

## INNOVATION LAB FOR FOOD SECURITY POLICY

### Africa Great Lakes Region Coffee Support Program (AGLC) Policy Advocacy Roundtable on Ensuring Access to Improved Inputs in Rwanda's Coffee Sector

Backgrounder 8

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### Guiding Question: How might we explore improvements to input delivery and antestia bug / Potato Taste Defect control?

#### The Challenge

Rwanda's strategic objectives for the coffee sector focus on increasing the productivity and quality of coffee harvested, as well as increasing the share of coffee produced through the "fully-washed" channel. The National Agricultural Export Development Board (NAEB) has identified the five main drivers of low productivity: (1) poor soil fertility; (2) poor application of mineral fertilizers; (3) yield loss due to pests and diseases; (4) lack of good agricultural practices; and (5) a large proportion of old trees.

The effective use of fertilizer and pesticide is an essential step in improving both productivity and quality across the sector. However, access to and affordability of inputs present major barriers. Nearly all coffee farmers depend on the distribution of inputs by the Coffee Exporters and Processors Association of Rwanda (CEPAR), which is overseen by NAEB. However, the amount distributed is not sufficient, and AGLC data suggests that inputs are not distributed equally across districts. Moreover, the inputs purchased and delivered by CWS vary greatly and are not dependable. Farmers rarely purchase fertilizers and pesticides to supplement the distributed inputs, resulting in limited productivity and quality.

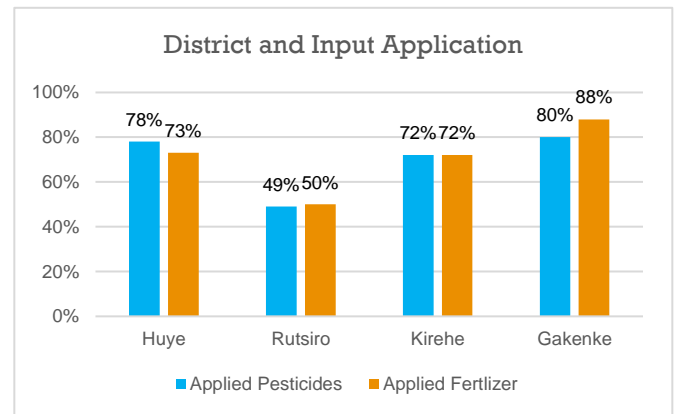
A major issue in Rwandan coffee quality, the "Potato Taste Defect" (PTD), which is linked to damage caused by the antestia bug, threatens Rwanda's reputation as a producer of one of the world's best coffees. The overarching challenge in this domain lies in the adoption of a fair and effective system for ensuring that farmers have an adequate supply of both pesticides and fertilizers and that they are applied using best practices for improved coffee productivity and quality, as well as human and environmental safety.

Questions to consider: Why are the amounts of fertilizer and pesticide distributed below the recommended doses? Why does distribution vary so much? How are distributed amounts determined? Should CEPAR/NAEB change their calculation of distributed input volumes to be more effective? Is the major issue cost, lack of accurate data, or something else?

#### Key Issues

1. For those farmers who receive inputs from CEPAR / NAEB, they receive far less than the recommended dosage, which serves as a major barrier to coffee quality and productivity.
2. Coffee farmers often consider the inputs they receive from CEPAR / NAEB as "free," even though farmers pay for them through the export fee. Farmers rarely spend their own money on additional fertilizer or pesticides.
3. With limited access to inputs, farmers do not apply the proper doses of fertilizer and pesticide consistently to all trees, nor do they apply consistently throughout the year. Inconsistent and incorrect application can negatively impact productivity, profits, and human and environmental safety.

Pesticide Use	Odds Ratio	Standard Error	Z	P> z	95% Confidence Interval	
Price	1.00005	.0000247	2.02	0.044	1.000001	1.000098
Coop Member	2.628693	.474882	5.35	0.000	1.844877	3.745521
Gender	.5861657	.1166775	-2.68	0.007	.396814	.8658723
Age	.9889687	.0056184	-1.95	0.051	.9780179	1.000042
Antestia Incidence	.6028796	.0933857	-3.27	0.001	.4450204	.8167351
Elevation	1.001948	.0006274	3.11	0.002	1.000719	1.003179
Rutsiro	.1953991	.0490681	-6.50	0.000	.1194459	.3196494



### Evidence from the Baseline, Midline, and Qualitative Data

- Both a lack of sufficient input distribution and the high cost of inputs serve as major barriers to productivity and to farmer investment in coffee. The distribution of fertilizer is only 1/6<sup>th</sup> the recommended dose, while the distribution of pesticide is only 1/3<sup>rd</sup> the recommended dose.
- All else equal, farmers who had antestia in the previous year are 40% less likely to use pesticides than farmers who did not have antestia. The reason for this could be that farmers who do not use pesticides are more likely to see incidence of antestia. These farmers may ultimately produce coffee with Potato Taste Defect (PTD), which is linked to antestia incidence.
- Certain factors greatly increase the likelihood that a farmer uses inputs. For example, all else equal, farmers who receive premiums for their coffee are 57% more likely to use fertilizer than those who did not receive premiums. Additionally, for each 10% increase in the portion of a farmer's income coming from coffee, the farmer is 7.6% more likely to use fertilizer. Thus, a greater percentage of income coming from coffee increases the incentive for farmers to invest in that coffee production. Finally, coffee farmers with large farms are approximately 27% more likely to invest in fertilizer than smallholder farmers.

### Key Data and Quotes

- Of farmers who did not use fertilizer/pesticide, 63% did not use fertilizer because it was “not free” and 68% did not use pesticide because it was “not free.”
- Coffee farmers in Rutsiro district are 80% less likely than farmers in Gakenke to use pesticide, and 87% less likely than farmers in Gakenke to use fertilizer.
- “I don't know if the tree census is current [and I am] not sure what data we are using to say what districts are getting what [volume of inputs]. We have never had the ability to see what districts get what fertilizer. [It is] key to see that our tree census data is spot on, so people get what they are owed.”  
– Key Informant

**Outputs of Roundtable Discussion:** Facilitators asked participants to discuss the top challenges and potential solutions related to ensuring access to and use of inputs among coffee farmers. Participants identified key challenges regarding insufficient farmer knowledge of market information and best practices, a lack of incentive for farmers to invest in coffee due to low coffee price, inaccurate tree census data, and limited government investment in the coffee sector. A synthesis of the solutions proposed by the group to address these challenges is provided below.

#### Potential solutions

- By increasing the export fee placed on coffee, the Rwandan government could amass greater revenue with which to purchase more inputs for delivery to coffee farmers.
- With sufficient funding, the Rwandan government could subsidize the purchase of inputs to support proper application in recommended doses by coffee farmers.
- Higher cherry prices to farmers could enable farmers to purchase higher levels of inputs on the local market.
- Coffee washing stations (CWS) could implement a premium-based system to enable coffee farmers to purchase inputs. CWS would pay farmers the money saved on sorting when the coffee brought to the station is of high quality.
- Extension services could be better designed to strengthen the relationship between farmers and CWS and to improve information sharing (e.g., on best practices and market prices) throughout the value chain.