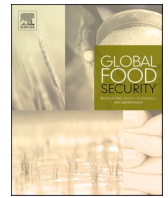


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Myths about the feminization of agriculture: Implications for global food security

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ABSTRACT

The term “feminization of agriculture” is used to describe changing labor markets that pull men out of agriculture, increasing women’s roles. However, simplified understandings of this feminization persist as myths in the literature, limiting our understanding of the broader changes that affect food security. Through a review of literature, this paper analyses four myths: 1) feminization of agriculture is the predominant global trend in global agriculture; 2) women left behind are passive victims and not farmers; 3) feminization is bad for agriculture; and 4) women farmers all face similar challenges. The paper unravels each myth, reveals the complexity of gendered power dynamics in feminization trends, and discusses the implications of these for global food security.

1. Introduction

Gendered labor patterns in rural areas have been changing in response to urbanization and structural transformation. Whether women are becoming a larger share of the agricultural labor force or are taking on more management of smallholder farms, these changes are often described as the “feminization of agriculture”. A number of factors are influencing these changes, including global and local labor migration, women’s increased mobility, the commercialization of agriculture, conflicts, and climate adaptation (Doss et al., 2021). While increasingly the literature critically analyses some aspects of these trends, such as changes in decision-making and asset ownership, myths remain. Not only do these myths mask reality but they also direct attention away from appropriate responses to issues of food insecurity and gender inequality.

In this article we address four common myths about the feminization of agriculture, challenge the assumptions behind these myths, and illustrate more nuanced realities. For each myth, we begin by considering the kernel of truth that is embodied within it and then challenge the myth by providing evidence as to what is overlooked. We first address the myth that the feminization of agriculture is the predominant global trend in global agriculture, by noting regional differences and patterns. The second myth frames women as passive victims of the

changes in rural economies, which we challenge by exposing women as active agents making strategic choices. Thirdly we unpack the myth that feminization is bad for agriculture by contextualizing the data and looking at systemic obstacles to women becoming more productive farmers. Finally, we analyze the diversity of experiences that rural women face and highlight the need for intersectional approaches, thus breaking down the myth of universality: that women farmers all face the same challenges.

By critically examining assumptions in these myths, we contribute to improving research on changes in gendered labour patterns in agriculture. This is critical to understanding and developing equitable and inclusive mechanisms for achieving global food security.

2. Debunking Myths

2.1. Myth: Feminization of agriculture is the predominant global trend

The first myth is that the feminization of agriculture is the predominant trend in global agriculture, closely associated with male labor outmigration, women playing greater roles in smallholder agriculture, and increased participation of women in commercial agriculture, both on the farm and in processing facilities.

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2.1.1. The kernel of truth

In many places, men are moving out of smallholder agriculture at a faster rate than women. Men frequently migrate to cities, both domestic and international. When they leave, the women who remain on the farm often become more visible, both as farmers and as farm managers. For example, in Nepal, there is widespread outmigration of men from rural areas, with women frequently remaining in the rural areas. These women increasingly identify themselves as primary farmers, whereas they had previously considered themselves contributing family members (Slavchevska et al., 2020). Similar patterns are found in China (Mu and van de Walle, 2011), India (Pattnaik et al., 2018), Egypt (Binzel and Assaad, 2011) and elsewhere.

In addition, women are taking advantage of new forms of wage labor in agriculture. Large-scale commercial farming, particularly that aimed at export markets, has created new employment opportunities. Women are increasingly working in this sector (Bigler et al., 2017; Deere, 2005; Sachs, 2019), although they still tend to predominate in seasonal, rather than full-time jobs (Bernardini, 2019; Deere, 2005; Gopal et al., 2020).

A third trend is that in some places such as Latin America (Deere, 2005), Morocco (Najjar et al., 2018), and Tajikistan (Mukhamedova and Wegerich, 2014), women are migrating within rural areas to engage in agricultural labor, particularly harvesting. There is little data that tells the extent to which this is a new trend and quantitatively different from the past, or whether it is simply becoming more recognized.

2.1.2. Challenging the myth

Labelling all three of these patterns as the “feminization of agriculture” collapses a wide range of experiences into one category. It conflates smallholder agriculture and large-scale commercial agriculture; management of household farms with agricultural wage labor; and work in commercial packing houses with growing food for one’s family. It also conflates work in the agriculture sector with work in the manufacturing sector processing agricultural products. These patterns are a result of very different forces and have different implications for the well-being of women and rural households as well as for agricultural production.

The reality is that we do not have good data on changing global patterns. Women’s work in agriculture is often undercounted, both on family farms and wage work (Koolwal, 2021; Oya, 2013). Many studies on the feminization of agriculture focus on particular locations where patterns of men’s outmigration are particularly apparent. Others examine changing labor patterns for particular groups, such as youth (Mueller et al., 2018). Other trends are also occurring. In some areas, women are moving to urban areas to work in factories or as domestic workers, while men remain on the farm (Latin America: Deere, 2017, 2005; Southeast Asia: Elmhirst, 2007; Hoang and Yeoh, 2011).

All of these trends are occurring in a context in which the share of people overall working in agriculture is decreasing. Populations are urbanizing and people are leaving agriculture. Globally, the share of employment in agriculture has declined from 44% in 1991 to 27% in 2019 (World Bank, 2021). Thus, an increasing share of women working in agriculture can result from men leaving and women remaining, or from men leaving agriculture at a faster rate than women, or from women moving into agriculture.

A focus on the feminization of agriculture leaves many changes in the gendered patterns of labor in agriculture unexplored. First, the patterns differ not only by gender: gender also interacts with age cohort. For example, in rural China in the 1990s, young men and women were equally likely to leave the farm, but middle-aged women were less able to find off-farm work than middle-aged men (de Brauw et al., 2008). A follow up study finds a broader increase in the share of farm work done by women (de Brauw et al., 2013). The implications for those remaining in the rural areas will differ, depending on who moves out. In Ethiopia, when a son migrates, women – either heads or spouses – may begin working on the farm. In Malawi, it is more likely to be the brother of the migrant who increases his farm labor (Mueller et al., 2018).

Second, the gendered labor patterns differ across the scale of farming

and the level of commercialization. For example, Jayne et al. (2016) report that the number of medium-scale farms in Africa is increasing. While medium-scale farms can create wage labor work especially for women, male elites who invest in commercial farming often obtain substantial benefits (Hall et al., 2017). To the extent that these farms are innovative and dynamic, we should be paying attention to who owns them and identifying ways to ensure that women are able to take advantage of such new opportunities (Dancer and Tsikata, 2015). In addition, there may be relationships between smallholder subsistence family farms and larger-scale commercial agriculture. In Northern Ghana, women seasonal workers on medium-scale farms use income from wage work to maintain their own subsistence farms (Tsikata and Yaro, 2014). In addition, the commercialization of small-scale farms is increasing in developing countries. Further research is required to understand the gendered patterns of ownership or management of these different types of farms.

Third, particularly within the commercial agriculture sector, men and women often hold different types of positions. Men dominate the permanent salaried jobs in agriculture (Bain, 2010; Pearson, 2007), while women are frequently employed as casual or seasonal workers. For example, in a commercial fruit production company in Northern Ghana, women account for 80% of 600 low-wage casual workers. On the other hand, men hold all the field supervisor positions and about 70% of permanent positions. Only two of the 21 office workers are women (Tsikata and Yaro, 2014). Thus, while women are taking jobs in commercial agriculture; they are rarely the owners or managers of these enterprises.

Finally, there is limited discussion about how women’s migration affects household agricultural production and food security. Instead, the literature tends to focus on who does the domestic work when women, especially married women, migrate and how this affects the men who remain (Hoang and Yeoh, 2011; Huijsmans, 2014). A number of studies in Asia suggest that grandmothers take over farming tasks, domestic work and care of grandchildren (Wu and Ye, 2016; Ye et al., 2017). In the context of rural-to-urban migration, migrant women frequently return to their rural village to maintain family farms and provide domestic labor (Nguyen, 2014; Resurreccion and van Khanh, 2007). Thus, women’s migration does not necessarily lead to the “masculinization of agriculture” and domestic work. Unpaid labor, including farming, is likely to remain as a women’s domain.

The myth simplifies the story about changing gendered labor patterns and renders some of these other changes invisible. The changing roles of men and women vary widely across contexts. When we focus only on whether men and women are moving in and out of agriculture, we may miss these other factors that will affect household welfare and food security.

2.2. Myth: women “left-behind” are passive victims and not farmers

The second myth is that women are “left behind” in the rural village as passive victims of rural change while men choose to leave the village and earn higher income elsewhere. Women are seen as being “stuck” managing unproductive farms without adequate resources.

2.2.1. The kernel of truth

As men abandon the farm, women may experience increased drudgery rather than empowerment as they become responsible for marginal farms (Pattnaik et al., 2018). Women’s additional responsibilities on family farms limit their opportunities to take paid jobs (Bacud et al., 2019), reinforcing gender norms that men earn incomes and women engage in unpaid labor of care and farming (Wu and Ye, 2016). Women “left behind” not only face labor and time burdens, but also greater psychological burdens than women whose husbands stay in the village (Graham et al., 2015). When married women migrate with their husbands, elderly grandmothers may be “left behind” caring for the farm and grandchildren (Tamale, 2018).

Precarious transnational labor migration may involve risk of exploitation and few remittances sent back to rural communities. If remittances are insufficient for investment in agriculture, women remaining on the farm may compensate for the shortage of men's labor with their own labor (Paris et al., 2005). This problem is particularly acute in areas where there are few other opportunities in the rural areas. Rural areas may become dependent on remittances and are particularly vulnerable when these remittances stop (Torres and Carte, 2016).

It may be disempowering for women when their husband migrates out. When a wife co-resides with other male relatives and senior women (e.g., mother-in-law), patriarchal family relations may continue (de Haan, 2006; Desai and Banerji, 2008; Doss et al., 2022; Hoodfar, 1996). The wife may no longer benefit from the mediating influence of her husband. In this case, the physical absence of her husband does not change patriarchal structures and women's position in farming may remain the same or become worse.

2.2.2. Challenging the myth

Generalized images of women "left-behind" mask women's agency and depict women as essentially passive. However, women who remain in the village are often active agents making strategic choices; they are not simply "left-behind". Women may be actively involved in determining household migration strategies and staying in the village may be their own choice. In her ethnographic study in Ugweno, Tanzania, for example, Archambault (2010) finds that women's productive and reproductive lives are closely associated with their social relations in their village and it is difficult for women to initiate new economic activities in a new place in isolation from their social relations. Many women, therefore, choose to remain in the village as it enables them to maintain self-sufficiency and economic autonomy. In Senegal, Mondain and Diagne (2013) find that some women are "active stayers" who mobilize financial resources for a man within their extended families to migrate. In return, the women receive remittances.

Second, some women take advantage of men's absence to take over new roles, thereby challenging gender norms in the community. These cases are often dismissed as atypical but it is important to understand the conditions that enable women's empowerment when men migrate out (Desai and Banerji, 2008). A number of diverse cases demonstrate this possibility. For Catholic Goan upper-caste women of peasant origin in India, when men migrate, women become de-facto household-heads, responsible for tasks including hiring and supervision of agricultural labor (Mascarenhas-Keyes, 1990). Similarly, in Quezon, the Philippines, men's absence increasingly challenges conventional gender roles in farming; some women have begun to take over the management of coconut farms. Although the women still have to negotiate with their male relatives, some eventually hire laborers and expand production using the remittances. Other Filipina women invest remittances in women's traditional domains of agriculture such as pig farming and subsistence agriculture (Lukasiewicz, 2011). These women's stories confirm that they may be able to take advantage of new opportunities when men leave, strategically choosing the extent to which they challenge current gender norms.

The myth of women being "left behind" also implicitly suggests that the only change on the farm is that men leave. Yet, family farms may adjust to the reduced labor supply in migrant-sending communities by changing the types of production. On the north-central coast of Vietnam, where men's migration is very common, some households stop growing crops that require substantial male labor, such as maize and cassava. Instead, men invest in long-term crops such as timber and orchard fruit before they migrate. This enables women to manage the farm without the need to replace all of the male labor. Women continue developing their own sources of income, such as pig farming, selling meat, or running a grocery store, using income from remittances for cold storage and inventory (Kawarazuka et al., 2020). In the Eastern Gangetic Plains of India, Lahiri-Dutt and Adhikari (2016) found that shortages of men's labor due to outmigration is altering the traditional crop-sharing

arrangements between landlords and laborers. A more equitable new contract-farming system (*theka*) has emerged in which women remaining in the villages become landlords who negotiate with male laborers; landless women have new opportunities to work as laborers in this new system. Women are actively engaged in these systems both as landlords and workers. The above cases confirm that family farms can be flexible in the face of changes in labor supply.

The gaps between the myth and realities confirm that the negative and passive connotation of women "left behind" is oversimplified. Economic opportunities and farming systems are rapidly changing and there is an urgent need to understand and document those environments that enable women to be active stayers and farm managers by learning from their lived experiences. In these dynamic systems, food security may improve.

2.3. Myth: Feminization is bad for agriculture

The third myth is that the feminization of agriculture has negative consequences for agricultural production. It claims that women are less productive farmers than men and thus, as men move out of agriculture, and production will decrease.

2.3.1. The kernel of truth

Simple comparisons frequently find that productivity – whether measured as production value, profit value or crop yield – is lower on plots managed by women than on those managed by men (Aguilar et al., 2014; Ali et al., 2015; Backiny-Yetna and Mcgee, 2015; Mugisha et al., 2019; Palacios-López and López, 2015; Quisumbing, 1996; Slavchevska, 2015; Tamang et al., 2014; Udry, 1996). This finding is then extrapolated to suggest that if women are less productive farmers, and if farms are increasingly managed by women, overall agricultural output will decrease.

2.3.2. Challenging the myth

A first challenge to this myth is the many examples where women farmers and farm managers are just as productive as men (de Brauw et al., 2013; Quisumbing, 1996; Doss, 2018). When gender gaps in productivity do exist, explanations reveal a range of structural factors, including gender norms. However, many of the differences can be explained, not by the gender of the farmer, but by the conditions under which they are farming (Doss, 2018). Indeed, comparisons of women's and men's plot level productivity are not particularly useful because the conditions under which men and women farm tend to be quite different – from access to resources, inputs, and services, to land ownership and access to credit.

Women farmers often lack sufficient access to productive resources (like land and credit), inputs, and services needed to implement good agricultural practices (Aguilar et al., 2014; Backiny-Yetna and Mcgee, 2015; Croppenstedt et al., 2013; Muricho et al., 2020; Padmaja et al., 2019; Quisumbing, 1996; Song and Jiggins, 2002; Tavenner et al., 2019). A review by Peterman et al. (2014) finds that across studies, men use more improved seed, fertilizer and extension services than women and that this input gap is responsible for productivity differences. A study on groundnuts in Nigeria found yield augmenting activities like technology validation trials, testing, and demonstrations to be critical in closing the gender yield gap (Muricho et al., 2020). Another Nigerian study notes that interventions and policies that increase women's access to productive inputs including improved seed would significantly increase agricultural productivity (Mugisha et al., 2019). In the context of male labor migration, women's access to productive inputs (e.g., quality seeds), assets (land, labor-saving machines) and hired labor also depends on whether women receive sufficient remittances and whether remittances are used for investing in agriculture. A literature review from Asia (Indonesia, Nepal and Laos) suggests that it depends on contexts but in many cases, remittances tend to be spent on fulfilling immediate needs or non-agricultural investment (Sunam et al., 2021). In

Latin America, remittances are used for agricultural input and assets to support smallholder production (Dodd et al., 2020; Radel et al., 2018), but it does not bring about meaningful change in both agricultural production and gender relations (Radel et al., 2012).

The input gap is aggravated by agricultural technologies (e.g., breeds, seeds) that do not take women's preferences and conditions into account (Ashby and Polar, 2019; Satyavathi et al., 2010; Song and Jiggins, 2002). Extension and research services are also often less available to women (Manfre et al., 2013) and delivery tends not to consider women's constraints and preferences (Ragasa, 2014). Indeed, some researchers call for a complete overhaul of agricultural research, development and extension from a production focus to broader food systems, including household food security (Meinzen-Dick et al., 2014).

Gender norms affect the choices that women farmers make as well as their visibility in agriculture (Nchanji et al., 2021). Gender norms influence crop choice (de Schutter, 2013), access to labor, reproductive labor demands, and access to markets. In many places, men grow more lucrative cash crops whereas women tend to grow crops for household consumption (Doss, 2001; Fisher and Carr, 2015; Peterman et al., 2011; Shibata et al., 2020). These choices are shaped by social expectations (de Schutter, 2013) and affect measures of productivity.

Gender norms likewise influence women's ability to access labor for their farms. Women farmers may have a harder time accessing, using, and supervising men's labor on their farms (Backiny-Yetna and Mcgee, 2015). In addition, women typically have many responsibilities in addition to farming linked to their 'triple roles' in providing productive, reproductive and community labor (Nchanji et al., 2021). For example, in Uganda a key explanation for the yield gap was women's greater childcare responsibilities (Ali et al., 2015). Gender norms may also limit women's access to (input and output) markets, particularly when women live in areas without transport (Ali et al., 2015).

A number of studies identify ways that the gender gap in agricultural productivity could be eliminated by reducing discrimination against women farmers (Nchanji et al., 2021), increasing women's access to productive resources (Maharjan et al., 2020; Udry, 1996), or increasing mechanization in place of heavy manual labor (Liu et al., 2019). This literature all suggests that women farmers have the potential to be as productive as men farmers, if these inequalities are addressed.

In addition to explaining and understanding gender gaps in productivity where they exist, it is also important to challenge the idea that women's increasing involvement in agriculture will negatively impact aggregate output or national food security. Bluntly stated, the perception is that more productive men smallholder farmers are migrating out and leaving the farm to their less productive wives. However, often men leave because the farm itself is not productive. So, the issue is not that women are poor farm managers; it is the farming systems that are unproductive. When a man migrates off a marginal farm to work on a commercial one, leaving his wife responsible for it, even if nothing changes on the family farm, his move will contribute to an increased average productivity for men and relative decrease for women (at aggregated levels). Analyses of gender productivity gaps do not consider that the decision regarding who will manage the farm may depend on the farm's potential productivity.

When considering national food security, the gender of the farmer of small, marginal plots will have little impact on national level yields: these plots do not contribute significantly to national production. As such, women taking over the farm has limited impact on national food security. The concern that women taking on the farm results in lower productivity conflates the effects of farms being managed by women with the effects of poverty and marginalization (Jiggins, 1998). This can be described as the "feminization of agrarian distress" (Pattnaik et al., 2018).

Finally, it is worth challenging the idea that yields are the only measure of what is "good" for agriculture. A movement towards more ecologically and socially sustainable farming practices can also be considered good for agriculture (Snyder et al., 2017). This may involve

more emphasis on management of farmland closer to settlements and less input intensive farming (e.g. in Nepal, Bhawana and Race, 2020), including organic agriculture (Altenbuchner et al., 2017; Farnworth and Hutchings, 2009; Nath and Athinuwat, 2020). It may also include emphasizing the impacts on household-level nutrition. Women may have greater roles to play in this changing agricultural context, including rethinking how agriculture is measured and evaluated. Some authors conclude that only when women's participation in farming becomes a means to their empowerment will it serve as an effective pathway to global food security (Asadullah and Kambhampati, 2021).

Food security is generally recognized as having stable access to sufficient quantities of affordable, nutritious food at global, national, local and domestic levels. Where women have access to credit and control over income, household dietary diversity is higher and food insecurity is lower (Larson et al., 2019). As women and girls are often particularly vulnerable to food insecurity women's roles in managing household food security are critical. Women play significant roles in growing food crops for household food security, which are not necessarily captured in measures of agricultural yields.

2.4. Myth: All women farmers face similar challenges in relation to the feminization of agriculture

The fourth myth is that women farmers are a homogenous group, all facing similar challenges. This myth is generated through gender analyses that simply compare women's situations with those of men.

2.4.1. The kernel of truth

Women face some challenges in the processes of change happening in rural areas, based on their gender. As noted above, women farmers frequently face more barriers in accessing credit, extension, land and other forms of capital than men farmers (Huyer, 2016; Kristjanson et al., 2014; FAO, 2011). It is frequently claimed that women farmers are less involved in farm management across a range of farm decisions (Acosta et al., 2020; Ambler et al., 2017; Shibata et al., 2020). These and other studies suggest that women face structural disadvantages based on gender.

2.4.2. Challenging the myth

Examining agricultural processes through an intersectional lens demonstrates that farming women differ in many ways from each other. Intersectionality is about considering multiple identities in which power structures operationalize and privilege certain identities and denigrate others (Crenshaw, 1989). Cultural norms and practices can "disparage, stereotype, exclude, ridicule, and demean certain social groups, denying them full personhood and equal rights to participate in the economic, social, and political life of their society" (Kabeer, 2016: 13). Different types of group-based horizontal forms of marginalization can layer disadvantage upon disadvantage, for example being a woman, a widow, aged, economically poor, and a member of a discriminated-against ethnic minority. Multi-faceted identities like these are self-evidently common (Farnworth et al., 2018; Mittal et al., 2016). Understanding that people have multiple interactive identities challenges understandings of gender as 'only' being about dichotomous and hierarchical relationships between women and men (Carastathis, 2014; de los Reyes and Mulinari, 2020; Shields, 2008; Yuval-Davis, 2006).

The concept of intersectionalities allows us to appreciate that it is impossible for women farmers everywhere to be facing the same situation, the same opportunities, and the same challenges. The intersectionality between caste and gender, for instance, often results in very different livelihoods, opportunities and constraints for women and men of different castes. Caste, as a gendered variable, complicates our understanding of the changes in gendered labor patterns. For example, in areas of Gujarat and West Bengal, India, women are more likely than men to report agriculture as their main occupation (Pattnaik et al., 2018). However, in Gujarat, Scheduled Caste and Scheduled Tribe

women are much more likely to work as paid laborers as well as provide unpaid labor on family farms than women identifying as middle and higher caste. Many of the latter practice *purdah* and do not go out for paid agricultural work. In West Bengal, endemic poverty results in women working in agriculture, regardless of caste. The more complex story is that in Gujarat, only lower caste women are moving into agricultural work whereas in West Bengal, these processes engage women across caste (Pattnaik et al., 2018).

Other intersectionalities include age and marital status. In Thai ethnic minority communities living in the mountains of northern Vietnam, young women provide much of the farming labor (Kawarazuka et al., 2021). Gender norms limit young women from seeking work beyond the village, while young Thai men find poorly paid construction work in Hanoi. Young married women live with their in-laws whilst their husbands are away and farm their parents-in-law's land, take care of livestock, and help around the home. They perform similar tasks for their own parents and relatives. This work is never defined as "agricultural work". Indeed young women do not describe themselves as working and their husbands claim their wives are "not working, just staying at home". Young women "trade" their labor (without explicit reference to their agricultural work) on their in-law's or parents' farms for money, cash advances for large expenditures, accommodation, food, childcare, and so on. The work of young women thus facilitates a reciprocal exchange relationship. They maximize their agency to obtain rewards within a cultural system that favors "intergenerational contracts" between older and younger family members (Kabeer, 2000). And, under the radar, many of the burdens of farming shift to young women (Kawarazuka et al., 2020).

At the same time, women are not "locked in" to pre-programmed intersectional identities that afford some women opportunities and deny opportunities to others. Women can negotiate and overcome – at least to some degree – the disadvantages they face based on their identities. Farnworth et al. (2020) analyzed women's decision-making strategies in wheat-based farming communities in Bihar, Haryana, Uttar Pradesh and Punjab. The authors identify six strategies, ranging from acquiescence in men's decision-making, through more consensual forms of decision-making, to women taking complete control of the farm. These strategies only partly overlapped with longstanding cultural norms, which varied across locations, as to how much freedom women were afforded. This suggests that women, regardless of intersectional identities, were actively remaking cultural norms to help them manage changes processes more effectively. A case study in northern Bangladesh highlighted how Santal women, discriminated against on the basis of their indigenous identity, religion, and gender, captured a women's organization and turned it into a channel for the delivery of technical training on wheat and maize to themselves and low-income Muslim women (Farnworth et al., 2020).

When research and development actors neglect intersectionality there is a risk that interventions will deepen poverty and weaken food security for some and enrich others. People experiencing overlapping forms of marginalization which contribute to dis-entitlements often live in the same communities as people whose identities contribute to entitlements. Entitled women are more likely to benefit from agricultural programming and strengthened food security, and leave other women behind. At the same time, some women deploy their agency to overcome intersectional disadvantages.

3. Conclusion

Literature on the feminization of agriculture highlights some important concerns. It draws attention to the fact that gendered labor patterns in agri-food systems are changing, often with women taking a more visible role in smallholder agriculture as men move out. These changes can result in women managing small farms on marginal land that cannot sustain their families. Women are also moving into commercial agriculture, often as casual wage laborers in harvest, packing,

and processing.

To understand the changes that are happening in the rural labor force and how they impact well-being, food security, and gender equality, we need to go beyond simply considering the extent to which women are increasingly a greater share of the agricultural labor force. Both men and women may be moving out of agriculture, so it is important to pay attention to *which* women, and *which* men, work in agriculture. The patterns are also changing in terms of the types of work that people are doing, whether as smallholder farmers or as laborers or managers on commercial farms.

Rather than seeing women as passive victims of rural change, it is important to analyze how they are expressing their agency and to identify the factors that support or inhibit their ability to improve household food security. The choices that women have when men migrate out will be shaped by the broader local economy and the opportunities that are available. Women's choices also depend significantly on availability and access to remittances from migrants. In this respect, the situation for rural women is clearly embedded in the broader global problems of inequality and injustice in transnational labor migration, urbanization, and industrialization.

Women have the potential to be an innovative and dynamic part of the agricultural sector and to contribute to enhanced food security at all levels. Yet, in order for them to play this role, they will need access to the necessary resources. To improve women's agricultural productivity, the factors discriminating against them must be mitigated. Programs on land tenure security, agricultural credit, agricultural extension, and producer cooperatives need to find new ways to reach and benefit women. Furthermore, a focus on national and global food security requires us to move beyond an exclusive focus on crop production and productivity as a primary indicators of productivity. When women remain on marginal farms with little access to resources and no incoming remittances, they are likely to remain food insecure and in poverty, and to contribute minimally to broader agri-food systems.

New opportunities within the commercial agricultural sector have the potential to benefit women and improve food security. Unfortunately, women are particularly concentrated in the more precarious domains within the sector, such as low-paid and seasonal wage work (Hall et al., 2017; Pearson, 2007). Steps are needed to ensure that women can move into the more permanent and better paid jobs within commercial agriculture.

Changing gendered patterns of agricultural labor are interwoven with women's reproductive roles. Women's care responsibilities influence their strategic livelihood choices and patterns differ by age. Commercial agriculture often takes advantage of women's limited employment options or their preference for seasonal work that is compatible with their childcare and subsistence farming for household food security (Tsikata and Yaro, 2014). In this respect, the agricultural sector is a site for the exploitation of women's "disposable" labor (Wright, 2013). Moreover, women's roles in childcare and household food security influence crop choices and farming strategies, in which higher yields or higher value crops are not the only priority.

It is also deeply problematic to view women as a homogenous group. Gender intersects with other social identities, which creates hierarchies among women and among men in the agriculture sector. Marginalized women who experience multiple disadvantages based on their social identities are often most vulnerable to household food insecurity and their experiences in the processes of change need to be documented and clearly reflected in the global food security agenda.

Despite the large body of research that refers to a feminization in agriculture, there is little discussion of gendered values and priorities in agriculture and global food security. This is partly because productivity in agriculture is assessed by traditional gender-blind methods. There is an urgent need to revise methods to take into account of diverse perspectives and approaches of women as well as men in both quantitative and qualitative analyses.

By focusing on the so called "feminization of agriculture", we miss

the opportunity to analyze issues that can further strengthen food security, at the household, community and national levels. While it is critical to address the constraints faced by women farmers, it is also important to recognize that often it is because farms have low potential productivity that they are run by women, rather than the causation being that the farms produce less because women are the managers.

To conclude, we need to develop more comprehensive measures to capture the dynamics of the “feminization of agriculture” in order to develop appropriate policies to improve food security and gender equality in agriculture. To do this, we need to better understand the broad patterns of changes in the rural labor force by gender and other social identities. We need to know how the patterns are changing both in terms of the numbers of men and women working in agriculture, which groups of men and women, and the amount of time that they are spending in the sector in relation to other labor market opportunities. Data is needed to understand how the changes affect both paid and unpaid work, for different groups of both men and women, which help identify gaps in knowledge on existing inequality in food security at household, community, national and global levels.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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