



## SUPPLEMENTARY DATA

### Appendix A: Survey Instrument

The following questions were administered, in this order, to five Ethiopian coffee-sector professionals between July 15 and July 21, 2026. Multiple-choice questions are marked; all others were free-response or single/multi-select as noted.

1. What is your current role?
2. How many years of professional experience do you have?
3. In your opinion, are coffee by-products (e.g., coffee husk, coffee pulp) currently utilized to their full economic potential in Ethiopia? (5-point agreement scale: strongly disagree to strongly agree)
4. In your opinion, why is coffee by-product processing still limited in Ethiopia? (Select all that apply: limited investment and financial support; lack of affordable processing technology; inadequate infrastructure for collection and transport; weak government support and policy frameworks; low market demand for by-product goods; lack of technical knowledge and training; competition from more profitable crops such as khat)
5. Which application has the greatest commercial potential? (Choose up to two: biodegradable material, cosmetics, animal feed, organic fertilizer, cascara tea, other)
6. To what extent do you agree with the following statement? "Ethiopia would generate greater economic value by processing coffee by-products into value-added products before export rather than exporting them as raw materials." (5-point agreement scale)
7. Which single action would have the greatest impact on scaling coffee by-product commercialization in Ethiopia? (Single select: government incentives and tax breaks; private investment; research and development funding; industry–university collaboration; other)
8. What practical step would you recommend to help Ethiopia develop a coffee by-product industry? (Free response)
9. To what extent do you agree with the following statement? "Growing restrictions on single-use plastics create new market opportunities for biodegradable products." (5-point agreement scale)
10. Have you or your organization been involved in any project related to coffee by-product utilization? (Yes/No)