POLICY BRIEF

THE COST OF THE GENDER GAP IN AGRICULTURE

FACTORS IN CLOSING THE GENDER GAP IN AGRICULTURAL PRODUCTIVITY IN FIVE AFRICAN COUNTRIES

THE ISSUE

Across Sub-Saharan Africa, women farmers have substantially lower rates of productivity than men — a phenomenon which has been noted, documented and measured in studies stretching back to the 1990s (e.g. Saito, Mekonnen and Spurling, 1994). These gender gaps in agricultural productivity have arisen not because women are less efficient farmers, but because women experience inequitable access to land and to agricultural inputs. Such unbalanced distribution frequently stems from and is bolstered by deeply entrenched sociocultural norms and traditional expectations of gender roles. This structure of constraints is multifaceted. For example, women are more income- and time-constrained than men, which has repercussions on their ability to access credit, land and appropriate levels of inputs. These constraints thus lead to sizeable gender gaps in the adoption of high-value crops and in the use of agricultural implements, male family labour, pesticides and fertilizer, among other elements.

Furthermore, agricultural productivity has been challenged by its high dependency on rainfall, ongoing environmental hazards and the effects of climate change, which cumulatively affect the productivity of both men and women farmers. However, gender gaps in agriculture result from how women and men differently access, participate in, adopt and benefit from climate-smart agriculture. Taken together, climate change and gender-differentiated adaptation to climate change have significant implications for poverty reduction.

It is in this context that UN Women, the United Nations Development Programme–United Nations Environment Programme Poverty-Environment Initiative (PEI), and the World Bank commenced a collaboration to create evidence of the links between women's economic empowerment, sustainable agricultural production and economic growth through a set of studies on the cost of the gender gap in agricultural productivity. The aim of this policy brief is to provide an overview of the key trends in these reports and how they compare with patterns documented in other published studies. It also summarizes important lessons on best practices in eradicating inequities in the agricultural sector based on the UN Women and PEI studies.

METHODOLOGY AND SCOPE

The studies have covered five African countries. The first was a quantitative study conducted in Malawi, Tanzania and Uganda in 2015, with similar studies conducted in Ethiopia and Rwanda in 2017. These provide estimates of the monetary value of the gender gap in agricultural productivity for each country and then calculate the costs associated with gender gaps in access to individual agricultural inputs. They also delineate how factors of

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production contribute to the overall gender productivity gap. These estimates are based on a decomposition procedure commonly used in the labour economics literature (e.g. Autor, 2015) to explain the drivers of the gender wage gap. UN Women and PEI also conducted a set of follow-up qualitative studies in 2017 in Malawi, Tanzania and Uganda. These studies provide field-level analysis of the factors in each country driving the gender gap in agricultural productivity and adoption of climate-resilient approaches.

THE FINDINGS

The quantitative studies found that the gender gaps in agricultural productivity in the five focus countries are considerable, ranging from about 11 per cent in Ethiopia to 28 per cent in Malawi (Figure 1). These yield differences vary by country for a number of reasons, including gender gaps in the use of fertilizers and improved seed varieties, access to and use of credit, ownership of land, and availability of labour. The gender gaps in agricultural productivity in these countries are within the range of those estimated in other published studies which have

FIGURE 1 GENDER GAP IN AGRICULTURAL PRODUCTIVITY ACROSS SELECTED COUNTRIES

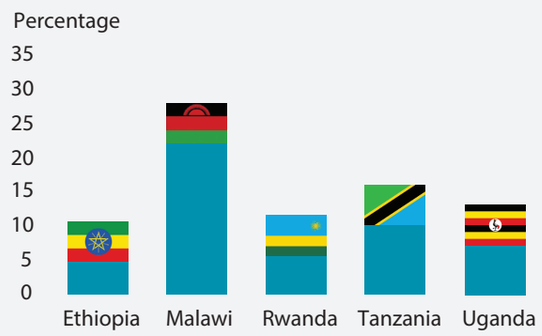
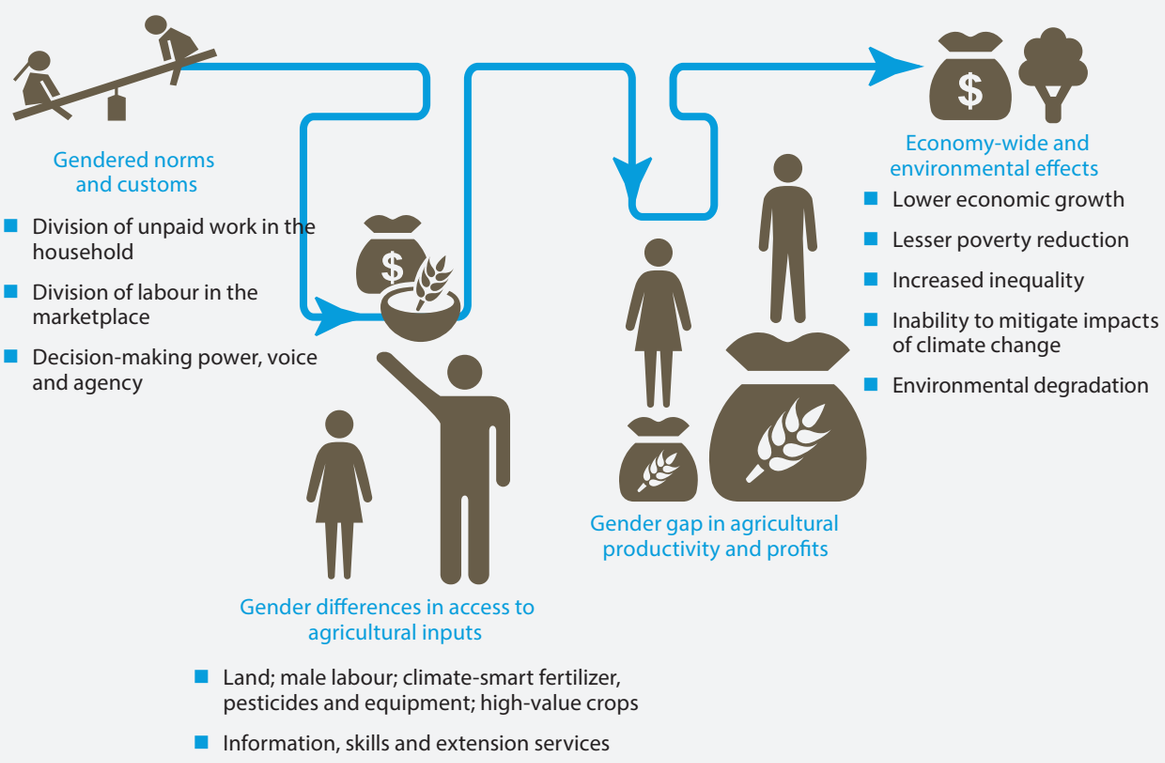


FIGURE 2 PATH MODEL OF GENDER GAPS IN AGRICULTURAL PRODUCTIVITY



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used comparable methods (e.g. Backiny-Yetna and McGee, 2015; Oseni et al., 2015; and World Bank, 2012).

Underlying the inequitable distribution in input allocation are social norms dictating gender roles and the gendered division of labour in households and the market (Figure 2). The qualitative studies in Malawi, Tanzania and Uganda affirmed that gendered norms affect input use, productivity and income generation; further, they affect both producers' adoption decisions and who benefits from innovations. Even if land, labour and fertilizer were equally allocated between male and female farmers, we might still observe gender gaps in agricultural productivity due to the interaction of gendered norms with a host of factors of production. Gender gaps in access to inputs and agricultural productivity often stem from the perpetuation of cultural norms which dictate that childcare and housework are primarily a woman's domain. The expectation that women are responsible for unpaid housework places a large time burden on them and — together with high rates of economic activity in the poorest countries — results in a double work burden for women. This burden can also translate into gender-inequitable distributions of inputs and resources within households and on farms.

DRIVERS OF THE GENDER GAP

In the five sample countries, women's limited access to agricultural inputs and factors of production is the main culprit behind the gender gap in agricultural productivity. Analysing the costs associated with unbalanced access to agricultural inputs can help policymakers set priorities among alternative interventions. By examining which factors of production account for the largest portion of the gender gap in agricultural productivity — and hence are the most costly constraints to women's productivity — policymakers can ensure the biggest "bang for the buck" in their policy interventions. The six drivers which explain most of the gender gap in Ethiopia, Malawi, Tanzania and Uganda (different drivers were identified in Rwanda, which used a different survey) are presented in Table 1 as results from a decomposition procedure. These drivers are (i) access to male family labour, (ii) planting of high-value crops, (iii) use of agricultural equipment and implements, (iv) use of pesticides, (v) use of inorganic fertilizer and (vi) the wealth index. The follow-up qualitative studies affirmed the deeper factors driving the gender gap as: (i) women's unpaid care and domestic work responsibilities, including providing unpaid family farm labour and cash

TABLE 1 DECOMPOSING THE GENDER PRODUCTIVITY GAP IN AGRICULTURE IN FIVE COUNTRIES

	Ethiopia		Malawi		Rwanda		Tanzania		Uganda	
Driver	Gap (%)	Gap in GDP (million $)	Gap (%)	Gap in GDP (million $)	Gap (%)	Gap in GDP (million $)	Gap (%)	Gap in GDP (million $)	Gap (%)	Gap in GDP (million $)
Access to male family labour	43.7	89.0	45.2	45.1			97.3	102.1	—	—
Planting of high-value crops	—	—	28.4	28.4			3.0	3.2	13.3	8.9
Use of equipment/implements	—	—	17.8	17.7			8.2	8.6	9.0	6.0
Use of pesticides	45.3	92.2	1.0	1.0			12.0	12.6	4.5	3.0
Use of inorganic fertilizer	25.1	51.0	5.3	5.3			6.4	6.7	3.0	2.0
Wealth index	—	—	5.3	3.3			−0.1	−0.1	—	—
Sales of household farm production					67.0	280.5				
Household size					22.5	94.1				
Spending on insecticides					12.8	53.7				
Years of education					11.5	48.3				

Note: Decomposition categories differ for Rwanda because of differences in underlying survey data. Percentages do not sum to 100 because the decompositions include other categories with negative values. Percentages do not sum to 100 because a number of drivers can be negative. Only a selection of those that reduce the gender gap are shown here, and together, they may overcompensate.

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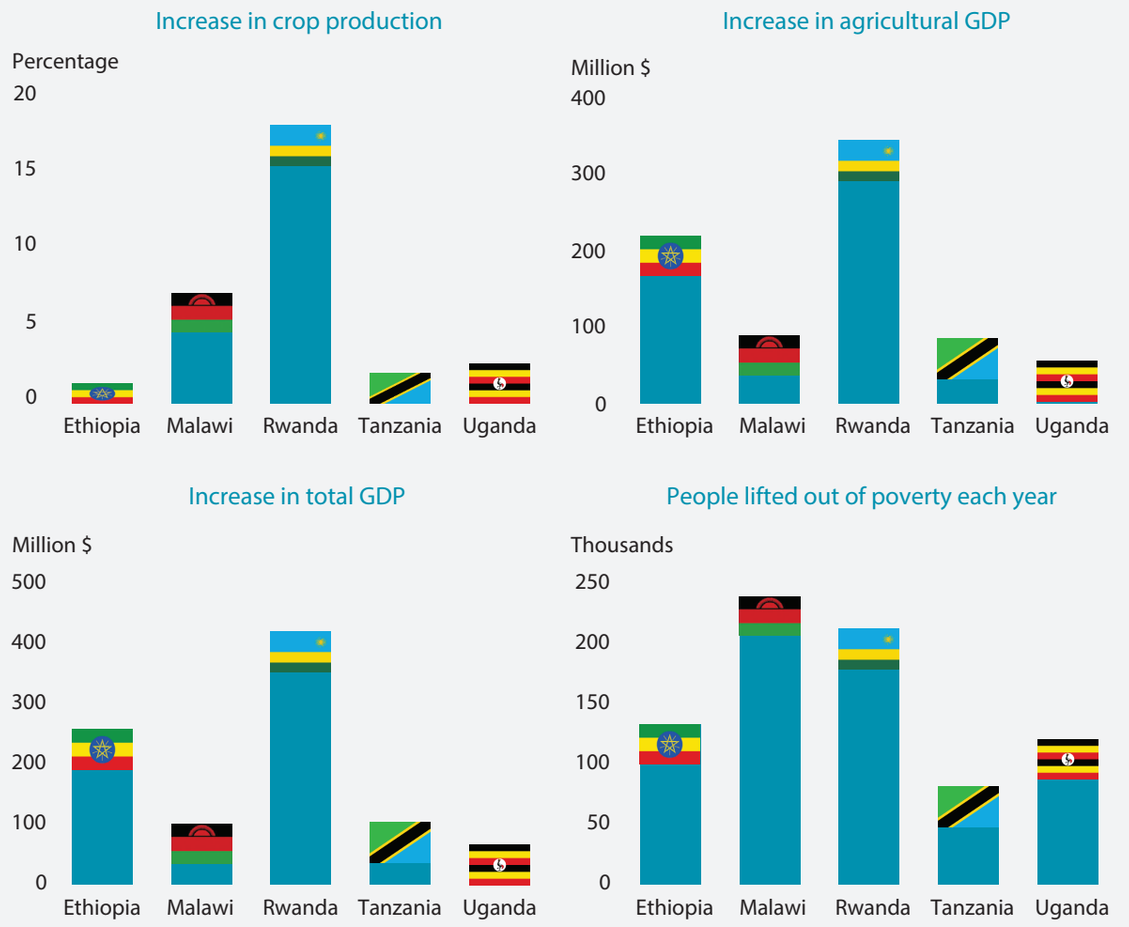
FIGURE 3 GAINS FROM CLOSING THE GENDER GAP IN AGRICULTURAL PRODUCTIVITY



to meet family needs; (ii) gender-based violence affecting women's productivity; and (iii) women's limited access to climate-smart extension services.

GAINS FROM CLOSING THE GAP

Increasing women's access to agricultural inputs would greatly improve productivity, crop production and income. These gains are substantial (Figure 3). Closing the gender gap in agricultural productivity corresponds to an estimated increase of almost 19 per cent in crop production in Rwanda and an annual 7 per cent increase in Malawi. Although percentage increases in crop production in the other three sample countries are noted, they are smaller; the boosts to agricultural gross domestic product (GDP) and overall GDP are still large. For example, in Ethiopia, the 1.4 per cent increase in crop production translates into a whopping $221 million increase in agricultural GDP. Rwanda has the largest increase in agricultural GDP among the sample countries at over $345 million. With multiplier effects factored in arising from the contribution of agriculture to GDP, the increases in overall GDP across countries are even higher, ranging from $67 million in Uganda to $419 million in Rwanda. Closing the gender gap in agricultural productivity also corresponds with a substantial reduction in poverty. At least 80,000 Tanzanians and as many as 238,000 Rwandans could be lifted out of poverty each year over a 10-year period if the gender gap in agricultural productivity were completely closed.

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TABLE 2 POLICY REFORM OPTIONS AND POTENTIAL GAINS ACROSS SAMPLE COUNTRIES

	Ethiopia	Malawi	Rwanda	Tanzania	Uganda
Increase women's access to labour and time-saving equipment and services					
▪ Support women's access to hired labour ▪ Confront gender norms around labour ▪ Introduce labour-saving devices ▪ Invest more in public infrastructure	High	High	Medium	High	Low
Facilitate women's shift to high-value crops					
▪ Improve access to info & markets ▪ Promote gender-awareness in R&D ▪ Confront gender norms	Low	Medium	High	Low	Medium
Improve women's access to non-labour agricultural inputs					
▪ Improve access to fertilizers & pesticides ▪ Encourage wider range of machinery use ▪ Increase women's access to credit	High	Medium	Medium	Medium	Medium
Strengthen women's land rights					
▪ Consider large-scale land titling reforms ▪ Correct gender biases in laws	Medium	High	Medium	High	High
Pursue other interventions which close the gender gap					
▪ Reduce gender-based violence ▪ Promote climate-smart agricultural practices ▪ Gender-responsive extension services ▪ Provide agricultural skills training ▪ Representation in cooperatives ▪ Encourage knowledge dissemination	High	High	High	High	High

REMEDIES AND BEST PRACTICES

The results of the UN Women and PEI studies provide an objective framework within which to evaluate alternative policy options aimed at closing the agricultural productivity gap between men and women. These policy reforms can be classified into five broad areas (Table 2): (i) increasing women's access to labour and time-saving equipment and services, (ii) facilitating women's shift to high-value crops, (iii) improving women's access to non-labour agricultural inputs, (iv) strengthening women's land rights and (v) pursuing other interventions which close the gender gap. These reforms will have a greater impact in some countries, depending on the importance of the underlying factors of production in explaining the gender gap as measured by the decomposition analysis. Table 2 displays the "bang for the buck" afforded by various policy reforms and programme interventions in terms of whether each country is likely to experience high, medium or low economic gains. Governments can choose among these policy reforms to select those which would yield the most benefit for their countries.

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CONCLUSIONS AND RECOMMENDATIONS

A large body of work supports the assertion that female farmers are as efficient as male and that greater gender equality in land ownership and access to labour, technology and other agricultural inputs would increase agricultural output. In fact, the main explanation for the gender gap in agricultural output is not that women are less able or less efficient cultivators; rather, the ways in which land, labour and fertilizer are allocated among men and women leads to lower productivity of female farmers. The evidence clearly shows that gender gaps in access to inputs have high economic costs, as discussed here. Further, these inequities can affect the extent to which farmers adopt new resource management practices and climate-smart technological innovations.

Dismantling the structure of constraints facing women is crucial for reducing women's unpaid work burdens and raising the returns on their labour. Examples of particular reforms include:

- The development of infrastructure which reduces women's time in unpaid work
- Initiatives which promote gender-aware agricultural extension services and improved access to information, including climate-smart agriculture-related Information
- Interventions to provide women with more equitable access to credit
- Reforms to combat gender-based violence
- Closing the gender gap in the application of gender-responsive climate-smart agricultural practices

The bottom line for most of these policies is that more effective targeting can work to reallocate constrained resources in socially optimal ways.

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