

COMMUNITY ENGAGEMENT ARTICLE

Community-Based Post-Harvest Value Addition and Cooperative Digital Accounting for Highland Coffee Farmers

Bambang Soedirman, Rina Melati, Andrew Stewart

1. Dept. of Agribusiness, Universitas Tadulako; 2. Center for Rural Microfinance; 3. Fairtrade Agroforestry Network.

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Abstract

Introducing anaerobic fermentation protocols and mobile ledger book-keeping across three village cooperatives. Household revenue increased by an average of 44% with transparent financial records.

Keywords: Specialty Coffee, Post-Harvest Processing, Digital Accounting, Village Cooperatives, Rural Development

1. Introduction

Smallholder highland coffee growers often sell unprocessed cherries to middlemen at minimum farm-gate rates. By mastering controlled anaerobic post-harvest fermentation and establishing transparent cooperative book-keeping, farming groups capture substantial specialty market premiums.

2. Method

Participatory capacity-building workshops trained 180 smallholders across three mountain cooperatives in moisture-controlled fermentation, cupping profiling, and smartphone-based double-entry digital bookkeeping over two harvest seasons.

3. Results and Discussion

SCA cupping scores for the cooperative batches rose from 80.5 (commercial grade) to 85.2 (specialty grade), securing direct export contracts at a 44% price premium. Cooperative member audit compliance achieved 100% transparency.

4. Conclusion

Merging biological post-harvest refinement with simple digital ledger transparency transforms vulnerable smallholders into self-sustaining specialty agribusiness enterprises.

Declarations

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Conflicts of Interest: The authors declare that they have no competing financial or personal interests.

Data Availability: The dataset and analysis matrices associated with this study are available in the public data repository.

Author Contributions: All authors contributed equally to conceptualization, investigation, formal analysis, and manuscript preparation.

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