with service providers, facilitated capital	Cattle (#)[a]	-0.169 (0.188)	0.72 (0.381)	-0.039 (0.139)	-0.252 (0.334)	Asset ownership was only significantly affected for women through increases in joint ownership, even though cows were registered in women's name as part of the design of the project.	Quisumbing and Shalini, 2014
	Goats (#)[a]	0.213 (0.128)	0.086 (0.109)	-0.002 (0.143)	0.029 (0.050)		
	Poultry (#)[a]	-0.332 (0.674)	0.110 (0.616)	-0.237 (0.950)	-0.206 (0.247)		

Project Details	Metrics	Impact of Project				Analysis of Results	Citation
		Household	Men	Women	Joint		
mobilization for chilling plant, selected and trained milk collectors **Region**: Bangladesh	Agricultural durables (taka)[a]	1303.25 (690.244)	940.33 (616.813)	183.395 (167.887)	-95.315 (441.567)		
	Non-agricultural productive durables (taka)[a]	452.58 (252.497)	253.68 (231.676)	60.187 (51.371)	127.737 (58.435)		
	Value of Consumer durables (taka)	4874.67 (4,401.09)	347.58 (1,213.80)	70.948 (328.389)	485.543 (852.042)		
	Land owned (hundredths of an acre)[a]	7.646 (11.295)	6.916 (7.947)	0.479 (0.917)	–0.183 (0.426)		
Objective: Improve food security **Implementation**: Government allocation of microplots to landless households for the purpose of growing food and raising livestock. Intent was to title land in woman's name. **Region**: West Bengal, India	Continued access and control of plot[a]	0.18 (0.01)		0.17 (0.01)		Program increased tenure security; including women's names on title had an additional effect on increasing tenure security.	Santos et al., 2014
	Continued access and control of plot when name on title[a]	0.08 (.02)		0.10 (0.02)			

Project Details	Metrics	Impact of Project				Analysis of Results	Citation
		Household	Men	Women	Joint		
Objective: Rebuild dairy herd after civil war, particularly in a way that would incorporate smallholders into the dairy value chain. **Implementation**: Trained smallholders in intensive methods of dairying then distribute improved cows after training **Region**: Manica Province, Mozambique	Cattle (#)[a]		0.33 (0.00)	-0.03 (0.1)	0.05 (.45)	The project increased asset inequality, the only significant change was to men's ownership. There were no significant changes to women's or joint ownership.	Quisumbing et al., 2015; Johnson et al., 2015
	Land owned (hundredths of an acre)[a]		NC	NC	NC		
	Household durables (index)[a]		0.85 (0.00)	0.03 (0.18)	NC		
	Agricultural assets (index)[a]		0.08 (0.00)	0.1 (.32)	0.02 (.32)		
	total assets (index)[a]		3.06 (0.00)	0.44 (.93)	0.02 (.32)		
Objective: Distribute irrigation pumps **Implementation**: Market-based approach **Region**: Kenya and Tanzania	Kenya: Who owned the High Pressure Pump? (proportion)[b]		0.8	0.18	0.03	Men dominated ownership of the pumps. Women preferred the HIP pump when slacks were not culturally appropriate attire for women.	Njuki et al. 2014
	Kenya: Who owned the sump pump? (proportion)[b]		0.76	0.22	0.02		

Project Details	Metrics	Impact of Project				Analysis of Results	Citation
		Household	Men	Women	Joint		
	Tanzania: Who owned the HIP pump? (proportion)[b]		0.79	0.18	0.09		
	Tanzania: Who owned the SMMP pump? (proportion)[b]		0.81	0.13	0.07		

Notes:

Unlabeled units are binary indicators. Results can be interpreted as in a linear probability model.

[a] relative to control [b] relative to baseline

Figure 24. Decision-Making

Project Details	Metrics	Impact				Analysis of Results	Citation
		Household	Men	Women	Joint		
	Who is the primary decision maker on:						
	Decision to buy a cow (primary decision-maker)[a]		-0.001 (0.062)	0.02 (0.023)			
	Decision to sell a cow[a]		0.015 (0.062)	0.005 (0.022)			
Objective: Increase smallholder yields and improve linkages to formal markets (beyond local)	Decisions on dairy-related expenses (feed, livestock)[a]		–0.033 (0.061)	0.055 (0.024)			
Implementation: Training in best practices, established input supply points, linked smallholders with service providers, facilitated capital mobilization for chilling plant, selected and trained milk collectors	How to use income from dairy sales[a]		–0.047 (0.068)	0.067 (0.045)			
	Decision to sell milk[a]		0.03 (0.089)	0.000 (0.068)		Main increases were through increases to joint decision-making. Decreased decision-making for use of milk as a result of more milk going to formal markets; lost decision-making ability on income from milk sales as well.	
Region: Bangladesh	Decision to give milk to children[a]		0.059 (0.044)	–0.055 (0.064)			Quisumbing and Shalini, 2014

Project Details	Metrics	Impact				Analysis of Results	Citation
		Household	Men	Women	Joint		
	Decision to give milk to others[a]		0.041 (0.041)	–0.036 (0.063)			
	Food expenditures[a]		–0.015 (0.092)	–0.033 (0.038)	0.026 (0.082)		
	House repair expenditures[a]		0.002 (0.091)	–0.035 (0.034)	0.015 (0.082)		
	Health expenditures[a]		–0.018 (0.091)	–0.035 (0.034)	0.031 (0.083)		
	Whether to take a loan[a]		–0.068 (0.066)	–0.021 (0.034)	0.151 (0.049)		
	How to spend loan proceeds[a]		0.007 (0.017)	–0.023 (0.032)	0.075 (0.082)		
Objective: Improve food security	Share of household land over which woman decides:						
	How to use the plot[a]	0.15				Increased participation in decision-making was strongly associated with	

Project Details	Metrics	Impact				Analysis of Results	Citation
		Household	Men	Women	Joint		
Implementation: Government allocation of microplots to landless households for the purpose of growing food and raising livestock. Intent was to title land in woman's name. **Region**: West Bengal, India		(0.04)				having the woman's name on the plot title.	Santos et al., 2014
	What to grow on the plot[a]	0.14 (0.06)					
	Whether to sell the produce from that plot[a]	0.11 (0.06)					
	How to use the plot (when name on title)[a]	0.07 (0.06)		0.13 (0.07)			
	What to grow on the plot (when name on title)[a]	0.10 (0.06)		0.15 (0.07)			
	Whether to sell the produce from that plot (when name on title)[a]	-0.02 (0.07)		0.17 (0.08)			
	Woman participates in decision-making on:						

Project Details	Metrics	Impact				Analysis of Results	Citation
		Household	Men	Women	Joint		
	Whether to take loans[a]	0.12 (0.04)					
	Whether to purchase productive assets[a]	0.12 (0.03)					
	Household food purchase and consumption[a]	0.09 (0.04)					
	Whether to take loans (when name on title)[a]	0.05 (0.04)		0.14 (0.03)			
	Whether to purchase productive assets (when name on title)[a]	0.04 (0.04)		0.15 (0.04)			
	Household food purchase and consumption (when name on title)[a]	0.03 (0.04)		0.13 (0.04)			
	Decision-making on access to resources and activities:						

Project Details	Metrics	Impact				Analysis of Results	Citation
		Household	Men	Women	Joint		
Objective: Natural experiment using large-scale change in choice of crop and type of agriculture, from rice farming to aquaculture. **Implementation**: Examined intra- and inter-household gender differences before and after shift from subsistence rice to commercial aquaculture. **Region**: Khulna, Satkhira, and Mymensingh Bangladesh	Household consumption and production of rice[b]		6	9		Women lost decision-making participation rights when households converted from subsistence rice farming to commercial aquaculture.	Gurung, Bhandari, and Paris, 2016
	Selection of varieties for production of rice[b]		10	5			
	Household consumption of fish and shrimp[b]		9	4			
	Utilization of income from fish and shrimp[b]		9	3			
	Credit to invest in commercial farming of fish and shrimp[b]		10	1			

Notes:

Unlabeled units are binary indicators. Results can be interpreted as in a linear probability model.

Notes: [a] relative to control [b] self-evaluated score

Figure 25. Division of Labor

Project Details	Metrics	Impact						Analysis of Results	Citation
		House-hold	Adult Men	Adult Women	Young Boys	Young Girls	Hired Labor		
	Average weekly hours in the last 30 days spent on:								
Objective: Increase smallholder yields and improve linkages to formal markets (beyond local)	Milking animals[a]	0.048 (0.290)	–0.056 (0.234)	0.099 (0.255)	0.005 (0.005)	-			
	Cleaning of milking area[a]	0.314 (0.140)	0.015 (0.009)	0.313 (0.140)	-	-0.014 (0.021)			
Implementation: Training in best practices, established input supply points, linked smallholders with service providers, facilitated capital mobilization for chilling plant, selected and trained milk collectors	Taking animals to hospital, or somewhere else for treatment[a]	0.036 (0.031)	0.037 (0.010)	-.001 (0.030)	-	-		Increases in men's time was driven by activities that require leaving the homestead, while women contributed more to activities performed within the homestead. Women provided by far the majority of household activities, and when time use was shifted to project activities there was little compensation.	
	Collecting/carrying fodder from field[a]	-0.272 (1.270)	0.365 (0.860)	–0.688 (0.877)	0.05 (0.020)	-			
Region: Bangladesh	Total over dairy activities[a]	-1.215 (3.590)	–1.637 (3.272)	0.168 (2.695)	0.158 (0.056)	0.096 (0.094)			Quisumbing and Shalini, 2014

	Feeding young children[a]	-1.225 (0.675)	0.037 (0.024)	–1.347 (0.671)	0.002 (0.002)	0.083 (0.039)			
	Looking after young children[a]	-1.612 (0.824)	0.079 (0.057)	–1.574 (0.835)	0.003 (0.003)	–0.119 (0.249)			
	Cooking[a]	-0.479 (1.011)	0.132 (0.066)	–0.913 (1.004)	–0.014 (0.052)	0.315 (0.115)			
	Total over household activities[a]	-3.461 (2.940)	0.283 (0.156)	–3.939 (3.002)	–0.042 (0.096)	0.237 (0.407)			
Objective: Natural experiment using large-scale change in choice of crop and type of agriculture, from rice farming to aquaculture **Implementation**: Examined intra- and inter-household gender differences before and after shift from subsistence rice to commercial aquaculture	Average total labor hours for rice cultivation on:							Women's role in production drastically reduced when household switched to aquaculture. Decreased reliance on hired labor limits ability to find paid work outside the homestead with increased time available.	Gurung, Bhandari, and Paris, 2016
	Land preparation[b]	19.8	8.15	0.3			10.1		
	Transplanting[b]	51.1	8.9	0.5			40		
	Weeding[b]	31.9	9.1	1.5			20		
	Harvesting and threshing[b]	55.1	11.1	1			40		
	Stacking and storage[b]	17.5	2.2	7.4			4		
	All operations[b]	188.8	48.5	10.7			117.7		
	Average total labor hours for aquaculture on:								

Region: Khulna, Satkhira, and Mymensingh Bangladesh	Pond construction, operation and management[b]	74.8	8.7	1.5			63.5		
	Fish feeding[b]	45.9	29.7	2.5			12.8		
	Fish Harvesting[b]	27.9	13.1	0.7			14.1		
	All operations[b]	152.6	93.8	4.2			52.1		
Objective: Rebuild dairy herd after civil war, particularly in a way that would incorporate smallholders into the dairy value chain **Implementation**: Trained smallholders in intensive methods of dairying then distributed improved cows after training **Region**: Manica Province, Mozambique	Average household labor hours on:							Project increased workload of all family members.	Johnson et al., 2015
	Cattle (including dairy)[a]		7.26 (3.22)	5.47 (3.09)	6.69 (2.45)		5.44 (3.09)		
	Crop farming[a]		0.65 (10.39)	0.11 (6.49)	9.59 (5.47)		-		

Notes:

Unlabeled units are binary indicators. Results can be interpreted as in a linear probability model.

[a] Regression analysis [b] Raw averages

Figure 26. Mobility

Project details	Metrics	Impact				Citation
		If accompanied by family	If covers her own expenses	If dressed appropriately for culture	Not applicable/No one objects	
	Conditions under which a woman can:					
	Go to the bazaar/market	0.133 (0.050)	0.005 (0.004)	-0.010 (0.031)	-0.032 (0.095)	
	Go to the hospital/clinic/doctor	0.021 (0.068)	0.007 (0.003)	-0.079 (0.082)	0.043 (0.099)	
Objective: Increase smallholder yields and improve linkages to formal markets (beyond local)	Go to the cinema/fair/theater	0.004 (0.039)	NC	0.001 (0.011)	0.044 (0.112)	
	Visit friends outside the community	–0.093 (0.066)	0.01 (0.005)	–0.057 (0.082)	0.113 (0.073)	
Implementation: Training in best practices, established input supply points, linked small holders with service providers, facilitated capital mobilization for chilling plant, selected and trained milk collectors		**Men**	**Women**	**Joint**		
	Who decides whether a woman can go by herself to					
Region: Bangladesh	Attend NGO training outside the community	0.006 (0.055)	0.021 (0.045)	0.105 (0.054)		Quisumbing and Shalini, 2014

Project details	Metrics	Impact				Citation
		If accompanied by family	If covers her own expenses	If dressed appropriately for culture	Not applicable/No one objects	
	Attend NGO training inside the community	0.025 (0.042)	0.041 (0.063)	0.074 (0.064)		
	The bazaar or market	0.036 (0.040)	-0.052 (0.053)	0.013 (0.006)		
	The hospital/clinic/doctor	-0.100 (0.082)	0.010 (0.060)	0.007 (0.004)		
	Cinema/fair/theater	0.032 (0.021)	-0.023 (0.035)	0.005 (0.003)		

Notes:

Unlabeled units are binary indicators. Results can be interpreted as in a linear probability model.

Health

While a mixed methods research approach is also common in the literature on health projects, these studies use much more diverse methods. Qualitative data in research on health projects is often used to offer a more complete picture of the complexity of the subject and to incorporate participatory methods given the community-focused nature of many health topics (Ahluwalia, Schmid, and Kanenda, 2003). Quantitative data can range from simple summary statistics in support of the qualitative data (Otchere and Kayo, 2007; Ahmed and Jakaria, 2009), to treatment effect models, as in agriculture literature (Barofsky, Anekwe, and Chase, 2015; Lucas, 2010), to other methods such as logistic regression and odds-ratio calculations (Dunkle, et al., 2004), which are common in medical papers.

Data used in analysis of health projects are not restricted to project surveys in this instance, because some interventions can be at the provider level (Le Cœur, et al., 2009) or on a nationwide scale (Joshi and Sivaram, 2014). In contrast to research on agriculture, there are also a number of studies that are not done on individual-level data but instead used aggregate measure (Barker, et al., 2007; Otchere and Kayo, 2007; Spangler and Bloom, 2010).

Many of the metrics in this topic relate to gender differentials in health outcomes of illnesses that are not gender-specific. For instance, tuberculosis can be contracted by both men and women, but many researchers are interested in the delay in diagnosis by gender. Health projects cover a diverse group of issues, and the indicators used must be tailored to the subject matter. Figure 25 presents summaries of health differentials by gender as noted in research on health projects, including the metrics used to study the differential.

Figure 27. Gender Differentials in Health Projects

		Health Differential			
Issue	**Metric**	**Men**	**Women**	**p-value**	**Citation**
Delays in diagnosis and treatment	Delay in diagnosis of tuberculosis: Vietnam				Long et al., 1999
	Total average delay (weeks)	11.4	13.3	0.02	
	Patient's average delay (weeks)	7.6	7.9	0.71	
	Doctor's average delay (weeks)	3.8	5.4	0.003	
	Average delay to first health care provider (weeks)	5.9	5.6	0.65	
	Health Care Providers average delay (weeks)	5.5	7.7	0.003	
	Delay in diagnosis of tuberculosis: Nepal				Yamasaki-Nakagawa et al., 2001
	Total median delay (months)	2.3	3.3	0.034	
	Proportion with total delay over nine months	7%	14%	0.055	
	Patient's median delay (months)	0.8	0.6	0.7	

		Health Differential			
Issue	**Metric**	**Men**	**Women**	**p-value**	**Citation**
	Health Care Providers median delay (months)	0.8	1.3	0.054	
	Delay and immune status before antiretroviral treatment (ARV) in HIV diagnosis: Thailand				
	Average delay between HIV Diagnosis and ARV initiation (years)	2.3	2.9	0.017	
	CD4 before ARV initiation (cells/mm^3)	45	84	<0.001	Le Cœur et al., 2009
	Health care provider visited first: Nepal				
	Traditional healers	11%	16%	0.17	
	Private health care providers	50%	47%	-	
	Government medical establishments	23%	26%	-	
	Other	14%	11%	-	
Traditional healers	Unknown	2%	0%	-	Yamasaki-Nakagawa et al., 2001
	Number of HIV seroconversions: South Africa				
	Intervention	15	57	-	
Incidence of disease	Control	13	68	-	Jewkes et al., 2008
	Supervision method and treatment outcome: South Africa				
	Direct Observation: Successful	61%	38%	-	
	Direct Observation: Other	39%	62%	-	
	Self-supervision: Success	64%	55%	-	
Other	Self-supervision: Other	36%	45%	-	Zwarenstein et al., 1998
Note: In some cases, p-values are not computed because gender was not the primary disaggregation of interest for the researcher, although gender differentials appear to exist in presented data.					

Many of the gender issues in health projects revolve around the gendered nature of health itself. Women have different, and perhaps greater, health needs on account of gender-specific health issues. Most notably are the increased health care requirements of pregnancy and delivery, but other seemingly non-gendered health issues often have gendered aspects as well (Garner, Kramer, and Chalmers, 1992; Vlassoff and Bonilla, 1994). Given the gender-specific nature of these impacts there is no differential to measure in outcome, but they have a significant impact on women's health nonetheless. While these topics may initially seem like a promising avenue for development projects to make headway in improving women's health outcomes, health interventions in these areas have struggled to improve these measures significantly. Figure 26 below provides some examples of gender-specific health issues and their metrics, as well as the results of relevant health projects.

Figure 28. Baseline and Post-Intervention Values in Health Projects

		Estimates			
Gender-Specific Health Issue	**Metrics**	**Baseline**	**Post-Intervention**	**Country**	**Citations**
Health issue: Maternal care Gender-specific significance: High rate of mortality and morbidity	Maternal mortality rate (per 100,000 live births)	807		Malawi	Godlonton and Okeke, 2016
	Number of prenatal visits	3.7	3.5		
	Use of formal care	70.10%	75.70%		
	Received at least three antenatal care visits	0.413		India	Joshi and Sivaram, 2014
	Delivered in a formal facility or with trained attendant	0.459			
	Received post-partum care within two weeks of delivery	0.282			
	Maternal mortality rate (per 100,000 live births)	230		Indonesia	Baird, Ma, and Prah Ruger, 2011
	Lifetime risk of maternal death	1 in 150			
	Under 5 mortalities (per 1000)	38 (National) 54.24 (sample)	49.91 (sample)		
	Infant mortality (per 1000)	53.82 (sample)	40.63 (7.80)		
	Deliveries overseen by trained personnel (%)	34.88 (7.75)	58.68 (16.78)		
	Delivery in a formal facility	8%	17.70%	Nepal	Barker et al., 2007
	Met need for emergency obstetric care (complications managed against an expected 15% rate)	7.30%	18.50%		
	Met need for caesarean section	3.60%	28.70%		

		Estimates			
Gender-Specific Health Issue	**Metrics**	**Baseline**	**Post-Intervention**	**Country**	**Citations**
	Maternal mortality rate (per 100,000 live births)	900			
	Lifetime risk of maternal death	1 in 24			
	Delivered in a formal facility	58.09%			
	Delivered with a non-professional provider	45.74%		Tanzania	Spangler and Bloom, 2007
	Maternal mortality rate (per 100,000 live births)	1200			
	Lifetime risk of maternal death	1 in 10			
	Delivered in a formal facility	3.80%	4.70%		
	Met need for emergency obstetric care (complications managed against an expected 15% rate)	8.80%	15%		
	Met need for caesarean section	0.80%	1.20%	Mali	Otchere and Kayo, 2007
Health Issue: Malaria Gender-specific significance: In-utero infection with malaria is associated with pregnancy complications and many cognitive delays in the child	Respondent is currently using the insecticide-treated net (ITN) acquired through the program				
	ITN Price = 0 ksh		.656 (0.093)		
	ITN Price = 10 ksh		-.126 (.0119)		
	ITN Price = 20 ksh		-.020 (.0105)		
	ITN Price = 40 ksh		.106 (0.134)	Kenya	Cohen and Dupas, 2010
	Respondent reports use of ITN by those originally intended to use the net				
	Pregnant women	77%		Tanzania	Mushi, et al., 2003

		Estimates			
Gender-Specific Health Issue	**Metrics**	**Baseline**	**Post-Intervention**	**Country**	**Citations**
	Child	97%			
	Total	94%			
	Tested for HIV during antenatal care	66%	99.90%		
	Infected with HIV	16.80%	20.40%		
	Mothers and infants receiving Nevirapine	185	256	Zimbabwe	Chandisarewa et al., 2007
	Tested for HIV during antenatal care (Tanzania)	60.20%			
	Infected with HIV (Tanzania)	15.80%			
	Mothers receiving NVP (Tanzania)	42.40%			
	Infants receiving NVP (Tanzania)	43.70%			
	Tested for HIV during antenatal care (Uganda)	80.30%			
	Infected with HIV (Uganda)	16.20%			
Health Issue: HIV Gender-specific significance: Mother-to-child transmission is the leading cause of HIV	Mothers receiving NVP (Uganda)	22.80%		Tanzania and Uganda	Karcher et al. 2006
	Infants receiving NVP (Uganda)	24.10%			

As for directly studying gender-related variables of interest, research in this literature often constructs and uses composite measures, like an index, for a given topic. Many aspects of health and gender are complicated and multifaceted, and composite measures incorporate multiple variables into one summary statistic. Indexes can be constructed using simple aggregation or by more sophisticated statistical methods, such as factor analysis. In terms of gender issues directly studied, below are some examples of indicators used in the literature on health projects to study gender issues related to health projects.

In a study of preferences of deliver care options, van Rijsbergen and D'Exelle (2013) constructed an Empowerment Index using factor analysis on a list of variables drawn from the literature. The index has the following features:

- Standardized to mean equals zero and variance 1

- Index average by place of delivery
    - Outside a facility: 0.12
    - Local health facility: 0.07
    - Hospital: .33
- Controlled for in multinomial probit for explanatory power in choice of delivery location
    - Coefficient estimate on hospital delivery: 0.293 (0.138)

In a study of the effect of travel time on choice of delivery care, Masters et al. (2013) constructed a categorical variable, with values 1 to 3, for Female Autonomy using principal component analysis on a list of variables drawn from the literature. The index has the following features:

- The score equaled three if a woman experienced more autonomy than 66% of the sample by construction.
- Controlled for in logit regression analysis of in-facility delivery
    - Odds ratio on second tercile: 0.632
    - Odds ratio on third tercile: 0.558
- Controlled for in logit regression analysis of antenatal care
    - Odds ratio for second tercile: .999
    - Odds ratio for third tercile: 1.005

In order to study the relationship between gender-based violence and HIV risk, Dunkle et al. (2004) used answers from the WHO Violence Against Women Instrument to construct an index of intimate partner violence, which allocated women to either "limited or no physical/sexual violence" or "broad physical/sexual violence":

- Sample characteristics
    - Limited or no physical/sexual violence: 55%
    - Broad physical/sexual violence: 45%
- HIV-positive percent by IPV
    - Limited or no physical/sexual violence: 29.1%
    - Broad physical/sexual violence: 39.6%
- Controlled for in logistic regression analysis of HIV serostatus
    - Odds ratio on broad physical/sexual violence: 1.53

Cost of GBV

Since there are no studies quantifying the change in GBV rates caused by a policy or project that did not have reduction of GBV as a primary goal, this section reviews the literature surrounding the measurement of the cost of GBV. Studies in developed and developing countries are reviewed, but detailed breakdowns of studies are only given for developing countries, which are presented in Figure 27. Though most studies only calculate costs, one study is unique in measuring the cost of physical IPV and then using it to evaluate a project intended to reduce IPV (Michaels-Igbokwe et al., 2016).

This section also focuses on the lessons learned from measurement studies so far, including the methodology most commonly used. Unlike other sections of this review, this section focuses more on studies in developed countries for several reasons. First, certain kinds of GBV are widespread in developed countries (Vara-Horna, 2013), with common causes as in developing countries (KPMG, 2014), and the methodologies used across countries are surprisingly similar. Second, there are many more studies done on developed countries than on developing countries, and lessons learned from developed countries can be applied to understanding GBV developing countries.

Out of the 69 studies collected for this review, 21 studies used US data, but some of these only analyze the health costs of IPV. The methods used in this subset of studies would not be possible in many developing countries it would be difficult to obtain the detailed health data that is required (Morrison and Orlando, 2005). This review focuses on studies that examined the total cost of GBV, because the methods are applicable to studies in developing countries (ICRW, 2007). The section concludes by examining some of the indicators used to determine the prevalence of GBV in developing countries

Measurement of the Costs of GBV

As there are already several reviews of the types of costs that can be included in a study of GBV, this review does not include an in-depth description of how to deal with each type of cost. A report by the Office of Status of Women (2004) in Australia contains a thorough discussion, but a report by KPMG (2014) offers a succinct list of examples, which may be more helpful.

These are the main findings in the literature about measuring the cost of GBV:

1) **Though many articles claimed to examine GBV, what was usually measured was a part of the impact of IPV**. One of the costing studies in developing countries discussed sexual harassment and stalking but did not provide estimates (KPMG, 2014). Another provided a framework for estimating the impact of GBV in the workplace in Papua New Guinea, but the results of any such study have not been published (Williams, 2014). None of the studies measured the impacts of other types of GBV such as discrimination.
2) **Though guides tend to advocate econometric methods such as propensity score matching, all studies but one used a bottom-up accounting approach**. The International Center for Research on Women (ICRW, 2007) gave an overview of propensity score matching but noted that it is only possible with a large amount of demographic data. One study in Colombia used propensity score matching (Morrison and Orlando, 2005), while other studies cited the CDC (2003) when describing the method used. Most studies in this review repeated this process several times using different types of GBV. For each type of GBV, the steps are:
    a. **Determine the type of GBV of interest and choose an indicator**. For example, if researchers wish to measure medical costs incurred through the hospital system, the appropriate indicator would be IPV injuries sustained in a hospital visit. (Additional examples of indicators are in the upcoming subsection.)

   b. **Use the indicator to find the annual prevalence rate of the type of GBV**. Studies may use survey data if their survey is representative but may also take the prevalence rate from another study. The prevalence rate is defined as the percentage of women that have experienced the type of IPV within the last 12 months. Following the above example, this would be the percentage of women who visited the hospital for an IPV injury in the last 12 months.
   c. **Among women who experienced the type of GBV in the last 12 months, find the average annual incidence of the type of GPV**. This is the average number of times women identified in the previous step experienced the type of GBV in the last 12 months. This can be obtained from surveys of women or institutions but is not available for every study. Continuing with the example, this would be the average number of times that women in the sample visited a hospital for an IPV injury in the last 12 months.
   d. **Find the unit cost of the type of GBV**. This is the average cost of one event and is sometimes obtained from a survey and sometimes obtained by contacting institutions. Costs may be relatively intangible, such as the cost of a lost disability-adjusted life year (DALY) or the cost of a life lost, but data on lives lost will generally not be available in survey data.
   e. **Find the total annual cost for the type of GBV**. This is done by multiplying the relevant population by the prevalence rate by average annual incidence by the unit cost.

3) **Costs were not categorized consistently**. Some studies broke up costs into direct and indirect (ICRW, 2009; Duvvury et al., 2012; KPMG, 2014; Roldós and Corso, 2013), but others used an alternative categorization (Siddique, 2012; Darko et al., 2015). There is also some disagreement about which costs are indirect, with some researchers considering opportunity costs to be a separate category and others considering them to be indirect costs (KPMG, 2014).
4) **There is a consensus that all estimates are gross underestimations**. No study, even in developed countries, comes close to including all of the costs, even when only considering intimate partner violence. This is true throughout the literature, with many concrete examples. A few of them are as follows:
   a. **Studies exclude same-sex couples and couples outside of live-in relationships**. Studies look at women who currently live with an abusive partner despite evidence that health care costs persist long after the relationship has ended (Varcoe et al., 2011; Fishman et al., 2010).
   b. **Not all costs of providing for newly homeless victims are included**. Some studies obtain data from shelters, but victims spend large amounts of money on hotel rooms, and friends and family bear a cost when they provide for victims (Skaperdas et al., 2009).
   c. **Women spend a significant amount of money managing IPV injuries at home**. Medical costs are estimated using hospital data, but only 40% of women visit the hospital after an injury (Day, 1995), and many spend significant amounts on bandages, painkillers, and concealment of injuries (Roldós and Corso, 2013).
   d. **Loss of productivity estimates typically only include absenteeism from work, and not presenteeism**. Productivity loss is measured using days of missed work, despite the fact that one-third of victims report being unable to concentrate at work

after an incident (Duvvury et al., 2012). Due to stress, injuries, or threats, women may also be more likely to be late for work, to leave work early, and to be harassed at work by their partner (ICRW, 2007). A US study found that 75% of victims were harassed by their partner at work (Laurence and Spalter-Roth, 1996), and there is no reason to believe this percentage would be insignificant in developing countries.

e. **Some of the largest costs are the least likely to be included**. Medical and legal costs are the most commonly examined, but the costs of social services and other government intervention programs are found to be larger in a Canadian study (Day, 1995). Some studies find pain and suffering to be the largest cost (Australian DFV Clearinghouse, 2001).

Figure 27 below is a summary of costing studies in developing countries. Many studies reported the cost in nominal US dollars; otherwise, the value is converted using the average exchange rate for the year as found on Canadian Forex. All studies but one examined the effect of IPV, which analyzed the cost of female genital mutilation (WHO Study Group on FGM and Obstetric Outcome, 2010). The study in Uganda is also significantly different from other studies because it focused on the cost of a program that aimed to reduce domestic violence. It should be noted that a study in Brazil is sometimes erroneously included in summaries of these types of studies—it actually measured the cost of interpersonal violence against men and women (WHO-CDC, 2007).

Figure 29. Summary of Studies Estimating the Costs of GBV, Developing Countries Only

Country	Types of Costs	Cost Estimate (Nominal US$)	Percentage of GDP	Citation
Jamaica	Costs to medical service providers	454,000 single hospital	--	Mansingh and Ramphal, 1993
Chile	Productivity loss	1.56 mil	2.0	Morrison et al., 1999
Nicaragua	Productivity loss	29.5 mil	1.6	
Colombia	Criminal justice costs Medical costs NGO costs Productivity loss	7.3 mil	--	Morrison and Orlando, 2005**
Macedonia	Criminal justice costs Social services costs NGO costs	0.77-1.0 mil	--	Gancheva, 2006
Morocco	Criminal justice costs	167/event	6.5 [III]	ICRW (2009)

Country	Types of Costs	Cost Estimate (Nominal US$)	Percentage of GDP	Citation
	Medical costs			
Uganda	Criminal justice costs Medical costs	5/event	1.6 [III]	
Burkina Faso, Ghana, Kenya, Nigeria, Senegal, Sudan	Medical costs of FGM Mortality associated with FGM	3.7 mil PPPD	0.1-1.0 [IV]	WHO Study Group on FGM and Obstetric Outcome, 2010
Vietnam	Out-of-pocket expenditures Productivity loss [I]	1.71 bil	1.41	Duvvury et al., 2012
Bangladesh	Displacement costs Legal costs Medical costs Productivity loss [I]	1.8 bil	2.05	Siddique, 2012
Ecuador	International support Legal costs Medical costs Productivity loss	109 mil	--	Roldós and Corso, 2013
Peru	Productivity loss [II]	181 mil	--	Vara-Horna, 2013
South Africa	Legal and policing costs Medical costs, including mortality NGO costs Out-of-pocket expenditures Productivity loss Research costs	2.62-3.91 bil	0.9-1.3	KPMG, 2014

Country	Types of Costs	Cost Estimate (Nominal US$)	Percentage of GDP	Citation
Papua New Guinea	Productivity loss[II] Direct costs to firms	223,000-1.7 mil/firm	--	Darko et al., 2015
Uganda	Development and implementation of a community outreach program designed to reduce physical IPV	552,000	--	Michaels-Igbokwe et al., 2016

[I] Victim and perpetrator; the majority of studies estimated productivity loss to the women.
[II] Productivity losses include presenteeism and absenteeism; the majority of studies used absenteeism.
[III] Percentage of per capita gross national income.
[IV] Percentage of the national budget.
**These authors did not conduct the study. This document is used since the original study is no longer available electronically.

GBV Prevalence and Indicators

Prevalence rates are clearly not the same from country to country. One report claimed that two out of 10 of full-time salaried women are victims of IPV in the US and worldwide (Vara-Horna, 2013), but in Ecuador, seven out of 10 women surveyed had been a victim of IPV at some point (Roldós and Corso, 2013). Though it is expected that rates differ between countries, differences in calculation method also cause variation in reported rates. Studies of IPV tend to include indicators of physical and sexual abuse, but not of other types of abuse such as economic deprivation (Schulte et al., 2014). Studies that choose to include more than the most common indicators necessarily report higher prevalence rate. Studies of IPV have relatively more variance in indicators than studies of workplace GBV, which focus on sexual harassment (Schulte et al., 2014). There is a lack of research on economic deprivation and on other types of work-related GBV, "including gender-based discrimination, stigmatization, exploitation and abuse, and labor and sex trafficking" (Schulte et al., 2014).

Below are some examples of indicators used in the measurement of the cost of GBV in developing countries. Consistent with the conclusions above, most indicators are related to IPV. Since these indicators reflect the data available in developing countries, their number are limited. For example, since studies in developing countries typically use survey data (IRCW, 2007), deaths due to GBV are often unknown. When this is the case, mortality cannot be used as an indicator.

Figure 30. Examples of Indicators Used in Cost Measurement Studies, Developing Countries

Cost category	Indicator	Citation
Medical	Number of hospitalizations reported by medical service providers	Mansingh and Ramphal, 1993
Medical	Number of injuries reported by victims	Gancheva, 2006; ICRW, 2009; Duvvury et al., 2012; Siddique, 2012; Roldós and Corso, 2013; Vara-Horna, 2013; KPMG, 2014; Michaels-Igbokwe et al., 2016
Medical	Number of obstetric complications associated with FGM	WHO Study Group on FGM and Obstetric Outcome, 2010
Medical	Mortality associated with FGM	WHO Study Group on FGM and Obstetric Outcome, 2010
Medical	Value of lives lost to IPV	KPMG, 2014
Criminal justice	Number of police interventions	Gancheva, 2006; ICRW, 2009; KPMG, 2014
Criminal justice	Number of legal interventions (i.e., number of family court cases)	Gancheva, 2006; ICRW, 2009; Siddique, 2012; Roldós and Corso, 2013; KPMG, 2014
Productivity	Number of hours missed at work due to IPV, victim	Morrison et al., 1999; Duvvury et al., 2012; Siddique, 2012; Roldós and Corso, 2013; Vara-Horna, 2013; KPMG, 2014; Darko et al., 2015
Productivity	Number of hours missed at work due to IPV, perpetrator	Duvvury et al., 2012; Siddique, 2012
Productivity	Reduction in output due to reduced ability to function at work	Vara-Horna, 2013; Darko et al., 2015
Productivity	Time spent in firms counseling victims, replacing employees, training new employees	Darko et al., 2015
Social services	Number of clients reported by NGOs	Gancheva, 2006; KPMG, 2014
Various	Total cost reported by an agency*	Roldós and Corso, 2013; KPMG, 2014

*There are issues with this indicator when some costs are inappropriately included in the reported number. See below.

Overwhelmingly, indicators used to capture the level of GBV in a society are discrete indicators, but some studies report the total cost of some service when discrete units are not available (KPMG, 2014; Roldós and Corso, 2013). For example, a KPMG (2014) study in South Africa included the

total amounts spent on GBV reported by various departments of government. A study in Ecuador included the amount of money donated by international programs to support local capacity-building efforts (Roldós and Corso, 2013). These measures are problematic because some of these costs are related to the prevention of gender-based violence. According to avoidance cost theory, the cost paid to avoid an event reflects the cost of that event to society, so that avoidance costs can be used to approximate direct costs (Abdalla, 1994). The issue here is that since these studies include direct costs and avoidance costs, some costs are effectively double-counted.

4 Going Forward

The literature review conducted as the first step of this project sheds light on a number of key lessons learned. The implications from these lessons for the practice of CBA are twofold: 1) there are significant differences in impact by gender; therefore, disaggregating the stakeholders by gender is a critical adjustment to conventional CBA, which forces the practitioners to dive more deeply in measuring the difference; and 2) in every sector, there can be additional impacts to consider in a cost-benefit framework that result from the prevalence of gender gaps or cultural norms.

However, more importantly, the literature review highlighted the gap that exists in research and quantitative evidence on gender impacts. Many learning opportunities have been missed, measurement is far from being tangible, and there exists a significant gap in standardized terminology and clarity.

The focus of the final report will address the following topics:

1. Key barriers for the integration of gender impacts into CBA in practice
2. Technical aspects of integration: impact identification, attribution, quantification, and monetization
3. Lessons learned from the integration of environmental impacts into CBA
4. Role of institutions in facilitating the process

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