Feed the Future Innovation Lab for Food Security Policy

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Challenges in accessing coffee pesticide for female household heads in Rwanda

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1. Introduction

Research published by the Africa Great Lakes Region Coffee Support Program found that Rwandan female household heads are less likely than male household heads to receive distributed pesticide for their coffee (Gerard, Clay, Lopez, Bowman, & Rukazambuga, 2018). Pesticide is important in controlling coffee pests such as the antestia bug, which is associated with the potato taste defect—a defect that reduces the value of some coffee in Africa's Great Lakes Region (Bigirimana, Gerard, Mota-Sanchez, & Gut, 2018). In Rwanda, pesticide and fertilizer are purchased in bulk and distributed by the Coffee Exporters and Processors Association of Rwanda (CEPAR). Each farmer is supposed to receive an allotment of pesticide based on the number of coffee trees on their farm. However, based on coffee farmer surveys implemented in 2015 and 2017, we found that female household heads (HHHs) were significantly less likely than male HHHs to use distributed pesticide. However, survey data did not provide direct evidence about why these gender differences existed.

Given the importance of pesticide to coffee productivity and quality, we conducted follow-on research to ask female household heads two questions: (1) why, if all farmers are supposed to receive pesticide, are female household heads less likely than male household heads to use it? (2) What approaches might improve female household heads' pesticide access and use?

2. Methods

We held six focus group discussions with female HHHs in Rwanda's Southern Province in 2019. We randomly sampled farmers from farmer lists of one cooperative and one privately-owned coffee washing station (CWS). Between 8-10 female farmers participated in each focus group. In total we had 57 participants; 28 participants were members of a cooperative and 29 were not members.

Key Findings

- Previous research found that female household heads in Rwanda were less likely to use distributed coffee pesticide than male household heads.
- This study provides evidence of *why* such differences in pesticide use might exist.
- Reason 1: Difficulty of spraying pesticide because of heavy sprayers—women in Rwanda generally hire laborers rather than doing their own spraying.
- Reason 2: Challenges in accessing pesticide from distribution centers, including not being told when pesticide is available and being given insufficient amounts of pesticide.
- Additional barriers to pesticide use: cost and difficulty of hiring laborers; concern that pesticide may be dangerous for women to spray.
- Possible approaches to improve access for female household heads: (1) encourage coffee washing stations to spray female household heads' farms for them (as is done by some cooperatives); (2) study barriers to equitable distribution at the local level.

Participants ranged in age from 34-81 with an average age of 59. Most participants were widows.

3. Results

3.1 Women's perceptions on pesticide spraying

Focus group participants, both cooperative members and non-members, suggested that women face physical difficulties in spraying pesticide compared to men. In fact, of 57 focus group participants, only one woman physically sprayed her own coffee.

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Table 1: Participant perceptions on reasons women do not spray pesticides. NC = non-cooperative; C = cooperative.	
Group	**Why do women not spray?**
NC1	Sprayer too heavy; physical weakness
NC2	Sprayer too heavy; physical weakness; health problems make it difficult to spray; mothers and pregnant women cannot spray
NC3	Sprayer too heavy
C1	Sprayer too heavy; physical weakness
C2	(Did not discuss)
C3	Sprayer too heavy; physical weakness; mothers and pregnant women cannot spray

Not spraying does not necessarily keep women from applying pesticide, but it means that they do not spray themselves; they either hire laborers or (if they are fortunate) their cooperative sprays for them.

Five groups (cooperative members and non-members) agreed that women in Rwanda tend not to personally spray pesticides. The sixth group was not asked. Table 1 provides a summary of why focus groups thought women tended not to spray pesticide. The primary reason participants gave is that sprayers are heavy and women cannot carry them. In addition, two groups said that women who are pregnant, nursing, or caring for children should not spray pesticide because it is toxic.

3.2 Pesticide access and use

Participants discussed how they access and use pesticide, and in doing so illuminated differences between the experiences of cooperative members and non-members. Table 2 provides an overview of how different groups receive and spray pesticides, and the challenges they face in doing so.

Cooperative members: Cooperative members said that their cooperative receives pesticide from CEPAR and sends trained teams to spray all members' farms. The cooperative has communicated to farmers that it is unsafe to have pesticide in their houses and that it is better to have professionals spray. The only problem with pesticide access noted by one group of cooperative members was late delivery by CEPAR. Delays in receiving pesticide can allow insects to damage coffee flowers and cherries, reducing productivity and quality. However, aside from these delays, cooperative members were satisfied with the cooperative spraying approach.

Non-cooperative members: Most non-members said that they received pesticide from coffee cherry collection centers (managed by the CWS), local government offices, or village leaders. Women learned that pesticide was available from their CWS or local officials and picked up pesticide from these distributors. The women then hired men to spray their coffee.

Most interviewed non-cooperative members applied pesticides; however, in two groups some did not spray. Reasons women said they did not spray included not being physically able to use heavy sprayers and not knowing when pesticide was available from distributors. In addition, participants noted the difficulty and cost (in terms of labor) of accessing and applying pesticide, even if it was available. However, beyond the binary of spraying vs. not spraying, some participants said that there were delays in receiving pesticide and that they received insufficient quantities.

Table 2: Pesticide access and use for cooperative (C) and non-cooperative (NC) groups			
Group	**Who distributes**	**Who sprays**	**Problems getting pesticide**
NC1	Local gov't; cherry collection center	Hired laborers	Cannot carry pesticide from distribution center; other farmers take all the pesticide; not told when pesticide available; hiring sprayers too expensive; pesticide delivered late; local distributors steal pesticide
NC2	Village leader	Hired laborers	Pesticide delivered late; receive insufficient volumes
NC3	Cherry collection center	Hired laborers (1 woman sprays)	Other farmers take all the pesticide; receive insufficient volumes; not told when pesticide is available; local distributors steal pesticide
C1	Coop	Coop sprays	None
C2	Coop	Coop sprays	None
C3	Coop	Coop sprays	Pesticide delivered late

Reasons non-cooperative members believed they received insufficient pesticide included (1) pesticide being stolen by cherry collection centers or local leaders, (2) not being told when pesticide was available or being refused at the distribution point, and (3) pesticide being diverted to other farmers. One group suggested that women were more likely to be refused pesticides than men because distributors thought they could get away with cheating women.

4. Discussion

Based on focus group discussions, we can hypothesize answers to a motivating question for this research: why, if all farmers are supposed to receive pesticide, are female HHHs less likely to use it? According to participants, reasons for this gender gap include physical difficulty of spraying pesticide, concern about health effects of spraying, difficulties in hiring labor, and discrimination by distributors. While they need to hire laborers to spray their coffee, female HHHs also face barriers to hiring laborers. According to participants, barriers include not only the cost of labor, but also the risk of hiring laborers due to the prevalence of sexual harassment.

4.1 Implications

It is important to note that this study took place in one province, with farmers from two CWSs. Though participants were randomly sampled from farmer lists, selected CWSs may not be representative of CWSs across Rwanda. Thus, additional data would help clarify whether the barriers identified here are present elsewhere. If these barriers *are* present elsewhere, there are steps Rwanda's government, cooperatives, and the private sector can take to improve female HHHs' access to pesticide.

Improving access to spraying services for women: Given the apparent effectiveness of the cooperative spraying program described by members, one approach could be for government to encourage or subsidize CWSs to provide spraying services. CWS owners should also consider how they can support women. For example, it may be worthwhile for them to spray female HHHs' farms to improve coffee quality.

Improving local distribution: Rwanda's government can evaluate the extent of local diversion of inputs and discrimination against female farmers, both of which constrain pesticide use. In addition, though delays in CEPAR pesticide distribution likely affect male and female HHHs similarly, this was an important challenge noted by participants and CEPAR should consider ways to improve the timeliness of distribution.

5. References

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