



POLICY BRIEF

EQUALLY PRODUCTIVE?

ASSESSING THE GENDER GAP IN AGRICULTURAL PRODUCTIVITY IN RWANDA

THE ISSUE

In Rwanda, as elsewhere in the Eastern and Southern Africa region, female and male farmers do not always face the same production conditions, nor do they always make the same production choices. They consequently do not always have identical levels of agricultural productivity.

Moreover, agricultural productivity is itself challenged by environmental hazards – especially climatic variability – which affect the productivity of both male and female farmers, both collectively and differentially. The effects are differential because gender gaps in agriculture influence how women and men access, participate in, adopt and benefit from climate-smart agriculture. And climate-smart agriculture is essential to poverty reduction in Rwanda: studies suggest that economic growth led by productivity increases in the agricultural sector has a greater effect on poverty reduction in Rwanda than does the same level of growth in the non-agricultural sector (Diao and others, 2010).

It is thus necessary to evaluate the productivity of female farmers in relation to male farmers in Rwanda. This policy brief summarizes the first attempt to estimate the cost of this so-called “gender gap” in agricultural productivity in Rwanda. It builds on work by the UN Women Eastern and Southern Africa Regional Office, the United Nations

Development Programme–United Nations Environment Poverty-Environment Initiative Africa, and the World Bank (UN Women, UNDP-UNEP PEI and World Bank, 2015).

METHODOLOGY AND LIMITATIONS

This brief is based on a technical analysis using Rwanda’s 2013–2014 Integrated Household Living Conditions Survey (EICV4). Using the EICV4 data, farms were identified as being managed by females or by males, and a production function was used to estimate the gender gap in agricultural productivity. An Oaxaca-Blinder decomposition (Blinder, 1973; Oaxaca, 1973) was then used to identify the various production factors which contributed most to the gender gap in agricultural productivity. Next, the share of land under women’s control was used to estimate the monetary value of the gender gap, in terms of potential gains in agricultural production, and the impact on total economic output, if the gap were eliminated. Finally, estimates of the elasticity of poverty reduction with respect to economic growth were used to quantify the impact of the closure of the gender gap in agricultural productivity on the number of people remaining in poverty.

The individual, household and plot characteristics used in the analysis were not as comprehensive as those found in an integrated survey of agriculture, such as those

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conducted in several countries in the region. In particular, because the analysis is based on female- and male-managed farms rather than plots of land, the monetary cost of the gender gap in Rwanda's agricultural productivity and the poverty impact of the gender gap should both be treated as preliminary. For this reason, the results of the analysis – despite having statistical significance – should be considered in need of further investigation, given the important trends they indicate.

KEY FINDINGS

The key findings of the analysis are as follows.

- The **gender gap in agricultural productivity in Rwanda was 11.7 per cent** in 2013–2014. This means that, on average, a female-managed farm was 11.7 per cent less productive than a male-managed farm in Rwanda due to differential access to and returns from productive and financial resources.
- Closing the gender gap in agricultural productivity between female- and male-managed farms in Rwanda could have resulted in a one-off **increase of USD 418.6 million in gross domestic product (GDP)**. Closure could also have **lifted 2.1 million people out of poverty** in 2013–2014; this number equates to almost one-third of those living in poverty in the country.
- Almost half (48 per cent) of the gender gap in agricultural productivity in Rwanda was due to **gender-based differences in access to productive inputs**. In many instances, females had lower levels of the water, improved seeds, fertilizers, insecticides and agricultural tools needed for their farming livelihoods.
- The main drivers of gender-based differences in access to productive inputs were the **age** of the owner, their **education**, the total **number of crops harvested**, spending on **insecticides**, **household size**, the



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dependency ratio (i.e. the relationship between those aged 0–15 and 65 and older to those aged 15–64), and the **sales** of production.

- Female-managed **farms were 10.5 per cent smaller** than farms managed by men.
- Female farm managers spent **25 per cent less on fertilizers and insecticides** than farms managed by males. Female-managed farms were thus more beneficial to the farm ecology with more positive gender-environment interactions, but this difference also affected farm production and income.
- A higher household size and a higher dependency ratio result in **more unpaid care and domestic work**, reducing the amount of female labour available to work on female-managed farms – and thus reducing the returns on production.
- More than half (52 per cent) of the gender gap in agricultural productivity in Rwanda was explained by **gender-based differences in the returns that accrued to those productive inputs**. In other words, in many instances, females were paid less for their farm products than men.
- **Education, certification, field ownership, and sales** of produce in markets were the main drivers of gender-based differences in returns on productive inputs. For example, female-managed farms tended to use rented fields.

Overall, as shown in table 1, the following were the most important drivers of the gender gap in agricultural productivity in Rwanda. Note that the percentages cited do not sum to 100, as other determinants, not listed here, may be negative.

- When female-managed farms sold more than half of their product in markets for cash, they were **paid less** than male-managed farms selling more than half of their farm production. This disparity accounts for 67.0 per cent of the gender gap and represents USD 280.5 million in lost GDP.
- Female-managed farms had **larger households**; this disparity accounts for 22.5 per cent of the gap and represents USD 94.1 million in lost GDP.
- Female-managed farms **spent less on insecticides**. This disparity accounts for 12.8 per cent of the gap and USD 53.7 million in lost GDP.
- Female-managed farm households had **fewer years of education**; this accounts for 11.5 per cent of the gap and USD 48.3 million in lost GDP.

POLICY IMPLICATIONS

Continued climate change makes action aimed at closing gender gaps in agricultural productivity imperative; it also implies a shrinking window of opportunity for such action. At a minimum, policies to better equip women and girls to fully participate in climate-resilient agriculture include the following.

TABLE 1 RELATIONSHIP OF SELECTED DETERMINANTS TO THE GENDER GAP IN AGRICULTURAL PRODUCTIVITY AND TO GDP IN RWANDA

Determinant	Percentage of gap	USD, millions
Cash 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: All factors shown are statistically significant. Percentages may not sum to 100 because a number of determinants 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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- **Make markets work better for women.** This includes not only markets for their farm output to ensure they receive better prices for their products, but also markets for their farm inputs, so women are better able to purchase insecticides and adopt climate-smart farm technologies.
- **Improve social protection for female-managed farms.** This will reduce the need for them to sell their output.
- **Improve education for girls.** Better educated girls have fewer children, reducing household size and competition for land. This addresses a key gender gap in agricultural productivity.

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