



PERU

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 \$179M ACROSS 132K FARMERS



Potential for yield improvements

- There is high potential for value add from yield improvements. Yields can be doubled at minimal cost, primarily through adoption of good agricultural practices such as fertilization and pruning
- Cost of production for smallholders tend to be high due to low productivity. Improving yields can offset fixed costs and increase profit

Improved processing

- There is modest potential value add from processing improvements. Most smallholders process coffee on farm, leading to significant loss in quality
- Improving processing and selective harvesting can allow farmers to attain price premiums for specialty coffee

Supply chain efficiency

- Farmers receive 85% of the export price, though there is variation across regions
- Though outside the scope of this study, there may be some potential to improve supply chain efficiency by organizing farmers into cooperatives to collectively process and aggregate coffee; others may prefer to remain independent
- Improved infrastructure and policies to discourage migration to virgin forests could lower transportation costs and shorten supply chains

POTENTIAL REVENUE INCREASE FROM HIGHER YIELD AND PRICE PREMIUMS



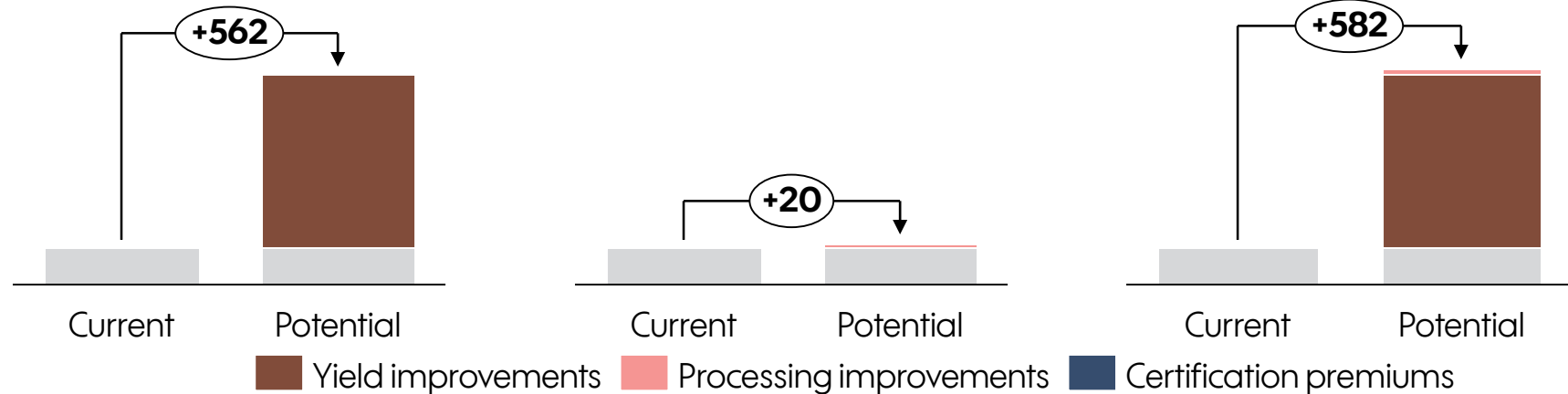
Net income from yield improvements (\$ / ha)



Net income from price premiums (\$ / ha)



Total net income increase (\$ / ha)



- Yields are low among smallholders in Peru at 1,200 lb green / ha. In combination with high production costs, this translates to a low farmer income
- There is potential to double yields from adoption of good agricultural practices, particularly fertilization and pruning, and selective harvesting

- There is potential to attain specialty coffee price premiums as 75% of the production is grown above 1,000 m above sea level
- Currently, farmers process coffee on farm and sell in dry parchment, which leads to a significant loss in quality
- Quality can be improved through selective harvesting and proper drying and storage

- There is high potential to increase net income to farmers through yield improvements
- By improving on-farm processing, farmers would be able to achieve price premiums for specialty coffee

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

\$177 MILLION OF POTENTIAL INCREMENTAL VALUE ANNUALLY

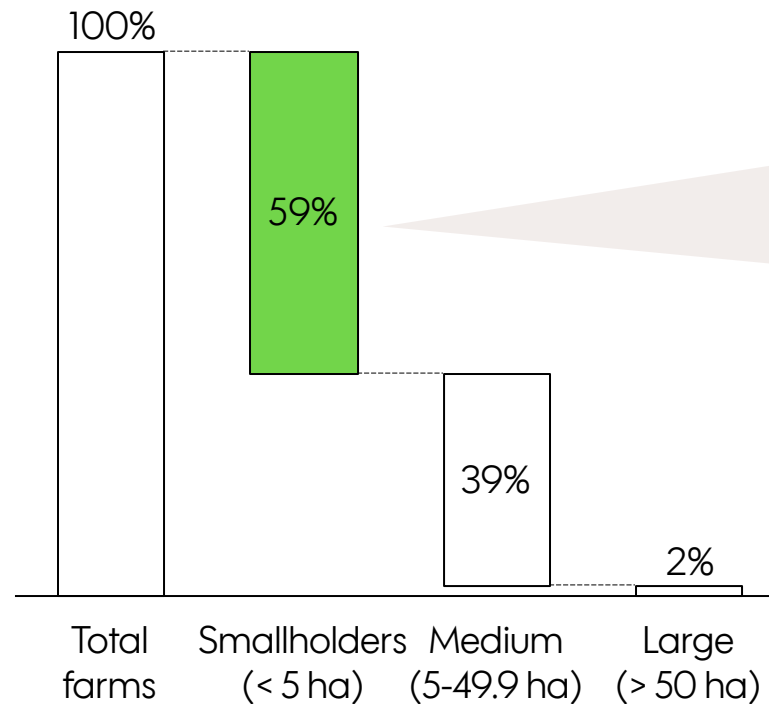


- There is an opportunity for a \$582 / ha increase in profitability for farmers, which translates into an estimated \$177m annual potential value across the 132k farmers in this farmer type (Arabica smallholders under 5 ha)

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

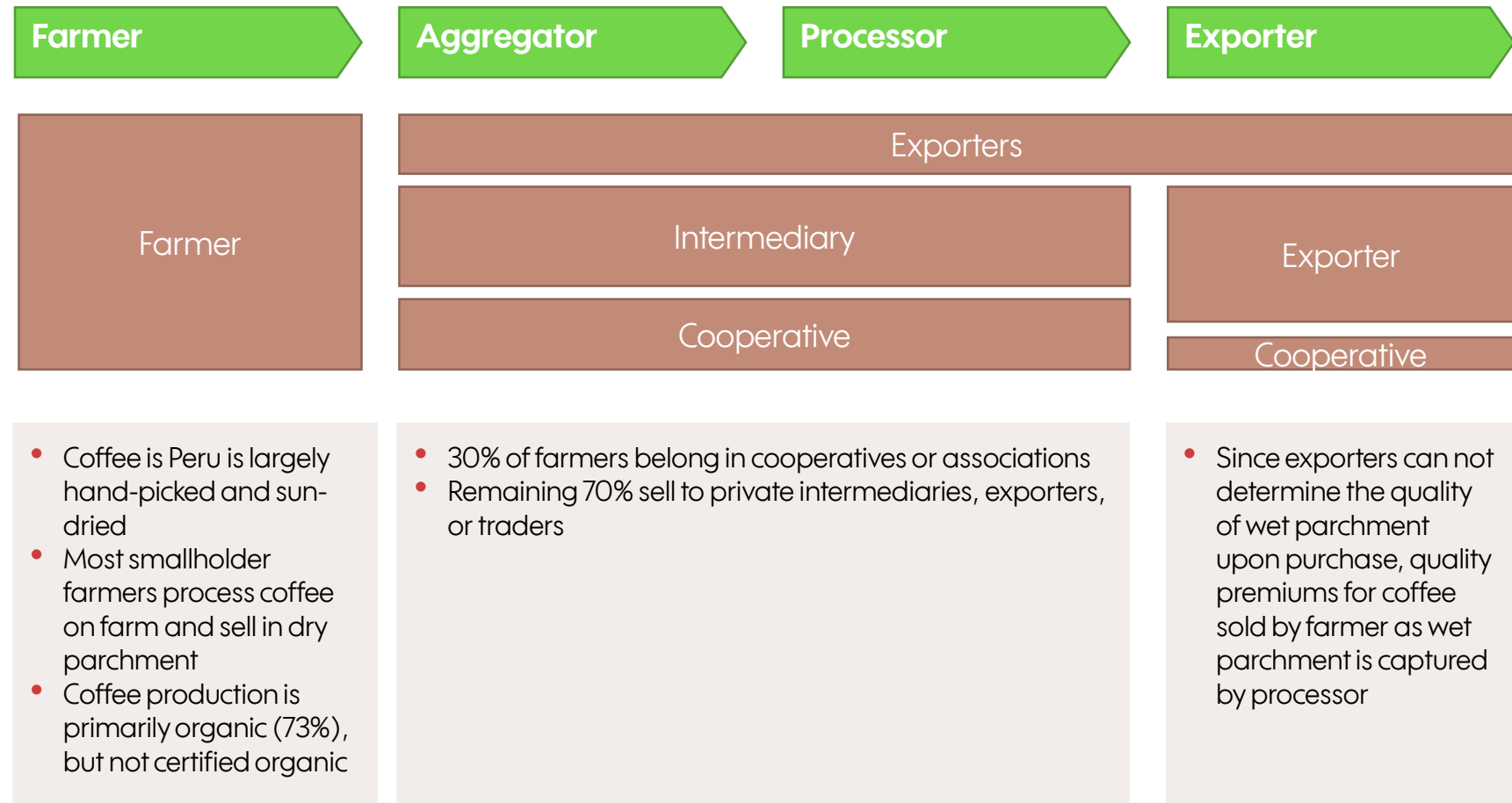
IDENTIFYING FARMER ARCHETYPE WITH HIGHEST POTENTIAL IMPACT

Farmer archetypes by number of farmers



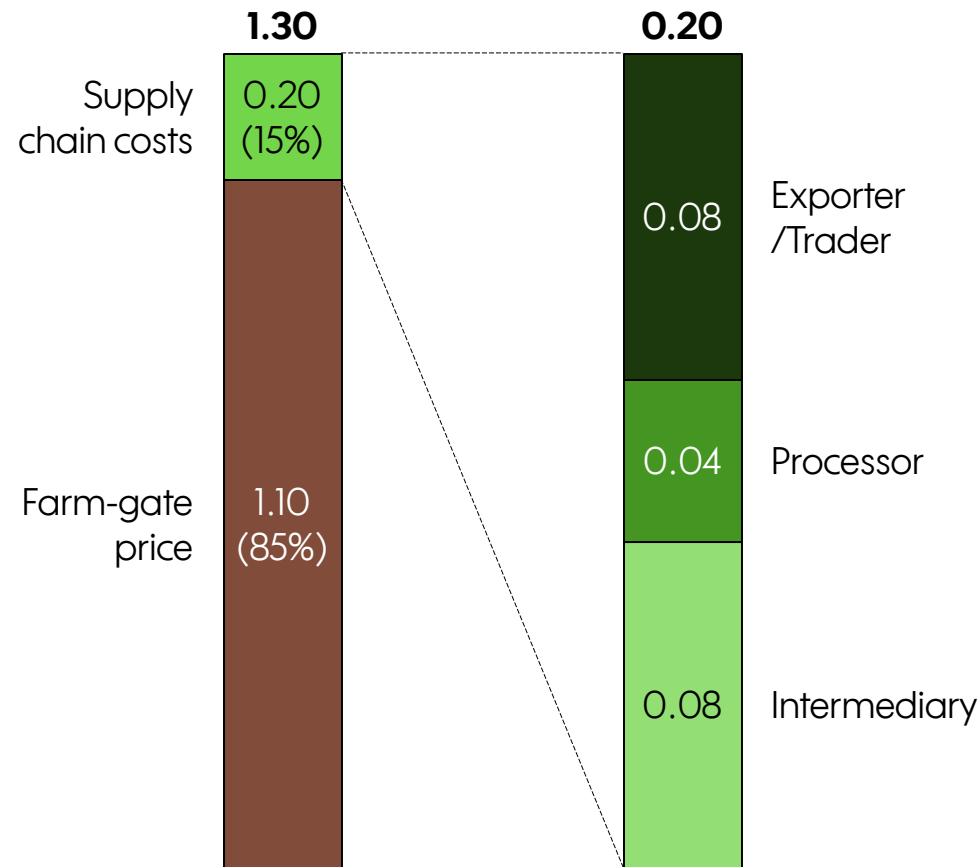
- 59% of the farmers in Peru are smallholders with 5 ha of coffee or less
- All coffee grown in Peru is Arabica. 75% of coffee farming area is grown at 1,000m above sea level or higher
- There tends to be some variation in the prices fetched by region

SUPPLY CHAIN OVERVIEW



SUPPLY CHAIN COST BREAKDOWN FROM FARM TO EXPORT

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



- Farmers receive ~85% of the export price
- Intermediaries play a significant role in the supply chain, with farmers often selling to primary intermediaries who then sell to secondary intermediaries



APPENDIX

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DETAIL ON FARMER TYPES

Type	Region	Farm size (ha)	Variety	Number of farms
Smallholders	N/A	< 5 ha	Arabica	132,000
Medium	N/A	5 - 49.9 ha	Arabica	87,000
Large	N/A	> 50 ha	Arabica	4,000



DETAILED DATA APPLICABLE TO SELECTED FARMER TYPE



Data point	Unit	Data
Farmer data		
Average coffee farm size	ha	2.30
Number of farmers in type	#	132,000
Assumptions		
Exchange rate	USD to LCU	3.30
Market Data		
Farm-gate price	cts/lb	110
Portion of production receiving farm-gate price	%	80%
Price for domestic consumption	cts/lb	65
Average FOB export price	cts/lb	130
Yield		
Average coffee yield	lb/ha	1,200
Potential yield increase	%	100%
Price		
Potential quality premium	cts/lb	17
% of production eligible for quality premium	%	15%
Potential certification premium	cts/lb	7
% of production eligible for certification	%	7%

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	31
Inputs	\$/ha	172
Labor	\$/ha	800
Incremental costs of increasing yield	\$/ha	650
Processing costs		
Paid processing labor	\$/ha	46
Drying service	\$/ha	46
Other	\$/ha	0
Incremental costs of improving processing	\$/ha	15
Third-party costs		
Other	\$/ha	0
Incremental costs of certification	\$/ha	1
Outputs		
Current revenue	\$/ha	1,212
Potential increase in net income from:		
Yield improvements	\$/ha	562
Processing improvements	\$/ha	22
Certification premiums	\$/ha	5

SOURCES



Organization	Data inputs	Detailed references
TechnoServe	Farmer data, market data, yield, price, costs	Stakeholder interviews (2017); TNS project data (2017)
COINCA	Farmer data, market data, yield, price, costs	Stakeholder interview (2017)
Perhusa	Farmer data, market data, yield	Stakeholder interview (2017)
Fair Trade USA	Farmer data, market data, yield, costs	Cost of Sustainable Production: An overview of farm-level production analyses in Latin America (2017)
Other	Farmer data, market data, yield	USDA, GAIN Report: Coffee, Peru (2017)
	Price	FAO Price Statistics (2016)
	Market data, yield, costs	Direccion Regional de Agricultura Huanuco (2016)
	Price, certification	Tuinstra, A. and Deugd, M., Rainforest Alliance Certification in Coffee Production: An analysis of Costs and Revenues in Latin America 2010-11 (2011)
	Farmer data	National Agricultural Census (2012)
	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

COINCA, Perhusa, Fair Trade USA

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.