GUIDANCE NOTE ON DATA ANALYSIS FOR GENDER AND TRADE ASSESSMENTS

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LIST OF ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
CGE	Computable General Equilibrium
EPA	Economic Partnership Agreement
EU	European Union
FAO	Food and Agriculture Organisation
FoB	Future of Business Survey
GDP	Gross Domestic Product
ICRW	International Centre for Research on Women
ICT	Information and Communication Technologies
ILO	International Labour Organisation
ISCO	International Standard Classification of Occupations
ISIC	International Standard Industrial Classification of All Economic Activities
LFS	Labour force survey
NAFTA	North American Free Trade Agreement
OECD	Organisation for Economic Co-operation and Development
SAM	Social accounting matrix
SDG	Sustainable Development Goal
SME	Small and medium enterprise
TRIPS	Trade Related-related aspects of Intellectual Property Rights
TUS	Time use survey
VLFS	Vietnam Labour Survey
WES	World Bank Enterprises Survey

EXECUTIVE SUMMARY

1. This guide offers an introduction to gender-aware data analysis for assessing distributional effects of international trade at the country level. It describes conceptual frameworks and data sources and shows how to use statistical data to understand the linkages between changes in trade policies and various dimensions of gender inequality. It provides simple steps and empirical applications, but does not delve into technical methods of either ex-ante or ex-post impact assessments. The guide is designed primarily for data analysts and policy advisers. It could also be of help to women's organizations and other civil society stakeholders involved in trade consultations.

2. The first step in gender-aware economic analysis involves building the statistical picture of an economy as a gendered structure. Such a picture, if appropriately disaggregated in terms of production sectors, workers' and households' characteristics can provide a useful baseline from which to track the direct and indirect effects of trade changes by gender. By highlighting existing inequalities, it can help assess whether proposed trade reforms and agreements are likely to redress or intensify bottlenecks to women's access to economic resources and opportunities. It can also guide selection of relevant indicators for ex-post monitoring.

3. Despite the availability of useful analytical frameworks and numerous calls for more nuanced economic analyses of gender and trade over the years, most quantitative empirical work in this policy area remains limited to simplistic interpretations of 'trade', 'gender inequalities' and 'employment'. A number of general principles need to be followed to ensure that economic data analysis meaningfully contributes to gender-equitable policy-making. First of all, it is good practice to select statistics that capture terms of inclusion and indicate women's capacity to achieve goals rather than merely count their numbers. For example, measuring women's paid employment only in terms of employment to population ratios says nothing about the terms of participation in labour markets. Tracking changes in the gender composition of employment status, and across occupations and sectors, can shed light on the quality of their employment. It is also useful to examine differences between different groups of women and men, focusing on the disadvantaged, and taking a life cycle approach wherever possible. Impacts on individuals within households as well as households as units need to be assessed and effects on unpaid domestic work and care must be included. Finally, when gender disparities are measured as ratios, it is important to understand the behaviour of the individual components of a ratio to determine whether a decline in a ratio (such as the gender wage gap) is an example of equalising up or down. For example, gender equitable trade would require that the average hourly earnings of both women and men rise, but the rise is more significant for women.

4. Assembling all the required data for gender-aware trade analysis involves examining many sources and surveys. These include: Labour Force Surveys, Household and Living Standards Surveys, Enterprise Surveys, Time Use Surveys, other surveys on more specialized issues when available, and administrative data from relevant ministries. Sex-disaggregated data from these surveys would need to be analysed in combination with each other and together with other non sex-disaggregated data as well, such as national accounts and customs data. The range and quality of data, and hence what is feasible in terms of gender-aware trade analysis, is likely to vary by country.

5. The second part of the guide (section 4) presents a selection of concrete examples of how this data analysis can be used to gain preliminary insights into different dimensions of the trade and gender relationship. The description of specific data examples is organized along two main

channels of interaction, the employment channel and the consumption and public provision channel.

6. With regard to the employment channel, a case study from Bangladesh is used to demonstrate how segments of a social accounting matrix can be used to highlight the gender composition of employment in both export-oriented and import-intensive sectors, and make predictions on the economy-wide effects of a potential decline in garments, the most export-oriented and female intensive sector in the economy. Another example from Vietnam shows how various labour and enterprise surveys alongside customs data can be used for preliminary ex-post analysis of the impact of export diversification on gender based sectoral and occupational segregation.

7. National-level data on farms and businesses are limited and of uneven quality, making gender dimensions of self-employment more difficult to analyse than gender wage employment effects, both in agriculture and non-agricultural sectors. The guide points to valuable new surveys and innovative methodological approaches that could at least partly contribute to a better understanding of gender dynamics in either entrepreneurship or agricultural production. For example, a set of enterprise surveys run by the World Bank since 2006 include data from about 144 countries on representative samples of small, medium, and large companies in the non-agricultural formal private sector.[1] The surveys examine selected sectors from both manufacturing and services. The data enables gender-breakdowns of enterprises (based on ownership and/or management) and analysis of the specific challenges women-led enterprises face in growing their business and engaging in international trade. Value chain analysis is another useful methodology that can be fruitfully used to complement economy-wide gender disaggregated data analysis. Its strength lies in its emphasis on the institutional arrangements that link producers, processors, traders, and distributors, and the recognition that power differentials among actors may influence outcomes along the chain. Selected examples of gender value chain studies in agriculture are described to demonstrate how this method can help to gain a deeper understanding of gender-specific constraints preventing small scale female farmers from diversifying and upgrading production, and to identifying measures to enable their inclusion in global supply chains on fairer terms.

8. Assessing the gender differentiated consumption and public provision effects resulting from trade liberalization would involve linking information on predicted or actual changes in prices, range of imported goods and the extent of public services delivery, to individual consumption patterns of different groups of women and men. This is the least studied aspect in gender and trade research, mostly due to the paucity of individual level data. Household surveys are the best source for data on consumption of goods and use of services, but, in many countries, these surveys only provide aggregate consumption by the household. However, it is possible to classify households by their characteristics in ways that are still useful for gender analysis, for example by comparing consumption of goods and use of services by households with and without young children, or by geographic location and wealth . In addition, qualitative research can provide useful information on consumption needs and use of services, and the impact of trade-induced changes on the availability of goods and services in the lives of different groups of women.

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[1] The World Bank Enterprise Surveys, https://www.enterprisesurveys.org/

1 INTRODUCTION

Gender impact assessments and indicators for monitoring trade effects are key to ensuring that trade agreements and reforms are designed and implemented in ways that reduce rather than exacerbate gender gaps, and hence support national efforts to promote gender equality. This guide offers an introduction to the basics of gender-aware data analysis at the country level, for assessing distributional effects of international trade and informing policies to reduce gender inequality in various domains.

Many training resources have been developed since the early 2000s to help in assessing the full range of gender distributional effects of trade.[2] These studies and frameworks identify the channels through which changes in the structure and nature of trade in a country (resulting from domestic liberalization policies and/or international agreements) affect different dimensions of gender inequality. They stress that interaction mechanisms between trade and gender are complex. This complexity is due to the variety of effects, which includes not only employment, but also consumption and public provision, and possible trade-offs between these effects. This complexity is also due to the fact that women and men are evidently not homogenous categories, and therefore it is important to track how different groups of women and men experience trade changes, depending on their employment status, consumption needs, household income and other socio-economic factors.

Methodologies combining quantitative and qualitative approaches, new research, and more regular collection and harmonization of gender statistics, are all needed to enable comprehensive gender assessments of greater trade integration. However, even simple analyses of national-level statistical surveys can produce useful preliminary insights. It is in this spirit that this guide shows how to use available data to identify gender patterns in economic activities and in unequal access to resources that relate to the trade structure of a country.

1.1 Objective of this guide

The guide lays out a conceptual framework, and describes methods and sources, on the use of statistical data to

- ✓ elaborate the case for including gender equality concerns in the domain of trade policy;

- ✓ describe the nature of interactions between gender dynamics and trade expansion;

- ✓ identify sectors, industries or topics where, on the one hand, economic opportunities for women exist and, on the other, where particular groups of women may be vulnerable to trade-induced changes; and

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[2] Gammage S. et al (2002). *Trade Impact Review*, Women's Edge Coalition, Washington D.C.; Fontana, M. (2003). 'The gender effects of trade liberalization in developing countries' Sussex Discussion paper in Economics DP101, University of Sussex; Williams, M. (2004). *Gender Mainstreaming in the Multilateral Trading System: a handbook for policy-makers and other stakeholders*, The Commonwealth Secretariat, London; Atthill et. al (2007). *Gender and trade action guide: a training resource*, The Commonwealth Secretariat, London; UNCTAD Virtual Institute (2014). *Training Material on Gender and Trade*. UNCTAD 2017 Toolbox. In addition, the book *Feminist Economics of Trade (2007)* edited by van Steveren, I., Elson, D., Grown, C. and Cagatay, N., Routledge, London, provides a collection of seminal studies looking at both sides of the gender and trade relationship.

✓ carry out ex-post analysis of the impact of changes in trade on different aspects of gender inequality, notably in relation to access to economic resources for women and the terms and conditions of such access.

The guide is designed primarily for analysts and advisers in countries where there is strong gender equality policy at national level or where country partners in trade negotiations require gender impact analysis to be carried out. It could also be of help to women's organizations and other civil society stakeholders involved in trade consultations.

The statistical analysis of gender inequalities recommended by the guide may not be sufficient on its own to elevate gender concerns into the formulation of trade policy or the design of trade negotiating options. Other circumstances need to be favourable. A constructive dialogue between researchers and policy makers as well as fruitful alliances between different stakeholders are required.

The guide does not, however,

- dive deeply into technical methods of impact assessment, or

- identify appropriate modalities for inclusion of gender sensitive measures in trade agreements,[3] or

- examine flanking domestic gender equality measures needed to enhance the effects of trade or to mitigate/offset harmful effects.

1.2 Structure of the guide

The Guide is organized as follows. Section 2 explains how to build the statistical picture of an economy as a gendered structure and lays out some general principles of gender-aware data analysis. Section 3 outlines a tried and tested analytical framework for mapping the gender distributional effects of trade.[4] This framework can be used to identify questions to be asked either at the stage of generating relevant evidence to inform trade negotiations or, later, at the stage of promoting interventions to enable successful implementation and monitoring. Section 4 follows with a description of specific data and indicators, and is divided into two parts. One part focuses on approaches and data for analysing gendered employment effects of trade (to include both employees and the self-employed), and the other part focuses on approaches and data for analysing consumption and public provision effects. Section 5 concludes.

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[3] For more information see Joekes, Susan (2020). *A Primer on Gender and Trade*. Published by the Gender, Social Inclusion and Trade Working Group. Frohmann, Alicia (2019). *Herramientas de política comercial para contribuir a la igualdad de género*, Serie Comercio Internacional Nº153. Comisión Económica para América Latina, CEPAL. Frohman, Alicia (forthcoming 2021). *Mainstreaming gender into trade rules*. Published by the Gender, Social Inclusion and Trade Working Group. International Trade Centre (2020). *Mainstreaming Gender in Free Trade Agreements*. ITC, Geneva.

[4] See for example Gammage et al., 2002 and Fontana, 2003 ibidem.

2 PRINCIPLES OF GENDER-AWARE DATA ANALYSIS

2.1 Building the statistical picture of an economy as a gendered structure

Economies are gendered structures in that economic resources such as jobs, assets, skills, infrastructure and time are not equally distributed between women and men.[5] These gender-based inequalities in the patterns of resource allocation affect power relations between different economic actors and act as barriers to economic and social transformation. Economic policies determine the distribution of resources and, hence, the way that governments design macro-economic policies – including trade reforms, among others – has the potential to reduce or amplify gender inequalities.

Economies comprise both a paid economy, where output is counted as contributing to economic growth as measured by GDP, and an unpaid economy, which supplies services directly concerned with the daily and intergenerational reproduction of people, through their care, socialisation, and education. Unpaid care work is not conceptually included in GDP and not counted as contributing to economic growth, but it makes an indirect, unmeasured contribution, since, as Elson notes,[6] without this work, there would be no people to produce economic growth.

Both the paid and the unpaid economy are characterised by gender inequalities, such as are manifest in the division of labour. Responsibility for unpaid care and domestic work is mainly assigned to women, and paid work is characterized by gender occupational and sectoral segregation and by gender earnings gaps.[7] Large businesses are commonly led by men and households are subject to internal gender inequalities in income, consumption, asset ownership and decision-making.[8]

Building the statistical picture of an economy as a gendered structure constitutes the first core step in gender-aware economic analysis. Such a picture, if appropriately disaggregated in terms of sectors, workers' and households' characteristics can provide a useful baseline from which to track the direct and indirect effects of trade changes by gender. By highlighting existing inequalities (e.g. rigid occupational segregation, gender-intensified constraints in access to skills and finance, and so on), it can help assess whether proposed trade reforms and agreements are contributing to redress bottlenecks to women's access to economic opportunities, and identify

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[5] Elson, D. (1995). *Gender Awareness in Modeling Structural Adjustment,* World Development, Vol. 23, No. 11, pp. 1851-1868; UN Women (2015). *Progress of the World's Women 2015-16: transforming economies, realizing rights.* New York: UN Women; UN Women (2016) *Towards Gender Equality in Vietnam. Making Inclusive Growth Work for Women*, Hanoi: UN Women Viet Nam.

[6] Elson, D. and Fontana, M. (2019). 'Conceptualizing Gender-Equitable Inclusive Growth' Chapter 1 in *Gender Equality and Inclusive Growth: economic policies to achieve sustainable development* D. Elson and A. Seth (eds). New York: UN Women.

[7] UN Women (2017). *The UN Women Gender and Economics Training Manual* chapters 4, 5 and 6; UN Women 2015 chapter 1 and 2, and annexes 1 to 4.

[8] UN Women (2019). *Progress of the World's Women 2019-20: Families in a changing world.* New York: UN Women.

gaps in trade and other policy domains. It can also help in selecting relevant indicators for future monitoring (e.g. number of decent jobs[9] generated by trade that go to women).

A range of data on several dimensions is needed to adequately paint a gender statistical picture of this kind. With regard to the paid economy, sex-disaggregated data are required not just on the quantity of employment – such as employment to population ratios, but also its quality – such as types of employment contract, hours of work, gender earnings gap and level of earnings, as well as measures of gender-based occupational and sectoral segregation. When the information is available, sex-disaggregated data on financial services are also valuable; not only to highlight gender differences in access but also to determine whether low-income women might be at greater risk of indebtedness and fraud.[10] With regard to the unpaid economy, statistics are required on unequal patterns of time spent on unpaid domestic and care work, as well as usage of services that can reduce unpaid work, such as electricity, water (in those countries that lack basic infrastructure) and care services. These data would ideally be disaggregated by household income, place of residence and family composition. Data on public spending on social services, possibly combined with gender-disaggregated beneficiary assessments, can help in capturing the extent of care deficits and whether families receive sufficient institutional support (by the State, non-profit organizations and other institutions) for care provision.

Assembling all these data at the country level requires examining many sources and surveys. Labour Force Surveys, Household and Living Standards Surveys, Enterprise Surveys, Time Use Surveys, other surveys on more specialized issues when available, and administrative data from relevant ministries, are all potentially useful sources of sex-disaggregated data. Ideally, they should be used in combination with each other as well as other (non sex-disaggregated) data such as national accounts and customs data. The quality of survey data is likely to vary: some data are likely to be under-reported (e.g. the extent of informal employment) and some of the breakdowns (other than by sex: e.g. by income level, migration or disability status) may be difficult to obtain. It is therefore important to complement findings through other sources and broad-based stakeholder consultations. It is good practice to complement statistical snapshots with studies that examine the evolution and determinants of unequal gender patterns over time when these are available. Box 1 lists a number of reliable data sources.

Assembling all the required data together might seem an arduous task, but it is a good investment for government planning since, once built, this 'gender baseline' can enable assessment of the gender distributional implications of policies related not only to greater trade integration but also other areas (e.g. government budget policies). Examples of how to use the gender statistical picture of the economy specifically for trade analysis are provided in section 4.

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[9] This paper uses the International Labour Organization (ILO) definition of decent work and vulnerable employment. According to the ILO 'decent work' is work that is "productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men" as in https://www.ilo.org/global/topics/decent-work/lang--en/index.htm. The ILO defines workers in vulnerable employment as the sum of own-account workers and unpaid contributing family workers. These workers are more likely to have inadequate and erratic earnings, low productivity, and difficult conditions of work that undermine their livelihoods and rights. In other words, they lack decent working condition. There is a significant overlap between the category 'vulnerable employment' and the category 'informal employment'. Most vulnerable employment is also informal, but informality can also be found among some of the workers whose employment status is 'wage work'.

[10] Mader, P. (2018). 'Contesting Financial Inclusion', *Development and Change* 49.2: 461-483; Bateman, M., Blankenburg, S., and Kozul-Wright, R. (eds) (2018). *The rise and fall of global microcredit: development, debt and disillusion*, Routledge, London.

A list of indicators and data sources related to the gender analysis of trade can be found in Table 1. This section concludes with a few general rules of gender-aware data analysis.

Box 1. Data sources

For country-level analysis, it is best to use nationally representative surveys such as:
- Household and Living Standard Surveys
- Labour Force Surveys
- Enterprise Surveys
- Rural Censuses
- Need to thoroughly examine various sources, use them in conjunction with other data (e.g. national account statistics, exports/imports) and be creative

For reliable comparable cross-country data:
- UN Statistics Division
- ILO Labour Market Indicators
- FAO dedicated data sets
- World Bank Enterprise Survey

2.2 General principles

The next pages set out a few general principles that should guide economic data analysis if this is to contribute to gender-equitable policy-making. Clarifying these principles is important because data collection and measurement reflect not only technical decisions but also policy priorities. For example, deciding to measure women's paid employment only in terms of the aggregate employment to population ratio says nothing about the terms of women's inclusion in labour markets. Tracking changes in the gender composition of employment status, and across occupations and sectors, reveals a greater concern for the quality of their employment.

(a) <u>Choose statistics that capture terms of inclusion and indicate women's capacity to achieve goals rather than merely counting their numbers</u>

The relevance of reporting not only employment to population ratios (or labour force participation), but also employment status (e.g. how many women relative to men are 'employers' vs. how many women relative to men are 'unpaid contributing family workers' or 'wage workers', and so on) has just been noted. There is consensus in the literature regarding the heightened vulnerability and relative powerlessness of women who work as contributing family workers.[11] By contrast, being an 'employer' often denotes power and greater entitlements and is an employment status rarely held by women. It is important to account for these differences when trying to evaluate the empowerment potential of being in work. Another example relates to access to finance. When the data are available, it is preferable to report the average size of loans that women-led SMEs are able to borrow and the interest rate they must pay, rather than simply the 'proportion of small-scale industries headed by women with a loan or line of credit' (as in SDG 9.3.2)[12].

(b) <u>Look at differences between groups of women and men, focusing on the disadvantaged, and taking a life cycle approach wherever possible</u>

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[11] For example Kabeer, N. (2017). "Women's economic empowerment and inclusive growth: labour markets and enterprise development" GrOW Working Paper Series GWP-2017-01-Concept Paper.
[12] UN Sustainable Development Goals. Indicator 9.3.2 of the SDG relates to: "Proportion of small-scale industries with a loan or line of credit".

Gender intersects with different sources of disadvantage such as place of residence, ethnicity, migration status, a lack of income or education, and it is essential to expose biases in the distribution of economic resources and opportunities along these lines as well. Planning for inclusive trade must involve special attention to those groups of women who are further marginalized because of where they live (e.g. remote rural areas), their background or the stage in their life cycle. For instance, it is widely documented that mothers of young children face an especially severe penalty in accessing quality jobs and earnings.[13] Growing evidence also points to the vulnerability of women of retirement age, who, in many countries, if widowed may be abandoned by their families, or who need to continue taking up (precarious) paid work, to avoid poverty, and at the same time care for their grandchildren, their husbands or their own parents.[14]

(c) Be aware of the difference between equalizing up and equalizing down

Gender disparities are often measured as ratios. But without additional information on context, and the behaviour of the individual components of a ratio, the researcher is unable to say whether an improvement in the ratio is a desirable outcome. For example, it is tempting to use a decline in the gender wage gap (or other decent work deficits) as an indicator of how gender-equitable trade is. However, simply looking at the gap conceals whether a decline is an example of equalising up or down. Gender equitable inclusive trade would be where average hourly earnings of both women and men rise, but the rise is more significant for women.

(d) Look at impact on households as well as individuals, and take account of effects on unpaid domestic work and care

Sex-disaggregated data at the individual level are the most relevant data but, at times, household level statistics can also be creatively used to enable analysis of gender issues. For instance, in absence of reliable time use statistics, household level data on differential access to water, electricity and child care by income and place of residence (e.g. rural vs. urban) can provide useful insights as to which households are likely to be most overburdened with the drudgery of unpaid work. Although these data do not reveal how this burden is shared between different family members, it is plausible to assume that this is borne mostly by women and girls.

One must resist over-simplifications, though, such as comparing female headed households and male headed households to capture the entirety of gender effects resulting from a particular policy change. Despite persuasive arguments against this practice from feminist scholars (most notably Chant, 2004)[15], the use of female headed households as a main indicator of gender difference continues to be found in a number of statistical analyses that claim to be gender-aware. Not only do female headed households usually represent a small fraction of total households in a country, but also they often tend to be a heterogeneous category (e.g. not all of them are poor). When dealing with household level data, distinguishing households by care needs (e.g. presence of children below the age of five, households including elderly members, and similar), and/or differential access to basic infrastructure (such as electricity or water) is a more helpful approach for exposing gender relevant dimensions than crude differentiation by headship.

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[13] ILO (2018). *Care work and care jobs for the future of decent work*. Geneva: ILO.

[14] Horstead, K., & Bluestone, K. (2018). "Who cares? Why older women's economic empowerment matters for the Sustainable Development Goals." Age International; UN Women 2019 *Progress of the World Women 2019-20: Families in a changing world* New York: United Nation: Section 5.7 .

[15] Chant, S. (2004). "Dangerous Equations? How Women-headed Households Became the Poorest of the Poor: Causes, Consequences and Cautions", *IDS bulletin*, Vol. 35, No 4, pp. 19-26.

(e) Select appropriate indicators depending on economic structure

The distributional effects of trade vary depending on a country's economic structure and stages of development. There are likely to be different structural features (including different gender configurations), between semi-industrialized and agriculture-based countries, for instance. It is important that these differences are considered when selecting relevant indicators. For example, the use of gender wage gaps and compliance with labour standards is more appropriate for the analysis of economies with well-developed labour markets and high shares of women in wage work. Gender differences in the distribution of paid and unpaid work as well as gender differentiated access to land and credit are more relevant indicators for the study of agriculture-based economies.

(f) Accept that data gaps are likely to be significant, particularly in low-income economies in the global South, but strive to be creative with existing data

Distributional effects of trade are likely to occur through many channels and involve interactions between the paid and the unpaid economy. Therefore, as noted, gender statistics would need to include a variety of aspects such as: employment status; working conditions; hours of both unpaid and paid work; skills and asset ownership; as well as access to social and physical infrastructure. In many countries, some of these statistics are available but are not systematically analysed or reported in official reports, so this may require obtaining access to original survey data, thoroughly examining and comparing different datasets and maybe even making ad hoc adjustments (ensuring transparency is maintained). Some other statistics will be missing. Pointing to areas where improvements in data collection are most urgent can be a useful by-product of a gender assessment exercise.

(g) Quantify gender differences in impact whenever the data allow it, but do not assume no gender impact if it is not possible to quantify

In-depth sectoral studies and qualitative research must complement economy-wide quantitative analysis. Despite the richness of available analytical frameworks and numerous calls for more nuanced economic analyses of gender and trade over the years, most quantitative empirical work in this policy area remains limited to narrow, simplistic interpretations of 'trade', 'gender inequalities' and 'employment' (see point (a)).

3 MAPPING THE GENDER IMPACT OF CHANGES IN TRADE

3.1 Country characteristics and stages of development

Trade policies are implemented within gendered economic structures, and hence invariably have gender differentiated effects. As noted, different groups of women and men face different economic opportunities and constraints and are assigned multiple but differing roles and responsibilities in both the paid economy and the unpaid economy. These differences mean that women's and men's benefits from trade and investment agreements, and their ability to adjust to possible negative effects resulting from their implementation, is also likely to vary. Gender effects are also likely to vary by a country's economic structure and stage of development. For instance, evidence shows that women have benefitted from employment opportunities related to export expansion in countries specializing in labour-intensive manufacturing, but not in countries

relatively abundant in agricultural or mineral resources which specialize in primary exports.[16] Moreover, female factory workers tend to be the preferred labour force only in early stages of export-oriented industrialization and they are often left behind when industries upgrade.[17] One general lesson from this literature is that the 'inclusion' of women in international trade does not necessarily mean that trade is inclusive. Assessing whether trade is truly inclusive and gender-equitable requires giving attention to the conditions under which women (and men) are affected by trade-related processes in their multiple roles, not only as workers, producers or traders, but also as care providers, consumers and citizens entitled to public services. Gender and trade data analysis must strive to capture these varied factors and circumstances.

3.2 Channels of impact: employment (including entrepreneurship), household consumption, public provision of services

Gender and trade analysis should therefore take into consideration gender distributional effects likely to result not only from job creation/destruction across production sub-sectors employing women and men to different degrees, but also from possible changes in the availability and quality of goods and services for consumption and care provision. A framework frequently used to analyse the distributional effects of trade liberalization identifies three distinct channels through which changes in prices, production structures and regulations can variously affect different groups of women and men: the employment channel (sectors that expand or contract may require different kinds of workers); the consumption channel (changes in relative prices, range and quality of goods affect socio-economic groups differently, due to differences in consumption needs), and the public provision channel (changes in the terms of access to social services and their quality are likely to have group-specific effects).[18]

As for the employment channel, trade expansion and liberalization lead to changes in the structure of production, with sectors producing for export likely to expand and sectors sensitive to import competition likely to contract. This, in turn, may cause changes in the level and distribution of employment between different categories of workers, based on gender, skill and employment status (e.g. wage work vs. self-employment). Economic volatility and possible changes in the regulatory environment often associated with production for world markets are also important determinants of the quality and security of trade-related employment, with small-scale producers and low-skill workers (many of whom are women) often bearing the brunt. Gendered employment effects from greater trade openness are to be expected because of the different distribution of women and men across tradable and non-tradable sectors and employment statuses, combined with limited substitutability between female and male labour due to gender-based occupational and sectoral segregation.

In many developing countries, women working in manufacturing are heavily concentrated in ready-made garments and food processing, usually in low-skill positions and with limited opportunities for training and promotion.[19] Gender-based hierarchical segregation tends also to

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[16] Fontana, M. (2003). "The Gender Effects of Trade Liberalization in Developing Countries: A Review of the Literature." *Sussex Discussion Paper in Economics DP101,* republished in Bussolo, M. and de Hoyos, R.E. 2009 *Gender Aspects of the Trade and Poverty Nexus: A Macro-Micro Approach,* Palgrave and McMillan for the World Bank: Washington D.C.

[17] Tejani, S. and Milberg, W. (2016). "Global Defeminization? Industrial Upgrading and Manufacturing Employment in Developing Countries" *Feminist Economics* 22 (2).

[18] Fontana, M. (2003). Ibidem.

[19] ILO (2018). *Women and Men in the Informal Economy: A Statistical Picture*, 3rd ed, Geneva: ILO.

prevail in services enabled by manufacturing and/or facilitated by the development of new technologies such as jobs in the information and communication sector.[20] Moreover, women are usually the majority of small-scale producers in agriculture and often find it difficult to become independently involved in global value chains.[21] Recent cross-country data analysis confirms that gender-based labour market segregation is remarkably persistent, not only in developing countries but also in high income ones. In their household-survey based cross-country analysis of 69 countries between 1980 and 2011, Borrowman and Klasen (2019) find that trade openness did little to erode such segregation. More specifically, they find that trade openness, measured as exports as a share of GDP, has minimal (positive) impact on sectoral segregation and increases occupational segregation.[22]

A related policy issue is whether it is easier for women to be included in export-oriented production as wage factory workers or as producers/entrepreneurs, and the terms and conditions of such inclusion. Elson et al. argue that gender inequality positions women as sources of competitive advantage (as cheap wage labour) rather than achievers of competitive advantage (as small entrepreneurs).[23] Female business owners and own-account producers need more than just their own labour. To achieve competitive advantage, they also need access to finance, technology, social networks, markets, and freedom from other demands on their time. Social and gender inequalities structure access to and use of these crucial resources, most often to women's disadvantage. Women's enterprise promotion policies and programmes in recent years have recognised and tried to address these issues, both domestically and in relation to trade, through Aid for Trade initiatives for example. The evidence so far, however, suggests women-led SMEs still struggle to run profitable businesses. Gender gaps in entrepreneurial activities have changed little in the last decade according to the OECD.[24] In many countries women-led businesses remain concentrated in low-profit retail and services activities, and are unable to break into higher-profit male-dominated sectors.[25] These observations suggest one should be cautious about strategies that emphasise entrepreneurship promotion as a sole and guaranteed vehicle for women's 'empowerment', a seemingly popular view in existing international trade fora (e.g. WTO and World Bank).[26]

As for the consumption channel, trade induces changes in the relative prices of goods and services and, sometimes, in the range and quality of products available in a country. These changes impact variously on different groups of households and, importantly, different individuals within households. The effects will vary depending on households' spending baskets and individual household members' command over their own household resources. To further clarify, changes in the availability and price of goods will determine which items, and in what quantities, are purchased by a household. How the purchased goods are used for the benefit of household members will be shaped by gender norms. Because women and men, younger and older people, have different decision-making power and different needs (for example, for health

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[20] Stiaritz, C. and Reis, J.G. eds. (2013). 'Global Value Chains, Economic Upgrading and Gender: Case Studies of Horticulture, Tourism and Call Centers' PREM The World Bank: Washington D.C.

[21] FAO-IFAD-ILO (2010). *Gender Dimensions of Agricultural and Rural Employment: Differentiated Pathways out of Poverty* FAO, IFAD and ILO: Rome.

[22] Mary Borrowman & Stephan Klasen (2020). "Drivers of Gendered Sectoral and Occupational Segregation in Developing Countries", *Feminist Economics*, 26:2, 62-94; ILO (2019) *A quantum leap for gender equality* Geneva.

[23] Elson, D., Grown, C. and Cagatay, N. (2007). "Mainstream, Heterodox, and Feminist Trade Theory" in van Staveren, I., Elson, D., Grown, C. and Cagatay, N., eds., *The Feminist Economics of Trade*, Routledge: London.

[24] OECD (2017) *The Pursuit of Gender Equality: An Uphill Battle* Part IV Paris: OECD.

[25] Goldstein, M. et al (2019). 'Tackling the Global Profitarchy: Gender and the Choice of Business Sector', *Policy Research Working Paper 8865*, The World Bank.

[26] The WTO is operationally constrained by the fact that its remit, within the UN system, is confined to trade-related matters, whereas labour and employment-related, but not entrepreneurial, matters are dealt with in the ILO.

care and nutrition), trade-induced changes in consumption goods and use of services will not affect all of them in the same way. In relation to food and nutrition, for example, gendered effects may arise because of prevailing norms assigning women primary responsibility for the purchase and preparation of food. Moreover, in some societies, when food is scarce and/or expensive, priority in terms of who eats first is often given to men and boys.

Data limitations mean that the impact of trade policy on intra-household consumption remains the least studied topic within the trade and gender literature. The claim made by some trade liberalization advocates that cheaper imports will enable the poor to increase their consumption levels does not seem so far corroborated by the evidence. On the other hand, concerns have been raised in recent years by civil society organizations regarding the possible negative consequences of trade rules over food safety, the environment and access to affordable medicines (e.g. TRIPS), which are included in some trade agreements.[27] New tools and data are needed to enable assessment of the intra-household gender effects likely to be associated with these measures.

Within the domain of what is possible with existing data, methodological approaches that focus on detailed country-level price analysis of items such as staple foods, other food, medicines, clothing, electrical equipment, entertainment, and differentiate by household groups with varied care needs, are more fruitful than approaches that use aggregate cross-country analysis and broad-brush categories of male-headed and female-headed households. (Unfortunately the latter approach continues to be preferred in some recent literature such as De Pretis-Chauvin and Porto, forthcoming[28]). These aspects will be further discussed in section 4.2.

Trade-related technological diffusion might also affect gender inequality, and much emphasis has been put recently on the potential of information and communication technologies (ICTs) to enable greater inclusion of women in international trade, as traders and entrepreneurs (e.g. World Bank and the WTO, 2020). This too is not straightforward. Widely cited examples include the use of mobile phones for money transactions and for running businesses, the digitalization of custom clearance or similar transactions (assumed to reduce the risk of dealing with corrupt officials), involvement in e-commerce and even greater opportunities to access educational and health services through digital platforms.[29] This optimistic perspective highlights the potential for cyberspace to facilitate more equitable gender relations by helping women overcome difficulties related to their restricted physical mobility and by redressing power imbalances likely to surface in their face-to-face interactions with men, especially in public spaces.[30] Yet empirical research also illustrates challenges for women in using ICTs, mainly related to constraints such as limited digital literacy, financial resources and infrastructure.[31] For example, a recent Mobile Gender Gap Report[32] notes that, although women's mobile phone ownership has increased in low and middle income countries in the last decade, a mobile gender gap persists everywhere (e.g. in South Asia

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[27] See for example Heinrich Boll Foundation's paper series on TTIP at https://www.boell.de/en/tags/ttip.

[28] Reported in World Bank; World Trade Organization (2020). *Women and Trade: The Role of Trade in Promoting Gender Equality.* Washington, DC: World Bank.

[29] World Bank and the WTO. (2020). ibidem; Madianou, M. and Miller, D. (2011). "Mobile Phone Parenting: Reconfiguring Relationships between Filipina Migrant Mothers and Their Left-behind Children". *New Media & Society,* 13(3), pp. 457-470.

[30] Wajcman, J. (2009). Feminist Theories of Technology. *Cambridge Journal of Economics,* 34(1), pp. 143–152.

[31] Buskens, I. and Webb, A. (2009). *African Women and ICT.* London: Zed Books; Elnaggar, A. (2008). Toward gender equal access to ICT. *Information Technology for Development,* 14(4), pp. 280-293.

[32] GSMA Connected Women 2019 (2019). *The Mobile Gender Gap Report 2019* available at https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/GSMA-The-Mobile-Gender-Gap-Report-2019.pdf

women are 28 per cent less likely than men to own a mobile and 58 per cent less likely to use mobile internet). The report further notes that mobile gender gaps extend beyond ownership in that, even when women own a mobile phone, they use a smaller range of mobile services. Affordability, literacy and digital skills, as well as safety and security concerns are the most important barriers cited by women for not owning a mobile and/or using internet.

As for the public provision effect, a frequent concern has been that trade liberalization can reduce tariff revenues — a significant source of tax revenue for many developing countries. If the decline in revenues, in turn, results in lower government spending, this will likely have disproportionately negative impact on women. This is because women tend to make more use of public services given their greater responsibilities for unpaid care and their lower incomes. Nevertheless, in some cases (such as support for small businesses and technical training), women may use the service less than men, because of access barriers.

A sound body of evidence, which does not, however, explicitly examine trade effects, shows indeed that fiscal policies that emphasise minimising taxation and cutting expenditure make it harder to prioritize budgets towards improving the lives of the poor, and particularly poor women.[33] If governments manage to replace import tariffs with alternative indirect taxes (i.e. to compensate for lost revenue), these are still likely to have gendered differentiated effects.[34] It is important that measures are taken to avoid tariff cuts having a regressive impact, improving consumption of well-off households whilst making goods and services consumed by vulnerable groups, especially women, less affordable. It should be also acknowledged that in many low-income developing economies, considerations about distribution are probably not the main determinants of how government spending is allocated.[35] Politics, donor and international financial institution priorities usually play a bigger role.

A related issue relevant to trade agreements seeking to liberalize not only goods, but also services and investment, has to do with possible effects on the quality of basic services. For example, in high income and middle income countries, increasing the share of private health services for the elderly is likely to negatively affect women more severely than men. Women tend to live longer but be poorer than men. In addition, they play a greater role as care providers for other family members even in their old age and may be called on to carry an even larger burden in this respect where access to and affordability of care services rises for relatives.[36] In low-income developing countries, the privatization of water provision has been identified as an area with potentially negative gender implications, since it is women and girls which are overwhelmingly tasked with collecting and treating water in contexts where access to water on household premises is limited.[37] A much quoted example refers to the case of Bolivia, where the government privatized the municipal water system, granting a contract to a multinational based in the United States. It

[33] Ortiz, I. and Cummins, M., (2013). "Austerity Measures in Developing Countries: Public Expenditure Trends and the Risks to Children and Women", *Feminist Economics* 19:3: 55-81.
[34] Grown, C. and Valodia, I., (2010). *Taxation and Gender Equity: A Comparative Analysis of Direct and Indirect Taxes in Developing and Developed Countries*, London: Routledge.
[35] See for instance Budlender, D., (2005). *Expectations versus Realities in Gender-Responsive Budget Initiatives,* Geneva: UNRISD.
Williams, M. (2007). "Gender Issues in the Multilateral Trading System" in van Staveren, I., Elson, D., Grown, C. and Cagatay, N., eds. (2007). *The Feminist Economics of Trade*, Routledge: London; Horstead, K., & Bluestone, K. (2018). Who cares? Why older women's economic empowerment matters for the Sustainable Development Goals. Age International.
[37] Bakker, I. (2015). "Towards Gendered Global Economic Governance: a three-dimensional analysis of social forces" in Gill, S. ed. (2015). *Critical Perspectives on the Crisis in Global Governance* Palgrave Macmillan: New York.

subsequently cancelled the contract because of extensive protest against the company's failure to supply adequate water to poor communities.[38]

3.3 General scheme for gender analysis

Trade policies have the potential to reduce gender inequalities in labour markets when they contribute to the creation of better job opportunities for women in higher value-added sectors previously precluded to them. However, there is a risk that they will perpetuate gender inequalities if they instead encourage export strategies centred around a limited number of traditionally low value added 'female' sectors. Trade policies can offer opportunities for redressing unequal gender patterns within households by, for instance, increasing the affordability of food, medicines and household goods needed for well-being, but may exacerbate both gender and income inequalities if they undermine governments' capacity to provide quality public services of particular value to low-income women, such as water, electricity and care services. Figure 1 is a summary illustration of these complex effects.

Figure 1: Gender distributional effects of trade
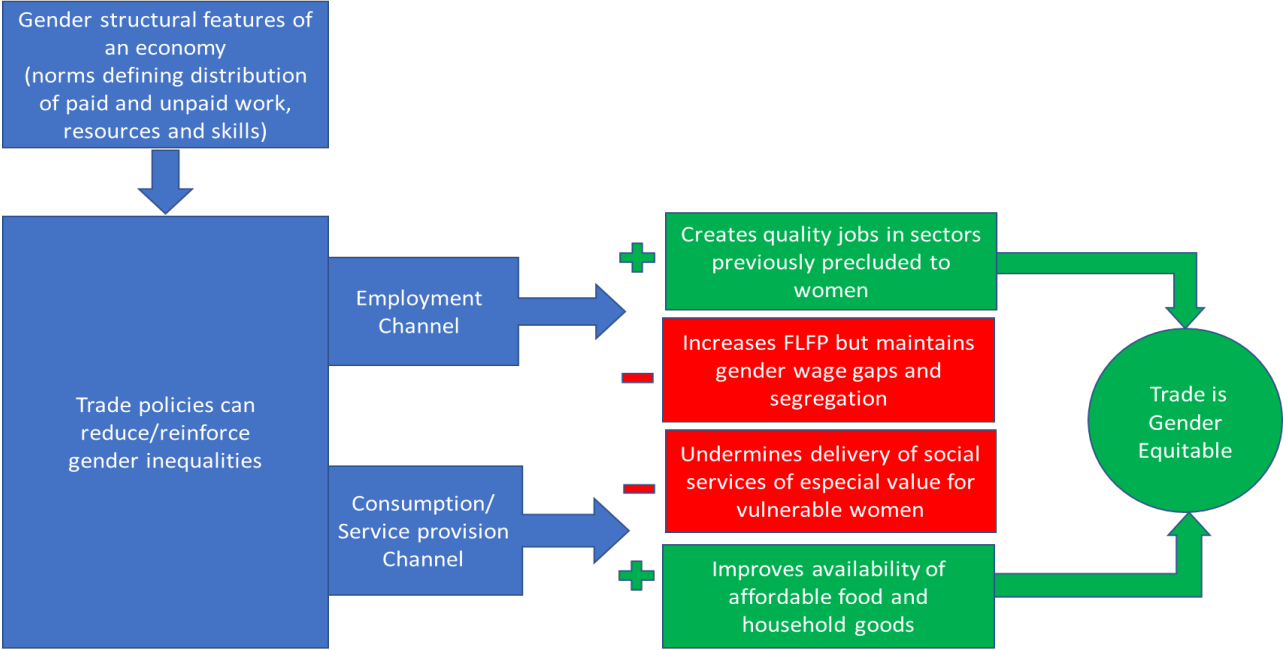
(FLFP = female labour force participation rate)
Source: Author's design

The checklist in Table 1 is based on the analytical framework just described. It shows the kind of data needed for each part of the analysis. It can be used as first step to identify data sources and data gaps for either ex-ante impact assessments or ex-post monitoring. section 4 provides selected examples of how elements of this checklist can be operationalized.

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[38] Sinclair, S. (2015). "Trade Agreements and Progressive Governance" in Gill, S. ed. (2015) *Critical Perspectives on the Crisis in Global Governance* Palgrave Macmillan: New York.

Table 1: Types of data needed for gendered trade assessments

EMPLOYMENT and PRODUCERS/ENTREPRENEURS		
Questions	**Trade linkages**	**Potential sources and indicators**
1. In which economic sectors do women and men work? What proportion of female and male workers are in sectors with potential for export expansion? What proportion of female and male workers are in sectors exposed to import competition?	□ Important to know if sectors expanding/contracting due to trade are female-intensive and hence whether gains/losses in employment likely to be disproportionately female/male.	✓ Exports and imports from customs data, production data from national accounts <u>to be used in combination with</u> individual level employment data from labour force surveys, and/or enterprise surveys, and/or social security data. Ad hoc adjustments may be needed since sectoral/ occupational categories and sampling strategies in different surveys may not match.
2. What's the extent of gendered sectoral and occupational segregation and its trend over time?	□ Understanding patterns of gender segregation in a country over time gives some indication of how difficult it might be for female workers/producers to be included into new sectors/occupations generated by trade-related structural change.	✓ Better to combine an index of segregation (such as the dissimilarity) together with a detailed breakdown of sectoral distributions by gender. All preferably at the 3-digit ISIC code or higher. Can be useful for both ex-ante assessments and ex-post monitoring.
3. What is the gender distribution of employment by both economic sector and employment status? (a) Wage workers: do working conditions vary by gender (e.g. social protection coverage and type of contract)? Are opportunities for training and promotion equally available to male and female workers? Do any of these features vary by type of firm ownership (e.g. foreign-owned vs. domestically owned)? (b) Producers/entrepreneurs: what's the volume of sales and earnings by gender of owner? What the proportion of female/male owners producing for export? Do female producers have equal access as males to credit and productive assets?	□ Important to know not only how many jobs likely to be generated for women, but whether trade contributes to improved job quality and better terms of inclusion. Employment status a good first approximation of quality, including informality. Essential to gauge what share of women in a particular sector is own-account/wage worker, since women entrepreneurs and women in wage work face different gender-intensified constraints. □ Identifying such gender-intensified constraints by sector and employment status crucial for designing flanking measures and AfT.	(a) Labour force surveys (LFS) best source for quality of work indicators but data availability uneven. Can be complemented with workers surveys when available. Workers surveys especially good for ex-post monitoring of training opportunities, promotion opportunities and access to care facilities. (b) Enterprise surveys and agricultural censuses best sources but patchy regarding sex-disaggregated variables. Their quality and frequency vary greatly across countries. Highly preferable to use indicators denoting women's ability to achieve goals rather than merely counting them (e.g. average size of loans and interest women-headed firms must pay and not only share of women-headed with a line of credit). May need to complement enterprise/agricultural producer surveys with other data sources such as household surveys and/or detailed value chain analysis of specific goods/services. Maybe complement customs data with internal revenue information when possible (often includes gender information).

CONSUMPTION AND PUBLIC PROVISION		
Questions	**Trade linkages**	**Potential sources and indicators**
4. Who is in charge of food expenditure in the household? How is family consumption distributed among girls and boys, women and men?	▫ Trade induces changes in the relative prices of goods and services and, sometimes, in the range and quality of products available. Changes in prices of food and collective household goods especially affect women because of their primary household responsibilities.	✓ Household surveys with detailed information on goods and services expenditures. Combine with data on consumer prices from National Statistical Offices. ✓ Consult empirical literature on intra-household resource allocation where available.
5. How much time do women and men spend on unpaid domestic work and care activities? Does this vary depending on location, family circumstances or ethnicity?	▫ Unpaid domestic work mostly carried out by women and particularly heavy in remote rural areas. Could be a barrier to women seizing new opportunities related to trade: e.g. by preventing female farmers from participating in extension services or limiting female workers' access to new paid employment conflicting with family responsibilities.	✓ Time use surveys (TUSs) (but these are of uneven quality). Combine with data on households' access to basic infrastructure and spending patterns from household surveys. ✓ Administrative data on care services e.g. records on early childhood education enrolments from relevant ministries. ✓ Need to make adjustments re. categories/groupings of variables to enable analysis of the above surveys in combination with each other. Relating sex-disaggregated TUS data with socio-economic characteristics of people surveyed essential for identifying spheres of policy action e.g. correlation between affordability of childcare and type of paid employment mothers can take on.
6. What is the proportion of social sector spending that supports gender equality? Is this likely to be protected in the event of a decline in public revenue? How is the promotion of gender equality objectives affected by changes in the regulation of public services?	▫ In developing countries, tariff liberalisation likely to reduce an important source of public revenue; might be especially detrimental to women. ▫ Concerns about foreign companies' involvement in the provision of services. Might affect equity of access to, and quality of utilities/health services with disproportionate negative consequences for disadvantaged women.	✓ Nationally representative household surveys combined with inspection of government accounts. ✓ Budget documents.

Note Not all can be covered by national statistics. Need to complement large survey analysis with sectoral studies and consultations with a variety of stakeholders.

4 DATA-BASED ANALYSIS: SOURCES, METHODS AND FINDINGS FOR SELECTED COUNTRIES

The following paragraphs offer concrete specific country examples to illustrate how a selection of gender statistics can be used to illuminate aspects of the gender and trade relationship, pointing to useful sources of data and ways in which different data can be analysed. Section 4.1 describes selected examples regarding employment effects while section 4.2 deals with consumption and public provision effects. The treatment of these issues in this section is by no means exhaustive and is simply meant to offer a starting point. The range and quality of data, and hence what is feasible in terms of gender-aware trade analysis, is likely to greatly vary by country.

4.1 Analysing the employment effects of trade from a gender perspective

4.1.1 Baseline snapshot of gendered employment in export-oriented and import-intensive sectors and model simulations for ex-ante analysis (Bangladesh)

The starting point for gaining insights into the gender composition of employment in both export-oriented and import-intensive sectors is to build up a snapshot of the production structure of a country alongside shares of female employment in each sector, at a fine sectoral detail (at least two digit-level ISCO/ISIC code). Table 2 is an example of what this can look like. It describes one segment of a social accounting matrix constructed to simulate the impact of trade reform on the gender distribution of paid and unpaid work in Bangladesh using a computable general equilibrium model. Employment in this exercise is measured in hours and also takes account of time spent by women and men in non-market work, which the study divides into two sub-categories called 'social reproduction' (i.e. unpaid domestic work and care) and 'leisure' (i.e. non-work). On average, women spend more hours in work than men, but a much higher share of their working time is spent in non-market domestic and care work. This very unequal distribution between paid and unpaid work has implications for trade effects, which are exposed in a full set of model simulations discussed elsewhere.[39] The present discussion focuses for simplicity on market work and is principally aimed at drawing attention to how sectoral differences between women's and men's paid employment related to Bangladesh's production and trade structure in the early 2000s.

Table 2 shows a highly skewed distribution of women across market sectors. About 60 percent of the total time spent by women in market work is devoted to agriculture. There is a marked gender division of labour across activities within agriculture; raising poultry and livestock are female-dominated activities. It is notable that, in relation to the trade structure of the economy, livestock is the agricultural sub-sector with the highest level of import penetration. In manufacturing, the ready-made garment sector and the knitwear sector have great strategic importance in exports. While the ready-made garment sector is also the most female intensive industry (women account for more than 80 percent of total working hours), the share of female employment in the knitwear sector is negligible. A gender-aware CGE model run to simulate a

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[39] Fontana, M. (2001). Modelling the Effects of Trade on Women: A Closer Look at Bangladesh. *IDS Working Paper 139* Brighton: IDS.; and Fontana, M. (2007). Modelling the Effects of Trade on Women, at Work and at Home: Comparative Perspectives. in van Staveren, I., Elson, D., Grown, C. and Cagatay, N., eds., *The Feminist Economics of Trade*, Routledge: London.

decline in garment production finds that female workers in Bangladesh are more likely than male workers to lose their jobs with a reduction of employment in that industry. The way the model and database are constructed reveal that women with primary education, who predominate in the garments industry, are disproportionately negatively affected relative to both unskilled women, who work in agriculture, and higher education groups. Other simulations find that export diversification, through expansion of other sectors with export potential such as shrimps, leather and vegetables, have negligible effects on women's employment opportunities because of highly segmented labour markets. The case of Bangladesh described in this modelling exercise is a typical example of the fragility of women's employment gains in contexts where export strategies centre around one single female-dominated sector, and insufficient attention is given to promoting women's inclusion in other sectors of the economy. Measures on both the demand side (e.g. fighting employer discrimination) and supply side (e.g. promoting technical skills and providing childcare) are needed to achieve the goal of widening women's opportunities for decent work.

This study is now about 20 years old but it provides a good example of how social accounting approaches can be used as an effective organizing principle for gender-aware data analysis to inform gender-equitable trade strategies. Data organized this way help with visualising the employment landscape and the extent of trade by sector, enabling quick identification of sectors where policy measures are most needed, either to protect women from job losses or to enable them to benefit from trade-related employment generation. The study also points to the importance of disaggregating Social accounting matrices (SAM) categories not just by sex, but also by skill, place of residence and extent of unpaid care burdens, whenever the data allow it.[40] A major limitation, however, is that this modelling approach does not distinguish by employment status (e.g. whether workers in each sector are in wage employment, contributing family workers, own-account producers or traders). To better understand these latter aspects, additional data and methodologies (such as in-depth studies) are needed.

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[40] For a more detailed discussion of these issue see Fontana, M. (2001). Modelling the Effects of Trade on Women: A Closer Look at Bangladesh. *IDS Working Paper 139* Brighton: IDS and Fontana, M. (2007). Modelling the Effects of Trade on Women, at Work and at Home: Comparative Perspectives. in van Staveren, I., Elson, D., Grown, C. and Cagatay, N., eds., *The Feminist Economics of Trade*, Routledge: London.

Table 2: Sectoral structure of Bangladesh, 2000

	Net output (% of GDP)	Exports intensity*	Import Penetration*	Female Intensity+	F Labour (% of tot)	M Labour (% of tot)
All market sectors, of which:	100.0			20.1	11.4	46.4
Rice and grains	7.6	0.0	4.5	16.0	1.7	9.3
Jute	0.3	16.2	0.0	6.6	0.0	0.7
Sugarcane	0.4	0.0	0.0	4.5	0.0	0.3
Commercial crops	2.2	1.0	14.2	1.6	0.0	0.7
Vegetables	5.6	0.7	9.5	34.7	1.4	2.6
Livestock	2.5	0.1	22.7	48.2	3.0	3.3
Poultry	0.5	0.0	0.3	76.4	0.3	0.1
Shrimps	0.5	36.2	0.0	32.1	0.1	0.1
Fish	5.6	0.0	0.0	29.8	0.4	1.1
Rice processing	2.9	0.0	1.5	35.8	0.2	0.3
Edible oil	0.3	0.0	44.4	0.2	0.0	0.0
Sugar	0.3	0.0	6.9	2.8	0.0	0.2
Other food	0.6	11.1	12.5	10.6	0.0	0.2
Tobacco products	0.5	0.1	2.0	32.4	0.0	0.0
Leather	0.2	69.5	11.0	2.0	0.0	0.0
Jute textile	0.2	66.1	29.1	0.5	0.0	0.2
Yarn	0.3	0.2	68.0	9.5	0.0	0.2
Mill Cloth	0.2	0.0	82.2	1.9	0.0	0.2
Other cloth	1.0	0.0	0.0	11.5	0.1	1.0
RMG	2.8	77.7	19.3	80.2	1.2	0.3
Knitwear	0.6	88.5	21.6	20.0	0.0	0.2
Other textiles	0.1	0.2	22.6	43.4	0.0	0.1
Other industries	2.8	0.4	65.0	15.5	0.2	1.2
Infrastructure	12.6	0.0	0.0	1.8	0.0	1.3
Trade and Hotels	16.7	0.0	0.0	3.7	0.4	10.3
Transports	11.1	0.0	0.0	0.8	0.0	6.7
Communications	0.8	0.0	0.0	4.0	0.0	0.2
Public sector	11.9	0.0	0.0	15.9	0.3	1.7
Domestic services	3.7	0.0	0.0	39.5	1.8	2.9
Financial services	5.2	0.0	0.0	1.5	0.0	1.1
All social reproduction**					45.1	6.4
All leisure					43.5	47.1
Total					100.0	100.0

Source: Fontana, Marzia (2006), 'The gender effects of trade reforms in Bangladesh' *USAID Bangladesh- GATE (Greater Access to Trade Expansion) Project,* Washington D.C.

Notes:

* Export intensity is measured as the share of exports in gross output and import penetration is measured as the share of imports in domestic use.

+ Female intensity is measured as the share of female labour in total labour working in a particular sector

** Labour for both males and females is measured in hours and 'social reproduction' is the term used to describe time spent on unpaid domestic work and care

The sectoral structure illustrated in Table 2 was constructed by patching together many data sources and making several adjustments to ensure consistency between them. The employment data were mainly derived from various Bangladesh Labour Force Surveys, but with *ad hoc* adjustments based on an existing Input/Output Table. A common challenge when linking different surveys through sector identifiers is that the level of sectoral disaggregation of employment statistics (mostly at the 2-digit ISIC code) is not as detailed as in trade statistics, which usually list products by tariff codes at the 8-digit level. This problem is most acute in

agriculture but also applies to manufacturing sectors. In the long run, the best way of addressing this challenge would be for national statistical offices to develop linked employer-employee surveys which are sufficiently disaggregated, represent all categories of firms and workers, and are run frequently. In the short term, a possible, if not ideal approach, involves attempting to match existing surveys anyway. This will require that researchers use their own judgment to decide the most appropriate grouping of categories to ensure some level of data compatibility.

These sorts of *ad hoc* adjustments are indeed common in social accounting matrices used to run CGE models, even when gender analysis is not accounted for. SAM are databases organized in matrix format to describe the generation and distribution of resources, income and consumption by diverse socio-economic groups and institutions in a country in a specific year. SAMs constitute the core database of any CGE model, a tool frequently used to analyze the effects of trade policies. CGE modelling is the approach routinely adopted for the quantitative analysis informing the European Commission's Sustainable Impact Assessments. A SAM database, however, can be used as a tool on its own right. It can be valuable in highlighting the gender structural features of an economy, provided relevant accounts are disaggregated to capture key patterns between different categories of women and men (both in production and consumption). It is not uncommon for Ministries of Planning or National Statistical Offices to regularly maintain a SAM or Input/Output Table. These databases could be in principle extended to reflect the information needed to undertake gender and trade analysis.

As for fully developed CGE models, one should be cautious about their usefulness for gender and trade distributional analysis. CGE models are often based on strong assumptions on how various markets work (e.g. labour markets are often designed to function without frictions or distortions, according to neoclassical economics principles) and have various limitations from the point of view of gender analysis.[41] Most CGE modelling simulations for regional trade agreements are carried out using multi-country models (usually based on the well-known Global Trade Analysis Project (GTAP) framework), and not single-country models. This approach enables a detailed multi-sectoral analysis for each of the economies participating in a particular trade agreement but can say little about within-country income distribution effects. Multi-country models usually incorporate only limited socio-economic detail for each individual country, mainly because more detail would add too much complexity to models that are already complex to handle. This means that these models enable measurement of the impact that the agreement would have on aggregate economic activity in each member country, but provide little insight on how gains and losses are distributed between genders, or other categories of workers or consumers, within an economy.

Nonetheless, a few exceptions exist. A study commissioned by the ILO[42] assessed the impact of ASEAN economic integration on labour markets. It provides a good example of how at least some gender breakdown can be incorporated into a multi-country model. The model includes six ASEAN countries (Philippines, Thailand, Indonesia, Lao PDR, Cambodia and Vietnam) to simulate the effects of a number of ASEAN-related economic integration initiatives and, helpfully, differentiates between different categories of workers. Workers are disaggregated by sex and skill. The study finds that in Vietnam, for example, under all scenarios, women experience employment gains more than men, but these gains largely result from an increase in unskilled jobs. This is a useful insight for policy.

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[41] For further detail see Fontana, M. (2014). "Gender in Economy-wide Modelling" in Rai, S. M. (Ed.), Waylen, G. (Ed.) (2014). New Frontiers in Feminist Political Economy. London: Routledge.

[42] Plummer, M.G., P. A. Petri, and F. Zhai (2014). *Assessing the impact of ASEAN economic integration on labour markets.* ILO Asia-Pacific Working Paper Series.

More serious drawbacks of CGEs models, applying to single country models as well as regional models, have to do with their strong assumptions about how labour markets work, and their limited ability to explain issues such as gender-based labour segmentation, gender bias in job selection, and the persistence of gender wage gaps. Moreover, CGE models are better suited for simulating policies that can be translated into direct effects on prices (e.g. tariff changes). They are not well suited for the analysis of Non-Tariff Barriers and other qualitative/regulatory aspects, which are increasingly a more significant component of current trade agreements than tariffs.[43] This all points to the need to complement model simulation analysis with other methods and to triangulate model results with findings from other sources, including broad stakeholder consultations.

4.1.2 Outcomes: the dynamics of gender composition of employment in relation to changes in trade (Vietnam)

Taking a simpler approach to survey data, a gender-aware analysis of the Vietnam economy undertaken by UN Women (2016)[44] examines employment trends in non-agricultural sectors in relation to export trends as well as gender patterns in various aspects of working conditions.

More specifically, the study focuses on an ex-post analysis of historical data rather than ex-ante simulations. Descriptive statistics of patterns in key exports are examined alongside changes in the gender composition of the sectoral labour force over approximately ten years.

Analysis of export data points to rapid changes between 2005 and 2013 in the composition of Vietnam's merchandise exports, towards a growing share of manufacturing exports. Most were low value-added, but some high value-added products made inroads. The rapid growth of a few products such as phones and parts, electronics, machinery and vehicle parts – some of which were not at all part of Vietnam's export basket ten years earlier – is especially notable (as illustrated in UN Women Vietnam 2016: Figure 3 p.47, reported below as Figure 2).[45] Table 3 provides information on concomitant changes in the gender composition of employment in manufacturing.[46] The sectors are arranged in descending order, according to the annual rate of their employment growth over the 2005-2013 period. Read together with Figure 2, the table shows that employment growth has been faster in sectors where export shares have increased; and these sectors are largely female-intensive. They were either female-intensive sectors right from the beginning of the period such as garments (also called 'wearing apparel'), or have become so in the process. It is especially notable that the female intensity of employment in electronics has increased from 58 percent in 2005 to 79 percent in 2013. Even the motor vehicles sector has shifted from being a relatively male-intensive sector in 2005 to having a female-majority workforce in 2013.[47] The initial share of the total workforce in each of these sectors was quite small in absolute terms, however, and the marked increases in the share of women in the workforce in these sectors had little impact at the aggregate level.

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[43] Fugazza and Maur (2008). Non-tariff barriers in computable general equilibrium modelling. Working paper policy issues in international trade and commodities study series no. 38 UNCTAD: Geneva.

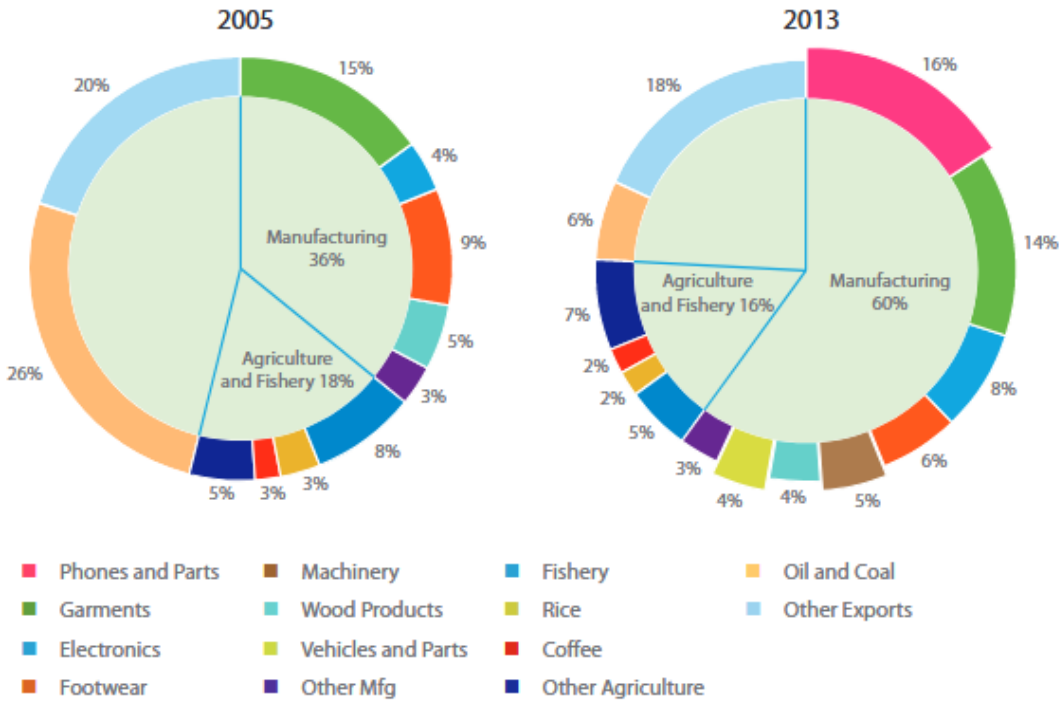[44] UN Women, "Towards Gender Equality in Viet Nam: Making Inclusive Growth work for Women" (2016). Hanoi: UN Women Viet Nam

[45] Ibidem..

[46] Ibid. What is labelled as Table 3 here was Table 8 in the original study.

[47] 'Computer and electronics' also comprise phone and parts, i.e. phone and parts is classified as ISIC 263 'manufacture of communication equipment' and was hence included in the ISIC 26 category.

Figure 2: Vietnam top exports, 2005 and 2013

Source: UN Women, "Towards Gender Equality in Viet Nam: Making Inclusive Growth work for Women" (2016). Based on General Department of Customs data.

This analysis is illustrative and points to possible gender-equalizing effects from Vietnam's greater trade openness, including potential employment opportunities for women in new dynamic sectors. But, as in the previous Bangladesh example, these data still say nothing about the quality of these employment opportunities. The enterprise survey data used in the analysis unfortunately did not provide breakdowns by workers' occupations and skills, and hence offers no insight on whether women were hired in these sectors as unskilled workers or semi-skilled workers, and whether opportunities for training and promotion were available. Evidence from other sources (e.g. studies of specific firms) indicates that women workers remained largely engaged at the level of low-skill assembly type of work, even in emerging sectors such as electronics.[48] These two sets of findings combined would suggest that Vietnam may indeed fit with the general patterns found in Borrowman and Klasen (2019), as noted earlier. Under existing modalities and circumstances, greater export-orientation may lead, as in this case, to some reduction in gender-based sectoral segregation, but it has no diffusion or demonstration effect in opening up opportunities for women in non-exporting sectors. Moreover, it does not seem to contribute to reducing segregation within occupational hierarchies and might actually increase it.

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[48] Nørlundb, and Tran (2015). 'Globalization, industrialization, and labor markets in Vietnam', *Journal of the Asia Pacific Economy*, vol 20, no. 1, pp. 143-163.

Table 3: Employment growth and female intensity in formal manufacturing, Vietnam

Industrial sector	Employment annual growth (female and male) (%)	Female intensity (%)	
		2005	2013
Total manufacturing	**7.5**	**58.6**	**60.0**
Computer, electronic and optical products	27.9	58.0	78.9
Motor vehicles; trailers and semi-trailers	12.3	31.7	57.8
Wearing apparel	10.5	82.6	81.3
Repair and installation of machinery and equipment	9.8	14.6	15.4
Rubber and plastics products	9.6	45.2	47.1
Fabricated metal products (except machinery and equipment)	9.1	26.9	28.3
Machinery and equipment	8.3	20.6	34.3
Other manufacturing	8.3	69.4	71.0
Basic metals	7.7	20.1	19.7
Leather and related products	7.2	82.0	79.4
Electrical equipment	7.2	63.9	60.3
Paper and paper products	7.1	37.1	42.0
Pharmaceuticals, medicinal, chemical and botanical products	6.7	55.2	52.8
Chemicals and chemical products	6.1	33.9	31.5
Printing and reproduction of recorded media	5.5	46.1	44.3
Coke and refined petroleum products	5.1	57.9	20.1
Food products	4.3	59.5	51.4
Furniture	4.2	43.4	42.2
Wood and of wood products (except furniture)	4.1	48.4	41.2
Beverages	4.0	37.8	34.3
Textiles	3.2	65.7	56.0
Other non-metallic mineral products	3.1	32.2	31.7
Other transport equipment	3.0	22.1	27.2
Tobacco products	-1.7	50.5	38.1

Notes: Employment annual growth is calculated as compounded annual growth over the 2005-2013 period.

For the purpose of this survey, the GSO defines formal enterprises as "business which is registered and regulated by the law" (GSO, personal communication, December 2015).

It is useful to point out that this exercise too, like the one for Bangladesh, required linking different data sources and making *ad hoc* adjustments. Employment data were taken from the Enterprise Survey of the General Statistics Office of Vietnam, because data in this survey are regularly collected on a yearly basis and disaggregated by sex according to the two-digit-level industrial classification, unlike the Vietnam Labour Force Survey, which uses different categories. Yet even the enterprise survey's classification does not entirely match the classification of manufactures export data from the General Department of Customs. Moreover, the enterprise

survey only covers employment in formal enterprises and does not provide a breakdown of workers' skills, but it was the best match that could be found.

It is also important to note that a comprehensive assessment of the gender employment effects of trade in Vietnam must also include agriculture, and the extent to which women in rural areas are negatively or positively affected by the changes brought about by new trade agreements. Vietnam is rightly seen as a dynamic industrializing country, but agriculture remains the main source of livelihood for about 40 percent of its female workforce. Women who work in agriculture are usually more disadvantaged, older and with fewer relevant resources and skills than other women, and even less visible in statistics and empirical analyses.[49] Anecdotal evidence suggest they have been so far left behind by processes of agricultural commercialization and diversification. But data on these aspects are even more uneven.

4.1.3 Gender and the quality of wage work in export-oriented sectors

A growing number of Labour Force Surveys collect information on a wide range of variables, allowing the researcher to capture aspects of employment quality by gender. For example, the Vietnam Labour Survey (VLFS) regularly collects employment status by gender and, since 2014, usefully asks also whether workers are covered by social insurance, a lack of which constitutes 'informal employment' according to the official ILO definition. VLFS data shows that in Vietnam many more women than men are in vulnerable employment,[50] which is mainly due to women's high share in the category of 'unpaid contributing family workers' in agriculture. As concerns wage employment in non-agricultural sectors, however, more male workers than female workers are in jobs without social insurance coverage. When the data are further disaggregated by firm ownership, it emerges that this pattern is explained by the fact that male wage workers are over-represented in domestically owned private enterprises. Social insurance coverage is lower in domestic private enterprises than in the foreign-owned sector (and the public sector), where women dominate[51]-- an interesting finding from a gender and trade perspective. Regarding foreign-owned export factories, higher compliance with labour standards can be partly explained by increasing pressures from reputation-conscious buyers.[52] It is also a reflection of the more developed labour and occupational safety policies prevailing in the countries where these companies originate.

For greater insights into gender differences in working conditions and quality of employment in factories producing for exports, sector specific workers surveys might be a more useful source of data. A good example is provided by the ILO Better Work workers surveys, which are administered every year in garment factories that have joined the Better Work programme[53], alongside other data such as firms' compliance with labour standards and managers' surveys. Usefully, in addition to objective job characteristics usually found in labour force surveys (such as occupation, skills, hours of work and earnings), Better Work datasets provide information on individual self-reported assessments regarding job dimensions such as promotion prospects, quality of workplace facilities, working conditions and channels for communicating work-related concerns. They also include workers' perceptions of their own health and well-being.

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[49] UN Women Viet Nam 2016 ibidem

[50] As noted in footnote 9, most vulnerable employment is by definition also informal

[51] According to 2014 LFS data (2014 GSO Report on the LFS, Table 2.9) men are 57 per cent of workers in domestically owned enterprises and only 34 per cent of workers in foreign-owned enterprises.

[52] For more information refer to Smith, Sally (2020) "Advancing Gender Equality through Voluntary Standards for Trade". Published by the Gender, Social Inclusion and Trade Working Group, www.genderandtrade.com

[53] The Better Work programme, a joint initiative of ILO and IFC, includes 1,700 factories in 9 countries: Cambodia, Vietnam, Bangladesh, Indonesia, Jordan, Egypt, Ethiopia, Haiti and Nicaragua see betterwork.org.

To illustrate, an analysis of the Better Work baseline worker survey for Vietnam[54] finds marked differences between male workers and female workers at the time that the garment factories joined the programme. Occupational segmentation by gender was significant and women workers were less likely to be promoted and to receive training than men workers, despite the fact that women, on average, had been employed at the same factory for longer. The analysis also finds that most workers believed there were barriers to promotion, with a significant share of female workers reporting their relationship with the supervisor to be a key obstacle. Half of the surveyed female workers were married and had children. Female workers who had children tended to have had less education than women without children and had been at the factory for longer. Women with higher levels of education used health facilities more often but were less likely to use factory based childcare centres, where these were available.

This is only a selection of the findings from the survey, and this brief account here is simply to demonstrate the usefulness of this kind of data in enabling documentation of qualitative dimensions of work in the context of export-oriented production and hence pointing to measures needed to reduce gender differentials in these dimensions. These surveys are usually updated every year, and hence offer the opportunity to monitor improvements in working conditions regularly over time, and could therefore be useful data sources for ex-post impact assessments. A drawback of these surveys is that they only include workers in formal organized factories and hence are unable to say anything about the many women who work in lower tiers of global value chains, or in hidden, satellite workshops of enumerated firms, or are home-based, with very limited benefits and rights.

4.1.4 Gender analysis of non-agricultural and agricultural self-employment in relation to trade

National-level data on farms and businesses, especially those which are of an informal kind and/or family-run, are limited and of uneven quality, making it more difficult to analyse gender dimensions of self-employment at the country level, whether in agriculture or non-agricultural sectors.

The World Bank Enterprises Surveys (WESs)[55] run by the World Bank since 2006 include data from about 144 countries on representative samples of small, medium, and large companies in the non-agricultural formal private sector. For a few surveyed countries, the dataset also includes modules on micro-enterprises with less than 5 employees and/or not formally registered firms. Manufacturing and services sectors corresponding to firms classified with ISIC codes 15-37, 45, 50-52, 55, 60-64, and 72 (ISIC Rev.3.1) are the business sectors of interest but, occasionally, companies in sectors such as education or health are included. The survey usefully asks questions on infrastructure, trade, finance, regulations, taxes and business licensing, corruption, labour, and perceptions about obstacles to doing business. The range of questions and scope of the data vary by country but, in general, this is a rich and useful source of data that in principle enables gender-breakdowns of enterprises (based on ownership and/or management) and analysis of the specific challenges women-led enterprises face in growing their business and engaging in international trade.

Of relevance to trade assessments, a study drawing on World Bank WESs data from East Africa by the International Centre for Research on Women (ICRW, 2019)[56] finds that female-owned and female managed enterprises are more likely to produce goods and services for domestic

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[54] Fontana and Silberman (2013). Better Work Discussion Paper 13: Analysing Better Work Data from a Gender Perspective Geneva: ILO.
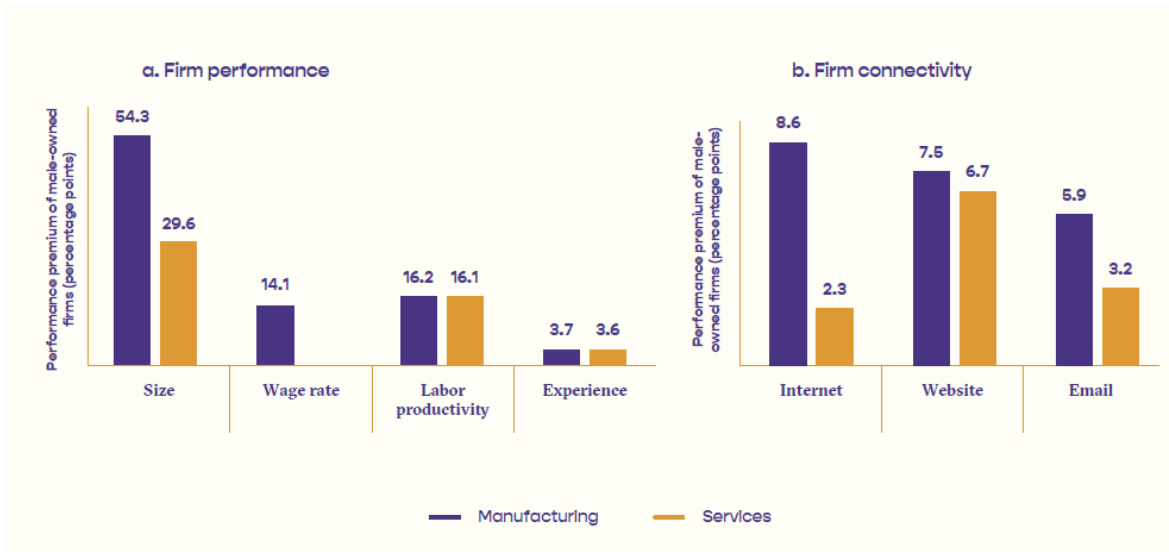
[55] The World Bank Enterprise Surveys, https://www.enterprisesurveys.org/

[56] ICRW (2019). Policy Brief titled 'Women entrepreneurs need more than capital', June 2019.

consumption and less likely to export their products than male-owned/managed enterprises. They also report more limited access to credit and financial services and higher interest rates when using credit.

Another recent analysis of the same dataset extended to a larger sample of developing and emerging countries across different regions confirms these gender patterns and offers further insights.[57] It shows that, among exporting firms, on average, males own 90 percent of manufacturers and 88 percent of services firms. In any country, female-owned firms are less likely than their male counterparts to export, to engage in global value chains, and to be foreign-owned. Further analysis of the datasets seem to lend support to the argument often made in the feminist economics of trade literature that women are more likely to be included in international trade as sources of competitive advantage (e.g. cheap wage labour) than as achievers of competitive advantage (e.g. entrepreneurs) (discussed in section 3 above). The data highlight that the constraints preventing women-led enterprises from participating in export markets include their smaller size as well as gaps in productivity, skill intensity, and experience. As shown in Figure 3, the study calculates that male-owned exporting firms have a performance premium in all these indicators (panel a), and are also more likely to use the internet and email and/or to have their own website (panel b). These gender gaps are most pronounced among manufacturing firms but are present in services as well.

Figure 3: Majority-male-owned exporting firms perform better and are more digitally connected than female-owned exporting firms

Source: World Bank Enterprise Surveys for the most recent available years, https://www.enterprisesurveys.org/en/data.
Note: Panel a shows the average premium in the performance indicators (shown on the vertical axis) for majority male-owned relative to female-owned firms. All regressions control for total factor productivity as well as country-sector, subnational region, and year fixed effects. The results shown are significant at the 1 percent level except for age (in manufacturing) which is significant at the 10 percent level. Wage rates are not available for services firms. Panel b shows the coefficients (mean differences) of separate regression models using the performance indicators shown on the vertical axis as dependent variables and male firm ownership as independent variable. The variables shown are in natural logarithms except for Internet, website, and email. Wage rates are not available for services firms. A positive value reflects lower performance for female-owned relative to male-owned firms. All regressions control for total factor productivity as well as country-sector, subnational region, and year fixed effects. All results shown are significant at the 1 percent level except for age (in manufacturing) and Internet (in services), which are significant at the 10 percent level.

Another reason why female-owned (or managed) enterprises are less involved in global markets than their male counterparts is likely to do with the type of sectors women tend to specialize in. Recent innovative methods of data collection such as the Future of Business Survey (FoB), a collaborative effort between Facebook, the World Bank and the OECD, can help in shedding

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[57] World Bank; World Trade Organization (2020). *Women and Trade: The Role of Trade in Promoting Gender Equality.* Washington, DC: World Bank.

further light on the reasons for this gender-based sectoral segregation, and the measures that can support women entrepreneurs in their efforts to enter higher-return male dominated sectors. The survey currently is administered to owners, managers and employees in enterprises that use a public profile on Facebook for their business. It includes 97 countries from both the Global South and the Global North. The most recent round of these data was specifically designed to look at potential correlates of sectoral choice.[58] The data are used to identify a sort of a 'hierarchy of earnings' consistent with the presence of both horizontal and vertical segregation. Thus, male business owners in lines of industry dominated by men earn the most, women owners in male-dominated sectors and male owners in female-concentrated sectors are in the middle tier; and women in female-concentrated sectors are at the bottom. The data include information on a range of characteristics of the owners and managers across these different categories which could be useful in guiding policy design to address key constraints.

These new initiatives in data collection fill an important gap in the understanding of gender dynamics in entrepreneurship and can certainly be useful in gender and trade analysis. However, it is important to be aware of the limitations of these datasets, which by construction tend to exclude the most informal and marginalized businesses. Another limitation of surveys which are only conducted online such as FoB (as opposed to those surveys administered and monitored by interviewers), is that they are more prone to response bias. For these reasons, it is always good practice to corroborate findings from surveys of this kind with separately commissioned in-depth studies of particular sectors or categories of workers. Gender-aware value chain analyses are particularly helpful for this purpose and are further discussed below.

A lack of reliable, comprehensive and nationally representative sex-disaggregated data is an even more severe problem with regards to agriculture. Recently, a few agricultural censuses have started to ask questions related to crops and access to agricultural resources by individual household member (e.g. Laos 2011 Agricultural Census). But they are the exception, and most agricultural surveys still continue to use the household as main unit of analysis. The additional drawback of agricultural censuses in most developing countries is that they are usually run every ten years, and hence do not meet the need for timely and regular assessments. In some countries, there might be ad hoc surveys and other data collection efforts usually sponsored by specialized organizations such as the Food and Agriculture Organization (FAO), and it is worthwhile exploring their potential for gender and agricultural trade analysis. Addressing the lack of gender-disaggregated data in agriculture should be high priority especially in countries where agriculture remains a significant source of livelihoods for the majority of the female workforce, as in Sub-Saharan Africa and parts of South Asia. Evidence about women who farm but are not head of households deserves special attention.

Small scale studies on the gender effects of commercialization of specific agricultural crops in developing countries do exist, and have been developed since the 1990s.[59] Katz (1995) deserves mention.[60] Her study draws on sex-disaggregated data collected by the researcher herself from over 300 households involved in contract farming, to examine differences in the gender intra-household allocation of labour, income and other resources between adopters and non-adopters of non-traditional agricultural export crops (broccoli and snow peas) in the Central Highlands of Guatemala. A detailed mapping of women's remunerated labour activities in relation to personal and household characteristics offers one of the most valuable insights of the study, which is

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[58] Goldstein et al, (2019). Ibidem.
[59] von Braun, J. and Kennedy, E., eds., (1994). *Agricultural Commercialisation, Economic Development and Nutrition,* Baltimore: The Johns Hopkins University Press for IFPRI.
[60] Katz, E., (1995). Gender and Trade Within the Household: Observations from Rural Guatemala, *World Development,* Vol.2, No 2, pp.327-342.

exemplary for its painstaking attention to the complex gendered dynamics that characterise allocation of labour as well as expenditure decisions within farm households in response to commercialization. The methodology used in the study could provide a useful template for future studies to be commissioned for ex-post assessments of trade agreements in contexts where agricultural liberalization is an important component.

4.1.5 Gender value chain analysis

The above mentioned study by Katz focuses on the impact of trade liberalization on decision-making and the allocation of resources within households. Studies are also needed on power, decision-making and the distribution of gains within value chains of specific goods and services. Gender value chain analysis of selected internationally traded products could usefully complement economy-wide gender disaggregated data analysis to this effect. Over the past decade or so, a number of international organizations and researchers have been advocating for the application of a gender lens to value chain analyses, and associated development programming and studies and guides to support practitioners have been developed.[61]

Value chain analysis is a methodology often used in the context of international trade. Its strength lies in its emphasis on the institutional arrangements that link producers, processors, traders, and distributors, and the recognition that power differentials among actors may influence outcomes along the chain. Including a gender lens in value chain analysis involves highlighting the different positions and contributions of men and women across the chain, and addressing issues of power reflected in production and exchange relationships. Conducting gender value chain analysis usually involves a combination of methodologies ranging from informant interviews with individuals representing each node in the value chain, to semi-structured questionnaires, focus-group discussions, and triangulation between primary and secondary data analysis. This combined approach constitutes an effective way of gaining a deeper understanding of the gender-specific constraints that may prevent producers, for example, from diversifying and upgrading production in a particular sector. It can be very helpful in identifying policy interventions to enable inclusion of women in global supply chains on fairer terms. Moreover, this approach may sometimes be the only way to gather information on groups of women workers who otherwise fall through the net of standard surveys. These include home-based sub-contracted workers and informal cross-border traders, who tend to be in the most precarious forms of employment and are the least likely to be counted in national surveys, hence contributing to their invisibility in both statistics and political design. Insights from gender value chain analysis would be particularly valuable for guiding gender-sensitive Aid for Trade initiatives.

A good example of a value chain analysis with gender focus is provided by a study of the shrimp sector in Bangladesh conducted for USAID.[62] Shrimp is an important export for Bangladesh which provides livelihoods for the poor, small farmers, as well as many intermediaries and exporters. However, the study finds that profits generated from shrimp exports are not broadly shared throughout the chain. There are marked differences in the benefits accruing to intermediaries and exporters compared to the returns realized by farmers and fry catchers. Gender disparities permeate the chain. Women are not engaged as intermediaries or as management. Instead, they are concentrated in the more flexible and insecure nodes of the value chain as fry catchers, farm labourers, and workers in shrimp processing plants. Recalling the

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[61] Rubin D., Manfre C. (2014) Promoting Gender-Equitable Agricultural Value Chains: Issues, Opportunities, and Next Steps. In: Quisumbing A., Meinzen-Dick R., Raney T., Croppenstedt A., Behrman J., Peterman A. (eds) Gender in Agriculture. Springer, Dordrecht. https://doi.org/10.1007/978-94-017-8616-4_12;
FAO (2016). Developing Gender sensitive value chains: a guiding framework. FAO: Rome.
[62] Gammage, S. et al. (2006). 'A pro-poor value chain analysis of the shrimp sector in Bangladesh' GATE Project for USAID.

snapshot of the gender and production structure of Bangladesh set out in Table 2, gender value chain analysis of a specific export good enables a richer understanding at the micro-level, and demonstrates the usefulness of combining economy-wide with sector-specific data investigations. Excerpts of the policy priorities that the shrimp study identifies for improving women's terms of inclusion across the chain are set out in Table 4.

Table 4: Example of policy action matrix based on gender value chain analysis

POLICY ACTION MATRIX FOR PRO-POOR DEVELOPMENT OF THE SHRIMP SECTOR			
Constraints	**Actions**	**Activities**	**Gender Indicators**
Low productivity of farms	Shift more farmers to modified traditional practices	▫ Provide extension services to farmer households (trainers and trainees should be both male and female) ▫ Train farmers to diversify production in small farms and encourage polyculture of fish and shrimp species ▫ Develop feed mills	▫ Increase in yields for female-headed and maintained households ▫ Increase in number of women engaged/employed in nurseries ▫ Increase in number of women engaged/employed in feed mill production ▫ Increased use of remunerated female labour in post-harvest sorting
Indebtedness	Provide credit	▫ Disburse flexible credit linked to the adoption of modified and environmentally sustainable cultivation practices	▫ Credit disbursed to women and women-headed households ▫ Reduced differential between sales prices received by men and women farmers
High number of intermediaries	Reduce numbers of 'faria' and 'aratdar'	▫ Provide credit ▫ Expand depots ▫ Link larger farms with processing plants	▫ Increase in the number of women receiving credit ▫ Increased number of farms owned and managed by women with links to processors
Social costs	Reduce informal employment and improve terms and conditions of work throughout the chain	▫ Develop a welfare fund for workers ▫ Encourage ethical trading initiatives ▫ Review industry minimum wage laws	▫ Proportion of women workers and fry catchers receiving welfare fund benefits ▫ Reduced differential in wages received by men and women in processing plants ▫ Increased proportion of women workers in processing plants covered by ethical trading certificates
Excerpts from Gammage, S. et al. (2006) 'A pro-poor value chain analysis of the shrimp sector in Bangladesh' GATE Project for USAID: pp.15-16			

4.2 Analysing the consumption and public provision effects from a gender perspective

Ideally, assessing the gender differentiated consumption and public provision effects that might result from trade liberalization would involve linking information on predicted (ex-ante analysis) or actual (ex-post analysis) changes in prices, quantities and range of imported goods and public services delivery to individual consumption patterns of different groups of women and men. As already noted, this is the least studied aspect in gender and trade research, mostly due the paucity of individual level data.[63]

Household surveys such as Living Standards Measurement Surveys are the best source for data on consumption of goods and use of services, but, in many countries, these surveys only provide aggregate consumption by the household, not by each individual in the household. However, it is possible to classify households by their characteristics in ways that are still useful for gender analysis, by comparing consumption of goods and use of services by households, for example, with and without young children, or by geographic location, wealth and income. Supplementary qualitative research (through semi-structured interviews or focus groups), can also provide important information about consumption needs and use of services, and the impact of trade-induced changes on the availability of goods and services in the lives of different groups of women.

One example of an approach that uses a carefully differentiated set of household groups is provided by a study conducted by One World Action and its partner organisations on the gender effects of Economic Partnership Agreements (EPAs).[64] The study was conducted in selected African countries, with the aim to inform EPAs negotiations that were taking place around the late 2000s. Given that the countries examined were Least Developing Countries, and hence already enjoying duty-free access to EU markets under the Everything but Arms trade regime, the approach taken by the researchers was to focus on import effects. More specifically, the strategy undertaken in the individual country analyses involved reviewing thoroughly both the list of goods to be liberalised and the list of exemptions for each country. Household survey data disaggregated by income level, location and headship, were then used to examine the gender characteristics of production and consumption of selected products in these lists. Both final goods and intermediate goods were considered and the chain of direct and indirect effects was explored as much as the data permitted it. The researchers involved in each country study were mostly data analysts working in relevant government departments. The analysis did not draw on a formal economic model but used researchers' judgment about the relative importance of certain sectors and transmission channels.

With regards to Mozambique, for example, households were disaggregated by income (poor/non-poor), location (rural/urban), sub-geographical regions (North, Centre and South) and headship (female/male). The goods examined included a few agricultural goods (e.g. almonds), intermediate goods like irrigation pumps and agro-processing machinery as well as selected final consumption goods which were identified as 'female' items (i.e. related to women's housework responsibilities) such as washing machines. This (ex-ante) analysis assumed that the liberalisation of import tariffs stipulated by the specific EPA between Mozambique and the EU

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[63] Some progress is being made, though, e.g. BKP Development Research & Consulting (2019). Sustainability Impact Assessment in Support of the Negotiations for the Modernisation of the Trade Part of the Association Agreement with Chile. Commissioned by the European Commission, DG TRADE.

[64] Fontana, M. (2009). *Gender Justice in Trade Policy: the Gender Effects of Economic Partnership Agreements (EPAs)* Synthesis Report. One World Action: London.

would indeed translate into cheaper consumer prices and that the tariff cuts would not be appropriated by intermediaries along the value chain. Findings highlighted that lower prices for these goods would have not favoured poor women as claimed by the proponents of the agreement, but would have largely benefitted wealthy urban households. This latter household group seemed to include the largest number of consumers of goods imported from Europe.

As for ex-post analysis, a seldom applied but valuable approach, which deserves greater attention in current gender and trade policy debates, involves examining trade policies and agreements in the light of human rights principles. These include progressive realization, equality and non-discrimination, and minimum core obligations to secure essential levels of economic and social rights. Such approach is taken, for example, by Serdan and Rosales (2011) in their analysis of the early NAFTA agreement between Canada, Mexico and the United States, and its effects on Mexico.[65] With regard to the right to an adequate standard of living, with particular focus on the right to food, Serdan and Rosales investigate whether NAFTA has supported securing a minimum level of enjoyment of the right to food for low-income Mexicans or not. They do so by examining annual trends in prices of selected commodities over the 1985-2005 period in combination with food expenditure by household deciles. They find that imports of corn and other key staples from lower-cost US farmers did not result in lower prices for tortillas bread and cereals for Mexican consumers. More specifically, they find that, whereas the average consumer price of tortillas, bread, cereals and fruits and vegetables increased over the period, the average price of meat and junk food declined. The average price of medicines and educational products also increased, while the price of shoes and clothing, electric and electronic equipment, automobiles and entertainment declined. Further investigations lead them to conclude that the decline in the relative price of junk food relative to other food was an important explanatory factor in the worsening of the quality of low-income Mexicans' diet and related increases in obesity, including among children. Even if not explicitly gendered, this sort of analysis can help to make inferences on possible gender implications of these price dynamics.

Analysis of the gender effects of changes in public services that might result from trade and investment agreements poses similar challenges as analysis of gender differentiated consumption effects. Researchers interested in pursuing these aspects could in principle draw on tools and methodologies developed in recent decades to enable gender responsive budgeting.[66] Gender-aware analysis of public spending requires data on how much the government has spent on public services in the past and plans to spend in the future. Budget documents and other official documents from the Ministry of Finance and other ministries should provide this data. Information on who uses public services may be available from administrative records for some services, but this data may be flawed, and usually household surveys complemented with qualitative research are preferred. When large-scale government household surveys are available, these can be used to create a representative sample of households of varying composition (by age, gender, disability and ethnicity) and analyse information on the incomes of household members, their spending and use of public services.

As noted earlier, particular attention needs to be given to the choice of household groups that can best expose aspects of gender inequality and how these might intersect with other sources of inequality such as income, ethnicity and migration status. Many typologies are possible, and the right configuration will depend, as always, on a country specific economic structure and socio-cultural context. For instance, the household typology provided in a microsimulation model used by the United Kingdom Women's Budget Group includes the following gendered household

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[65]Serdan-Rosales, A. and Salas, C. (2011). "Trade Policy and Human Rights: Mexico" in Balakrishnan, R. and Elson, D. (2011) *Economic Policy and Human Rights: Holding Governments to Account* Zed Books: London.
[66] For example see 'Gender responsive budgeting in practice: a training manual' by UN Women; and the website of the UK's Women's Budget Group wbg.org.uk.

groups: working age adults in couples, with or without children; single female and single male adults without children; working age female and male lone parents; retired couples; retired single females and single males. The microsimulation model is used to assess the cumulative distributional impact of all cuts and changes to social security, spending on public services and tax policies in the United Kingdom from 2010, when cuts were first introduced, projected forward to 2020.[67] The study examines the impact of these policy changes on the disposable incomes/living standards of women and men in the above household groups. Findings show that female lone parents and female lone pensioners have been the most negatively affected by austerity policies in the 2010s, due to unfavourable changes in the tax and benefit system for the former group, and cuts in health and social care spending for the latter group. The analysis goes further by showing that gender, race, poverty and income intersect and compound the effect. Black and Asian women in the poorest third of households stood to lose the most. In the increasing number of countries where gender budgeting is undertaken and similar data efforts are ongoing, it should not be difficult to extend this kind of microsimulation exercise to assess the potential gender distributional impacts from changes in public provision and taxes expected from trade agreements.

5 CONCLUDING REMARKS

Gender implications of trade and investment agreements are wide and involve multiple dimensions, all of which must be considered when setting national policy priorities to achieve goals of economic and social inclusion. Planning for gender-equitable trade policies must involve special attention to those groups of women (and men) who might be particularly vulnerable to trade-related changes either in employment, consumption or public services provision.

Conducting rigorous and comprehensive statistical analysis is an important step towards the promotion of gender equality objectives in trade policies and agreements. To help with this task, this guide has outlined principles of good practice for gender-aware data analysis, suggested appropriate data sources and developed an analytical framework to show how to relate gender inequalities in a country to its trade structure. It has also provided specific empirical examples and case studies to illustrate how various gender statistics and methodologies can be used to illuminate aspects of the gender and trade relationship.

Examples included ex-ante snapshots of gendered employment of traded sectors (for the case of Bangladesh); ex-post analyses of various labour and export data to examine changes in the quantity and quality of wage work in export-oriented sectors (for the case of Vietnam); cross-country analyses of enterprises surveys enabling identification of the specific challenges faced by women-led enterprises in engaging in international trade relative to men-led enterprises; and small-scale studies of the effects of commercialization of agricultural crops on gender dynamics within households and within value chains.

The guide did not aim to provide an exhaustive treatment of issues. It simply offered a range of options for data analysis and demonstrated that many useful insights on gender and trade dynamics can be gained from existing data, even when surveys and methodologies are limited. It also acknowledged that statistical analysis of gender and trade effects is only one step that must be complemented with a variety of other methodologies and broad-based stakeholder consultations to validate findings from various sources.

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[67] Women's Budget Group (2017). Intersecting Inequalities: the impact of austerity on BME women, WBG and Runnymede, available online; EHRC, (2018). The cumulative impact of tax and welfare reforms, available online.

In general, encouraging commitment to gender equality in the practice of empirical trade analyses and in trade negotiations requires a multi-pronged approach. This approach needs to recognise the importance of engaging with policy-makers, civil society, women's groups and researchers at many levels, working simultaneously on capacity building, research and policy analysis, collection of new data and public awareness raising.

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