The Agricultural Marketplace and Women's Work

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Abstract: In general, women's wage work in the market economy may be characterized as relatively insecure, low-paid, unskilled, and gender-segregated. Gender differences become more pronounced when considering the realm of the agricultural marketplace, specifically in unpaid reproductive/care work in rural areas and non-remunerative productive work on the farm. This chapter reviews a large body of academic literature on development economics and labor economics, specifically focusing on gendered labor access and opportunities in the domains of the agricultural marketplace of developing countries. First, it conceptualizes gender-contested spaces in the agricultural marketplace and how gender differences are linked with social norms, economic constraints, institutions, international processes, and policy recommendations. Second, it analyzes major patterns and trends shaping the extent and nature of women's experience in agriculture industries. It specifically explores the relationships between women's agricultural labor force participation and economic development, trade liberalization, the availability of opportunities to work as wage laborers vs. self-employed farmers, and the impact of job creation through global value chains. Third, it elaborates on how gender differences are constructed and sustained specifically with regard to age, perceptions, social norms, time use, unremunerated productive work, agricultural productivity, landholding and management, and the allocation of land, labor, and other resources. Lastly, it extends the discussions on patterns, trends, and gender differences in the agricultural marketplace to how to dismantle the gendered structure of constraints and eliminate barriers to women's participation. Drawing on an extensive review of relevant case studies from various parts of the world, it explores effective policies and techniques that brought impactful changes in women's experiences. Along the way, it offers a comprehensive understanding of the drivers of success and failure and proposes recommendations for future initiatives and programs for improving women's status in the agricultural marketplace.

Index Terms: gendered labor access, agricultural marketplace, rural landscape, gender differences, credit, market imperfections, norms, care work, export markets

1. Introduction

Regardless of region, men's labor force participation rates usually exceed those of women. Gender differences become more pronounced when considering the realm of the agricultural marketplace, specifically in unpaid reproductive/care work in rural areas and non-remunerative productive work on the farm. In the agricultural marketplace, which includes both wage labor and self-employment as small-business owners, men are concentrated in higher-paying skilled labor jobs, and women often cluster in lower-paying unskilled jobs. However, women generally work longer hours than men and perform more unpaid housework and care work than men. Rates of non-remunerative productive work on the farm (that is, unpaid family workers in farming activities without wages) tend to be higher for women than men as well in lower-income countries, often due to the need to combine productive farm work with childcare (Rodgers and Menon 2013). Further, many countries exhibit lower rates of agricultural productivity for female farmers due to their unbalanced access to land and other agricultural inputs (Duflo and Udry 2004, Diiro et al. 2018).

Against the backdrop mentioned above, this chapter reviews a large body of academic literature on development economics and labor economics, specifically focusing on gendered labor access and opportunities in the domains of the agricultural marketplace of developing countries. When examining the agricultural marketplace, the chapter focuses on the ability of workers to engage with local or international markets in obtaining fair value for their labor or produce. In particular, it considers agricultural wage labor in non-farm work, local and global value chains, and self-employment (especially in small businesses). An important stylized fact is the increasing representation of women in agricultural wage work. However, women's wage

work in the market economy is relatively insecure, low-paid, and unskilled, while men hold more stable, high-paid jobs. The chapter also focuses on time use in non-remunerative activities like fuel and water collection, reproductive care and domestic work, and uncompensated agricultural labor in rural regions.

One of the biggest hurdles to developing a comprehensive review of women's labor force participation in the agricultural marketplace is the absence of gender-disaggregated and comparable cross-country data. There is also a significant lack of reliable micro-level data on women's time commitments, the environment in which women operate, detailed characteristics of their work, the constraints they face, and demographic and other information on individual and household features, including asset ownership and control over resources. This absence of detailed data impedes the ability to comprehensively understand the situation that women face and the true extent to which their costs bind, as well as the ability to provide adequate scholarly and empirical support for some of the trends, patterns, and policies elaborated in this chapter. Collecting reliable gender-disaggregated quantitative evidence over time and across countries would thus be invaluable in fostering policies that truly work for women. In an age of competing needs given limited resources, such evidence would help persuade policymakers that gender-sensitive goals and strategies must be prioritized.

The chapter begins with a conceptual framework in section 2, offering critical scrutiny of gender-contested spaces in the agricultural marketplace and linking gender differences with social norms, economic constraints, institutions, international processes, and policy recommendations. Section 3 analyzes major patterns and trends shaping the extent and nature of women's experience in agriculture industries. It specifically explores the relationships between

women's agricultural labor force participation and economic development, trade liberalization, the availability of opportunities to work as wage laborers vs. self-employed farmers, and the impact of job creation through global value chains. Section 4 elaborates on how gender differences are constructed and sustained specifically with regard to age, perceptions, social norms, time use, unremunerated productive work, agricultural productivity, landholding and management, and the allocation of land, labor, and other resources. Section 5 extends the previous discussions on patterns, trends, and gender differences in the agricultural marketplace to how to dismantle the gendered structure of constraints and eliminate barriers to women's participation. While this section is mindful of the infeasibility of proposing a "one-size-fits-all" policy lesson, it identifies certain themes and broader policy lessons that are reiterated across various contexts. Drawing on an extensive review of relevant case studies from different parts of the world, it explores effective policies and techniques that brought impactful changes in women's experience. Along the way, it offers a comprehensive understanding of the drivers of success and failure and proposes recommendations for future initiatives and programs for improving women's status in the agricultural marketplace.

2. Conceptual Framework

To better understand these gender gaps in agricultural markets, it is crucial to follow an integrated framework and a set of causal pathways that link gendered differences with social norms, economic constraints, institutions, international processes, and policy prescriptions. This chapter uses a framework in which male and female labor (a primary endowment) interact in gender-contested spaces to yield sub-optimal outcomes and inequities that warrant attention from policymakers. Since labor itself may embody different capabilities due to gender differences in

human capital investments, differences in economic opportunities between men and women may be driven by gender differences in capabilities. The spaces in which male and female labor interacts include, among others, the market for wage labor and the rural landscape – the spaces that are examined closely in this review of empirical work on gender and labor.

The agricultural marketplace may exhibit gender differences for a variety of reasons. For example, credit and land market imperfections have differential consequential impacts by gender. Long-standing socio-cultural norms can also dictate gender relations and sanction how women are expected to engage with non-domestic spheres. Explicit restrictions on mobility or restrictions that result from being time constrained due to engagement in multiple activities might mean that women have restricted access to profitable markets or have to mediate sales of their produce through men. Moreover, substantial gender gaps in agricultural productivity have arisen not because women are less efficient farmers but because of inequitable distributions of necessary inputs arising from entrenched socio-cultural norms and expectations. Women are also more income-constrained than men are, and this has repercussions on their ability to access appropriate levels of inputs and fertilizers.

The upshot of these features is that women bear the burden of reproductive care work and housework, and for several reasons, including the ease of simultaneously accommodating childcare and income generation, women's representation in non-remunerative productive work in farming activities is relatively high. This high representation of women in unpaid work within the home and on the farm may be symptomatic of "survival" as opposed to "accumulation" activities and may contribute to and be a result of widespread poverty and inequality. Coupled with the responsibilities of housework and childcare, women's long hours of labor outside the

home shackle them with a double work burden. This double burden is especially true in poor rural regions since the lack of adequate compensation from a single agricultural activity implies that women have to engage in multiple opportunities for paid work, thus further exacerbating their long hours of labor. Time poverty also constrains one's ability to escape being income-poor, which means that income poverty and time poverty are mutually reinforcing. The time-poverty issue in the agricultural marketplace is a form of deprivation that warrants not just careful scrutiny but also rectification with effective policy action since male and female labor do not have equitable access to resources and opportunities.

Consistent with the categorization in Knobloch (2014), the chapter considers labor access and opportunities in three domains. In the first domain – the gender-based division of labor in the market sphere - there is a high degree of occupational segregation by gender, and jobs that are predominantly held by women tend to pay less and have lower status (women engaged in weeding in the fields while men operate agricultural machinery is an example). The second domain is characterized by a gender-based division of unpaid work in which women tend to spend proportionately more hours than men on unpaid tasks that are less visible and relatively less valued (both within the home performing housework and caring for children, as well as outside of the home collecting water and fuel). The third domain is the division of labor across paid and unpaid work, a relatively traditional division in which men are disproportionately represented in the market sphere engaged in wage labor and self-employment, while women are disproportionately represented in unpaid work activities (women engaged in relatively more house cleaning while men produce crops to sell locally is an example). The gender-based division of labor across these domains is problematic not so much because it is inefficient but

more because it is inequitable and prevents people from attaining their full capabilities (Knobloch 2014).

The three domains are closely intertwined. In particular, an unbalanced division of labor in the non-market economy presents women with constraints and obstacles that limit the extent to which they can participate and advance in the market economy. In the reverse direction, women's concentration in low-paying jobs with little employment security in the labor market reduces the incentive for women to engage in market-based work and reinforces gendered access in the non-market economy (World Bank 2012). These patterns are often bolstered by social norms and traditional expectations of gender roles. Individuals do not simply construct social norms around gender; these are tangible structures and impediments that are rooted in organizations, economic transactions, and group characteristics that vary by region and along social and demographic dimensions such as caste, ethnicity, and age (Gammage et al. 2016, Kabeer et al. 2013). The fact that gender norms are entrenched in institutions is increasingly reflected in analytical work on gender and agriculture. For example, Egypt and Bangladesh have mostly patrilineal and patriarchal family structures that coincide with tight restrictions on women's freedom to navigate public spaces. These structures of constraints have contributed to low female labor force participation rates, relatively few well-paid jobs, and sub-optimal economic growth (Kabeer et al. 2013). Strong social norms around gender have also contributed negatively to women's labor force participation in Chile, where the existence of machismo and conservative cultural values together outweigh the positive impact of human capital investments to contribute to reduced female labor participation rates (Contreras and Plaza 2010). Ghana, alternatively, is characterized by the co-existence of both matrilineal and patrilineal kinship

systems, both of which assign women major productive roles in the market domain to such an extent that Ghana is known as a country of female farming (Kabeer et al. 2013).

Although these brief examples may not do justice to the complex systems of gender relations and norms in agricultural markets, they do help illustrate how men's and women's labor can have very different productive roles in contested spaces that are subject to strong gender norms and a structure of constraints. The existence of these spaces means that development policies and projects in agriculture (such as training programs and farmers' associations), as well as technological innovations used in these areas, may vary in their levels of success across local settings. Moreover, policies in and of themselves may reinforce gender biases. Ultimately governments need to be more cognizant of the need for gender-aware legislation that has the power to change institutionalized constraints, such as inheritance laws to even the economic playing field for men and women.

The next two sections examine stylized facts around this conceptual framework at the macroeconomic and microeconomic levels. Much of the research underlying these stylized facts on women's employment in agriculture remains constrained by data availability and data quality. One issue is that women's labor market status is often measured by the female labor force participation rate, which is calculated from cross-sectional household surveys where the ILO definitions of labor force participation are employed to construct a binary indicator for employment. These definitions of labor force participation thus fail to capture labor conditions such as job security, job quality, worker vulnerability, adequacy of the remuneration, or more importantly, the trade-offs that women face. A second issue is the variation in survey instruments and definition of employment across countries, particularly in the care-giving sectors where

women are well-represented. The challenge of measuring this work leads to underreporting, undercounting and broad undervaluing of labor force participation and its role in the broader economy. A third issue is that labor force surveys seldom ask for detailed histories about an individual's labor force participation, job quality, and intermittency.

Beyond these definitional challenges for measuring women's employment status, there are methodological challenges. Studies on women in the agricultural marketplace measure economic outcomes in several different ways, including regression analysis with large-scale survey data, case studies, randomized control trials, time-use diaries, and qualitative interviews or ethnographies. Some scholars have strong preferences for the methods by which these empowerment metrics are calculated. The conventional practice is to use an econometric method applied to data that are mostly generated by census or survey questionnaires with pre-coded categories, and are most frequently collected and processed by others, often national governments or statistical agencies. Despite the dominance of regression analysis based on large-scale survey datasets in the economics profession, this methodology cannot identify country-specific factors that may influence outcomes. There is growing recognition that regression analyses should be coupled with local case studies or qualitative methods to determine the context that underlies the association between dependent variables and structural forces.

Over the last two decades, randomized controlled trials have gained a "gold standard" reputation in empirical microeconomics and in development economics. Many researchers view them as impartial and necessary to establish casual relationships in empirical investigations. But influential as randomized controlled trials have been, their criticisms also continue apace (Donovan, 2018). Many are related to their small scale, limited temporal extent, external and

even internal validity, costs of implementation, ethical oversights, and technocratic orientation (Rodgers et al. 2020). In response to some of these critiques, some scholars have turned to time use diaries to measure gendered outcomes in the agricultural sector. As of 2020, over 100 countries had conducted at least one time use survey, with more expected to come on board (Floro 2021). However, the surveys vary considerably in what gets measured and how they measure it, making it difficult to compare time use statistics across countries with a single time-use activity classification. Qualitative, observational studies may allow researchers to more concretely observe the triangulation of women's resources, agency, and achievement. However, gathering information along all these dimensions can be time consuming, and often researchers are unable to cover enough households or communities to aggregate their analyses (Mason 2005). Because mixed-methods approaches are often able to utilize the best aspects of each of these methods, in the remaining sections we introduce studies which come from a variety of methodological traditions.

3. Gender, Labor, and Agriculture: Macro-Level Patterns

This section outlines the major patterns and trends that shape the extent and nature of women's agricultural labor force participation. It specifically examines the relationships between women's agricultural labor force participation and economic development, trade liberalization, the availability of opportunities to work as wage laborers vs. self-employed farmers, and the impact of job creation through global value chains. By analyzing the trends and patterns along with the relevant statistics and studies, this section demonstrates how women's agricultural labor force participation is influenced by complex juxtapositions of various factors and situations in different contexts.

3.1 Relationship between economic development and women's agricultural labor force participation

The relationship between economic development and women's participation in the agricultural labor market exhibits a fairly predictable and well-documented relationship. In some low-income countries that still have relatively large agricultural sectors and an emphasis on household farm production, the female labor force participation rate is high. In such economies, the distinction between paid work and home production is blurred, thus increasing the number of women who are considered economically active in the market. In these countries, women often play the primary role in collecting and managing water and firewood and in cultivating and maintaining the land. As countries industrialize, female labor force participation rates start to decrease as the household farm model becomes less common and more women engage exclusively in non-market activities such as childcare and housework. In more advanced economies, female participation rates begin to rise again as women combine working in the labor market with raising a family. This trend in women's labor force participation rates as countries industrialize generates a U-shaped function that fits time-series and cross-sectional data for numerous countries at different stages of development (Mammen and Paxson 2000).

Women constitute about 43 percent of the agricultural labor force in developing countries, with their numbers projected to increase in all major developing regions of the world (SOFA and Doss 2011). However, this aggregate figure hides quite a bit of variation in the types of work that women perform. In many countries, women are less likely than men to have a full-time contract. In every country tracked by SOFA and Doss (2011) except for Nicaragua and Panama, the proportion of men holding full-time contracts exceeds that of women with such

contracts. Women are also over-represented in seasonal jobs instead of year-round jobs, which penalizes women since seasonal jobs tend to have lower pay and do not include benefits. There is also a sizable gender wage gap in rural areas. On average, men earn about 28 percent more than women in the rural sector across the sample of countries (SOFA and Doss 2011).

3.2 Relationship between trade liberalization and women's agricultural labor force participation

Since the 1970s, women's labor has become a primary source of foreign exchange earnings for many developing economies. Due to women's job segregation in export industries that are subject to intense price competition and downward pressure on wages, women's low wages have played an instrumental role in the feminization of foreign currency earnings. While the concentration of women in export manufacturing has received the most attention, what is less recognized is that in many agricultural economies, women's seasonal or daily wage labor on farms has proven critical to keeping costs low and export demand high (Lastarria-Cornhiel 2006; Croppenstedt et al. 2013).

Market-oriented economic reforms and trade liberalization policies in developing regions have been accompanied by strong growth in the production of cash crops along with increasing segmentation and gender segregation of the agricultural labor force. Female participation in the cultivation and sale of cash crops is particularly important given the significant positive welfare benefits this type of farming brings compared to subsistence agriculture. Across developing regions, increasing integration into world markets has brought new job opportunities for rural women in high-value agricultural export goods such as cut flowers, fruits, and vegetables (FAO/IFAD/ILO 2010). The horticultural export sector is not the only area where women have seen new paid employment opportunities; livestock keeping, fisheries, and aquaculture have also

become important sectors for job creation for women (SOFA and Doss 2011). In two large fish-producing economies – India and China – women constitute close to one-quarter of all fishers and fish farmers, and in Indonesia and Vietnam, women represent 42 percent and 80 percent of the rural aquaculture workforce, respectively. Women's increasing participation in fisheries and aquaculture has also been reported in West Africa, where "Fish Mamas" are active in most parts of the fishery value chain, from production to sales (SOFA and Doss 2011).

Overall, women constitute the majority of workers in these sectors in numerous countries. In a review of women's employment in high-value agriculture industries, Dolan and Sorby (2003) estimate that women form at least 64 percent of the workforce (in Colombia) and as much as 87 percent of the workforce (in Zimbabwe) in a sample of countries that export cut flowers. The range is similar for countries exporting vegetables (66 percent female in Kenya to about 85 percent female in Mexico) but somewhat lower for picked fruit (45 percent female in Chile to 65 percent female in Brazil). A number of country case studies reviewed in Quisumbing et al. (2012) indicate that women make up more than half of the workforce in some horticulture industries, including Senegal's French bean industry (90 percent female) and tomato agro-industry (60 percent female), Sri Lanka's tuna plant workers (more than 90 percent female), and Latin America's seafood industry (ranging from 52 percent female in Uruguay to 72 percent female in Argentina).

3.3 Women's experience as wage laborers vs. self-employed farmers

The agricultural marketplace also encompasses small businesses and self-employment, an important source of productive employment for women and men across developing regions. While some individuals start their own businesses as a means toward greater flexibility in

generating income and new opportunities for innovation, others resort to self-employment as a coping strategy in the face of scarce employment opportunities. In developing countries particularly, the very poor are more constrained in their economic choices by the market environment, lack of infrastructure, and insufficient sources of affordable credit. Hence, small-scale entrepreneurship serves as the primary vehicle for income generation.

An important issue is whether poor rural women are better off being incorporated into agricultural value chains (either local or global) as wage laborers or as self-employed farmers. In principle, poor rural women are better off being incorporated as self-employed farmers since, as "residual claimants," although they bear more risk sometimes, they also have the opportunity to be more profitable in the long run. As wage laborers, wages are set for the term. Although the risk is minimal (one always earns a wage as a wage laborer), the level at which the wage is set is often low. The available evidence indicates that wages for women agricultural workers are usually lower than those for men (e.g., Malapit et al. 2020; Barrett et al. 2021). An ideal scenario might, in fact, be path-dependent, in which women begin their progression as wage laborers so that they may accumulate some earnings/savings, and then those who want to transition into self-employed farm work (where women now have savings to buffer risk but also have the opportunity to make substantial profits that would accrue mostly to them) are able to transition.

3.4 Global value chains and women's employment opportunities

Another important consideration is the extent to which women have benefited from international trade and foreign investment through new paid employment opportunities. Although low wages for women have raised concerns, some scholars argue that jobs in the export sector offer better pay compared to the existing alternatives for women, and the

evaluation of wages in the export sector should hence consider wages in alternative jobs as well. This argument applies to both manufactured exports as well as high-value agricultural exports, while in contrast, casual agricultural daily wage laborer is often viewed as a job of last resort (Kabeer 2012). According to Maertens and Swinnen (2012), even though the rapid growth of modern supply chains in developing countries is characterized by a high degree of gender segregation, these supply chains have, on the whole, been beneficial for women in terms of reducing gender inequalities in the rural landscape. Production through large-scale estates and processing through agro-industries has led to greater employment generation for women and more direct benefits compared to farming through smallholder contracts. Others argue that as firms face pressure in international markets to keep production costs low, the jobs offered to women are increasingly insecure. Employment is often temporary, casual, flexible, and characterized by poor working conditions (Barrientos 2019). The extent to which job creation resulting from global value chains helps to empower women is a source of extensive debate and depends not only on the terms of employment but also on changes in women's bargaining power at home and their ability to leave relatively more exploitative, dangerous, and menial work (Kabeer 2012; Osterreich 2019).

4. Gender Differences in the Agricultural Marketplace: Micro-Level Patterns

Gender differences in the agricultural marketplace are determined by a wide variety of factors. Drawing on an extensive review of the existing literature on gender gaps in agricultural markets, this section elaborates on the way the agricultural marketplace is characterized by gender differences in age, perceptions, social norms, time use, unremunerated productive work,

agricultural productivity, landholding and management, and the allocation of land, labor, and other resources.

4.1 Gender differences in age, perceptions, and norms

In most countries, the relative age profile of women working in the agricultural export sector is, on average, quite young. For example, in Kenya, 85 percent of women workers in the vegetable export sector are less than 29 years old compared to 78 percent of men who are less than this same age benchmark (Dolan and Sorby 2003). Consistent with trends in many labor-intensive manufactured export industries, horticultural export employers tend to hire young women for certain tasks because of their relatively low wages and lack of bargaining power. As compared to men, women workers are perceived by employers to be more obedient and passive, have nimble fingers for detail-oriented tasks, and have weaker bargaining power in negotiations for terms of employment-related to benefits and job security. These perceptions, along with other gender norms related to appropriate roles for men and women in agricultural production, have contributed to high rates of occupational segregation in agribusiness enterprises. Women perform relatively labor-intensive, unskilled jobs, such as weeding and trimming in the fields, snipping and picking in the processing stage, and packaging, while men engage in jobs that are considered to require more strength and skill, such as lifting heavy loads, construction, and operating and maintaining agricultural machinery (Lastarria-Cornhiel 2006). This type of segregation both reinforces socio-cultural norms and perpetuates existing employment structures in agricultural markets (Quisumbing et al. 2012; Oduol et al. 2017).

4.2 Gender differences in time use

One of the most salient features of gendered labor patterns, specifically in the rural landscape of developing countries, is women's disproportionate amount of unpaid family work and their lack of paid employment. Women allocate their time not only to employment, but also to domestic responsibilities such as childcare, cooking, and cleaning. Fuel and water collection are particularly time-intensive activities that can occupy a substantial portion of a woman's working hours, especially in low-income countries with poor infrastructure. Some of these time burdens have increased in the face of deforestation and larger village populations (Mishra and Mishra 2012). Moreover, men tend to experience a stable time use profile over their lifetimes, while women experience more variable paid and unpaid workloads as family structures change. Differences between men and women are largest when caring for young children. Time-use data across a sample of countries representative of different regions indicate that women work longer than men do in total, and they perform more unpaid work than men (World Bank 2012).

This conclusion of sizable gender gaps in paid and unpaid workloads based on aggregate country-level data has been confirmed with analyses of micro-data for numerous countries. For example, in South Africa, time use data indicate that women's difficulties in finding market-oriented work are interconnected with their relatively large workloads that result from being engaged in unpaid housework simultaneously (Floro and Komatsu 2011). Growing evidence indicates that the gender gap in unpaid work has grown during the Covid-19 pandemic in the rural sectors of a number of countries, including Bangladesh and Pakistan (Sarker 2020; Ali et al. 2020). Not only did school closures increase time demands for childcare and home schooling, but the return of migrant workers to rural villages and the spread of the virus also meant more people to care for, with most of that work falling on the shoulders of women. Restrictions on

imported agricultural inputs also increased women's unpaid work in food production (Doss et al. 2020).

Projects that include digging wells and programs that supply households with new technologies such as cooking stoves and electricity have helped to reduce some of women's domestic work burdens. For example, in Burkina Faso, various organizations started initiatives to construct wells, supply carts to villages for hauling wood, build fuel-efficient ovens, and introduce hullers and grain mills to convert grain into flour. Evidence in Kompaoré et al. (2007) suggests that the introduction of these new technologies reduced women's workloads and helped them to use their freed-up time to create new businesses. Similarly, in the Philippines, Uganda, and Zimbabwe, survey findings indicate that access to an improved water source could reduce women's average unpaid care workloads by one to four hours per day (Rost and Koissy-Kpein 2018).

4.3 Gender differences in unremunerated productive work

Hand in hand with women's disproportionately large work burdens involving caring for children, performing housework, and collecting water and fuel is their high representation among unpaid family workers who engage in family labor in farming activities without receiving wages but produce goods that are either consumed or sold in the market. Although it is difficult to obtain comparable cross-country data on unremunerated productive work in the agricultural sector, there is readily available data for national labor markets from the ILO for unpaid family workers. Drawing on this data for men and women in a sample of African economies, most of which have relatively large agricultural sectors, Rodgers and Menon (2013) show that proportion of women who are employed as family workers is higher than that for men in every country

except for Mali, perhaps a reflection of its matrilineal society. These high-unpaid family work shares stand in contrast with the proportion of women engaged in paid work - either in the wage labor market or in self-employment. In this case, men are relatively more represented in paid work than women in almost every country, with the exception of Mali and Botswana (where a high proportion of workers are classified as "other," making it difficult to determine if they are engaged in paid or unpaid employment).

4.4 Gender differences in agricultural productivity

Another salient feature of specifically the rural landscape is substantial gender differentials in agricultural productivity that have been linked to biased access to agricultural inputs and to women's relatively insecure land rights. For example, the gender gap in agricultural productivity is estimated to be $100 million in Malawi, $105 million in Tanzania, and $67 million in Uganda per year (UN Women et al. 2015). These gaps are calculated by first converting the agricultural output produced by female and male farmers at the plot level into monetary values by multiplying plot output by crop-specific prices, then estimating the proportion of land cultivated by female and male farmers and combining that proportion with the gender productivity gap, and then calculating the size of the gap in relation to agricultural GDP (UN Women et al. 2015). In all three countries, women's limited access to inputs and support services serves as the main explanation for this gap. Among the imbalances, gender differences in the use of implements and machinery explain 18 percent of the gender gap in Malawi, 8 percent in Tanzania, and 9 percent in Uganda. These gaps in agricultural productivity are large, and the potential economic gains from eliminating them would translate into sizeable reductions in poverty and improvements in nutritional outcomes. As many as 238,000 people in Malawi,

80,000 people in Tanzania, and 119,000 people in Uganda could be lifted out of poverty by the closing of the total gender gap in agricultural productivity within each country (UN Women et al. 2015).

4.5 Gender differences in landholding and management

With respect to land across developing regions, women own and control substantially less land than men. To illustrate the scope of these inequities, Figure 1 shows the percent of individual agricultural holders (which includes landowners, producers, and managers) who are women in countries around the world that report gender-disaggregated data on landholdings and management. The figure shows that women's control over land varies considerably across regions. In Latin America and the Caribbean - where women primarily gain access to land through inheritance and through community property rights that accompany marital laws - the data underlying the figure indicate that women's representation among agricultural holders ranges from 30 percent in Chile to 8 percent in Belize and Guatemala. This range is better than in Asia where land reforms in numerous countries appear to have done little to redress gender inequities due to inheritance practices that traditionally favor men. An exception is Nepal, which had several constitutional amendments in the 2000s that improved women's land access and resulted in an increase in women's economic empowerment (Mishra and Sam 2016). In most African countries, where women's control over land depends on customary tenure systems based on patriliny, the variation in women's control over land is more substantial than in other regions, partially reflecting the number of countries for which there is gender-disaggregated data and reflecting variations in the extent to which countries have strong matrilineal communities. The

implications of these gender inequities in land holdings for agricultural investments and output are enormous since insecure land tenure reduces the incentive of farmers to invest in their land.

In Latin America, sizeable gender gaps in land ownership account for much of the agricultural productivity gap (Deere and León 2001). The main reason is that inheritance serves as the primary means through which women acquire land, and most countries are still characterized by male preference in bequeathal practices. These inequities have placed relatively more constraints on women's ability to become successful commercial farmers as compared to men. To ensure a more equitable distribution of property rights for women, Deere and León (2001) argue not only for greater gender equity in land inheritance but also for more legislation that contains provisions for mandatory joint titling of land to couples and provisions that give priority to female household heads. Moreover, joint titling helps to protect women's rights to land in the event of separation, divorce, or widowhood.

4.6 Gender differences in the allocation of land, labor, and other resources

The land is not necessarily the most important binding gender constraint depending on countries' economic structures and other structural features. In particular, labor market and credit market imperfections can have greater adverse effects for women in their ability to engage in income-generating activities and to purchase farm inputs (Palacios-López and López 2015). These varying social, structural, and market constraints mean that the underlying causes of agricultural productivity gaps by gender will vary not only across regions but also across countries within regions (Croppenstedt et al. 2013). Yet studies across developing regions have documented that once access to inputs (land, fertilizer, credit) is taken into account, women are as productive and technically efficient as men. That is, the main explanation for the gender gap

in agricultural productivity is not that women are less efficient cultivators; rather, there is an inefficient allocation of land, labor, and fertilizer among household members. Although access to land, in particular, may not always be a constraint that binds, it has implications for the scale of farming women can engage in and how productive they can be. This, in turn, affects their ability to generate a marketable surplus. Hence greater gender equality in land ownership and access to agricultural inputs could possibly increase women's engagement in agricultural markets.

Much of the evidence to support this claim comes from Sub-Saharan Africa. For example, in Burkina Faso, plots controlled by women were farmed less intensively than similar plots simultaneously planted with the same crop but controlled by men within the same household. The main explanation was that inefficient allocations of land, labor, and important inputs, such as fertilizers, meant that areas controlled by women were less productive. Results indicate that reallocating factors of production in a more efficient manner could increase output by 6 percent (Udry 1996). An inefficient allocation of resources was also found in Côte d'Ivoire by Duflo and Udry (2004), where strong gender norms dictate that men and women farm their own plots without trying to maximize joint household production. In Kenya, women farmers were found to be as responsive to price incentives in terms of output supply and input demand as men farmers and as economically efficient when agricultural inputs and human capital factors of production were taken into account (Alene et al. 2008). In a study of rural Ghana, Goldstein and Udry (2008) found that women have relatively less social and political power in villages, are less likely to have secure land rights, and are less likely to invest in land fertility. The authors attribute women's substantially lower profits per hectare compared to men primarily to women's insecure land tenure and the heightened risk that women face of having their land expropriated. As a final example of the large number of studies on the gender gap in agricultural productivity

in Sub-Saharan Africa, in the Osun state of Nigeria, female rice farmers are actually more technically efficient than male rice farmers, particularly when age and years of education are taken into account (Oladeebo and Fajuyigbe 2007).

Although much of the literature on the gender gap in agricultural productivity has focused on Sub-Saharan Africa, the finding that this gap can be closed with equal access to inputs is not unique to the region. Within Asia, crop output in two agro-ecological regions in Bangladesh would increase by up to 10 percent if technical inefficiencies – which include a low share of female labor in total labor – were eliminated (Rahman 2010). Moreover, female rice farmers in Nepal are as productive as male rice farmers when access to irrigation and seed technologies are taken into account (Aly and Shields 2010). In the Philippines, even though women farmers have less access to land than their male counterparts, they have higher values of rice production (Mishra et al. 2017).

These gender gaps in labor inputs and agricultural productivity can have sizable macroeconomic repercussions. A large body of literature shows that the marginalization of women's labor impedes poverty reduction efforts, dampens productivity, and reduces economic growth (DFID et al. 2013). In agricultural economies, the effect of gender on growth prospects is linked to the gender division of labor within this sector and gender inequality in land ownership and loan access. As demonstrated by the trends reviewed in this section, and as supported by cross-country evidence in Croppenstedt et al. (2013), gender equality in access to land, technology, and agricultural inputs holds the key to increasing productivity in food production. Not only is gender inequality economically inefficient, but the sizable macroeconomic repercussions of its presence also provide a rationale for better understanding and eliminating the

barriers that prevent women from having full access to agricultural resources and productive paid employment opportunities. The predicted benefits from removing these barriers in terms of increased productivity of land and overall output are substantial (Croppenstedt et al. 2013).

5. Lessons from Empirical Studies

Thus far, the chapter has presented a comprehensive review of empirical analyses of women's time use, paid work, and employment patterns that focus on the agricultural marketplace. This description has painted a detailed picture of the challenges faced by women in these spheres, thus providing a context within which to understand the mechanisms at work and the framework of policies and tools needed to address these challenges. This section takes steps in the direction of formulating effective policies and techniques by outlining lessons from several illustrative case studies. The objective is to analyze drivers of success (and failure) in the spheres of human capital, livelihoods, and economic well-being and to glean lessons that may be taken to the design of future initiatives and programs to improve women's status. Particular goals include increasing women's labor share in food production and agricultural work, reducing their unpaid work burdens, and eliminating gender imbalances in the labor market, including wage gaps and occupational segregation.

5.1 Reallocating women's labor time away from unpaid work

An issue central to women's work is the disproportionately large amount of time spent in unpaid work, which constrains their ability to engage in other spheres. Although women's total work burdens are often higher than those of men, much of the work remains invisible and unremunerated. One of the reasons for the invisibility is women's disproportionate representation

in the labor force in the informal economy, where lack of regulation implies that hiring and pay practices often work against women even when they are sole proprietors of enterprises. However, even in the registered formal sector, there is an inequitable distribution of unpaid work that is shouldered by women. Consider workers in the horticultural export sector in South Africa, Kenya and Zambia. The majority of the workers are women, yet men are mostly in permanent employment whereas women are predominantly in temporary work. The flower and vegetable export industries face a proliferation of codes of conduct from importers and trade associations. In a set of studies that evaluated gender issues in employment patterns following the enforcement of codes of conduct, Dolan et al. (2002) and Smith et al. (2004) note that there are several code-related issues that are relevant for women. These issues include insecurity (especially relevant for women as they are in risky, temporary jobs), overtime (which is difficult to accommodate without additional childcare), insufficient wages (which make childcare infeasible for women who are sole caregivers), pregnancy (which is often a cause for discrimination in hiring), and family/maternity leave policies (which often do not exist). Hence, although competition and the pressure to lower wages favors hiring women (who are often paid relatively less and have lower bargaining power) in such global value chains, the failure to enforce the codes of conduct and ameliorate the more systemic challenges may weaken women's positions.

Furthermore, the prevailing socio-cultural context in the horticultural sector does not encourage the promotion of women, which further denies them opportunities for earning additional income, and exposes them to environmental hazards, including chemicals that are widely used in the horticultural export sector. While harmful to both men and women, such chemicals are especially toxic to unborn babies and young, nursing children. An approach with multiple stakeholders enacted at the local level would be most effective in addressing gender

issues in these industries (Dolan et al. 2002, Smith et al. 2004 and FAO/IFAD/ILO 2010). Best practices to improve working conditions, especially for women employed in wage work, include the provision of education on company policies for all workers as well as improved communications with workers and unions by employers.

In addition to the lack of job security and help with childcare, another factor that dictates women's time in unpaid work is poor infrastructure. Policies that would save time for women by reducing work not considered to contribute economically (that is, unpaid domestic work and care work) include infrastructure improvement in the water sector, electrification, road construction, better transportation options, and sanitation services. These needs are especially stark in rural areas (Fontana and Elson 2014). OXFAM's WE-Care program, a three-year initiative supporting interventions, policies, and practices to address women's inequitable burden of unpaid care and domestic work in ten developing countries, is an example of the way developing better water and energy infrastructure, providing elder and childcare, and promoting communications can result in women's political, economic, and social emancipation. An evaluation of the WE-Care program reveals that it offered women and girls more choices over how they spent their time, reduced time required for unpaid care work, redistributed care work between female and male members of the household, and promoted recognition of unpaid care work in local, national, and global policy-making (Oxfam 2015, Oxfam 2020). Similarly, MenCare – a global fatherhood campaign which is coordinated by Equimundo: Center for Masculinities and Social Justice and Sonke Gender Justice, involves men in childcare and domestic work in more than 50 countries. It works with individual program participants, community mobilizers, community organizations, media, and governments to challenge gender norms and push for progressive legislation supporting men's involvement in caregiving (MenCare n.d.). Equimundo: Center for Masculinities and

Social Justice, which started in Brazil and later expanded its work in Latin America, United States, and many other parts of the world, also works to achieve equitable distribution of care, nurture healthy and diverse masculinities, and train men and boys to become active allies in achieving gender equity (Equimundo n.d.). Initiatives like these have the potential to alleviate the unequal burden of unpaid care and domestic work, eradicate gender disparities in families and communities, and open up scopes for women to get involved in the agricultural marketplace more efficiently.

5.2 Provision of skills training opportunities

In the marketplace, women lag behind men in terms of acquiring skills. Even in the general rural landscape, whether they work in agriculture or are engaged in non-farm enterprises, women would benefit from opportunities to replenish and accumulate skills. A relevant case study is Cargill's labor improvement program in Thailand (Lawler and Atmiyanandana 2000). This program was implemented to reduce high turnover and absenteeism rates in one of the large poultry processors in Thailand that mainly hired female workers. Causes for the high turnover and absenteeism rates among women workers included widespread dissatisfaction with the job, burdensome family responsibilities, and for those coming from agricultural households, the seasonal need to assist other household members with farming operations. High rates of turnover were costly for the processor because it meant that there was little time to recover the costs of training the employees (training was provided upon entry with the aim of increasing productivity) and because workers had less time on the job to augment experience – an important ingredient to improving output.

Several measures were adopted to reduce turnover and the rate of absenteeism. The first was that compensation was linked to performance and time in the company. Production workers' pay and opportunities for promotion were both tied to their productivity, and basic pay increased with tenure in the company. Other policies linked bonuses to attendance and reduced accident rates. The company also invested in several gender-sensitive policies. Supervisors were trained to be more responsive to employee needs. For example, supervisors were allowed to give production workers extended leave as needed (without pay) to deal with family emergencies that might arise. Policies on maternal leave were reinforced, annual physical examinations were required for all employees, and monetary assistance was provided for children's schooling. Free bus service was arranged for all employees, and women, in particular, viewed this service favorably as it addressed work and safety concerns. Another policy was an educational program that allowed employees to attend classes outside of normal work hours and receive payment. Women – many of whom had only the basic level of schooling required to be in their job – viewed this policy as an opportunity to attain a higher level of education and to demonstrate a more positive influence on their children. Finally, shifts between daytime work and nighttime work were rotated among the production workers every two weeks. These policies, some gender-sensitive and some not explicitly so, strengthened the workers' attachment to the employer.

Another relevant case study is that of workers in the São Francisco valley grape farms in Brazil (Selwyn 2007). This valley provides export-quality grapes to markets in the UK and Europe, places that in turn enforce strict quality control standards. To meet these standards and to select the most appropriate workers for these jobs, several policies were implemented, including a minimum wage that was 10 percent higher than the national wage, overtime pay that was higher than base pay, and provision of protective gear for workers involved in applying

pesticides, provision of childcare facilities, a paid day per month for women workers to see doctors, and the right for nursing mothers to tend to their babies for an hour more than the originally sanctioned lunch hour. Other policies tailored towards women included a three-month paid maternity leave, provision of free bus transportation to and from work, and the provision of drinking water.

These policies were especially attractive to the women workers of the São Francisco valley who, in comparison to the other regions of Brazil, were more likely to be employed on permanent contracts. Women are important in the export grape business as they are considered by supervisors to be especially adept at skilled tasks, such as bunch pruning. Given quality control pressures, tending to the needs of such workers was considered to be of paramount importance. Unlike other studies of export agriculture that have pointed to the lack of power among laborers employed in these industries, Selwyn (2007) underlines that the strategic leverage exercised by workers in the São Francisco valley and the presence of powerful trade unions that provide a backdrop against which to exercise this power have allowed workers to experience substantial gains. Hence, these Brazilian grape farms are an example of how global value chains impose a northern retailer's standards on southern suppliers and directly improve conditions for workers employed in the process of increasing the production and packaging of export commodities for world markets.

The case of Junior Farmer Field and Life Schools also has been successful in improving the skills and training of farmers, especially women farmers. Both boys and girls are taught agricultural concepts, including sowing, weeding, conservation, processing of crops, and marketing. This training is bundled with basic education and learning and other concepts of

equality, health, and nutrition. Evaluations of these programs have been positive, especially in terms of their impact on the empowerment of women and girls who have benefitted from the new methods and innovative means of skill delivery (FAO/IFAD/ILO 2010).

5.3 Strengthening women workers' labor rights

In addition to reallocating women's labor time away from unpaid work and providing skill training and other opportunities, strengthening of women's labor rights is crucial in ensuring that women workers can compete on even ground in the market. Take again the case study of South Africa's fruit market, Kenya's flower market, and Zambia's vegetable and flower market: studies note that codes of conduct that are applied from the UK and European buyers need revision to be applicable to these largely-informal markets where women are in a majority (Barrientos et al. 2003; Tallontire et al. 2005). Codes of conduct are applied by Northern buyers to improve working conditions among Southern suppliers, but often inequity in power between buyers and producers implies that many of the risks of production and distribution are borne by producers. Some of the management strategies that producers bear in order to manage such risks and to maintain high-quality standards include taking on the burden of falling market prices and meeting deadlines using "just-in-time" production techniques, which dictate the use of flexible employment methods. These strategies, in turn, often necessitate the use of informal workers who have little job security, labor organization, or social protection. As noted above, informal work, while attractive to women because of the ease of movement it affords between productive and reproductive roles, is marked by the absence of collective bargaining frameworks, among a set of other disadvantages.

The lack of worker organization is particularly true for informal work in agriculture, including horticulture. Representation of women's interests by trade unions is weak, and among them, formal union membership is extremely low – for example, only 8 percent of women in South Africa were members of unions (Barrientos et al. 2003). This low union representation has implications for women's rights and responsibilities and keeps them insulated from formal labor regulations and the benefits such regulations might bring, including maternity leave, childcare, and employment protection. While codes of conduct may be enforced by buyers on poor producers, a deeper understanding of the socio-cultural context in which the codes operate is essential, as is cognition of the fact that the context is often not gender-neutral. As discussed above, codes that are developed with multiple stakeholders are often found to be the most gender-sensitive, but mainly in formal sector employment (Barrientos et al. 2003; Tallontire et al. 2005).

Another example of the importance of strengthening women worker's labor rights is the case of informal sector workers in Ghana's national labor laws (Chen 2009). In this case, a three-way effort by the government, employers, and the Ghana Trade Union Congress (GTUC) successfully extended rights covering formal sector employees to those in the informal sector. Although this was a joint effort that resulted in the New Labor Act of 2003, it was instigated independently by the GTUC, which undertook a review of the national laws and found that they were not attuned to ground realities or the Ghanaian constitution. The aim had not been to improve the lives of women workers as such. Rather, since women in Ghana are concentrated in the informal sector with low levels of earnings and high levels of employment risks, they were the indirect beneficiaries of regulations that furthered job security and employment protection. These regulations included provisions for temporary and casual workers that were the same as

those afforded to permanent workers, including equal pay for work of equal value, the full minimum wage for days worked, including public holidays, and medical benefits. Further, the employment of a temporary worker for more than six months implied that that the worker must now be treated on par with a permanent worker. This was an example of an action by a national trade union that resulted in extending social protection and other benefits to informal sector workers, a large majority of whom were women.

5.4 Extending rural sector public works programs

One of the biggest determinants of women's time in unpaid labor is the state of public infrastructure, including roads and electrification, and ease of access to drinking water and firewood. These areas are the domain of women in developing countries, many of whom have commensurately less time to work in a remunerated sector even if they are able, given the time-intensive nature of water and firewood collection and other household activities. Easing this burden can liberate women's work and improve rural infrastructure simultaneously if adequate provisions are made to enable them to participate to the extent that they can through, for example, the provision of childcare services on-site (FAO/IFAD/ILO 2010). Further, making women stakeholders in projects that build infrastructure such as roads often brings significant returns. Nowhere is this approach more evident than in the Peruvian rural roads maintenance program (World Bank 2004). This program, which operated in Peru from 2003 to 2006, increased women's participation in decision-making roles by setting female quotas of 10 percent in microenterprises that were in charge of maintaining rural roads. Researchers found that these quotas served to increase women's representation in executive roles such as President, Secretary, Treasurer, and Supervisors. Women took on all types of maintenance activities and performed

them on par with men, sometimes better. Thus, the Peruvian roads program is an example of a rural program that improved women's participation and created an asset that, in turn, benefitted them primarily.

Another infrastructure-focused development scheme that brought significant benefits to women is South Africa's rural electrification program. Dinkelman (2011) finds that the introduction of rural electrification increased female employment within five years, primarily by allowing for micro-enterprises and by liberating women from home production. With electrification, households used less wood within the home and increasingly adopted electric lighting and cooking. Electrification thus worked as a labor-saving device, allowing women to move from home production to market work (Dinkelman 2011).

Another case where the development of infrastructure has been especially fortuitous to women is the National Rural Employment Guarantee Act (NREGA) of 2005 in India. This Act guarantees each rural household a minimum of one hundred days of work per year. Although there are few eligibility requirements, it was believed that the nature of the work and the level of wages were such that only the poor would self-target into accessing the program. According to the government, the main aim of NREGA is to increase wage employment and wage security in rural India. Secondary objectives included addressing underlying reasons for poverty, such as deforestation, soil erosion, and drought. As part of these secondary services, sponsored projects involved road construction, improved irrigation, and water conservation.

Although these categories of work reflect manual labor, there are several reasons why women workers, in particular, were attracted to NREGA work. First, wages in NREGA work do not differentiate by gender, which means that the offered wage differential between rates for

alternative options and NREGA work is especially attractive for women. Second, much of the work can be undertaken locally - a stipulation that reduces commuting times to work sites and reduces the burden for women who bear the bulk of the responsibility for housework. Third, NREGA worksites also have the mandated availability of childcare facilities. While this provision was not fully enforced at all sites, it eased the burden of childcare in areas where this functioned relatively well (Narayanan 2008). This further eases women's time restrictions that may now be re-directed towards labor-intensive yet remunerated work. Results suggest that NREGA has had positive impacts on public works employment and on labor force participation rates, especially for women (Azam 2012).

5.5 Improving access to information and services

One of the ways in which women in agriculture are constrained is by having limited access to information and other services. Women often are not represented in agricultural cooperatives to a large degree. They are also mostly absent from professional and service networks, which allow for the quick diffusion of information. Much of this is because socio-cultural norms limit their mobility and social circles. In considering patterns of agricultural support services, in particular, extension agents who are women may be more likely to reach women farmers, especially in societies that are highly segregated by gender (Quisumbing et al. 2012). Improving access to information for women in order to improve their productivity is of special importance. India's "Gyandoot" network serves as one good example of the means by which women's access to information has been fostered (DFID/FAO/ODI 2002). This network is a system of village "kiosks" that are linked through an intranet system where people may access public information, such as land records, technical advice, marketing information for agricultural

commodities and prices, and details on government projects. It also serves as a communication outlet as individuals may submit complaints directly to the local government. This computer intranet system is used for other functions as well, such as e-marketing, for obtaining information on education, syllabi, exams, and textbooks for children from the government's education staff, and even as a matrimonial service (DFID/FAO/ODI 2002). Gyandoot's innovations, especially the ability to post questions to agricultural extension staff and the ability to gain information on market prices of grains and other commodities, are invaluable to India's female farmers. This technology has the power to bring measurable benefits to a segment of farmers who are often not recognized in their own right, and who are often curtailed in their everyday dealings with the market.

Another example of what improving access to information and services means to women is the case of mobile phones in Africa. The coming of this new technology has had a widespread impact on economic development (Aker and Mbiti 2010). There is evidence that mobile phones have brought disproportionately positive effects for women. For example, Klonner and Nolen (2008) find that the introduction of a mobile phone network in South Africa had widespread labor market consequences that were stratified along gender lines. In particular, with the advent of this network, employment increases by 15 percentage points in rural areas, and much of this effect is for women who do not have large childcare responsibilities within the home. Most of these women find work in wage employment. There is also evidence of sectoral shifts with the advent of network coverage as agricultural employment declines, especially among men. These large employment increases and sectoral shifts translate into increases in household income and measurable declines in extreme poverty in South Africa. Although the study does not clarify how women's wage employment increased with the introduction of mobile phone networks, a

mechanism may be the opening up of avenues for new businesses and self-employment work in rural settings that could now hire women. Hence, improving access to services and information can bring substantial benefits to women.

5.6 Improving women's access to credit

One of the consequences of remaining isolated from networks is restricted access to credit markets. This restricted access also results from women's relatively meager control over assets that may be used as collateral. Further, formal lending institutions often view women as risky clients because women have lower levels of education and skills, which increases the perception that they cannot be "banked." These restrictions limit women's abilities to undertake profitable work and further contribute to their disadvantage in the marketplace. India's rural sector serves as a good example of an arena in which women experience such a disservice. However, widespread government efforts to tackle poverty by increasing access to banks in poor areas can have strong impact on women in such venues. Menon and Rodgers (2011) examine the impact of India's rural social banking program, which the government initiated in 1969 following the nationalization of banks. Between 1969 and 1990, when the program ended, up to 30,000 new bank branches were opened throughout the country. Provisions of the program included mandates based on population and the stock of branches per capita, with a particularly strong requirement from 1977 onwards that required banks to open branches in four previously unbanked locations (often in rural areas) in order to obtain a license to open a branch in a place that already had a bank. The government also set deposit and lending policies to provide incentives for people to use the new banks. The savings rates were higher, and lending rates were

lower than in urban areas, and there were targets set for lending in priority areas that included agriculture and small-scale entrepreneurship.

The increased availability of credit that was afforded by this program was of particular significance to women. Since much of rural India is uneducated and restricted in its mobility, women were relatively more likely to be employed in small-scale "female" trades, such as spinners, weavers, and makers of tobacco products. These activities tended to be limited in nature and only marginally profitable. In this context, the easing of credit constraints allowed transitions to more profitable work on a larger scale. Results in Menon and Rodgers (2011) indicate that women's self-employment, especially as own-account workers, responded positively to the increase in rural bank branches. In particular, women's self-employment increased by 0.16 percentage points for a unit increase in the number of bank branches opened in rural unbanked locations per capita, while there were no significant effects on men's self-employment. Interestingly, women's probability of self-employment as own-account workers showed greater responsiveness to loans from banks as compared to loans from other informal sources, such as moneylenders, employers, and family members. This result is consistent with an argument that pre-existing failures in the market for formal credit curtailed talented women from becoming self-employed. Once these constraints were alleviated, capable women entrepreneurs found the means to finance and operate new microenterprises. The provision of loans did not come bundled with the provision of extension or training services. It is possible that with such provisions, rates of success for women may have been even higher. Hence, India's rural banking reform is an example of a government intervention which, although not specifically targeted to women, succeeded in releasing women from funding constraints.

6. Summary

This review has shown that even though women's labor force participation rates in agriculture have risen in recent decades and agricultural export markets in developing countries have seen a feminization of foreign exchange earnings, sizable gaps remain in gendered labor outcomes in the agricultural marketplace. Women's engagement in paid work in the labor market in post-production local or global value chains and in non-farm wage labor, and in self-employment in small businesses or as petty traders and sellers, is on an uneven playing field with several inherent disadvantages. Salient features that frequently arise are women's relatively greater burden of unpaid housework and reproductive and caring labor, women's relatively greater representation in unremunerated productive work as family helpers in farm activities and family businesses, and agricultural productivity gaps that arise not from lower female efficiency but from inequitable access to land, credit, technology and agricultural inputs. These inefficiencies not only have negative repercussions for overall agricultural output and growth but also severely curtail women from achieving their full productive capabilities.

Women continue to perform more hours of housework than men do, with the greatest disparity occurring during prime child-bearing and child-rearing ages. Although the proportion of time in housework varies across regions, a large part of the unequal distribution of unpaid labor in the household stems from the perpetuation of social and cultural norms that dictate that childcare and housework is primarily a woman's domain. Together with high economic activity rates for women in very poor countries, these patterns underline a double work burden for women. In particular, since a single agricultural activity often does not provide adequate compensation, women often engage in multiple paid activities simultaneously (Johnston et al.

2015, UN Women 2016). Coupled with domestic responsibilities, this further increases their hours and intensity of work. Framing the double work burden as a time-poverty issue couches these gender differences in the more compelling language of deprivation and increases the importance of finding ways to eliminate them. The main determinant of women's time in unpaid work is poor infrastructure.

In this context, dismantling a structure of constraints is crucial for reducing women's work burdens, raising their labor returns, facilitating meaningful income generation options, and eliminating barriers that curtail women's participation in market activities. Given differences in history, socio-economic characteristics, and culture across regions, it is infeasible to prescribe "one-size-fits-all" policy lessons. However, there are certain themes that are common across these contexts. These lessons include the need to economically value unpaid work and to adopt practices that redistribute the burden of care and housework; the implementation of public works programs that build and improve time-saving infrastructure (especially electrification and the provision of piped water); greater availability of agricultural information and services including the market prices of inputs and commodities; the development of programs that reinforce women's skills that enable them to increase their future employability; and the incorporation of other key policy ingredients that allow women to engage in work in a meaningful manner (for example, the guaranteed provision of on-site childcare facilities). The emphasis on skills formation is particularly important so that such policies achieve more than just a simple switch away from unproductive employment in agriculture to unproductive employment in non-agriculture.

Empirical patterns also point to the importance of creating more wage-employment and rewarding self-employment opportunities. Again, this specific policy prescription may not be universally applicable. For instance, there is little point in encouraging new avenues for rural non-agricultural employment in contexts where markets to sell the output produced by such employment are absent. Further, small business self-employment activities owned and operated by women tend to be limited in scale. Several explanatory factors vary across regions, but in general, these include land, credit, and technology constraints that disfavor women, which can be mutually reinforcing. A growing number of governments have implemented large-scale land titling programs, with results indicating that joint titling of land for married couples serves as an effective way for women to gain legal land rights (e.g., Menon et al. 2017; Ali et al. 2014). In addition, policies that build skills and knowledge – perhaps through local grassroots and community-led education clinics tailored to women – and other initiatives that foster the development of networks for marketing purposes may increase the scale of small businesses and transform them into powerful engines that generate marketable surpluses and productive employment.

Along these lines, public and non-governmental institutions could play key roles by investing more in infrastructure and providing subsidies and support for the marketing and sale of products produced by female-operated businesses. In this context, an avenue for quality jobs has been employment in local or global supply value chains that generate non-traditional agricultural exports. Although wages are relatively high, women in these occupations are at the lowest rungs of the organization and face a plethora of challenges. Since bolstering their position in the labor market is likely to bring greater returns than a focus on their actions as producers, public and NGO groups have a further key role to play by encouraging the creation of farmer

cooperatives and unions, especially among smallholders, and by generating conditions that foster women's active participation in them. Making women more aware of their employment rights and community-led strategies to enforce labor standards embedded in codes of conduct would serve to increase their voice and agency on multiple platforms. Of course, national laws and regulations must fully cover women workers both in theory and in practice. Governments can promote gender equality in employment through the provision of critical public goods and effective natural resource management.

This chapter has also reviewed a large body of work showing that female farmers are as efficient as male farmers are, but a socio-culturally rooted structure of constraints has contributed to sizable gender gaps in the adoption of high-value crops, and in the use of agricultural implements, pesticides, and fertilizer. Analysis of the costs associated with these gender gaps may help planners prioritize alternative entry points to assist women. The evidence shows that closing gender gaps in access to labor, the use of cash crops, access to agricultural machinery and implements, and in the use of pesticide and organic fertilizer will serve to raise agricultural production. When introducing innovations specifically into the rural landscape for a target population of producers, policymakers should be informed about existing gender-differentiated constraints that affect input use, technology choice, and the subsequent generation of income. These constraints are often the result of explicit and implicit gendered norms that lead to unequal rights and terms of access to inputs. In such contexts, agricultural extension services that are gender-sensitive and taught by female extension agents may be extremely effective in training women and in raising their productivity. This need has grown during the Covid-19 pandemic, with available evidence indicating that gender differences in access to extension services increased as a result of the crisis (Alvi et al. 2021). Improving women's experiential learning

through farmer field schools is another avenue that has the potential to significantly benefit women.

Finally, several broader policy lessons may be drawn from the review of the literature on best practices in reducing inequities in gendered labor access and agriculture. First, accountability for the success of programs should be widely held. As demonstrated from the case study of horticulture exporters from several African countries, approaches based on multiple stakeholders work better than single/limited holder interests do. The reviewed case studies also highlight the importance of flexibility in terms of work policies in dealing with women workers, evidence of willingness to invest in workers (such as the provision of free transportation to and from work), and provision of initiatives that invest and build the human capital of workers. Another policy lesson is the importance of increasing women's representation in cooperatives and their engagement in the collective bargaining process. Broadly speaking, placing women in leadership positions increases accountability and ownership, and serves to promote women's success in the agricultural marketplace.

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Cross-References

“Gender and intrahousehold issues” in Development and Labor section.

“Informality and labor market dualism/segmentation” in Development and Labor section.

“Microfinance and employment” in Development and Labor section.

“Contract Labor in Developing Economies” in Development and Labor section.

“Micro-entrepreneurship in developing countries” in Development and Labor section.

“Gender Stereotypes and Gender-Typed Work” in Gender section.

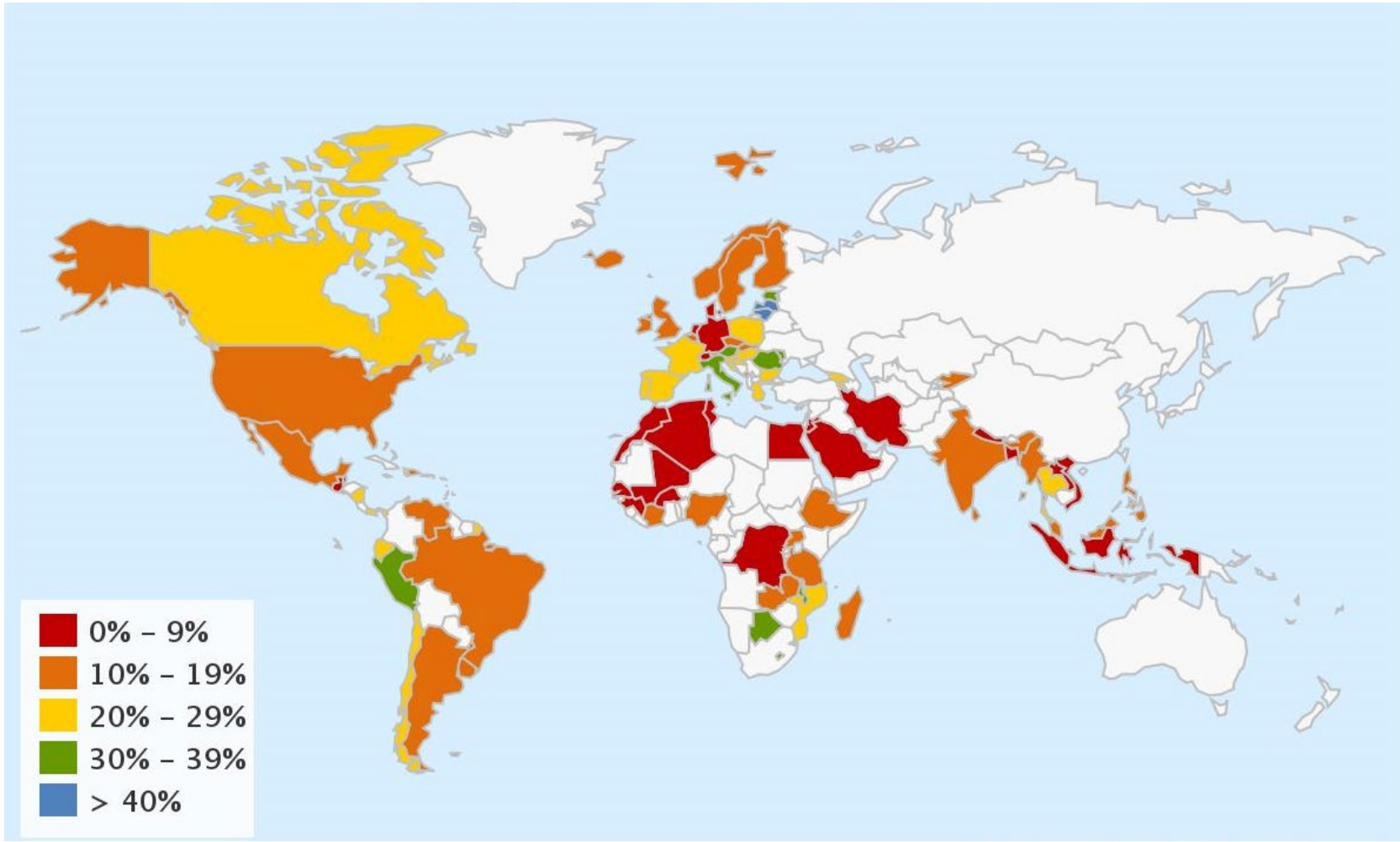
“Gender Roles and Families” in Gender section.

“Gender and Precarious Work” in Gender section.

“Household Labor Supply” in Household Economics section.

“Female Labor Force Participation Decision” in Household Economics section.

Figure 1. Percent of Agricultural Holders who are Women.



Source: Food and Agricultural Organization (2016).