



INDONESIA

A Quick Scan on Improving the Economic Viability of Coffee Farming



OBJECTIVES OF STUDY

Overall objective

- Identify opportunities for potential benefits to coffee farmers from improved farm profitability and increased efficiency along the supply chain

Detailed objectives

- 1 Understand overall farm-level financial benefits for the dominant farmer type in each country and how they compare to other countries
- 2 Describe the main green coffee supply chain in each country at a high level to understand supply chain efficiency
- 3 Highlight key opportunities to increase farmer profitability in each country and explore next steps to increase value add for farmers and the industry

ANALYTICAL PROCESS TO DEVELOP A BUSINESS CASE FOR COFFEE FARMING



Approach	Model Inputs	Model Outputs
1 Define producer types	<ul style="list-style-type: none"> • Farm size • Coffee yields • Coffee quality metrics • Production volume • Number of growers 	<ul style="list-style-type: none"> • Farmer types
2 Establish farmer financial benefits	<ul style="list-style-type: none"> • Coffee price premiums • Potential increase in yield • Incremental changes to costs 	<ul style="list-style-type: none"> • Potential increase in net income for farmer
3 Describe value chain structure	<ul style="list-style-type: none"> • Key actors in value chain • Costs and margins • Share of value captured 	<ul style="list-style-type: none"> • Map of supply chain • Supply chain overview
4 Present recommendations	<ul style="list-style-type: none"> • Selected opportunities to optimize business case 	<ul style="list-style-type: none"> • High-level recommendations for priority opportunities • Potential partners to address gaps

Note: Assumes that demand for coffee will increase as coffee supply increases, thus maintaining static coffee prices

POTENTIAL ANNUAL VALUE CREATION OF \$400M ACROSS 507K FARMERS



Potential for yield improvements

- There is high potential for value add from yield improvements for Robusta smallholders in Southern Sumatra
- Yields are low (700 kg / ha) in comparison to Vietnam with potential to double
- Farmers use low-yielding techniques to minimize labor costs, fertilizer usage, and irrigation. Effective pruning and stumping would improve yields, but also impact short-term cash flow

Improved processing

- There is modest potential for value add from improved processing
- Industry experts estimate that up to 20% of value is lost through poor post-harvesting practices. However, farmers are not currently incentivized to improve processing as they are often not paid premiums for quality

Supply chain efficiency

- There is limited potential for value add from additional supply chain efficiency
- Farmers receive a high portion of the export price (80%). However, the supply chain is quite fragmented due to involvement of local collectors. Further efficiencies within the supply chain may be possible at the collector level

Other opportunities

- Growth has been focused on Arabica and soluble exports in the past several years, suggesting potential for value add to farmers, though this was outside the scope of this scan

POTENTIAL REVENUE INCREASE FROM HIGHER YIELD AND PRICE PREMIUMS



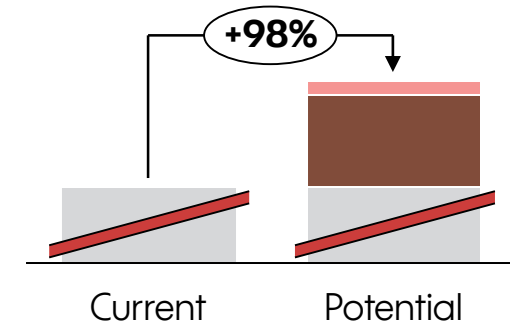
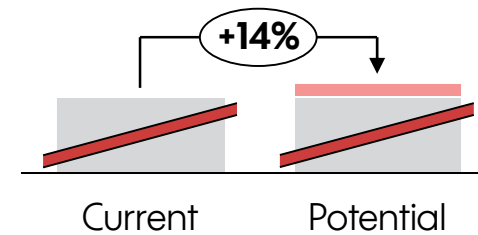
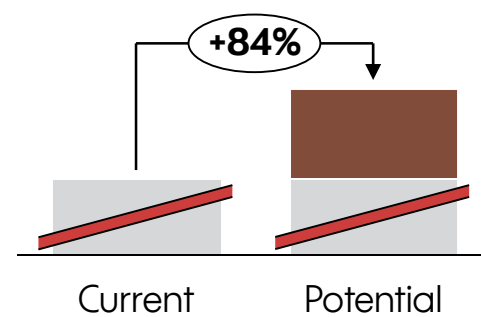
Net income from yield improvements (\$ / ha)



Net income from price premiums (\$ / ha)



Total net income increase (\$ / ha)



Yield improvements
 Processing improvements
 Certification premiums

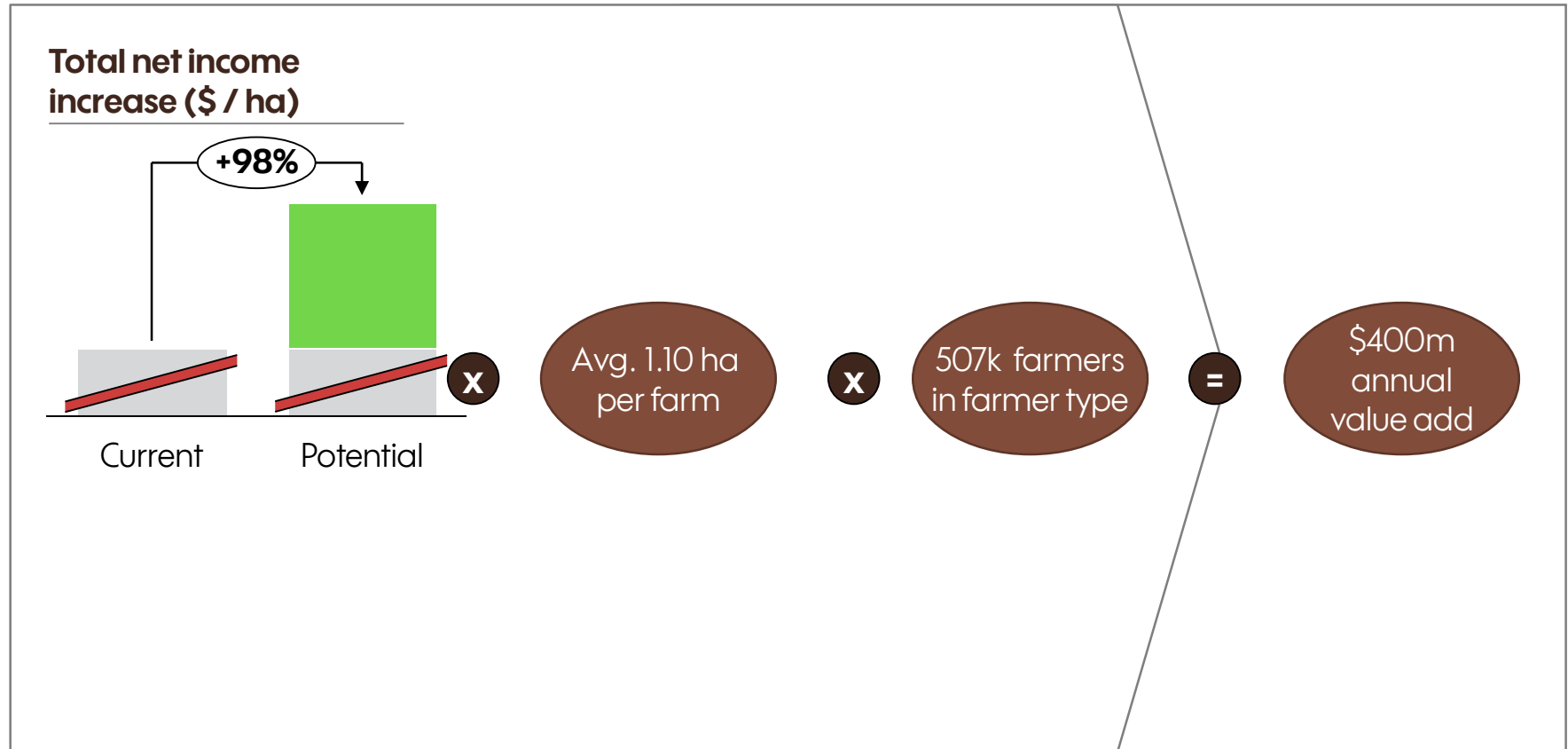
- Production is low at 700kg / ha with potential to double yields
- Key levers for yield improvement are:
 - Adoption of good agricultural practices (key issue is low skills of farmers)
 - Farm rejuvenation (trees tend to be old with high tree density)

- Farmers sell in unsorted green beans (asalan), normally after paying a fee to hull their coffee. Investment in proper drying can increase incomes for farmers, but current price structure offers little incentive to improve processing
- Low farmer output and the dispersed production base make certification and sustainability programs expensive

- There is potential to increase value add to farmers from improving yield. Farmers currently prefer low-yielding techniques that require less costs and inputs. Pruning and stumping lower production and directly impact short-term cash flows, which inhibits adoption

Note: assumes that three interventions are separate and independent.
Source: See appendix.

\$400 MILLION OF POTENTIAL INCREMENTAL VALUE ANNUALLY

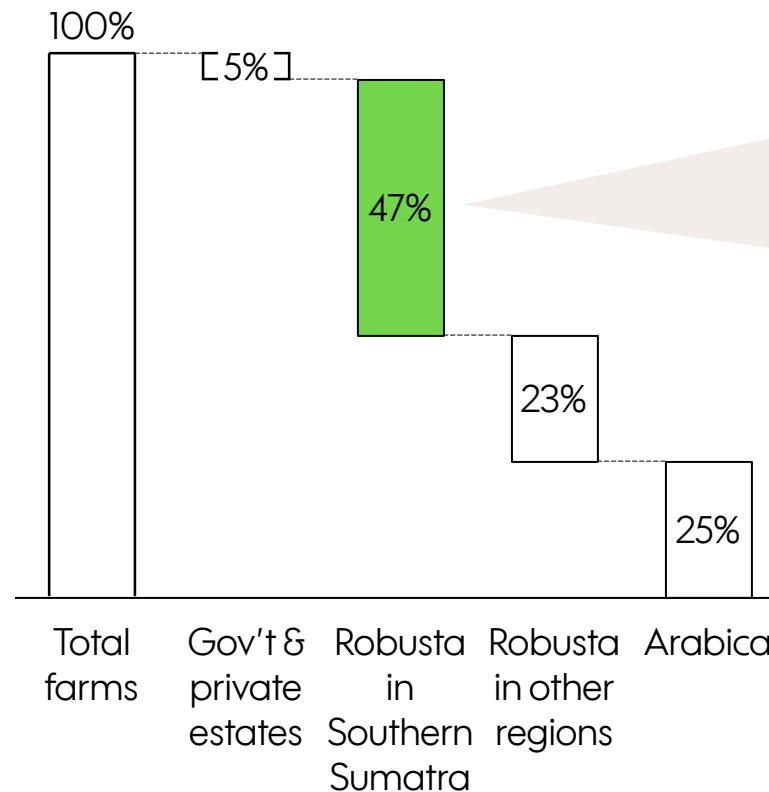


- There is an opportunity for a 98% increase in profitability for farmers, which translates into an estimated \$400m annual potential value across the 507k farmers in this farmer type (Robusta smallholders in Southern Sumatra)

Note: Extrapolated estimate annual value; improvements in profit for individual farmers may vary.
Source: See appendix.

IDENTIFYING FARMER TYPE WITH HIGHEST POTENTIAL IMPACT

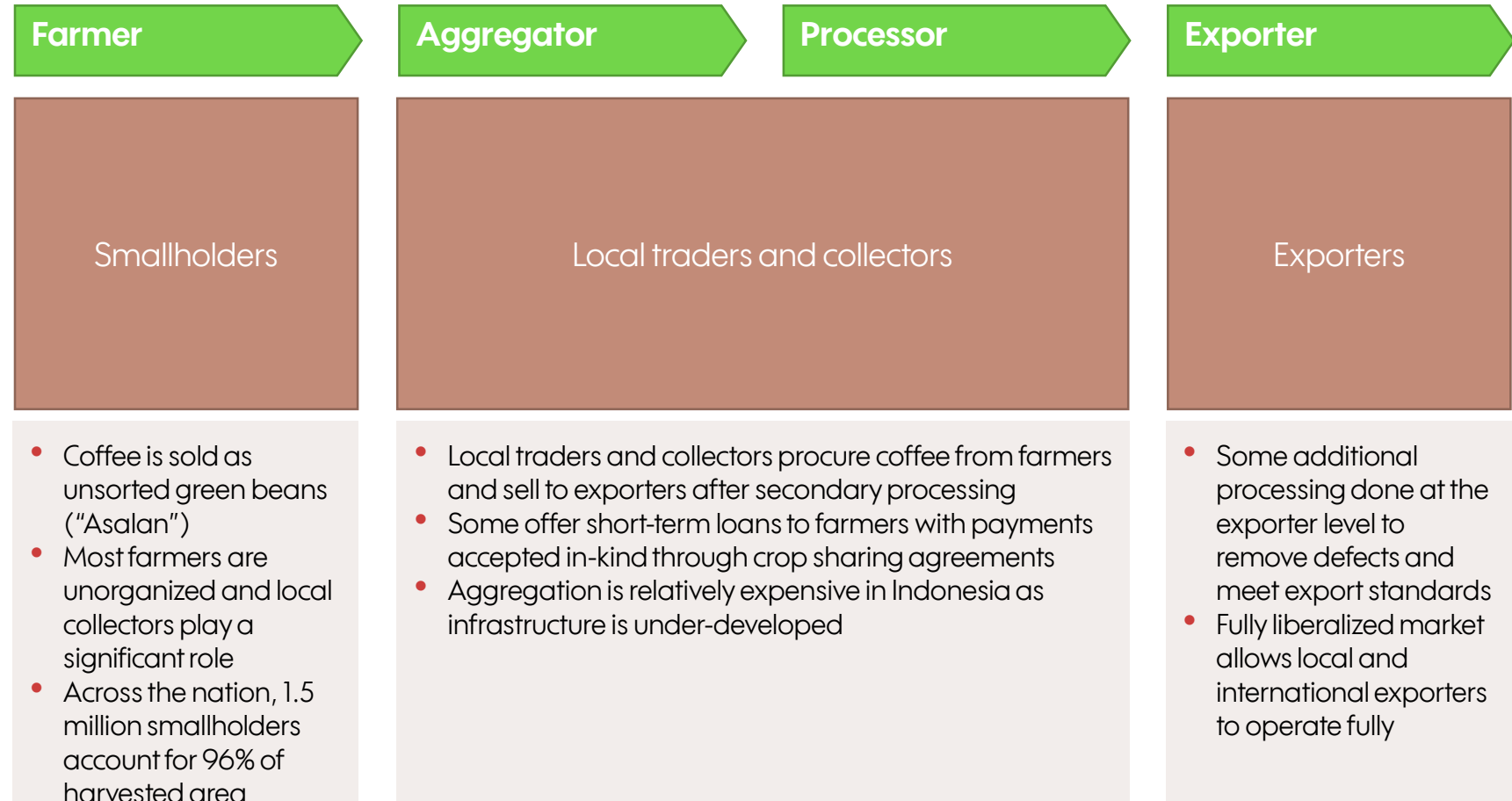
Farmer types by share of volume



- There are an estimated 1.5 million smallholders in Indonesia
- About 80% of the production is Robusta, with production focused in the Southern Sumatra region*, and as such, the study focuses on Robusta smallholders in the Southern Sumatra region
- There is an estimate of 507k Robusta smallholders in the Southern Sumatra region
- Not all coffee farmers are "active" and dependent on coffee as a meaningful part of their household income

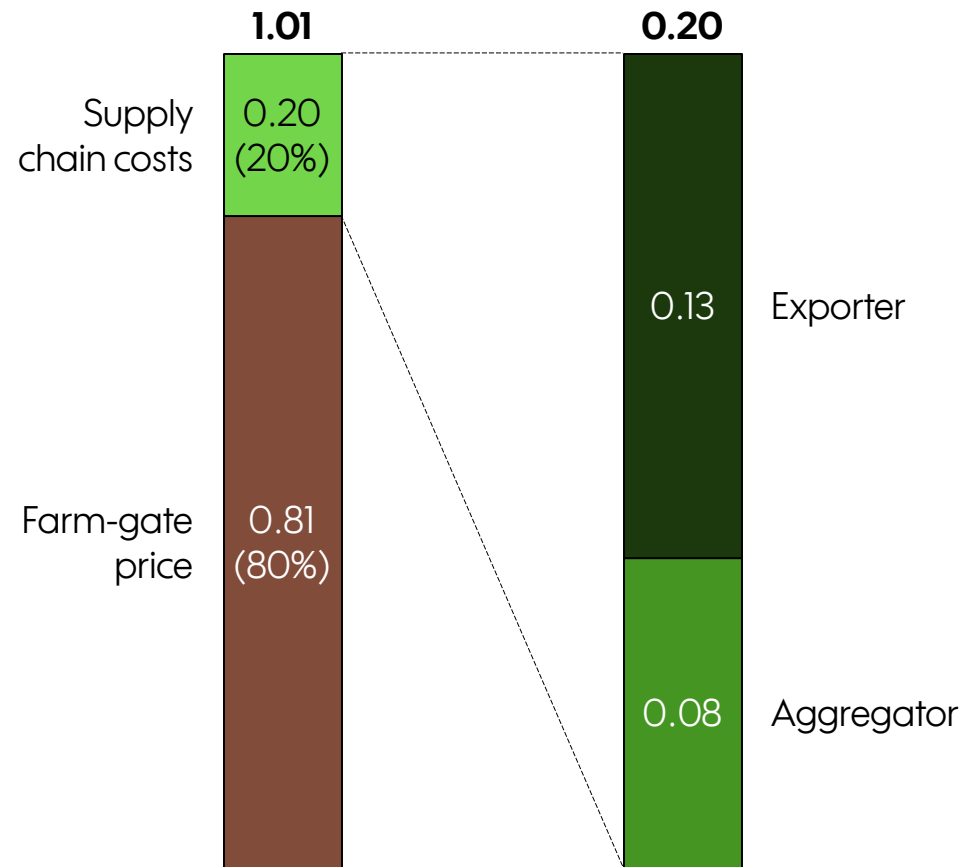
* Jambi province included for the purposes of this study.
Source: TNS (2014), KOPI (2016), Enveritas (2017)

SUPPLY CHAIN OVERVIEW



SUPPLY CHAIN COST BREAKDOWN FROM FARM TO EXPORT

Supply chain cost breakdown (US \$ per lb green)



- Farmer share of export price is 80%
- Local collectors play a significant role in the supply chain. Aggregation costs are high, partly due to less developed infrastructure and low farmer output. There is room to increase value to farmers through a more efficient supply chain
- Coffee's low contribution to government revenue (1%) makes it a lower government priority, so there is little regulatory focus or government extension services



APPENDIX

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DETAIL ON FARMER TYPES



Type	Region	Farm size (ha)	Variety	Number of farms
Government and private estates	N/A	Government / private estates	N/A	N/A
Robusta smallholders in Southern Sumatra	Southern Sumatra	Smallholder	Robusta	507,000
Robusta smallholders in other regions	Other regions	Smallholder	Robusta	541,000
Arabica smallholders	N/A	Smallholder	Arabica	452,000

DETAILED DATA APPLICABLE TO SELECTED FARMER TYPE



Data point	Unit	Data
Farmer data		
Average coffee farm size	ha	1.10
Number of farmers in type	#	507,000
Assumptions		
Exchange rate	USD to LCU	13,000
Market Data		
Farm-gate price*	cts/lb	70
Average FOB export price	cts/lb	88
Yield		
Average coffee yield	lb/ha	1,543
Potential yield increase	%	100%
Price		
Potential quality premium	cts/lb	14
% of production eligible for quality premium	%	100%
Potential certification premium	cts/lb	1
% of production eligible for certification	%	3%

* Farm-gate price modeled refers to previous season, though stakeholder interviews suggest current farm-gate prices are higher.
 Note: Costs of production updated to 2016 exchange rates. All volume units are for green coffee equivalent.

Data point	Unit	Data
Production costs		
Operations	\$/ha	9
Inputs	\$/ha	125
Labor	\$/ha	116
Incremental costs of increasing yield	\$/ha	450
Processing costs		
Paid processing labor	\$/ha	0
Drying service	\$/ha	40
Other	\$/ha	47
Incremental costs of improving processing	\$/ha	115
Third-party costs		
Other	\$/ha	0
Incremental costs of certification	\$/ha	0
Outputs		
Current revenue	\$/ha	1,086
Potential increase in net income from:		
Yield improvements	\$/ha	636
Processing improvements	\$/ha	102
Certification premiums	\$/ha	0

SOURCES



Organization	Data inputs	Detailed references
TechnoServe	Farmer data, market data, yield, costs, supply chain	IDH and TechnoServe, Indonesia: A business case for sustainable coffee production (2014); Stakeholder interview (2017)
Hanns R. Neumann Stiftung	Farmer data, market data, yield, price, costs	Stakeholder interview (2017)
Enveritas	Farmer data, market data	Stakeholder interview (2017)
ICCRI	Farmer data	Stakeholder interview (2017)
Other	Farmer data, yield, supply chain	USDA, GAIN Report: Coffee, Indonesia (2017)
	Farmer data, yield	Ministry of Agriculture, KOPI Report (2017)
	Certification	ICO, The State of Sustainability Initiatives Review 2014 – Standards and the Green Economy (2014)



LIMITATIONS OF METHODOLOGY

This scan is intended to initiate conversations between coffee origins, rather than to be an exhaustive study of farmer economics. It seeks to provide a synthesis of existing databases, studies, and reports as well as a comparative analysis across origins. However, given wide variation in methodologies, regions, and characteristics of available information, there may be credible and important data sources not incorporated into this study.

Since national averages of production indicators do not represent real farmers, our scan focuses on one farmer type within each origin. These farmer types are not representative of the national averages and opportunities may not be uniform within each farmer type.

This scan is not meant to evaluate certification schemes, but rather assesses incremental contribution of certification premiums to farmers' incomes. Impacts of certification achieved through the promotion of best practices and improved access to markets are outside the scope of the scan. Prices are assumed to be static and therefore the scan does not account for volatility of coffee prices and exchange rates, both of which have a significant impact on farmer incomes. Climate change, droughts, and diseases such as coffee leaf rust also pose risks for farmers, but are outside the scope of this scan. Intercropping and other household incomes are also outside the scope of this scan.



Acknowledgements

ICCRI, Hanns R. Neumann Stiftung, Enveritas, JDE Coffee

About the Global Coffee Platform

The GCP is the leading facilitator of the coffee sector's journey towards sustainability. The GCP improves the livelihoods, ecosystems and resilience of coffee farming communities and the sector as a whole by enabling producers, international roasters, governments, traders, and NGOs to align and multiply their efforts and investments, collectively act on local priorities and critical issues, and grow and scale successful sustainability initiatives across the coffee world.

About TechnoServe

TechnoServe works with enterprising men and women in the developing world to build competitive farms, businesses and industries. A nonprofit organization operating in 29 countries, TechnoServe is a leader in harnessing the power of the private sector to help people lift themselves out of poverty. By linking people to information, capital and markets, we have helped millions to create lasting prosperity for their families and communities.