



WhatWorks

TO PREVENT VIOLENCE

Economic and Social Costs of  
Violence Against Women and Girls

# Guidance on Methods for Estimating Economic and Social Costs of Violence against Women and Girls in Low and Middle Income Contexts



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# EXECUTIVE SUMMARY

It is well established that violence against women and girls (VAWG) is a human rights violation and public health issue. Worldwide, one in three women report experiencing some form of physical and/or sexual violence, predominantly perpetrated by a partner or ex-partner, over their lifetime (WHO 2013). More recently, there is a growing recognition of the wider economic and social costs of VAWG for individuals, the community, businesses, society and the economy.

The economic costs of VAWG at these different levels, such as the loss of personal and household income and loss of economic outputs for businesses that erode national tax revenue, can undermine economic growth. While social costs, such as women's decreased political participation or the negative impact on women's capabilities, do not have an intrinsic monetary value, it is hypothesised that over time many of these costs translate into economic losses. Taken together, the range of economic and social costs of VAWG result in an overall loss for society and the economy.

Establishing estimates of these costs provides an evidence-base to advocate for a comprehensive response and increased investment in addressing this serious issue. This would, in turn, result in significant savings for governments. Given the importance of such growth for advancing economic development, this is particularly relevant for countries of the Global South.

This guidance outlines the methodological options for estimating the myriad economic and social costs due to VAWG. In many low- and middle-income countries, national databases housing the variables required to estimate costs of VAWG are non-existent, fragmented/inadequate, or often inaccessible. As such, this guidance provides stepwise support for analysing available national data or specialised primary survey data on economic costs to produce cost estimates of VAWG. It also outlines the different methods for analysing qualitative data in relation to social costs. The guidance focuses on a range of specific costs incurred by women and their children at the household and community levels, costs at the business level, and the impact of these costs on the national economy. Studies focused on producing 'costings' of VAWG can extend our understanding of the depth and scope

of the impacts of VAWG. Methodological innovations, such as those presented here, in relation to calculating lost productivity, provide a greater capacity to capture the full consequences of VAWG on economic growth.

The guidance has been developed to support VAWG costing studies and draws from the lessons learned through the What Works to Prevent Violence: Economic and Social Costs of VAWG<sup>1</sup> project (2014-2019) carried out in Ghana, South Sudan and Pakistan, funded by the UK Department for International Development (DFID). It is intended for researchers who have collected primary data or who have access to relevant national level data in low- and middle-income countries. The guidance is designed to enable users to choose the appropriate method to analyse this data. The guidance is divided into five sections. The first section details the importance of costing studies, with a focus on low- and middle-income contexts. Section two discusses the conceptual framework for understanding economic and social costs at the individual/household, community and business levels, and how these contribute to losses at the national level. In section 3, the range of quantitative and qualitative methods for estimating economic and social costs are explored. This is followed by stepwise guidance on calculating cost estimates in Part 4. Part 5 concludes by detailing innovations, challenges and recommendations in relation to VAWG costing studies.

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1. For further information on the project, please visit [www.whatworks.co.za](http://www.whatworks.co.za)

# 1. INTRODUCTION

Violence against women and girls (VAWG) continues to be a serious and pervasive problem worldwide. VAWG encompasses multiple forms, such as domestic violence, sexual harassment, rape and sexual assault. According to recent international research, more than one third of women have experienced sexual and/or physical intimate partner violence (IPV) or non-partner sexual violence in their lifetimes (WHO 2013). There is also a growing recognition of emotional/psychological and economic abuse perpetrated by both intimate partners and non-partners. As reflected in Sustainable Development Goal (SDG) 5, which re-prioritises the elimination of all forms of VAWG, a comprehensive and multi-sectoral response is urgently needed. Cost estimates of VAWG can be a powerful tool in achieving this goal by incentivizing countries to actively address violence, develop realizable strategies and ensure allocation of adequate resources.

The impact of VAWG is manifold, ranging from direct physical and psychological consequences to the ripple effects for children, families, communities, the workplace and society in general (see for example, Bonomi 2006, Garcia-Moreno & Watts 2000, Dube et al. 2002, Wathen et al. 2015). Though at a nascent stage, studies estimating the wider social and economic costs of VAWG, particularly the costs of inaction<sup>2</sup>, are gaining momentum. To date, almost 60 studies, predominantly from countries in the Global North, have sought to document and quantify the impact of Domestic Violence (DV) at the individual, household and community levels (see for example, Duvvury et al. 2012, Duvvury et al. 2015, Walby & Olive 2014). A recent study conducted in Vietnam indicated that the costs of accessing services, missed work and lowered productivity amounted in aggregate to 3.12 per cent of GDP (Duvvury et al. 2012). VAWG also has long-term effects on children's health and education, potentially limiting their future economic participation.

Indeed, owing to high prevalence rates, the costs of non-fatal DV against women and children are estimated to be substantially greater than the combined costs of homicide, assault, terrorism and war (Hoeffler 2017). As such, increased and targeted investment in effective prevention, support services and prosecution would result in large savings for governments. Countries that have undertaken economic cost research have used the evidence to influence DV policy and programming. For

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2. Costs incurred as a result of governments failing to adequately address the problem of VAWG.

example, in Egypt, the Ministry of Planning increased the budget for VAWG-related activities based on the findings of a national costing study conducted in 2015 (Duvvury et al. 2015).

The What Works to Prevent Violence programme (2014-2019) was an innovative, large-scale investment by the UK Department for International Development (DFID) to address VAWG in developing, conflict-affected and humanitarian contexts. The third component of the programme, Economic and Social Costs of VAWG, was led by a consortium of researchers from the National University of Ireland, Galway, Ipsos MORI (UK) and the International Centre for Research on Women (ICRW, Washington D.C.). This project (henceforth 'the What Works project') worked with local partners in Ghana, Pakistan and South Sudan to estimate the costs of VAWG in these settings using innovative methods that integrated quantitative and qualitative approaches and aimed to understand, and, where possible, quantify a wide range of costs and impacts. The project moved beyond other costing studies by examining the ripple effects through the economy due to violence, deepening understanding of the intergenerational social costs of VAWG. This was achieved by examining the impact on children's education and women's care work, as well as analysing costs to businesses due to violence against female employees.

The study also extended research boundaries by examining violence in a wider range of forms than most costing studies (physical, sexual, economic and psychological) and across a range of locations (in the home by intimate partners or other family members, in the workplace, in educational institutes, and in public spaces)<sup>3</sup>. The holistic approach employed represents the cutting edge in costs of violence research and resulted in significant findings that can be used to advocate for action to end VAWG by a range of actors. Further studies on the costs of violence are however needed to engage with governments, NGOs, regional banks and the business sector within regional and national contexts to invest in ending VAWG. As costing in low- and middle-income countries can be challenging, clear guidance on carrying out such studies is required.

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3. For more on the findings of the Economic and Social Costs of VAWG project, see: University of Limerick and NUI Galway 2019; SPDC et.al 2019; ISSER et al. 2019; Asante et al. 2019; Elmusharraf et al. 2019; Ghaus et al. 2019.

Building on the growing interest in costing research, several guidelines have been developed to enable researchers, governments and civil society to conduct costing studies on VAWG. The first guidelines by Duvvury, Grown and Redner (2004) present a framework and guidance on the proposed steps to take when designing and undertaking a costing study. In 2016, a simple tool for costing the impact of VAWG to businesses in low- and middle-income countries was also developed by Walker and Duvvury (2016). Drawing on these guidelines, tailored guidance was compiled for estimating the economic costs of DV in the Arab Region (Duvvury et al. 2019). Under the What Works to Prevent Violence Against Women programme funded by DFID, the London School of Hygiene and Tropical Medicine has also developed guidelines for conducting economic evaluations of interventions to prevent VAWG (Ferrari et al. 2018).

While the above described guidelines were developed for low- and middle-income countries, the majority of guidelines produced to date have focused on high income countries, where data sources are typically more available and more rigorous. This literature often provides information on how to develop costing studies, including constructing surveys and accessing data sources, which can also be applied in some cases to low- and middle-income contexts. However, there is a dearth of information on how to produce economic estimates from primary and secondary data in low- and middle-income countries. Thus, the current guidance, which draws on the What Works project's costing approaches, addresses this gap by focusing on the range of methods that are feasible for deriving costs in these countries. In the first part of Section 4 of this document, step-by-step guidance is provided to produce economic cost estimates.

Costs of VAWG should not, however, be confined to those that are economic or quantifiable. This guidance therefore recognises the need to include social costs in costing approaches. While there have been some attempts to quantify certain types of social costs, particularly health costs, in high income countries, it is often not feasible to do this in low- and middle-income country contexts due to the data requirements for these methods. There is thus a need to deepen understanding of a wider range of social costs and the linkages between costs at the individual, household and community levels. In the absence of quantitative data, qualitative methods present a means of doing so. However, there is also a dearth of guidelines on using qualitative methods for costing of VAWG, including data collection and analytic approaches. In the second part of Section 4, we provide guidance on how to conduct qualitative studies to derive social costs of VAWG. We also outline how to

derive intangible social costs that supplement, or act as an alternative to, the costing methods presented in the first part of Section 4.

The guidance focuses on a range of specific costs incurred by women and their children at the household and community levels, and their impact on the national economy, across multiple forms of VAWG. However, it is important to note that the cost estimates established in the What Works project are partial: all of the pathways from economic and social costs to losses for the economy could not be explored in a single study. In particular, given the methodologies available and the lack of longitudinal data, the study has not established how social costs translate into economic costs. If the various social costs were quantified and monetised, the overall loss would be many times greater than the current estimates, which are based only on tangible economic costs, detailed in this report.

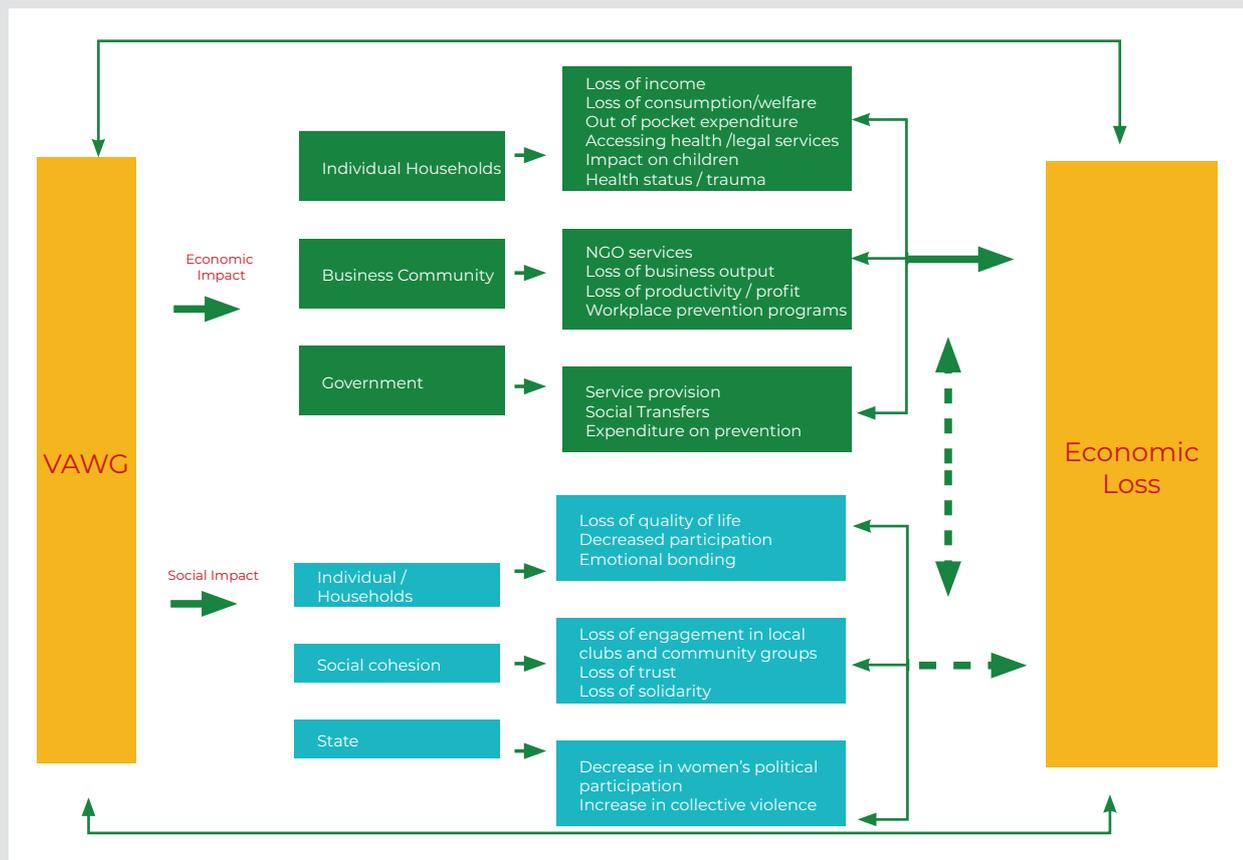
## 2. UNDERSTANDING COSTS

It is widely acknowledged that VAWG has multiple impacts that translate into losses for women, their families, and communities/businesses, as well as macro losses for society. The conceptual framework provided below outlines the range of economic and social costs of VAWG at the individual/household level, the community/business level, and the government/state level.<sup>4</sup> It also depicts the pathways through which economic and social costs at each of these levels contribute to national losses. Economic costs, such as lost personal and household income and loss of economic outputs for businesses that erode national tax revenue, undermine economic growth.

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<sup>4</sup> It is recommended that government expenditure to prevent and mitigate the impacts of violence should not be viewed as a 'cost', but rather as 'due diligence' to fulfil the government's human rights obligations to prevent VAWG, protect women and prosecute perpetrators.

## Figure 1: Conceptual framework of economic and social impacts of VAWG



Source: Scriver et al. (2015)

Social costs of VAWG, such as loss of trust in authority figures, friends and others due to stigma and victim-blaming for instance, have serious consequences for well-being and capabilities, for social cohesion and participation, and for social stability. These costs cannot be immediately monetized. However, it is hypothesised that over time many of these social costs are translated into economic costs through, for instance, chronic disability, limited access to, and performance in, education, as well as increased social instability and conflict. These combined costs result in an overall loss to society and the economy. It is important to note that this overall loss also affects VAWG, so the relationship is not unilinear but rather a circular flow.

The social and economic costs of VAWG, as well as the specific costs at the different levels, are interlinked. It is therefore insufficient to simply aggregate costs across levels. Research must focus on exploring these diverse and dynamic costs with a view to highlighting their macro-level influence on both economic and social development. Recognising that VAWG is not separate from other forms of violence,

both structural and inter-personal, but is a driver of, and driven by, social and economic processes, allows for a holistic approach to understanding its costs. This enables a more accurate account of the impacts of VAWG on society as a whole to be established.

## **2.1 Impact Pathways**

Building on the conceptual framework in Figure 1, it is evident that a number of important variables mediate the impact of IPV, at the individual/micro level, on the macro level of economic growth: Capabilities, Trauma and Intra-Household Gender Relations (Duvvury et al. 2013). For example, the various and profound health consequences of IPV can lead to lower labour force participation and reduced labour force 'quality', which has implications for economic growth. Trauma negatively affects employment stability and presenteeism (being less productive), with fear operating as a mechanism that increases trauma, resulting in poor mental health status, which in turn, impacts productivity and human capital formation. In terms of intra-household gender relations, loss of income at the household level can negatively affect welfare consumption and household utility by reducing consumption and savings. 'For women engaged in micro-enterprise, violence could potentially undermine their potential resources available for investment and/or circumscribe their independent decision-making' (Duvvury et al. 2013, p.4).

## **2.2 Typology of Costs**

When conducting a VAWG costing study, the variety of economic and social costs that can be estimated are broadly delineated into four main categories: direct tangible, indirect tangible, direct intangible, indirect intangible. Direct and indirect tangible costs have a monetary value, while direct and indirect intangible costs do not. Annex 1 provides an outline of the various types of costs at the different levels considered in a variety of costing studies.

In the What Works project, costs of VAWG were estimated in relation to IPV, violence by other family members, violence in public spaces and violence experienced at the workplace/educational institution. The focus was limited to the following costs for individuals and households: 1) accessing services, 2) productivity loss in terms of days of absenteeism and presenteeism (being less productive), 3) days of missed care work 4) children's missed school days, and 5) social costs in terms of reproductive, physical and mental health outcomes, and impacts on women's participation and leadership. These losses at the individual and household levels are extrapolated to the national level to estimate the costs for the economy.

We also explored the economic costs to businesses to gain an understanding of how VAWG impacts the business sector. Together, the estimates produced in this study are an important contribution to our understanding of the economic and social costs of VAWG, adding greater depth to the existing knowledge of public health costs in this area.

### 3. METHODS TO ESTIMATE ECONOMIC AND SOCIAL COSTS

The majority of costing studies undertaken to date have used four main quantitative methods to estimate the economic and social costs of VAWG. These methods provide an indication of the various types of individual/business costs and the aggregate loss for the economy. However, the consequences of VAWG on economic growth have not been systematically reviewed or empirically tested (Duvvury et al. 2013). Given the importance of such growth for advancing economic development, this is particularly relevant for low- and middle-income countries. To address this gap, an alternative method, Social Accounting Matrix (SAM), for estimating the full macroeconomic loss due to VAWG is provided, which represents an innovation in our research.

Further, rigorous examination of qualitative approaches to understanding the social/intangible costs of VAWG have largely been absent. The methods employed in the What Works project enable an exploration of these costs that can add depth and understanding to evidence generated through primary or secondary quantitative data sources. Such qualitative analysis can also stand alone as a means to explore the intangible social costs of VAWG to individuals, households and communities. In this section, guidance is provided for deriving social costs, including information about qualitative data collection methods that are appropriate for costing at the individual/household and community levels.

Different types of costs present different challenges, particularly those that are indirect and intangible in nature. When selecting a suitable method, it is important to consider its strengths and limitations, as well as the availability of data and the degree of rigour desired. Table 1 below outlines the various quantitative and qualitative methods available, the types of costs that can be estimated within each and the data required.

Method	Costs	Data Requirements
Accounting	<p>Direct tangible costs – out of pocket expenditure:</p> <p>i) accessing services, such as health, police, court, shelter, counseling, legal aid</p> <p>ii) repairing or replacing damaged property (utensils, furniture, vehicles, phones, television, radio, etc.)</p> <p>Indirect tangible costs:</p> <p>i) loss of income due to missed work</p> <p>ii) missed school days</p>	<p>1) Prevalence rate – percentage of women experiencing violence in the population.</p> <p>2) Incident or Victimization rate – number of incidents per 100 women.</p> <p>3) Proportion of women incurring expenses to access services.</p> <p>4) Primary data on fees, transport, and other routine costs for accessing services and leaving home, expenditure on replacing property (furniture, utensils, phones, vehicles, etc.).</p> <p>1) Days missed per incident, average wage.</p> <p>2) Days missed by children per incident, total school fees paid in a year, to estimate value of missed school days.</p>
Econometric Approaches	<p>Indirect tangible costs:</p> <p>i) lost time in the labour market (women prevented from working or losing their job due to violence)</p> <p>ii) lost productivity/ earnings</p> <p>iii) consumption loss due to separation after violence</p>	<p>1) Prevalence of violence/incidents, macro data on age, education, employment rate, occupation, years of employment, hours worked, earnings/wage data, labour force participation, discount rate.</p> <p>2) Detailed data on income for different types of households to calculate equivalent disposable income.</p> <p>3) Data on probability of not being in a relationship after violence*.</p>
Willingness-to-pay/accept	<p>Indirect tangible costs: productivity loss</p> <p>Direct intangible costs: pain, suffering and lost quality of life</p>	<p>1) Prevalence of violence/incidents, macro data on age, education, employment rate, occupation, years of employment, hours worked, earnings/wage data, labour force participation, discount rate.</p> <p>2) Prevalence data/incidents, distribution of type of injury or fatality, cost estimates on willingness-to-pay – detailed data by risk of different types of injury/negative outcomes, detailed data on jury awards for different types of injury or fatality.</p>
Quality of Life Losses	<p>Indirect tangible costs: productivity loss - estimate YLL (Years of Life Lost)</p> <p>Direct intangible costs: pain, suffering and lost quality of life - estimate YLL (Years of Life Lost) or DALYs (Disability Adjusted Life Years)</p>	<p>1) Years of Life Lost include Present Value of Lifetime earnings (PVLE) to estimate the productivity loss as a result of premature mortality. To estimate PVLE, data on life expectancy, labour force participation or economic activity rates, wages, discount rate are required. All data should be standardized for age range 18 to 75.</p> <p>2) Detailed demographic and burden of disease data, detailed data on health outcomes due to IPV, attributable fraction of burden of disease to IPV.</p>

<p>Social Accounting Matrix (SAM)</p>	<p>Macroeconomic loss: including reduced output and reduced income across various sectors of the economy</p>	<p>1) Basic data of missed days by women (and men if available), distribution of employed workers across sectors, sex disaggregated wages of employed workers.</p> <p>2) SAM for the country providing the interrelation of consumption, production and government sectors or input-output table of economic sectors.</p>
<p>Qualitative Approaches</p>	<p>Qualitative Approaches Intangible costs: costs including impacts on self-esteem, relationships, trust, social cohesion</p>	<p>1) Qualitative data, including interview transcripts and notes from individual in-depth interviews, Focus Group Discussions (FGDs), and Key Informant Interviews.</p> <p>2) Visual data emerging from FGDs.</p>

\* When there is a separation in the household due to VAWG, consumption is negatively affected. This data is useful to estimate consumption loss due to separation.

### 3.1 Ethics in Costing Research in Low- and Middle-Income Contexts

Regardless of the approach, or the context in which the research is carried out, all researchers should be attendant to ethical concerns and potential risks to both participants and researchers. Sensitive topics such as VAWG present additional ethical considerations. To minimise harm, a protocol must be put in place, with procedures designed accordingly. Principles of informed consent, confidentiality and anonymity should be followed closely. This is particularly an issue where primary data, either quantitative or qualitative, is collected. A number of useful guidelines have been produced that address the ethical dimensions of researching VAWG or gender-based violence, that also recognise the particular challenges of developing, humanitarian and/or conflict settings (WHO 2016, GWI 2017). Similar to issues identified in the WHO (2016) and GWI (2017) documents, in the What Works project, we encountered some specific challenges in relation to data collection, including:

- Risks of exposure to violence due to conflict
- Difficulties in securing privacy during interviews
- Literacy and language challenges
- Consent for women’s participation from male family members or community leaders
- Risk of distress to participants and/or researcher

A thorough review of potential risks to all involved in the research, carried out prior to data collection, is the backbone to all safeguarding processes. If the risks are high

or they outweigh the potential outcome/benefits of the research, then alternative procedures should be considered. In the case of the What Works project, the assessment conducted in South Sudan indicated that the risks to participants and researchers due to the conflict were greater than the value of collecting qualitative data. As such, the difficult decision to abandon the qualitative element of the project was made.

The design of the research tools is another important aspect of the research process. Questions must be carefully worded to address the possibility of emotional discomfort or mild distress in a sensitive manner that is least likely to re-traumatise or imply victim-blaming. In addition, poor translation of tools can intensify distress among participants. The use of professional translators, in addition to local speakers, to translate and review the research tools is important to improve comprehension and reduce potential distress caused by insensitively constructed or culturally offensive questions. Another important element of the preparatory phase of the research involves the cognitive testing of the research tools. In the What Works project, a selection of translated questions was identified as being potentially sensitive and/or difficult to understand. A workshop with a small group of people from the areas in which the study was undertaken was organised to examine the meaning and impact of these questions. The participants helped us to identify where questions were unclear or where the language was insensitive to the particular context.

Thorough training of staff is also critical to ensure that enumerators are adequately prepared to deal with the challenges posed by issues, such as privacy, consent and literacy. This training should include specific modules on collecting sensitive data, gender, and ethics in research on VAWG. In the What Works project in Pakistan, it became necessary to provide additional training after it was found that few women reported violence in particular regions. An assessment of the data collection processes found that enumerators were inadequately prepared to deal with the challenges of privacy and participants' reluctance to discuss stigmatised issues. More in-depth training resulted in considerably improved rates of reporting of violence in a re-survey of these areas. For example, enumerators were trained on the use of vignettes to elicit responses and additional ways of distracting interlopers in the household who wanted to listen in or be present during women's interviews, such as the use of dummy surveys.

A good awareness of the particular context in which the study is being undertaken is another requirement for ethical research. For example, in Pakistan, it was necessary to secure permission from local authorities prior to conducting surveys or undertaking qualitative research within communities. Without this, participants could be viewed by others in the community with suspicion and be subject to gossip or worse. Similarly, across all our sites, the initial survey with the household head, who in the majority of cases was the husband or father, helped us to identify the woman respondent for the household. Thus, the majority of women respondents took part in the subsequent Women's Questionnaire with the knowledge of the household head, reducing the risk of the woman being seen as behaving inappropriately.

While all efforts should be made to reduce the risk of trauma and distress to participants and researchers, the nature of data collection on costs of violence may nevertheless result in distress. Field supervisors should ensure that there is a protocol in place should this issue arise. In the case of the What Works project, this involved debriefing sessions for researchers and ensuring that there were accessible supports available to participants. Where possible, such as in Ghana and Pakistan, we secured permission from local VAWG services to make referrals for women who were in distress. In South Sudan, where such services were not always available, we included social workers with VAWG training in the research team to enable them to provide immediate support to participants in distress.

### **3.2 Quantitative Methods for Estimating Economic and Social Costs of VAWG**

Figure 2 illustrates the main quantitative methods available, as well as the Social Accounting Matrix, to estimate the economic and social costs of VAWG<sup>5</sup>. In this section, we provide a brief overview of how each methodology is used to establish costs.

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5. See Ashe et al. (2016) for a more detailed discussion of these methods and examples of studies that have employed them.

**Figure 2: Methods to quantify the impacts of VAWG**



### **1) Accounting Methodology:**

This method can be used to calculate a range of direct and indirect tangible costs. To calculate the costs of service use by women due to VAWG, for example, multiply the unit cost incurred by the woman by the number of times the service was used, and sum these across sectors to derive a total cost estimate for out-of-pocket expenditure. A similar approach is used for estimating indirect costs, such as missed care work. Though straightforward, this methodology may substantially underestimate the true social costs of VAWG due to underreporting as well as recall bias while answering questions on service use due to violence. The equations that can be used to estimate costs are detailed in Annex 3.

### **2) Econometric Techniques:**

Econometric techniques enable an estimation of indirect tangible costs, such as lost income due to VAW. A reduced earnings equation is employed, which includes a standard variable for earnings and indicators for VAW, as well as a selectivity correction for labour force participation (Morrison & Orlando 2005). A limitation of this approach is the potential simultaneity between earnings and violence, as earnings may impact on a woman's probability of experiencing violence. An instrumental variables approach (inclusion of a variable that is related to violence but not to labour force participation or earnings) has been employed to overcome this problem. However, this approach has several weaknesses. For example, the instruments for violence may include physical abuse in the woman's childhood, which may also have a direct impact on earnings by affecting self-esteem and thus effort and ability (Morrison & Orlando 2005).

Alternatively, Propensity Score Matching (PSM), a non-parametric method, can be used to overcome the limitations of econometric regression analysis. It involves estimating a probit equation of risk factors for violence (e.g. age, educational attainment) and matching women with the same risk probability who have experienced violence with those who have not to compare outcome measures (such as wages) for the two groups (Duvvury et al. 2013).

### **3) Willingness to Pay:**

This method has been used to estimate indirect tangible and direct intangible costs. It is underpinned by the assumptions of basic cost-benefit analysis, which stipulates that the cost to society of an undesirable outcome equals the amount people would be willing to pay to avoid that outcome (Wilmann 2009). Economists have developed estimates of the value of a statistical life (VSL) using evidence of market choices that involve implicit trade-offs between risk and money. This method is subject to several limitations. For example, its application is limited in many countries of the Global South given the normalization of violence and the undeveloped nature of market-based valuation of life, i.e. life and other types of health insurance (Duvvury et al. 2013).

### **4) Quality of Life Losses**

Quality of Life Losses enables estimates of indirect tangible and direct intangible costs to be produced. Disability-Adjusted Life Years (DALY) is a common method within this approach. DALYs are calculated as the present value of the future years of disability-free life that are lost as a result of illness, injury, or premature death. For example, to estimate the lost quality of life resulting from an injury or disability, the average duration of a condition (from development to recovery or death) is calculated and multiplied by an assigned weight, based on the severity of the injury in comparison to death. Outcomes that do not result in mortality or morbidity, such as increased future criminality, are not captured in DALY estimates.

### **5) Social Accounting Matrix (SAM):**

By accounting for the structural interlinkages within real economies, regardless of the level of development, the SAM framework provides a firmer theoretical basis to estimate the economic costs of VAWG. It is a representation of a macroeconomic system incorporating the transfers, transactions, and relationships between macro and meso level economic categories or accounts (Pyatt & Round 1985). The SAM

framework is flexible in terms of accounting for all economic activities, such as consumption, production, and distribution, at various levels of disaggregation within the economy. Using SAM, we can estimate the loss of income due to VAWG within the circular flow of income between activities, factors, and household accounts. We can also derive the indirect impact of that loss for the other sectors in terms of both production and consumption demand by employing the SAM-based multiplier analysis. Detailed information about the application of SAM is provided in Section 4 and Annex 2.

### **3.3. Qualitative Methods in Costing Studies**

While quantitative methods have the capacity to assign numerical value to costs and losses that occur due to VAWG, and thus provide a clear indication of the scale of the problem, they also have some limitations. For instance, in constructing surveys (the basis for quantitative methods), forms of violence and potential impacts must be identified and included, prior to the survey taking place. In providing information about the full range of violence that may be experienced by women and girls, quantitative methods are thus restricted by the boundaries of the researchers' existing knowledge. Further, quantitative approaches have limited capacity to reveal the ways in which costs are actually experienced by women, families and communities. Finally, not all costs are easily quantified or assigned monetary or numeric value and are thus at risk of being lost within studies that employ only quantitative techniques.

Qualitative approaches to investigating the social and economic costs of violence are thus necessary for comprehensive costing. Such research offers the possibility of exploring understandings of forms of violence and their meaning to the quality of life of those who experience it and those around them. The use of qualitative research, often based on the words or 'voice' of survivors of violence, provides the compelling and affective expression of research findings that remind the audience that costs of violence are not, ultimately, abstract, but experienced by real people, with real consequences. Thus, the presentation of findings from qualitative research, alongside those from quantitative approaches, together motivate investment and change by stakeholders and policy makers to address VAWG.

Qualitative research, in general, involves inductive or deductive approaches or a combination of these. Inductive approaches aim to allow for the emergence of new

theories, ideas and concepts to arise from the data. Researchers using inductive approaches will often limit their knowledge of the topic in order to avoid a-priori conclusions biasing the outcomes of the study. Inductive approaches include well-known methodologies such as grounded theory, as well as lesser known qualitative data collection methodologies, such as the Gioia (2013) method<sup>6</sup> and various forms of narrative approaches, including the biographical narrative interpretive approach<sup>7</sup> (Gordon 2017). Deductive approaches, on the other hand, aim to test existing theories and are guided by a set of hypotheses. Structured and semi-structured interviewing approaches generally employ deductive reasoning with questions guided by the primary research questions and theoretical framework. In practice, research often combines aspects of both types of approaches.

Qualitative research should also be cognisant of the ways in which costs of VAWG accrue at different levels – including for the individual and their family, as well as for the community. Below, we consider some of the qualitative approaches for examining the costs of different forms of violence at the individual, household and community levels.

### **3.3.1 Examining Social Costs at the Individual and Household Level**

Numerous studies have sought to document the impact of VAWG on individual well-being, focusing on either specific outcomes related to mental health, reproductive health, participation in social and economic activities, and employment status of women and girls who have experienced violence, or impacts of violence on their children (e.g. poor performance in school). While some of these studies employ quantitative approaches, qualitative studies offer a means of deepening understanding of the pathways between the experience of violence itself and these various outcomes or costs, as well as giving a sense of the depth of the impact from outcomes that cannot be monetized. In-depth interviews, either with individuals or groups, are a critical approach to such data collection.

Deductive, in-depth interviews provide a means of advancing ‘theoretical understanding of an issue and/or to gain a more complete understanding of a

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<sup>6</sup> The Gioia method is an adaptation of the Grounded Theory approach that aims to allow for rigorous inductive methods in qualitative research.

<sup>7</sup> The Biographical Narrative Interpretive approach or methodology (BNIM) is a qualitative method of interviewing and/or analysis of narrative interviews. Interviews using this approach elicit life stories using a Single Question Used for Inducing Narrative (SQUIN), while the analysis methods pay heed to the ‘whole’ of life histories or stories, the subjectivity of the narrator and the interpretive nature of analysis (see for instance: Corbally and O’Neill 2014).

phenomenon than can be gained during a shorter study' (Ellsberg and Heise, 2005, p. 80). This approach is therefore a feasible method for all costing studies, either to gain primary data about the impacts of VAWG in women's lives, or to probe further the emergence of findings from quantitative studies. In addition to individual interviews, group interviews, such as Focus Group Discussions (FGDs), contribute to an understanding of 'cultural norms, beliefs, and behaviours [and]...capture and analyze complex motivations' (Ellsberg and Heise, 2005, p.80). This may be particularly beneficial for inclusion in costing studies, where quantitative approaches lack the nuance to capture the interaction between norms, beliefs, behaviours and outcomes that produce 'costs'. In the What Works project, both in-depth individual interviews and group interviews were included, providing data on direct and indirect costs, and the influence of social and cultural norms on the mitigation or intensification of such costs.

While interviews may involve a variety of approaches, semi-structured individual interviews and FGDs have been among the most popular in studies examining the experience and impact of VAWG. These approaches permit open discussion of topics, which follow a guide developed by the researcher and which reflects the project's research interests. They provide a forum for women to share details about the impact of all outcomes of violence that cannot be assigned a numeric cost. In the What Works project, issues such as fear, self-esteem and isolation were identified as the costs of violence, among others. A drawback of such approaches is the time investment required of the research team - in comparison to surveys, sample sizes will be notably small, yet will produce vast quantities of data, which are time-consuming to code and analyse.

The use of narratives, including life-stories, to gather qualitative data is growing among VAW researchers (see for instance, Riger et al. 2002, Gordon 2000). This inductive approach is often perceived as offering a deeper data set than traditional in-depth interviews, which usually maintain the question/response structure of structured interviews. Narrative approaches aim to allow space for respondents to contextualise their experiences in their own way, with their own language and with minimal intervention by the interviewer. This approach has the capacity to reveal unexpected relationships and connections regarding the impact of violence and what participants themselves see as 'costly' to their lives and wellbeing. It is particularly useful for exploratory studies that aim to generate new understandings, theories or even categories of costs. As with other interviews however, this approach requires considerable time-investment by researchers and participants. While this

approach was initially included in the research design of the What Works project, it was ultimately abandoned due to time-constraints. However, it offers many advantages and should be considered for use in future studies to explore the areas identified in figures 5 and 6 in section 4.2.

Participatory and visual methods in group work provide another approach to gathering data at the individual and household level. In such an approach, participants not only engage in group discussions guided by the facilitator on particular topics, but also take part in a range of different group-based activities. Examples of such activities within VAWG research may include producing 'maps' of spaces in which women feel safe/less safe from violence, producing a group narrative of a fictionalized character, or story boarding experiences. Such visual participatory methods are also particularly useful in providing an additional set of data for analysis. Maps produced through the What Works project, for instance, identified how women's use of space within their community is constrained due to VAWG – an intangible cost that may be overlooked in other methods.

### **3.3.2 Measuring Social Costs at the Community Level and Beyond**

While the approaches discussed above are primarily used to establish individual and household level impacts of VAWG, they can also provide some insight into community or state level impacts. For instance, the participatory techniques, such as the maps described above associated with participatory FGDs, can produce data that helps to identify community-level impacts, including spaces within communities that exclude women due to the threat of violence, for instance. Social cohesion, which includes various indicators such as collective identity, trust, safety, participation, etc., presents another area of investigation to understand community level costs of VAWG.

Qualitative approaches to measuring social cohesion, particularly where they are used as one part of a mixed-method approach including social cohesion measures on surveys, offer the potential to 'provide valuable data essential for a better understanding of the nature of bond and vertical and horizontal relationships that bring people together and cause them to behave in a particular way' (Shuayb 2012, p. 23). Qualitative approaches can provide added depth to understandings of the relationship between the experience of violence and the cost to communities, through loss of social cohesion due to VAWG. In the What Works project, for instance, qualitative data supplemented the findings from the quantitative survey, explaining the impact of 'gossip' by community members on women's trust in

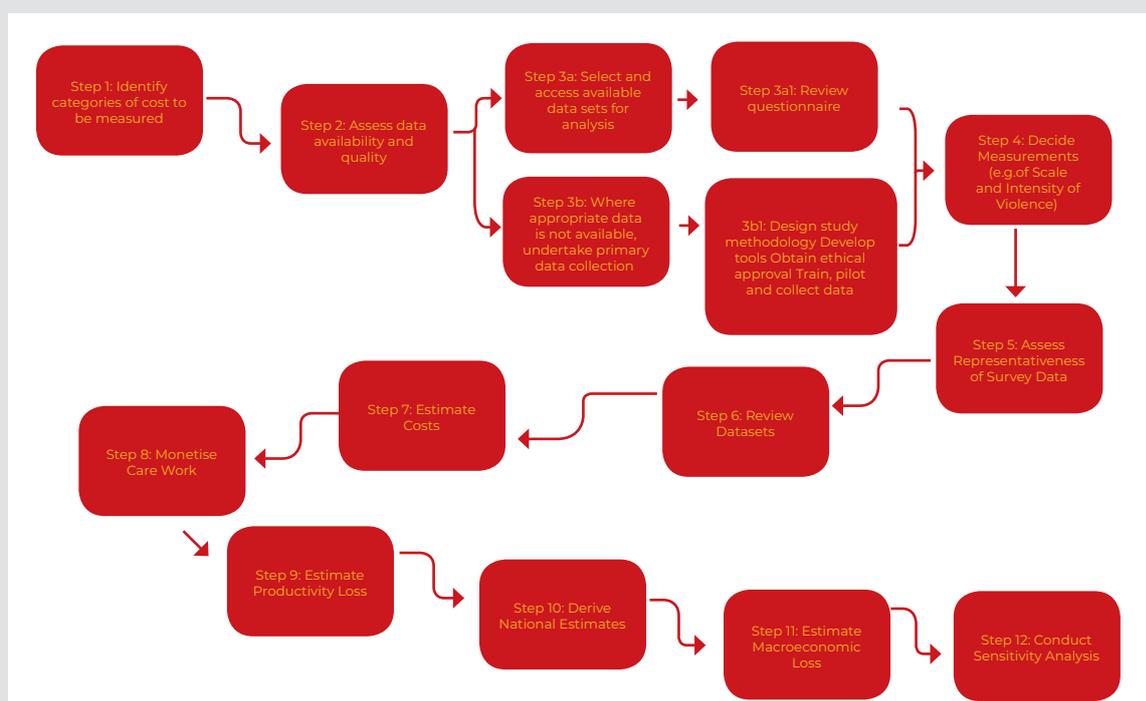
others, and consequently their willingness to disclose experiences of violence to, or seek support from, neighbours, family members and friends.

## 4. GUIDANCE FOR ESTIMATING COSTS AT THE INDIVIDUAL/HOUSEHOLD, COMMUNITY/BUSINESS AND NATIONAL LEVELS

### 4.1 Estimating Tangible Costs

In many low- and middle-income countries, national databases housing the variables required to estimate costs of the different forms of VAWG are non-existent, fragmented/inadequate or often inaccessible. In such contexts, researchers interested in estimating costs would have to rely mainly on data from specialised surveys with women focused on obtaining data on prevalence, incidents, and economic and social consequences of violence. If such basic data is available through specialised surveys, a mix of accounting and econometric approaches can be used to estimate monetary costs (tangible costs) related to experiences of violence at the individual/household level, the community or business level and at the macro level. Below, we outline the key steps and decisions to be made for data analysis to produce estimates of monetary costs.

**Fig. 3. Practical Steps for Economic Costing of VAWG**



**Step 1: Identify the category of costs to be measured.** There are a wide variety of potential costs of VAWG. Deciding which costs should, and will, be measured is thus a first and critical step in the preparatory phase of a costs of VAWG study. Once selected, the appropriate data required to examine these costs can then be identified. In the What Works project, we first developed a conceptual framework outlining how the economic and social impacts of VAWG at the individual, community and national levels translate into national losses for the economy. Based on this conceptual framework and a review of the three country specific contexts in the study, the particular costs to be measured were identified. For example, we determined that the impact of violence on women's work and thus foregone income was the most crucial cost to estimate. Then, we were able to identify the most relevant questions to explore to estimate missed workdays.

**Step 2: Assess data availability and quality.** Primary data collection has potential risks to both participants and researchers. An assessment of existing data, including from previous research projects and national level surveys, should be carried out to ascertain whether there is sufficient data of a high enough quality to gather information on the categories of costs identified in Step 1.

**Step 3: Depending on the results of the assessment:**

**3a. Select and access available data sets for analysis via an open access repository or by securing permission from data set owners.**

**3a1. REVIEW THE QUESTIONNAIRE:** The research team must review the questionnaire and list the costs that can potentially be estimated using primary survey data and available national level data. This step is particularly important for those researchers who have not been involved in the design of the questionnaire. This listing of possible cost estimates would indicate the mix of methods that can be applied to derive the desired estimates. For example, the questionnaire may ask questions related to out of pocket expenditure but not lost productivity. In such a case, the researchers may have to restrict the cost estimates to out of pocket expenditure.

## And/or

### **3b. Where data sets to address the study objectives are unavailable, undertake primary data collection.**

**3b1. DESIGN STUDY METHODOLOGY:** Where primary data is to be collected, a range of steps are required, including the decision to undertake quantitative and/or qualitative data collection. Appropriate tools must then be developed and ethical approval sought from the appropriate sources. Once approved, the tools should be tested and piloted, enumerators should be trained in ethics and data collection processes, and distress protocols should be developed. Finally, data should be collected and cleaned/transcribed in preparation for analysis. In the What Works project, consent and information sheets were developed to ensure that participants understood the purpose of the research and their rights (e.g. to decline participation, refuse to answer any question, to stop the interview, etc.). These are necessary and critical elements of any research but are of particular significance when engaging participants to take part in research on sensitive issues such as violence. The research tools, as well as the consent and information sheets, were translated from English into the relevant local language(s) by professional translators. The translations were then checked by local speakers. The capacity and characteristics of enumerators is of critical importance to ensure quality data is collected. Attention should be paid to the experience of potential field teams, particularly in terms of working on gender issues and knowledge of the local context, as well as to the gender and ethnic composition of interviewers to reduce possible tensions. In the What Works project, care was taken to recruit field staff reflecting the ethnic composition of the population in all three countries. In South Sudan, which was in a state of conflict at the time of the field survey in 2016, distrust between ethnic groups was a palpable risk for both respondents and interviewers. The interviewers selected for survey implementation were from the specific regions selected for the survey and were matched to the ethnicity of respondents in the selected regions. The research teams in all countries involved women's organisations in the training of fieldworkers and supervisors to provide a deeper understanding of the gender and cultural context as well as insights into the best ways to engage with respondents in a sensitive and non-judgmental manner.

#### **Step 4: Decide measurement of scale and intensity of violence.**

The primary survey is often undertaken with a clear definition(s) of the form(s) of violence, including the specific behaviours of violence, to be measured. A key initial decision is how to measure prevalence of violence – whether as lifetime, i.e. ever prevalence, or past year prevalence, i.e. current prevalence. The decision to choose ever prevalence or past year prevalence could depend on the impacts of violence being measured. For example, if the impact being considered is reproductive health outcomes, measuring ever prevalence would be more appropriate. On the other hand, if the impact being measured is missed workdays, then measuring past year prevalence would be more appropriate due to recall bias. Equally important is defining intensity of violence which is often a combination of number of behaviours experienced and the frequency of each type of behaviour. With such a combination, a severity index of violence can also thus be constructed. For example, in the What Works project, severe violence refers to economic or psychological violence with a frequency greater than 10 times in the last 12 months, physical violence greater than 3 times in the last 12 months and any behaviour of sexual violence in the last 12 months. By contrast, moderate violence was defined as physical violence experienced once or twice, and economic and psychological violence 6-10 times. Low-level violence included only economic and psychological violence below 5 times. Equally, a severity index could be constructed by assessing individual behaviours across economic, psychological, physical and sexual violence as low, moderate or severe. This would involve a judgement, for example, whether or not a slap is less serious than choking in the case of physical violence or a threat to divorce is more severe than an insult in case of psychological violence.

**Step 5: Assess representativeness of the survey.** Establishing the representativeness of the survey is required before moving to derivation of estimates. The representativeness should be checked by reflecting on the survey design. For example, in What Works study, the survey was designed to be representative of women (18-60); in such a scenario, key variables that were assessed in relation to available national estimates for women (18-60) included age distribution, marital status, education, and household socio-economic status. Sometimes, the survey is not representative of characteristics of the respondents on which a researcher wants to do an estimate because survey design didn't include it, or the sample estimates do not match the national estimates. In such circumstances, to a certain extent, under or over representativeness in the sample can be addressed. Step 10 provides a brief description about addressing under or over representativeness of the survey data.

**Step 6: Review the dataset(s).** The key aspect of reviewing the data involves having an initial glance at the descriptive statistics of various variables that can be used for estimating costs. If too few women have answered a question, then an alternative variable within the data to establish the cost should be used. Similarly, outliers in the data need to be carefully examined and removed if there are any errors or the sample is very small. Another aspect of reviewing the data involves dealing with missing data; for example, in primary survey datasets, women may say yes to accessing services but do not provide any expenditure information. Given the already underreporting of violence related costs in primary surveys, it would not be ideal to exclude women from estimation. Although they could not recall the amount spent, they incurred costs. In such a scenario, replacing missing values with the average value of those who provided the expenditure is a possible solution. Regression analysis is another alternative to replace missing values of the variables (see Box 1 below). A word of caution is that regression modelling may be quite challenging when the sample size for a particular variable is small. Thus, the decision to replace missing data needs to be made carefully based on robustness of the data.

### **Box 1: Multiple regression model method to replace missing data**

#### **The multiple regression model is useful to fill missing gaps in data:**

- In order to estimate missing data regarding wages for waged female workers, regression can be undertaken by regressing the wages on the job characteristics, in addition to the age, the educational level, and place of residency of the waged worker.
- The opportunity cost approach can be used to estimate the daily earnings for the self-employed, employers, and unpaid female workers by regressing the daily reported wages on the job characteristics (excluding the contract) and age, education, and place of residency.
- The missing wage values of the spouses can be estimated by regressing the daily reported wages on the occupation, economic activity, age of the husband.  
See Duvvury et. al (2016) for further details

**Step 7: Estimate tangible costs.** Two possible methods are available to estimate direct and indirect tangible costs using the survey data: direct method or indirect method. The direct method can be used if the survey data refers to questions asked of women who experience violence in the reference time frame (ever or last 12 months) regarding various consequences, such as expenditure for accessing services, missed paid or unpaid work, missed care work, etc. A limitation of the direct method is that there could be a recall-bias, especially when respondents are asked questions involving a very long period of time.

By contrast, the indirect method can be used if questions are asked of all women in the survey before asking violence related questions. For example, questions on work status, wages, absenteeism, or presenteeism, care work or expenditure data for health, legal expenses, replacement of damaged property, or children missing school could potentially be asked of all women. In such a situation, a comparison between the means (average) for each group (those who experience violence and those who do not) can be used to determine if there is a statistically significant difference between the groups. A comparison of group means by controlling for variables like marital status, number of children/dependents, age, family type, years of working that can affect the difference in means using PSM can also be used. Another alternative is using beta coefficients through regression analysis, controlling for other independent variables. The indirect method can provide better results depending upon the robustness of the applied econometric model. A good approach is to compare the results from both methods and make the final call looking at the richness of the data. In the What Works project, we used the indirect method where it was feasible as the better method of estimation. See Annex 3 for the specific equations used.

**Step 8: Monetise care work.** An important step is assessing how to monetise some of the variables for which there is no agreed method, for example, care work missed due to violence. Three approaches discussed in the literature are opportunity cost, generalist replacement cost, and specialist replacement cost to monetise the care work all women do. The first, opportunity cost approach, is based on assessing the potential wage an individual would earn in the paid labour market if the woman did not do care work. The most common wage used is the potential wage of the

person based on sex, education level and age (Folbre 2015). This assumes that there is paid work available and wages are determined by the qualifications and experience of the person undertaking the work; in other words, different wages for the same work based on who is doing the work. In the case of women engaged in paid work, the individual's hourly wage is the value used to monetise care work. The generalist replacement cost approach employs wages for housekeepers/ elementary occupations or the minimum daily wage set by governments to value unpaid work. By contrast, in the specialist replacement cost approach, the value of unpaid work for a specific activity is assessed by multiplying the compensation or wage rate of a specialist engaged in this activity by the time spent carrying out the activity. A limitation of this method is that it is affected by a disparity in productivity between people engaged in unpaid work and an occupation due to differences in economies of scale and in the capital equipment ratio.<sup>8</sup> The final decision on which method to use is again driven by the availability of detailed time use data on different care work activities, as well as wage data for all the different specialist tasks involved in care work. To reduce the risk of overestimation (as women may not recall with great accuracy the hours involved in unpaid domestic production and care work activities), it may be necessary to cap hours at an acceptable number per day, taking into account the need for sleeping, eating and basic personal bodily care at a minimum. Another option is to use time-use data (if available in the country) to replace any outlier values. In the What Works project, we opted to present estimates of the number of missed days of care work, rather than monetising the days missed. The number of days lost is often better understood than monetising missed work as a percentage of GDP. If the available data is insufficient to monetise accurately, it is recommended to instead present the number of days.

**Step 9: Estimate productivity loss.** In the human management literature, productivity loss is often measured through absenteeism, tardiness and presenteeism. However, direct measures of productivity impacts of violence have not been assessed in most violence-related costing studies. On the other hand, most studies on economic costs of violence have assessed productivity loss via earnings differentials between those experiencing violence and those not experiencing violence. This is a robust method if the majority of women are in waged employment.

<sup>8</sup> <https://www.unecce.org/fileadmin/DAM/stats/documents/ece/ces/ge.30/2006/sp.24.e.pdf>.

However, in many low- and middle-income countries, women are primarily engaged in self-employment or unpaid domestic work. An innovation in our research is the indirect method of estimating productivity loss as described above. This is a simple 5-item scale to measure absenteeism and presenteeism (see Annex 4 for the specific questions) for all working women.

Productivity loss due to VAWG for businesses has been relatively unexplored in the low- and middle-income countries. At the business level, scales for absenteeism, tardiness (which is also an issue of concern for businesses) and presenteeism can be similarly constructed to assess the difference due to experience of violence. Additionally, this measurement can be done for perpetrators and for bystander colleagues who provide support for survivors of violence. Such estimates would help to demonstrate that violence directly or indirectly affects the majority of employees in the business/firm. The business data estimates of the What Works project provides evidence that supports the productivity loss happens for survivors, perpetrators as well as colleagues.<sup>9</sup>

**Step 10: Derive national estimates.** An important aspect of estimating costs is to extrapolate the costs from the sample to the national level i.e. for all the women in the country. The roots of this estimation are laid out in the sampling technique used for doing the survey. If the survey is nationally representative and second checks as laid out in Step 5 have been performed, population weights can be used to produce estimates for the entire country. Most survey agencies provide population weights; however, some only provide sampling weights. In the absence of population weights, weights can be estimated by the researchers for each sampled woman by multiplying the woman's sampling weight by  $N/n$  where  $N$  is the national country estimate of the number of women and  $n$  is the country sample size. When extrapolating, it is important to provide results with 95% confidence intervals, as they provide a range in which an estimate may lie. If the survey data is not representative of the national data either because of the survey design or the distribution of respondents' characteristics, such as age distribution, education level etc. as laid out in Step 5 do not match the national estimates as expected from the survey design, extrapolation using population weights should not be done.

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<sup>9</sup> A potential concern is that business managers could further discriminate against women if their productivity loss is higher than that for male perpetrators. The few studies that have been conducted in Canada and Peru highlight that male perpetrators have a productivity loss roughly the same as female survivors of violence. See: [http://dvatworknet.org/sites/dvatworknet.org/files/PAR\\_Partner\\_report-Oct-23-2017dl.pdf](http://dvatworknet.org/sites/dvatworknet.org/files/PAR_Partner_report-Oct-23-2017dl.pdf); <https://www.giz.de/en/downloads/giz2014-0251en-violence-women-financial-consequences-peru.pdf>

If the sample is not representative of the population, proportions within the sample can be used to address under or over representativeness of the sample data in comparison to the national data. For example, by survey design as well as by comparison of national estimates, the What Works project data was representative of women and girls (18-60), but not of working women and girls (18-60). However, to account for this shortcoming in the data, proportions from the sample of working women were used to extrapolate to the national level. This corrects for the shortcoming because although the proportion of working women in the sample is not reflective of the national figure, the proportion of those missing work due to violence within those who are working can be assumed to be representative of the national figure. In the What Works project Ghana study, 24.13% working women in the sample reported experiencing IPV. However, as the survey data was not representative of working women (18-60), population weights were not applied to extrapolate the total number of working women experiencing IPV as this would have led to incorrect estimate. In this scenario, the proportion of working women experiencing IPV (24.13%) was multiplied by the total number of working women in the country as per available national estimates to estimate the total number of working women experiencing IPV. This corrected for under-representativeness of working women in the Ghana sample; had the Ghana sample included a few more working women which would have made the sample representative of working population in Ghana, it can be safely assumed that in those small number of additional women that are added in the sample, 24.13% would be experiencing IPV.

**Step 11: Estimate macroeconomic loss.** National estimates provide losses to the households but do not capture the multiplier effect for the economy overall. Such a loss to the entire economy (or macroeconomic loss) is crucial for policymakers. For estimating such a loss, an innovative methodology used in the What Works project is the Social Accounting Matrix (SAM). SAM provides comprehensive links of various sectors of the economy i.e. household, production, government, import-export. It is important to have a recent SAM for the specific country for which costs are being estimated. See Appendix 3 for a more technical discussion of the SAM approach and the required manipulation.

**Step 12: Sensitivity analysis.** If there are available economic evaluation studies on interventions aimed at reducing VAWG for the studied country, a further sensitivity analysis can be undertaken of macroeconomic loss estimated in the What Works project. Such a sensitivity analysis can be conducted in the form of Benefit-Cost ratios (BCRs), where the 'cost' in BCR is the cost of interventions to reduce the prevalence of VAWG. The 'benefit' in BCRs can be measured by the reduction in macroeconomic loss due to a reduction in the prevalence rates of VAWG in the future. In most of the benefit cost studies on violence, the benefits have primarily been measured in terms of a reduction in the prevalence of VAWG. However, the What Works project has assigned a monetary value to the benefits in the form of reduction in macroeconomic loss.

A range of expected reduction in prevalence rates of violence can be used, depending upon if the intervention is going to be slightly, moderately or highly successful in reducing VAWG. Different reductions in prevalence rates would lead to a different range of reductions in the macroeconomic loss, and thus different BCRs can be estimated. Multivariate sensitivity analysis can also be conducted by varying the discount rates of benefits with varied prevalence rates.

#### **4.2 Estimating Intangible Costs through Qualitative Approaches**

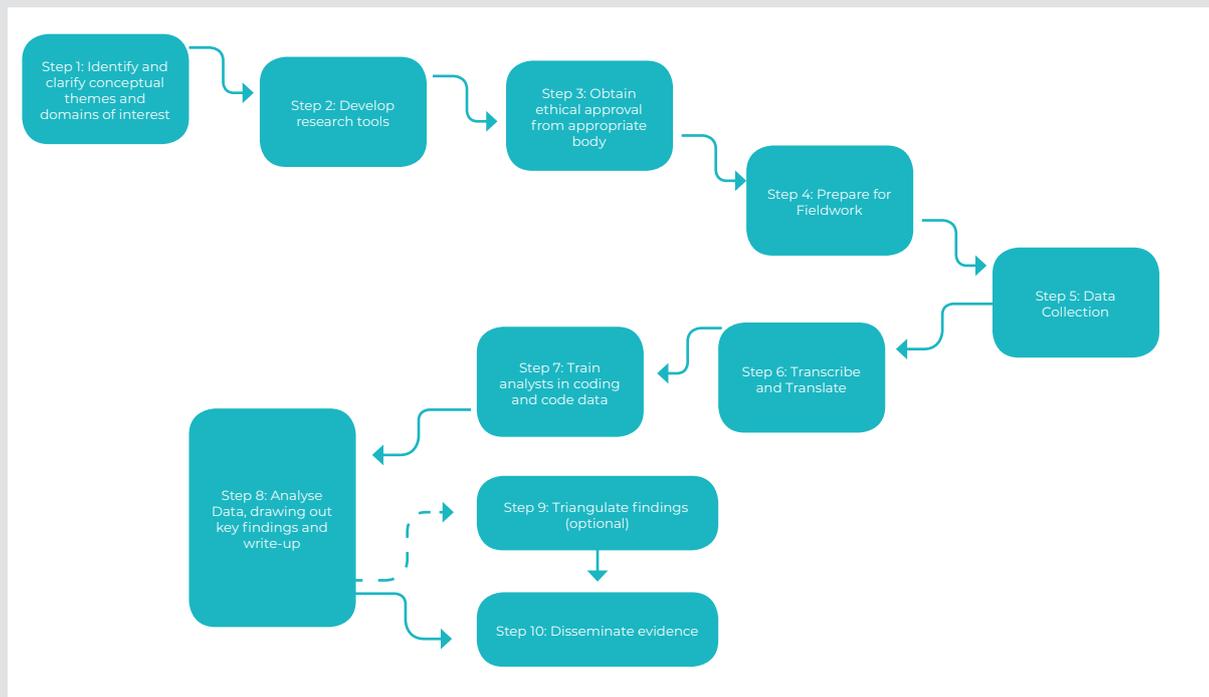
The selection of qualitative approaches for costing of VAWG should be guided by the research questions and project aims. In the case of the What Works project, there was, first, a need to deepen understanding of the findings generated through quantitative surveys to add context and meaning. To address this, a deductive method was employed that integrated key themes and topics from the quantitative research into the qualitative research. This was accomplished through intensive and ongoing interaction between researchers leading the quantitative aspects of the research and those leading the qualitative aspects of the research throughout the project life-cycle, and particularly during the development of surveys, to ensure coherence across the project as a whole. Second, there was an acknowledgement that given the vastly different contexts the project was carried out in (Ghana, Pakistan and South Sudan), there may be forms of violence and costs that we, as researchers, had not considered. For this reason, there was a need to integrate and

allow space for unexpected topics and discussions to emerge through the qualitative research. Ultimately, the approach chosen needed to be able to identify and explain the impact of intangible costs which could not immediately be assigned a monetary value and help clarify the pathways through which violence produces costs across time and at different social levels.

Given these aims, the qualitative research approach included a range of interviewing methods, including individual in-depth interviews (IDIs) with women who experienced violence, as well as women who did not, participatory focus group discussions (PFGDs), including groups of women and groups of men in both urban and rural settings, and key informant interviews. Visual methods were integrated into PFGDs to assist in understanding community and individual level costs of violence, for instance, on the use of space in the community by women. Such approaches should be considered in any costing study, with final selection reflecting the requirements of the particular study. Questions for the research design include the following: will the qualitative research act as a supplement to quantitative research? Will it stand alone? Is the primary goal to develop new understandings or to 'test' and deepen knowledge of existing information about VAWG? The qualitative research design should clearly reflect these considerations.

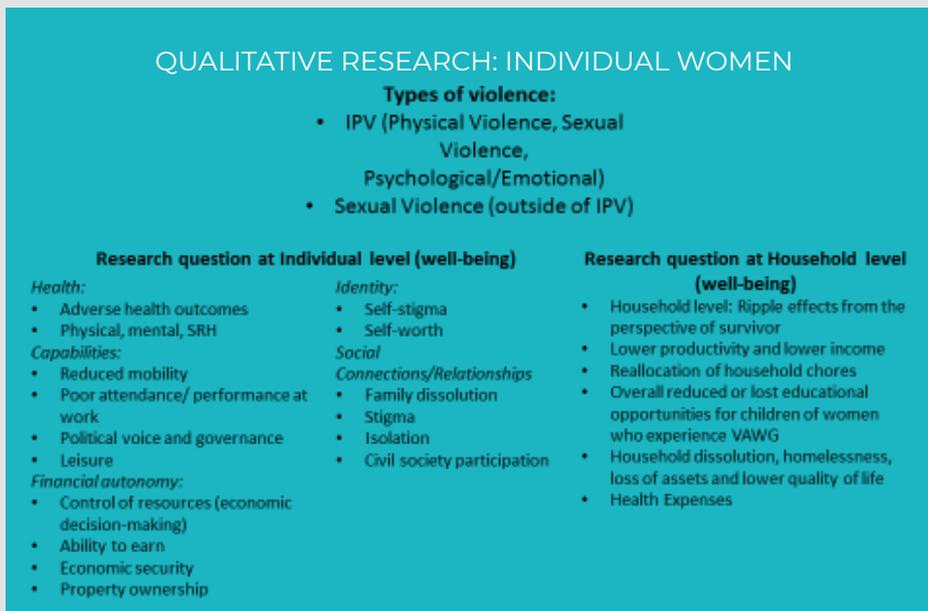
Due to the desire to deepen understanding of the findings from the quantitative surveys, the qualitative research in the What Works project was staggered, to be conducted following the surveys. Women participants for the IDIs were selected from a sample of women who undertook the survey and agreed to be re-contacted. This approach is particularly useful when the qualitative component of a mixed method study aims to deepen understanding of the findings from a survey or other quantitative method. Engaging a sub-set of participants from the quantitative study provides a more rigorous approach to unpacking key findings through discussion. Below, we detail the steps involved in carrying out the qualitative research component of the What Works project, which can guide researchers in undertaking qualitative costing research.

## Fig. 4 Practical Steps to Costing VAWG through Qualitative Approaches



**Step 1: Identify and clarify themes and domains.** Prior to commencing the development of tools or data collection, researchers should review existing studies on VAWG in general, in particular the specific study context and costs of VAWG in order to identify potential areas for further exploration. In mixed-methods studies, this should be followed by a discussion with the quantitative team to ensure that questions on the quantitative surveys also address these key issues where possible. This iterative approach ensures that there is coherence in focus and approach across different components of a mixed-methods study and produces a set of key domains of interest that act as a practical template for developing interview guides and for analysis. In the What Works project, this approach produced the following set of domains for qualitative interrogation (Figures 5 and 6), responding to our key research questions.

**Figure 5: Domains of research at individual and household levels**



**Figure 6: Domains of research at Community Level**



**Step 2: Develop research tools.** Qualitative research, as with all empirical research, requires a set of tools that can be applied consistently to collect data that can be analysed to develop and understand costs. While inductive approaches, such as narrative approaches, may have as little as one over-arching question designed to elicit an open discussion, deductive approaches and combination approaches are likely to include more, well-developed and specific questions relating to identified themes and queries. In the What Works project, based on the domains identified in Figures 5 and 6, interview and PFGD guides were developed. Questions were

designed to both seek responses that addressed the identified domains, as well as some general questions that permitted a wide variation in response.

### **Step 3: Ethical approval must also be obtained from the relevant**

**ethics body.** As with the quantitative aspect of the research, in the What Works project, consent and information sheets were developed to ensure that participants understood the purpose of the research and their rights (e.g. to decline participation, refuse to answer any question, to stop interview, etc.). The research tools, as well as the consent and information sheets, were translated from English into the relevant local language(s) by professional translators, in addition to local speakers.

### **Step 4: Prepare for Fieldwork.**

**Recruitment and Training of Field Teams.** As noted in the quantitative section, the experience of potential field teams, particularly in working on gender issues and knowledge of the local context, as well as the gender and ethnic composition of interviewers, is of critical importance to ensure data quality and to reduce possible tensions. In the What Works project, local researchers were identified by the local partner organizations in-country. All researchers who conducted IDIs with women were also women. PFGD facilitators for women's groups were women, and for the men's groups, they were men. Researchers of the same ethnicity were selected to carry out interviews, where relevant, but from different regions than the participants. Interviewers were trained on the use of the qualitative instruments by the lead qualitative research organization and experts from the in-country partner organization. Training took place for 3 to 5 days, depending on the existing level of expertise and knowledge on qualitative methodologies. Teams were given specific training on ethics in research and gender sensitive research approaches, and they were taken through the translated instruments. Role play sessions were used to test and shape the interviewing skills of the interviewers. A strong training component for field teams in preparation for the field work is important to ensure ethical and high-quality data collection.

**Pilot tools and revision.** Qualitative research should be flexible and responsive given the uncertainties of what could arise in interviews and discussions. Piloting and revising tools as needed is required to prepare researchers for the field and ensure that tools are appropriate for the task. In the What Works project, a mock PFG with volunteer participants was conducted to test the group interview tools developed. The tools were then revised according to participants' feedback and researchers' experiences of leading the pilot discussion. Guides for IDIs and PFGs were also

piloted during the training session for the fieldwork team and revised as required. Finalize a detailed recruitment plan and develop a data collection approach designed to fit the overall timeframe. Careful planning and thought needs to go into the design for recruitment and data collection, keeping in mind the constraints of the project timeline. The team recruited has a fundamental impact on the data produced and should therefore reflect project aims and objectives. Inclusion of key informants, for instance, is important to understand contextual issues, while broad-based community PFGDs provide increased knowledge about community norms and attitudes.

In the What Works project, women recruited for the qualitative data collection included those who self-identified as survivors of violence (IPV and NPSV in particular) as well as women who did not identify as survivors of violence. Women who had taken part in the survey were asked to indicate if they would be willing to be re-contacted. The sample of women for the IDIs was then drawn from those willing to be re-contacted and who provided their contact details. Strata included location (urban/rural) and age.

While this approach was particularly useful to allow for the investigation of findings among a sub-set of the same sample who completed the survey, contextual issues, such as clear re-contact information and potential risks to participants, may not always permit this approach. In Pakistan, using the re-contact method provided an insufficient number of women to participate in the research. 'Snowball sampling', where participants helped identify others who would be interested in taking part in the study, was therefore used to increase the number of participants to reach a satisfactory sample size.

For the PFGDs, groups of six to ten women and men explored gender norms and perceptions of violence against women. The PFGDs for men were conducted in different towns to the female PFGDs; however, the selected towns for men needed to have similar characteristics to the towns selected for the female PFGDs. Key informants (KIs) were selected based on their involvement in addressing and preventing VAWG in Ghana and Pakistan. The KIs included men or women who held formal and informal leadership positions in the community where the study took place, as well as having lived there for more than five years. The approach used allowed for deeper investigation of findings that emerged from the quantitative component, as well as providing more context and allowing for new issues, such as the withdrawal of women from leadership activities, to emerge.

**Step 5: Collect the data.** Attention should be paid to the safety of both researchers and participants in carrying out data collection, as well as to practical issues such as weather, conditions of social unrest, and the impact of seasonal work on the available sample. With these considerations in mind, qualitative data for the What Works project was collected over an intensive period of approximately one month, following the completion of quantitative data collection in the relevant locations. Interviewing teams had at least two interviewers each and, in Pakistan, they included an independent observer on each team. For FGDs, refreshments were provided as sessions were typically over 2 hours in length and participants were notably fatigued. In some contexts, as was the case in Pakistan, it may be necessary to seek permission from the government or other local authorities to collect data. This should be evaluated on a case-by-case basis.

**Step 6: Transcribe and translate the data.** In order to protect the identity of participants, transcripts and fieldnotes should be transcribed and anonymized. In Ghana, where all participants agreed to be audio recorded, verbatim transcripts of all interviews were completed and translated into English. In Pakistan, where no participants agreed to be audio recorded, detailed notes on all interviews were transcribed and translated. Maps drawn during PFGDs were also translated. Any references to names, specific places, or other identifying details were redacted from the transcripts and notes. To protect the identity of participants, each transcript was assigned a participant ID code, e.g. Urban\_IDI\_001. Data was then stored on password encrypted computers. Researchers should ensure that data storage meets the relevant regional regulations, such as the General Data Protection Regulations in Europe.

**Step 7: Train the analysts and code the data.** In-depth training is not only required at the data collection phase, but also at the analysis phase to ensure consistency of approach where multiple researchers are involved. In the What Works project, ICRW conducted virtual trainings on qualitative data analysis with the in-country research teams. The training focused on qualitative analysis (uses, strengths, types), coding qualitative data, creating coding schemes, and how to use Nvivo.

Following the training of analysts, experts at ICRW worked with the country teams to create a qualitative coding scheme. For the coding scheme, a list of likely themes was formed based on the study objectives and an initial reading of the data to allow

for the emergence of new or unexpected themes, along with a code definition list. The coding scheme addressed the costs and impact of violence on three levels: the individual, household, and community levels. Additionally, the coding scheme included categories for types of violence and risk factors, including individual risk, risky situations, and gender norms. When coding, phrases, sentences, and paragraphs were mapped to the relevant codes described by the coding scheme.<sup>10</sup>

Reliability and reproducibility are also important concerns for qualitative data analysis. To ensure that the analysis of findings met these criteria, ICRW and the in-country teams conducted an initial round of analysis focused on inter-rater reliability, where a sub-section of the transcripts were coded by both teams to ensure standardized coding and to identify any new themes that required additional codes. After the first round of coding, any new themes that emerged were assigned a code. The process was then repeated with another subset of transcripts. One third of the transcripts from both countries were coded by both ICRW and the respective in-country teams to ensure reliability. The remaining interviews and discussions were coded by the in-country teams. These efforts were designed to reduce issues of variability between researchers and to strengthen the reliability and rigour of the analysis.

### **Step 8: Analyse the data, drawing out key themes and write up**

**findings.** In thematic content analysis approaches, which are commonly used in qualitative data analysis, key themes emerging from the coding process are extracted and used to produce overarching or particular findings. This permits the myriad different codes which may be difficult to convey to an audience, to be grouped and assessed under more general summaries. To do this in the What Works project, coding summaries were created for each individual code, noting patterns and themes within the code, connections to other codes, and differences between various strata. Coded findings were grouped into broader themes that responded to the key research questions, as well as some unanticipated findings that emerged. The findings were then summarized in general and supported using quotes from participants. In doing so, attention was paid to differences between the various strata (gender, age, location).

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<sup>10</sup> For more on approaches to coding in qualitative research, see: Flick (2018).

**Step 9: Triangulate with quantitative findings (optional).** This step involves comparison and contrast with the findings that emerged from the quantitative data in the case of mixed method studies. In some cases, the qualitative data may provide an explanation for the findings that emerged from the quantitative aspects of the study, while in others, they may challenge these findings. For instance, in the What Works project, there were very few reports of sexual violence in the surveys in Pakistan, while participants in PFGDs identified sexual harassment and violence as common and of considerable concern to women in the country. In some other cases, issues not considered or identified in the survey emerged from the qualitative research, such as, for example, in Ghana, the impact on women's leadership due to IPV.

**Step 10: Disseminate the findings.** In order for research findings to be translated into concrete actions, they must be adequately disseminated to key audiences. Stakeholder meetings, preferably with stakeholder groups formed early in the project and thus who feel a level of engagement with the project as a whole, are a useful way to share information. Specifically, for costs of violence research, workshops that help policy-makers and stakeholders to understand the process of generating costs and thus to engage in their own costing work or projections, has a particularly strong influence on securing buy-in and usage of data and outputs. In the What Works project, this proved very helpful, as evidenced by participant feedback. Finally, returning the evidence to the communities who participated should also be considered where it does not create risks of identification for participants. Infographics and other visual methods of communication are particularly appropriate to overcome potential issues of literacy or language.

## 5. INNOVATIONS, CHALLENGES AND RECOMMENDATIONS FOR COSTS OF VAWG STUDIES

To conclude, while VAWG is clearly recognised as a gross violation of human rights, its economic and social costs have received less attention. Nevertheless, recognition of the need to advocate for action to end VAWG through multiple channels, armed with a variety of forms of evidence, is growing. Costing of VAWG presents one such piece of evidence.

This increasing recognition of, and demand for, estimating the costs of violence requires robust costing methods that can be used in a variety of different contexts. Given the dearth of information on effective costing approaches in low- and middle-income countries, where robust data sources may be less available, this guidance aims to assist researchers in carrying out studies on the costs of VAWG using primary survey data and national level data. It also provides guidance on using qualitative methods to estimate intangible costs and to provide a deeper understanding of the social impacts of VAWG.

Drawing from the extensive costing experience of the authors and from the What Works project – an innovative, multi-country, mixed method costing study - a number of innovations in costing approaches are detailed. Future researchers can use these innovations as a reference tool in designing costs of VAWG studies.

### **Innovations**

- Expanding the focus on forms and types of violence to include economic and psychological violence, in addition to physical and sexual, and covering various locations in which VAWG can occur, such as in the home, in the workplace, in education and in public spaces
- The Social Accounting Matrix (SAM), which enables the estimation of the full macroeconomic loss due to VAWG to be estimated.
- Methods for estimating productivity loss in relation to presenteeism, adapted to low- and middle-income contexts.
- Including qualitative methods for unpacking intangible costs, impact pathways and intergenerational effects of VAWG.

While the innovations described demonstrate the potential of undertaking costs of violence studies in low- and middle-income contexts, there are some challenges that researchers are likely to encounter. Below, we outline some of these challenges and possible means of resolution.

## Challenges and Means of Resolution

- **Lack of available rigorous data:** In many low- and middle-income countries, national databases housing the variables required to estimate costs of VAWG are non-existent, fragmented/inadequate, or often inaccessible. As such, this document provides stepwise guidance on analysing specialised primary survey data and relevant national level data for the estimation of specific costs.
- **Missing data from surveys:** Participants often do not answer all of the questions on a questionnaire. Where this occurs, a possible solution is to replace missing values with the average value of those who provided the expenditure or to conduct a regression analysis to replace missing values of the variables. A word of caution is that regression modelling may be quite challenging when the sample size for a particular variable is small. Thus, the decision to replace missing data needs to be made carefully based on robustness of the data.
- **Low participation/re-contact rates:** Recruitment of women for participation in qualitative research via participation in the quantitative survey is advocated. However, in some contexts, such as where migration occurs frequently or where women do not have their own phones, this method may not be appropriate. Snowball sampling, starting from any women who did provide accurate re-contact details, women's NGOs or other sources, presents as an alternative to increase recruitment. Though, as with any approach, there are limitations to snowball sampling, such as the likelihood of similarities among cases in the sample.
- **Conflictual findings in quantitative and qualitative data:** It is not uncommon in mixed methods research to find that qualitative and quantitative data produce conflicting findings. Rather than perceiving this as a problem, researchers should consider this as a finding in itself and consider the reasons why this may have occurred. For instance, in the case of the What Works project in Pakistan, low reporting of sexual violence on the survey compared to group discussions pointed towards the impact of stigma and shame – an important finding in its own right.

- **Underestimation of costs:** A specific challenge for costing studies is that the prevalence of VAWG is often underreported in surveys, which can underestimate the cost at the national level. Thus, it is always important to explicitly note that the estimates produced are likely to be underestimates. However, it should be emphasised that the unit costs – out-of-pocket expenditure by women using services or days missed by working women experiencing violence- are representative and indicate the magnitude of the impact of VAWG at the individual level. It is good practice to identify benchmarks at the level of the individual to highlight the significance of these costs. For example, out-of-pocket expenditures can be benchmarked in terms of annual per capita non-food expenditure, which is available in most countries, or the missed days of work as a percentage per capita of GDP or national income. Attention should be given to identifying appropriate benchmarks within a specific country context.

There are also critical challenges that arise given a particular context in a country, for example, conflict. In a conflict context, it is more difficult to identify and access a nationally representative sample to collect primary data for costing given that national databases are unlikely to be properly updated. Additionally, it may be that economic activity is suppressed generally in a context of generalised violence, thus making it more challenging to attribute specific costs to violence against women in particular. Another challenge is that with a fluid economy and volatile exchange rate, monetary estimates are likely to be extremely unreliable. Lessons from the South Sudan suggest some adaptations that need to be considered for costing studies. These include, in particular, focusing on parts of the country where primary field work can be implemented safely, potentially undertaking small case studies in sectors which are economically active (maybe specific service sectors). This provides depth and context to the cost findings and ensures that cost estimates are expressed in appropriate non-monetary terms, such as days of care work, days of missed school or days of missed work.

The innovations, challenges and resolutions encountered through the What Works project are important contributions to the body of knowledge on costing VAWG. They expand our understanding of the economic and social impact of VAWG by enabling the production of a wider range of, and more in-depth, costs. Drawing from these experiences, the following are our overarching recommendations to researchers planning on undertaking costs of violence studies.

## Recommendations

- **Be clear on what is being costed.** There are many types of VAWG that may occur in various locations. Identifying the focus of the study is critical to ensuring that adequate data is available and that the study is feasible.
- **Consider data availability in choosing the relevant method.** While there are a wide variety of costing methods, feasibility will depend on the data available. Knowledge of the primary and secondary data on costs of violence is necessary as a first step before choosing the analysis method and the adaptations that are possible.
- **Where primary data is being collected (quantitative or qualitative), care and attention are required in the preparatory steps.** Clarity of definitions, data requirements for estimating costs, participant recruitment (including representativeness and appropriate strata), and the quality and training of the field work and analysis team are all key elements of producing robust data.
- **Be attendant to context-specific ethical concerns.** While issues of confidentiality, consent and anonymity are critical ethical issues for all research projects, research on sensitive issues such as VAWG in contexts that are highly patriarchal and/or experiencing conflict require additional consideration. Assessment of possible risks is required, such as physical danger due to conflict or retaliation by family or community members; psychological risks, including lack of support services for distress; and the emergence of conflict between researchers and participants due to differences in gender, ethnicity etc. Protocols for managing such risks are needed and researchers should receive adequate training and support for their implementation.
- **Be aware of context and flow of costs.** Neither individuals nor economies exist in isolation. As outlined in figure 1, the impact of violence thus flows through individuals to households, communities, businesses, and ultimately the wider economy and state. By estimating and exploring quantitative and qualitative costs at each of these levels, costing studies should aim to understand the ways in which costs ripple through these spheres in order to produce more comprehensive cost estimates.

- **Consider the intangible.** There has been a tendency for costing studies to focus on the quantifiable, tangible costs of violence to the exclusion of intangible, social costs. Such approaches risk overlooking some of the most serious consequences of violence – the loss of identity, belonging, trust; reduced capabilities; intergenerational transmission of violence, among many others. Qualitative methods offer a means of capturing some of the costs that quantitative methods cannot and can deepen our knowledge about the forms and impacts of violence. Integrating qualitative research into mixed methods costing studies therefore presents as an important element of conducting high quality costs of violence research.
- **Involve stakeholders, early and often.** To ensure the findings are used by policy-makers and other stakeholders, it is important to involve stakeholders in the study at the earliest stage possible and to allow for feedback and information sharing as the project develops. Formation of stakeholder advisory boards, who receive regular updates on project development, as well as participation in workshops and dissemination events, is an effective method for creating research buy-in and to increase the likelihood of the adoption of the findings.

While the methods and approaches presented here allow for the production of robust cost estimates that acknowledge the challenges of working in, often, data poor contexts, it is important to note that any costing study can only capture a fraction of the overall costs of violence. Costing studies ultimately present a means of identifying and conveying the serious impact of violence to individuals, households, communities, businesses and economies, but cost estimates are just one tool in the arsenal to advocate for investment to end VAWG. Estimates on the costs of violence are a support to, not a replacement of, the human rights-based argument to reduce and eliminate VAWG.

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## ANNEX 1: RANGE OF COSTS INCLUDED IN COSTING STUDIES

Level of Analysis	Cost Category	Type of Costs
	Out of Pocket Costs	
Individual/ Household	Medical	Emergency Room care Hospitalization Outpatient visits Nursing home care Dental care Mental health care Medication Transportation Ambulance Surgery
	Criminal Justice	Filing Police Report Court appearances Emergency protection order Temporary restraining order Probation Lawyers' fees Transportation Communication charges
	Housing and Refuge	Hotel Transition homes Shelters Rental housing
	Legal Services	Mediation (informal and formal) Divorce Legal counsel

	Social Services	Counseling Rehabilitation
	Replacement of Property	Property repaired Property replaced
	Foregone Income	
	Reduced Earned Income	Lost days of paid work immediately following incident (for survivors, perpetrator and other adults) Lost days of paid work in order to access services (for victim, perpetrator and other adults)
	Loss of Unpaid Care Work	Lost days of unpaid care work immediately following incident for survivors Lost days of care work due to accessing services (for victim and other adult women)
	Loss of Productivity	Reduced output per reduced labour input (for woman, husband other adults) in household enterprises
	Social Opportunity Costs	
	Health Outcomes	Reproductive health outcomes Physical health outcomes
	Well-Being and Relationships	Reduced self-esteem Psychological injuries Suicide ideation Loss of trust in others Loss of status in the community Isolation Stigma/shame
	Impact on Children	Missed schooling Academic performance

BUSINESS	Business Loss	
	Output/Productivity Loss	Reduced output through Absenteeism and Presenteeism (measure of presenteeism that captures lack of concentration/focus, arriving late, leaving early and accidents)
	Expenditure for Firing, Hiring and Retraining Staff	Firing costs Hiring costs Retraining costs

COMMUNITY	Community Loss	
	Social Cohesion	Loss of trust in others and in authority Reduced sense of belonging Reduced engagement and leadership of women

NATIONAL	Opportunity Costs	
	Macro opportunity costs	Aggregate out of pocket costs Monetary value of total workdays lost Monetary value of total care workdays lost Output Loss for Businesses
	Productivity loss	Reduced productivity via chronic pain and suffering and loss of quality of life Earnings differential for women experiencing violence Reduced labour force participation Intergenerational loss in human capital

## ANNEX 2: SOCIAL ACCOUNTING MATRIX

Social Accounting Matrix (SAM) is a double-entry table that depicts accounts of economic agents- households, firms, government- that engage in market transactions and transfers. It represents a circular flow of funds in an economy and describes the interactions of:

- (1) Production activities (productive sectors of the economy) and commodities used (intermediate goods used in production);
- (2) Factors of production (capital and labour);
- (3) Agents (households, firms and government);
- (4) Capital accounts (the financial side of the macroeconomy); and
- (5) Rest of the world (imports, exports and other financial flows).

These transactions are symmetrically arranged (in rows and columns) forming a square matrix that traces the origin and destination of expenditures and income received. Columns and rows of the table represent production, income, and consumption flows in a balanced manner so that total outlays from an agent (column sum) must equal total receipts to the agent (row sum). For instance, the total value of output in vehicle manufacturing must be equal to the total payment for inputs used in the production to other agents entitled to the payment, as seen in the Table 1.

A SAM provides a framework for linking macroeconomy with microeconomic activities, in particular, of households. The national accounts of an economy disaggregate into microeconomic accounts, based on household surveys. The disaggregation augments the distributional and social dimensions to the matrix, and thus allows one to see how total income is distributed across factors and households. For example, labour, a factor of production, can be specified as being male or female, skilled or unskilled; each industry can be described by the types and amounts of inputs used, including the female/male intensity of labour employed. A SAM also allows for information on several household types to be constructed depending on specific socioeconomic characteristics, i.e., rural versus urban location.

## Table 5. Simplified Schematic Social Accounting Matrix

		ENDOGENOUS			EXOGENOUS			Total	
		Production accounts		Institutional accounts					
		Activities (1)	Commodities (2)	Factors (3)	Households (4)	Government	Saving and Investment		Rest of world
ENDOGENOUS	Activities (1)		Domestic supply (T12)						Gross Income
	Commodities (2)	Intermediate demand (T21)			Household final consumption (T24)	Government final consumption	Gross capital formation	Exports	Total demand
	Factors (3)	Value added (T31)							Total factor income
	Households (4)			Factor payments to household (T43)		Transfers to households		Remittances	Total household income
EXOGENOUS	Government		Sales and import taxes		Income taxes and fees			Foreign loans and grants	Government Income
	Saving and Investment				Private saving	Government net saving		Capital account balance	Total Saving
	Rest of world		Imports			Current transfers to ROW			Foreign exchange outflow
Total		Gross output	Total supply	Payments for factors	Total household expenditure	Government expenditure		Foreign exchange inflow	

Multiplier analysis based on a SAM exploits endogenous circular linkages of the accounts in the SAM. Demand and supply linkages (T<sub>21</sub>, T<sub>31</sub>, T<sub>24</sub>) through which exogenous demand shocks in the form of an injection of funds generate positive cycles of demand and supply responses of interdependent households and firms. The positive multiplying effects then raise the income and production of the economy. It enables researchers to analyse macroeconomic impacts on production, employment, and income growth, as well as distribution via direct and indirect channels (Pyatt & Round 1985).

To construct the multiplier matrix from the endogenous linkages, the demand-supply circular elements of the SAM, denoted as  $T_{ij}$ , are converted into the corresponding matrix of average expenditure propensities, denoted as  $A_{ij}$ , and called technical coefficients, which are simply the division of each element by column sum of the elements,  $Y_j$ :

$$A = \begin{bmatrix} 0 & T_{12}/Y_2 & 0 & 0 \\ T_{21}/Y_1 & 0 & 0 & T_{13}/Y_4 \\ T_{31}/Y_1 & 0 & 0 & 0 \\ 0 & 0 & T_{43}/Y_3 & 0 \end{bmatrix} = \begin{bmatrix} 0 & A_{12} & 0 & 0 \\ A_{21} & 0 & 0 & A_{24} \\ A_{23} & 0 & 0 & 0 \\ 0 & 0 & A_{43} & 0 \end{bmatrix}.$$

By definition of the matrix  $A$  it follows that, each endogenous column sum is  $Y_j$  given as  $Y_j = AY_j + x$ , where  $x$  is a vector of exogenous demand of  $i$ ,  $\sum_j x_i$ . By rearranging the equation, we get  $Y_j = (I - A)^{-1}x = Mx$ , where  $I$  is an identity matrix and  $M$  is the multiplier matrix.

The macroeconomic loss due to domestic violence consists of direct and indirect costs. The direct cost accounts for the loss of income from absenteeism due to violence. The indirect cost accounts for the additional loss of output from the multiplier effect of the initial income loss. The estimation of the macroeconomic cost, including the indirect cost, or the multiplier loss, has recently received attention in the literature (Raghavendra, Duvvury & Ashe 2017).

The method used in this study differs from the multiplier analysis model used in Raghavendra, Duvvury and Ashe (2017). Instead of modifying the labour share of each sector to reflect the loss of earnings, the loss is translated into the loss of household consumption that implicates the macroeconomic cost through multiplicative linkages between households and productive sectors via consumption and earnings, as well as the linkages among productive sectors. However, this method comes with significant challenges:

**Inelasticity of specific sectors** – Not all sectors can respond to changes in exogenous demand in a short time frame. Therefore, it is important to consider which sectors may have inelastic supply. For agriculture and mining sectors, production depends critically on the available natural resources, such as land and mineral deposits, which are commonly inelastic. Hence, it is unlikely that the output of these sectors would respond to exogenous changes in

household demand as quickly as the other sectors could. As a result of the supply constraints, the multipliers associated with these sectors should be set to zero to be realistic. If that is the case, the estimate of the macroeconomic loss would be an underestimate in the absence of a major sector like Agriculture, where women's work force participation is significant in most low-and-middle income countries.

**Availability of data for construction of SAM** – the costs and availability of necessary data to build a SAM is a key issue in a developing country case. An elaborate macro SAM requires national economic accounts, international economic accounts, industry input-output accounts, a labour force survey, and an income and expenditure survey. National accounts-gross domestic product, personal income and outlays and other aggregate data are disaggregated by household and industry based on other micro data sources. In the process, macro data from national accounts are to be reconciled with micro survey data to satisfy the double-bookkeeping principle. To the extent of micro data availability, one can disaggregate the accounts, especially of households. Data requirements can be challenging in many countries of the Global South. Conducting a nation-wide survey with adequate frequencies can be too costly to commit; prevalence of informal economy and other measurement error may undermine the accuracy of official data sources.

## ANNEX 3: BASIC EQUATIONS USED FOR ESTIMATING COSTS

Out-of-pocket costs were calculated for each woman for each type of expense based on the following equation (Asante et al. 2019, Scriver et al. 2019):

$$TOPC = \sum_i \sum_s C_{is}$$

Where TOPC is total out-of-pocket cost, represents the reported cost for each service for each woman experiencing violence, as outlined in the table above. The costs of each specific service included various elements such as fees, transport, and/or material costs. The unit cost for accessing each service or replacing property was calculated by averaging the total cost by the number of women reporting the expense.

In terms of indirect costs, the average number of lost days was calculated by taking the mean number of days reported by women with respect to their missing work and their partners missing work. For missed care work, the number of days missed by each woman reporting missed care work was calculated as follows:

$$MCW = \sum_i \left( \sum_t (DFS_t * H_t) + (DPS_t * H_t) \right) / \sum H_t$$

Where MCW is Missed Care Work, i individual woman, t is the care activity, DFS is days fully stopped in relation to care activity t, DPS is days partially stopped in relation to care activity t, and  $H_t$  is the average hours spent on care activity in a day. The sum of hours of care work missed across all tasks is divided by the hours spent on care activities in a day to derive days missed of care work.

Following the same logic as above, the missed school days was calculated as the mean of the days children missed school, reported by each individual woman, as given below:

$$MSCD = \left( \sum_i (SCD_i) \right) / n$$

where MSCD is Missed School Days, SCD is reported school days missed by children, is number of women reporting their children missed school.

Each of these costs were calculated for each location of violence, as well as an overall average across all locations. Thus, two estimates are provided – costs for IPV alone and costs for any form of violence including IPV.

## ANNEX 4: PRODUCTIVITY LOSS – MEASURING ABSENTEEISM AND PRESENTEEISM

An important economic cost of violence against women is violence-related productivity loss. Productivity loss is widely understood to occur through three pathways – absenteeism (missing work), tardiness (being late for work) and presenteeism (being less productive while at work). In the research on productivity loss, absenteeism and tardiness have been a focus with less attention to presenteeism.

There are over 20 scales designed to measure the presenteeism and absenteeism costs (Mattke et al. 2007). However, it is very difficult to implement these scales in business contexts or to include in population- based household surveys, because they are too long and require a lot of time, something that companies and households are reluctant to incur. Thus, it is necessary to design scales which were short enough to facilitate the gathering of information, but long enough to ensure minimum reliability and validity levels. The 5 instruments widely used in the Global North include the Endicott Work Productivity Scale (WPS), Health and Labour Questionnaire (HLQ), Health and Work Performance Questionnaire (HWPQ), Work Limitations Questionnaire (WLQ) and the Work Productivity and Activity Impairment Questionnaire (WPAI).

Building on these scales, Vara Horna developed a scale to use with employees in businesses to measure productivity. The absenteeism items used included two sub-scales – absenteeism due to health reasons and absenteeism for other reasons. Absenteeism was measured through a 5-item scale with six alternative answers.

Tardiness was measured similarly using the same two sub-scales as absenteeism. For presenteeism, a new development in the measurement was the introduction of the concept of zero productivity based on business practice to record levels of presenteeism in the Peruvian organizational environment (Vara-Horna 2013). Respondents were asked about all items for the last 4 weeks and were given the following options: no days; one day; two days; between 3 and 5 days; between 6 and 10 days; or more than 10 days. The individual items for each scale are given in the table below.

<b>Dimensions</b>	<b>Items</b>	<b>Weightings</b>	<b>Algorithms</b>
<i>Presenteeism: Low performance by distraction and exhaustion</i>	P1 Difficulties concentrating on my work.	0.25	Annual presenteeism (days)= $\sum [((\text{Mean} (P1, P2, P3)) * 0.25, P4, P5*2) *12$
	P2 Working more slowly than I would normally.	0.25	
	P3 Feeling exhausted at work.	0.25	
<i>Presenteeism: Zero productivity</i>	P4 Had to stop working because something was bothering him/her.	1	
	P5 Made mistakes or had work-related incidents.	2	
<i>Absenteeism: Health reasons</i>	A1 I was unwell at home.	1	Annual absenteeism (days)=
	A2 I had to go to a hospital or a health clinic because I was unwell.	1	
<i>Absenteeism: Other reasons</i>	A3 I had to look after a child or other family member because they were unwell.	1	$\sum [((\text{Mean} (A1, A2)), A3, A4, A5) *12$
	A4 I had to attend to legal, financial or personal matters.	1	
	A5 I did not have enough money for transport to and from work.	1	
<i>Tardiness: Health reasons</i>	T1 I was unwell at home.	0.125	Annual tardiness (days)= $\sum [((\text{Mean} (T1, T2)) * 0.125, T3*0.125, T4*0.125) *12$
	T2 I had to go to a hospital or a health clinic because I was unwell.	0.125	
<i>Tardiness: Other reasons</i>	T3 I had to look after a child or other family member because they were unwell.	0.125	
	T4 I had to attend to legal, financial or personal matters.	0.125	

To use with the broader population of working women, including self-employed and unpaid family workers, it would be important to test how the constructs move together. For example, for self-employed women and household workers, exhaustion may be an independent dimension not related to low concentration and working slowly. Similarly, tardiness may not be a relevant concept for such workers. While the item constructs are valid in various contexts, the interrelation between items under each board concept of absenteeism, tardiness, and presenteeism should be explored to adapt the algorithm to the type of workers being included in the measurement. Thus, the algorithm developed by Vara-Horna is a useful starting point that can be adapted after testing within the data collected.



