Chapter 4

Economic Cost of VAWG Methodology

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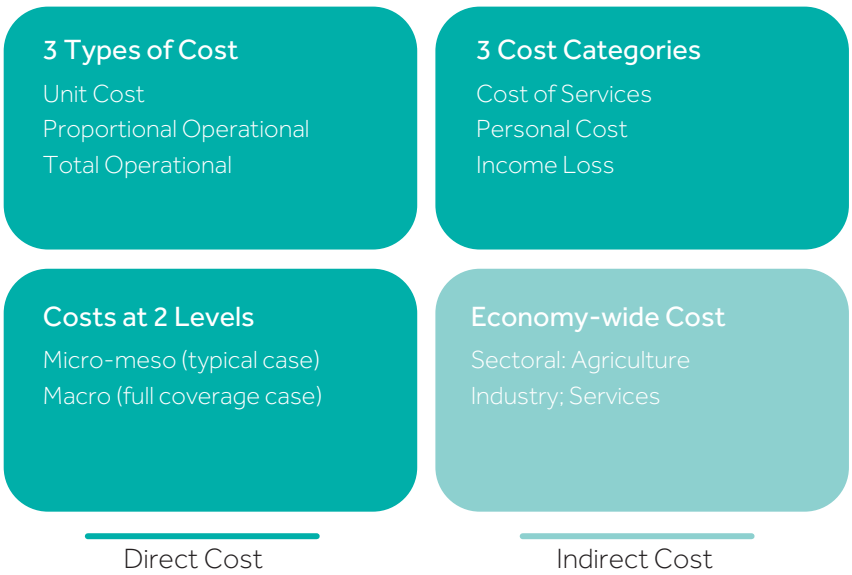
In order to capture structural interlinkages within the real economy, and thus calculate the full economic cost of VAWG, the methodology applied in the present exercise includes three types of costs, namely: (i) directly measurable costs; (ii) indirect costs (costs that are difficult to measure directly); and (iii) induced costs (costs leading to further linkages and that will have secondary effects).

Direct costs include: the cost of medical treatment for various types of physical and mental abuses – doctors'/hospital bills for physical injuries and bills for psycho-social care; costs for involvement of the law/police; loss of income due to absence from work etc. **Indirect costs** measure reduced gross domestic product (GDP) as a result of linkages between the income generation process and reduced effective demand due to loss of female work days. Loss of female work days translates into loss of income and hence reduced private consumption. This reduction in private consumption expenditure in turn leads to a decline in effective demand and subsequently GDP because of their inter-dependence in the circular flow of income generation. The third type of costs, **induced costs**, represents a further reduction (i.e. second round effects) in GDP due to loss of demand for the products (unaffected in the first round) which are inter-dependent with the products affected indirectly. For instance, tourism sector may not be affected in the first round as it is generally not an essential type of regular expenditure, but due to inter-dependence of tourism sector with rest of the economy it would be impacted in the second round as incomes of the unaffected households would likely to decline due to the slowdown of the economic activities.

The costing module used consists of four building blocks. There are three building blocks for the direct cost component (shown in Figure 4.1) and one building block for the indirect/ economy-wide cost component.

The main features of the direct cost component – with its three building blocks – are discussed below. Section 4.3 outlines the indirect/economy-wide cost component.

Figure 4.1 Costing module comprises four building blocks



4.1 Structure of the model framework

Three types of cost approaches (1)

The estimated costs are based on three types of approaches: (i) the unit cost approach; (ii) the proportional operating cost approach; and (iii) the total operational cost. The 'unit cost' approach estimates the cost of a certain service package provided to a survivor in a certain case (e.g. per day hospital cost or medical service package for a survivor with grievous injuries). The 'proportional operating cost' approach is based on identifying the share of survivors in the total number of service recipients (e.g. 30% of the total social services budget spent for survivors). The 'total operational cost' approach is applicable to 24 hour per day/7 days per week services (such as a telephone hotline for survivors of violence).

Three categories of costs (2)

The estimates are produced for the following potential three categories of costs:

i. Cost of services provided in response to violence and assistance for survivors. This category may include: the healthcare sector, law enforcement and the system of justice, penitentiary institutions for abusers, social and specialised services for women affected by violence etc.

ii. Personal material losses and cash expenses of survivors due to violence.

iii. Lost economic output due to irreversible population losses, such as premature death of women, temporary and permanent disability due to GBV, and reduced work productivity of survivors – leading to loss in output or income.

Costs estimated at two levels (3)

An important observation is the high latency (under-reporting) of offenses against women and girls according to official statistics (UNFPA and DFID 2017). This is for obvious reasons, such fear of being stigmatised, fear of being blamed for provocative behaviour or fear of retaliation by the abuser. Thus, estimates based only on official statistics may produce a huge underestimation of the economic cost of violence (since the official data misrepresents the real magnitude of VAW). Accordingly, a sensible approach may include cost being estimated at two levels or using two scenarios:

- **First,** cost estimation based on official or survey data (in other words, estimates based on micro- and meso-level data). According to the literature, such economic cost estimates are said to be based on a 'typical' scenario using the official police statistics on offenses.
- **Second,** a so-called 'full coverage' scenario – that is, a cost estimate based on a simulation model using the violence prevalence rates and features of survivors contained in population-based surveys. This may also be referred to as a macro-level cost estimate.

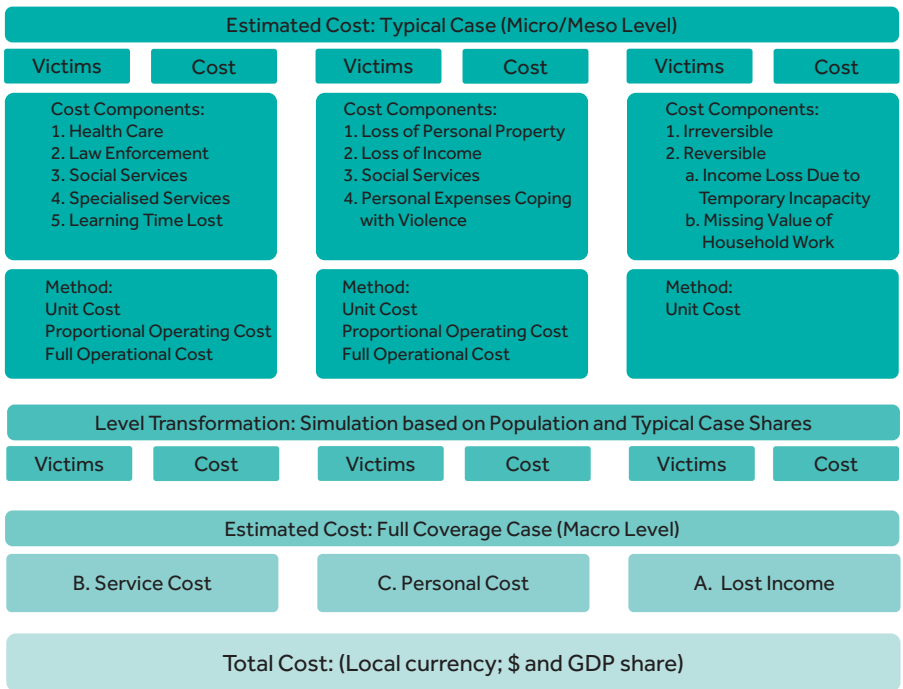
4.2 Software

The model costing framework developed by the authors of this book has been created in an MS Excel environment to enable transparency, accessibility and transferability; and it has been tested with hypothetical data.

It is a generalised framework intended to be populated with country data. The model is designed to provide two types of costs: (i) typical case costs based on micro-/ meso-level information; and (ii) full coverage case costs based on a macro-level simulation using shares of micro/meso level and age cohort population data.

The logical flow of the model is shown Figure 4.2.

Figure 4.2 Schematic specification of the direct cost component



Source: Author's Representation.

4.3 Economy-wide/indirect cost

To assess the indirect cost of VAWG, the researchers use a simple economy-wide framework. Consider an economy with earnings and spending. We earn our income from various types of activities (e.g. agriculture, manufacturing, mining, construction and services), by investing our financial resources (or capital) or through participating in the labour market (capital and labour are known as 'factors of production'). The vast majority of what we earn is spent (or consumed) on various types of commodities and services. Spending or consumption generates demand for commodities and services, which in turn stimulates supply of various activities where these are produced. Stimulated supply employs labour and capital and thus creates income for spending again – and the loop continues.

One outcome of the direct cost of VAWG is the loss of work days leading to loss of income. Income loss leads to a reduction in private consumption expenditure (spending) with subsequent negative impacts on demand for and supply of goods and services. As production of goods and services depend on purchases of other goods and services, as well as factors of production, the loss of female work days (which is a direct impact of VAWG) may indirectly lead to further loss of income due to this interdependence.

To capture the indirect impacts of VAWG, the researchers use an economy-wide database or model. The two most widely used economy-wide data sets are: the input-output matrix (IOM[1]) and the social accounting matrix (SAM[2]). The economy-wide data sets are then converted into a multiplier framework to capture the economy-wide indirect cost of VAWG.

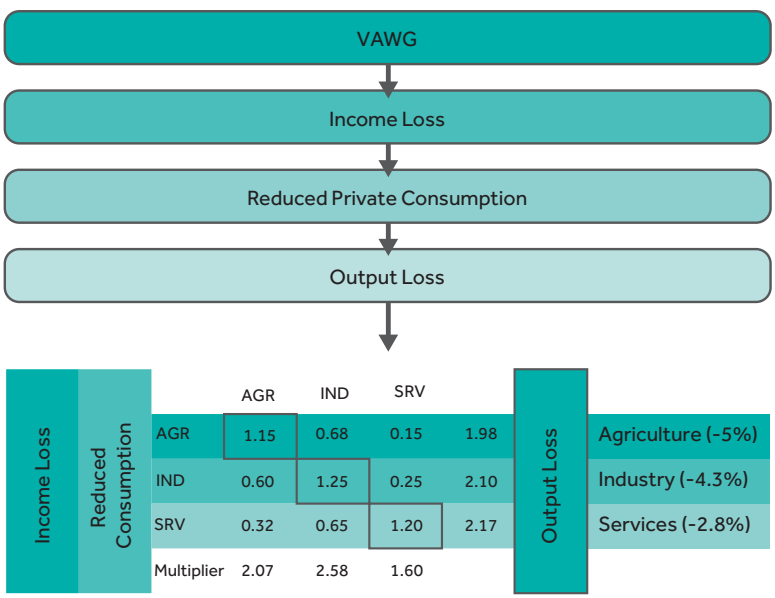
A hypothetical example, with only three broad economic sectors (agriculture, industry, services; in reality number of sectors would be much larger) is shown in Figure 4.3.

As can be seen, income loss derived in the direct cost approach leads to a reduction in private consumption expenditure. For a three-sector economy, private consumption loss is recorded for services as being 1.5 per cent and for agriculture as being 4 per cent. The consumption expenditure in the industry sector is considered unaffected to capture the interdependence of the multiplier model.

These reduced consumptions are then incorporated as exogenous shocks into the multiplier model (i.e. in this case, a 3 × 3 multiplier model) to assess the indirect and induced cost of violence. The total indirect cost is found to be 7.8 per cent (output loss to agriculture and services, 5+2.8), while the total induced cost is 4.3 per cent (output loss to industry).

This is a highly data demanding exercise. Unlike the other economic statistics, data required for numerical specifications of the model are not readily available. The project consequently made heavy investment on data collection.

Figure 4.3 Hypothetical example of multiplier framework



Two missions were carried out (i.e. an inception mission and a data collection mission). Thorough reviews of literature and statistics were also conducted and more than 70 stakeholders were met. One exclusive expert group consultation involving 15 experts and a focus group discussion with 12 VAW survivors were also conducted to gather data, as well as to cover gaps in the information set.

4.4 Country implementation strategy

Country-level implementation requires the steps below.

A. *The following information allows estimation of the micro/meso level or 'typical' case:*
   1. Collect administrative data and available survey data on gender violence (i.e. micro/meso-level data) to generate prevalence rates for difference types of violence (e.g. minor, medium gravity and grievous types etc.).
   2. Collect administrative financial information to calculate the 'unit cost' for various services (e.g. per day hospitalisation cost; outpatient fee per visit etc.) and cost categories (e.g. minimum wage; per capita income of employed person; hourly wages of police personnel, social service officials, judges etc.).
   3. Get intervention parameters for different services (e.g. number of hours spent per case by the police, judiciary, social services and family welfare etc.) for cases under different types of violence.
   4. Collect detailed budget information for ministries and agencies involved in preventing VAWG. This information allows the researcher to determine the amount of public funds allocated for the fight against violence.
   5. Arrange consultation meetings with local experts (i.e. in-country experts) to validate findings based on administrative and survey data (i.e. micro/meso-level data).
   6. Organise a focus group discussion (FGD) with survivors to supplement the information gathered from micro- and meso-level sources. Such an FGD may also help the researcher get information on personal costs incurred; duration of treatment; loss of working days etc.

B. *The following step is needed for the macro-level estimation or 'full-coverage' case:*
   7. Gather age cohort gender-segregated population data to operationalise macro-level cost estimation. Information of age

cohort population data are then used alongside the information on three types of costs (i.e. unit cost, proportional operational cost, full operational cost); prevalence rates; and other relevant shares to estimate the macro-level cost or cost under the 'full coverage' scenario.[3]

C. *Economy-wide estimation requires the following strategies:*

8. Estimated output loss or income loss information are then used to examine the economy-wide indirect and induced costs of VAWG. If a consistent macroeconomic data set (i.e. IOM or SAM) is available for a recent year, the economy-wide model is specified by designating some of accounts of IOM/SAM as 'endogenous' accounts (or analogous to dependent variables) and 'exogenous' accounts (or analogous to independent variables). Endogenous[4] accounts include activities; factors of production – labour and capital; and households. Exogenous[5] accounts are composed of policy variables such as government expenditure; investment; exports etc.
9. If a recent macroeconomic data set is not available, the data set may be updated to a recent year using sectoral economic information (such as value added or GDP, imports, exports, consumption, public expenditure, investment etc.). In this case, the updated macroeconomic data set is converted into an economy-wide model.
10. Carry out a simulation exercise with the economy-wide model to assess the indirect and induced cost of VAWG.[6]

Further details on the economy-wide estimation approach are discussed in Annex 2.

4.5 Overcoming data gaps

The costing module should ideally be based on country data or data available from international agencies such as the UN, World Bank and multilateral development banks etc. However, as mentioned above, obtaining robust estimates on the cost of VAWG are subject to significant data limitations and gaps in all countries in the world (Duvvury et al. 2013). Where data/information are not readily available, an indirect method can be adopted to derive them. For instance, unit value (or return to employment) can be derived from information on earnings of female workers and number of person days or person hours worked. In extreme cases, some 'place holder' values may be obtained from similar studies for preliminary estimates with a target that the 'place holder' values be replaced with country-level data at a later time. Moreover, in some cases, surveys may need to be conducted to fill

the data/information gaps. Digital records need to be identified and assessed and, in some cases, paper records will have to be digitised.

Another challenge will be to collect/gather IOM or SAM data to carry out indirect and induced cost estimations. Ideally the researcher needs to use a SAM for the indirect and induced cost estimations. Even when a SAM is not readily available, it may be possible to develop a SAM using an IOM (as is done for Seychelles). An important source of IOMs for a large number of countries is the Global Trade Analysis Project (GTAP) database.

In order to ensure as high a level of accuracy as possible, once the modelling is complete, meetings with administrative agencies, expert groups and survivors of VAWG will need to be arranged to discuss the findings – including under-reporting – for improvement and consolidation.

Notes

1 IOM usually captures the production structure of an economy for a particular year describing production technologies and ensuring equality of supply to demand for all sectors of activities classified in that economy.
2 SAM is an extension of IOM incorporating other important agents such as factors of production (i.e. labour and capital factors) and institutions (i.e. households; government; corporations etc.). A special feature of the SAM is that it shows income generation process (i.e. income generation process by factors of production such as labour factor or capital factor); distribution of income to various institutions such as household; government; corporation etc.
3 Some literatures have also labelled the 'full-coverage' case as the 'best' case scenario.
4 They usually include an activity account, factor account, household account etc.
5 Private and public consumption, exports and investment, pure transfers between institutions (e.g. from government to households) and foreign remittances are generally included to define the exogenous account.
6 It transpired that this method has never before been attempted in gender studies and studies to estimate the economic cost of VAW.

Reference

Duvvury, N, A Callan, P Carney and S Raghavendra (2013), 'Intimate Partner Violence: Economic Costs and Implications for Growth and Development', Women's Voice, Agency, & Participation Research Series, No.3., the Work Bank, Washington, DC.