



# COLOMBIA

A Quick Scan on Improving the Economic Viability of Coffee Farming



# OBJECTIVES OF STUDY

## Overall objective

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

## Detailed objectives

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

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

# POTENTIAL ANNUAL VALUE CREATION OF \$76M ACROSS 235K FARMERS



Potential for yield improvements

Access to specialty market

Adoption of improved post-harvest practices

Other

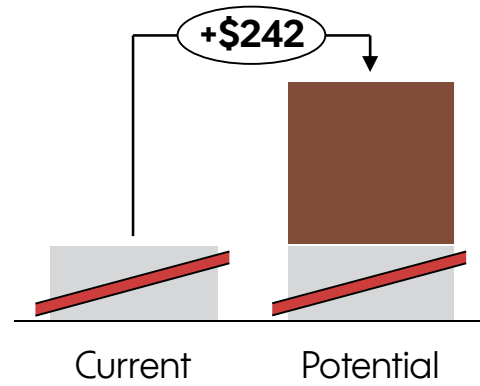
- There is high potential for value add through yield improvements of 20-25%
- Best practices have been well-established by actors such as FNC and Cenicafé
- Increases in productivity will allow farmers to spread costs over higher volumes and offer competitive prices for UGQ quality levels compared with other countries
- There is some potential for value add through premiums for specialty coffee
- Demand for specialty coffee has increased and 10-20% of exports are sold as differentiated. However, farmers must receive sufficient incentives through the supply chain to make this differentiation profitable
- There is some potential for value add through better post-harvest practices. 80% of defects occur post-harvest, but incentive structures are not strong enough to promote improvements to existing practices
- Addressing this quality gap could bring significant added value to producers, particularly as current extension services are focused on improving yield
- Farmer profits are heavily influenced by the exchange rate, especially in the context of recent volatility
- Farmer-level incentives to improve yield and quality must be supported by investment in infrastructure for processing facilities, transportation, etc.
- It is important to consider to what degree certification premiums compensate farmers for additional costs of social and environmental compliance

Source: ICO (2014), FNC (2016), Innovakit (2016), stakeholder interviews, [www.procolombia.co](http://www.procolombia.co)

# POTENTIAL REVENUE INCREASE FROM HIGHER YIELD AND PRICE PREMIUMS

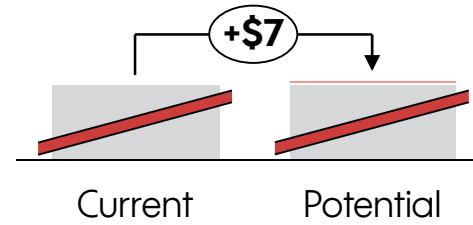


Net income from yield improvements (\$ / ha)



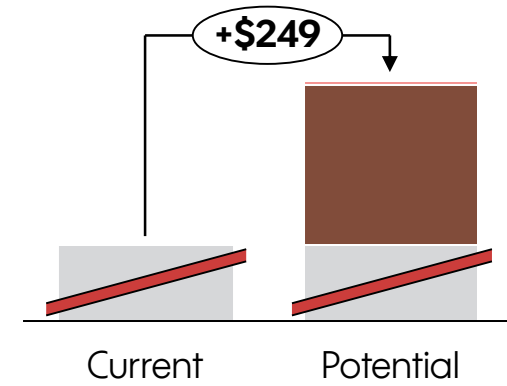
+

Net income from price premiums (\$ / ha)



=

Total net income increase (\$ / ha)



Yield improvements
  Processing improvements
  Certification premiums

- Potential increase in yield of 20% (from current yield of 2,016lb/ha) through:
  - Optimized fertilization
  - Integrated pest control
  - Effective shade mgmt.
  - Targeted rejuvenation
- Best practices are well-established but not fully adopted

- Though farmers may receive significant price premiums from improvement in post-harvest practices and access to specialty market, size of the market is unclear and is estimated to be only 10% of the current production volume
- Central milling may potentially add value to farmers\*

- Yield improvements can bring added revenue to farmers and also help them counter-balance rising production costs
- Specialty coffee production may be another opportunity for value add, though supply/ demand dynamics and price premiums will need to be explored further

\* Though not an intervention specifically considered in this study  
 Note: Assumes that three interventions are separate and independent.  
 Source: See appendix.

# \$76 MILLION IN POTENTIAL INCREMENTAL VALUE ANNUALLY

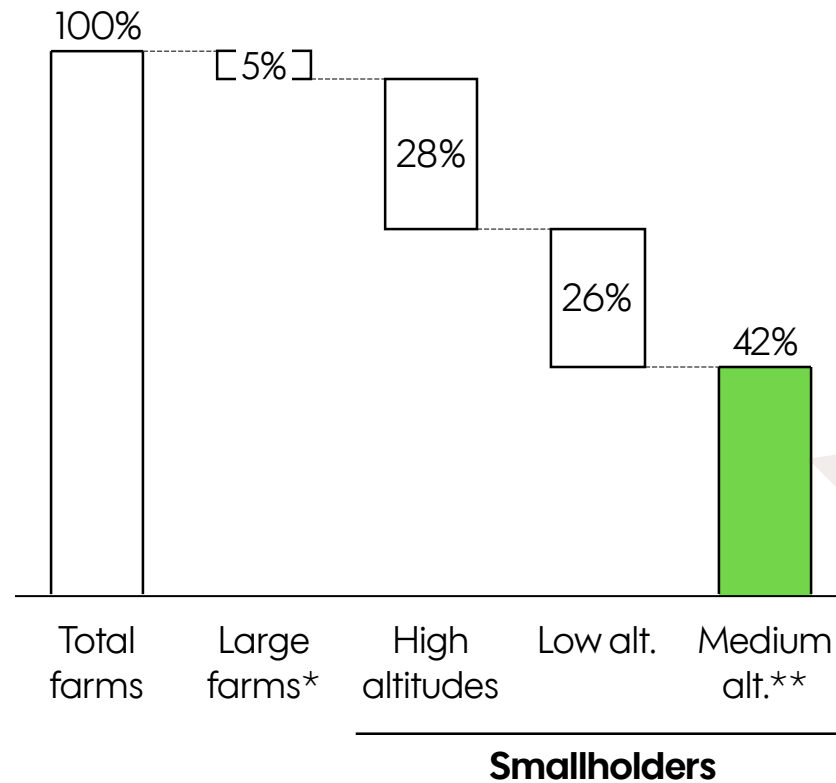


- There is an opportunity for a \$249/ha increase in profitability for farmers, which translates into estimate \$76m annual potential value across the 235k farmers in this archetype (small farmers at medium altitudes)
- There are other opportunities for income increases for other types of smallholders as well

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 number of farmers

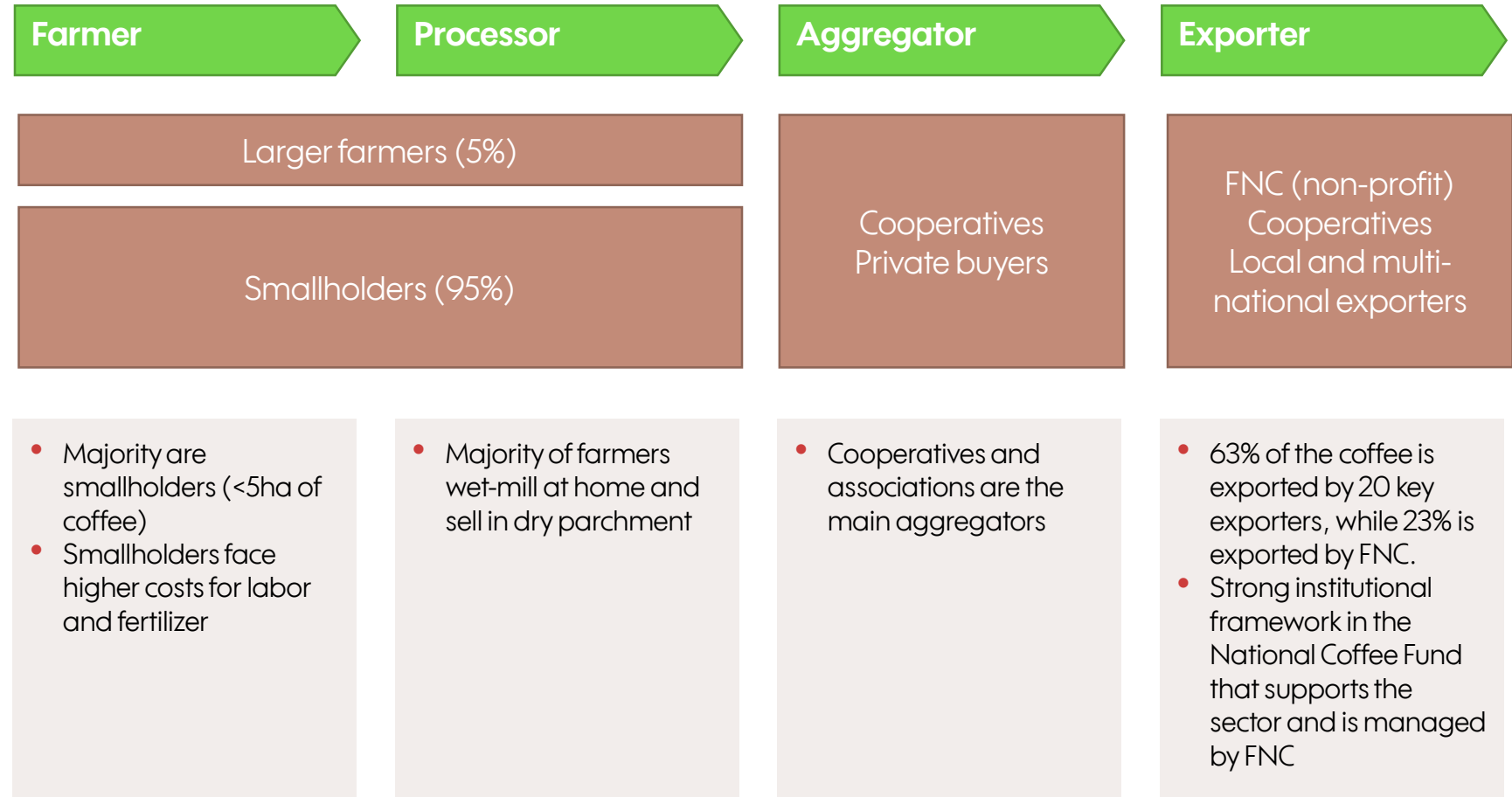


- Focus on small farms at medium altitudes as the key area to improve profitability
- 95% of farmers in Colombia own less than 5 ha of land
- Farms at medium altitudes are less vulnerable to pest/disease and climate change with most potential to improve quality and profitability
- There are opportunities to increase value for other smallholders as well

\* Larger than 5 ha

\*\* High altitudes: >1,600m, medium altitudes: 1,200-1,600m, low altitudes: <1,200m  
Source: TNS (2014), FNC (2016), USDA (2016)

# SUPPLY CHAIN OVERVIEW

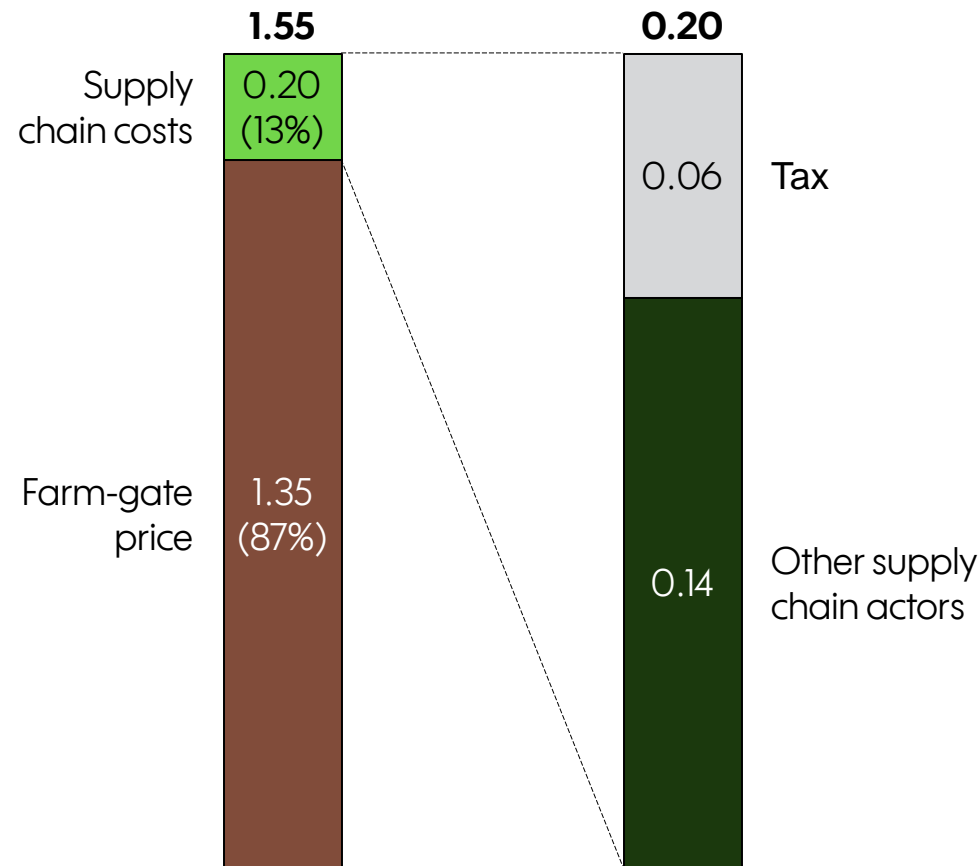


Source: TNS (2014), FNC and AsoExport (2016), stakeholder interviews



# SUPPLY CHAIN COST BREAKDOWN FROM FARM TO EXPORT

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



- Farmer share of export price is high at 85-90%
- 6 US cents per lb green on all coffee exports go to the national coffee fund
- Changes in production costs on a per lb basis are heavily influenced by changes in productivity
- As there are proportionately high fixed costs for production, profitability is driven by yield (volumes) and price; in periods with low sales prices, farmers can either try to improve yields or cease production
- Some parties believe additional transparency would further improve farmer incomes



# APPENDIX

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## DETAIL ON FARMER TYPES



Type	Region	Farm size (ha)	Variety	Number of farms
Large farms	N/A	Large	N/A	28,000
Small farms at high altitudes	N/A	Small (under 5 ha)	High (>1,600m)	155,000
Small farms at medium altitudes	N/A	Small (under 5 ha)	Medium (1,200 – 1,600m)	235,000
Small farms at low altitudes	N/A	Small (under 5 ha)	Low (<1,200m)	145,000

Source: FNC (2016), TNS (2014)

# DETAILED DATA APPLICABLE TO SELECTED FARMER TYPE



Data point	Unit	Data
<b>Farmer data</b>		
Average coffee farm size	ha	1.30
Number of farmers in type	#	235,000
<b>Assumptions</b>		
Exchange rate	USD to LCU	2,900
<b>Market Data</b>		
Farm-gate price	cts/lb	135
Portion of volume receiving farm-gate price	%	90%
Price for domestic consumption	cts/lb	68
Average FOB export price	cts/lb	155
<b>Yield</b>		
Average coffee yield	lb/ha	2,016
Potential yield increase	%	20%
<b>Price</b>		
Potential quality premium	cts/lb	11
% of production eligible for quality premium	%	10%
Potential certification premium	cts/lb	5
% of production eligible for certification	%	0%

Note: Costs of production updated to 2016 exchange rates. All volume units are for green coffee equivalent.

Data point	Unit	Data
<b>Production costs</b>		
Operations	\$/ha	42
Inputs	\$/ha	323
Labor	\$/ha	1,319
Incremental costs of increasing yield	\$/ha	275
<b>Processing costs</b>		
Paid processing labor	\$/ha	218
Drying service	\$/ha	0
Other	\$/ha	247
Incremental costs of improving processing	\$/ha	14
<b>Third-party costs</b>		
Other	\$/ha	0
Incremental costs of certification	\$/ha	0
<b>Outputs</b>		
Current revenue	\$/ha	2,586
Potential increase in net income from:		
Yield improvements	\$/ha	242
Processing improvements	\$/ha	7
Certification premiums	\$/ha	0



## SOURCES

Organization	Data inputs	Detailed references
TechnoServe	Farmer data, market data, yield, price, supply chain	IDH and TechnoServe, Colombia: A business case for sustainable coffee production (2014); project implementation data (2017); stakeholder interviews (2017)
Solidaridad	Farmer data, market data, yield, price, costs	Estudio de Costos de Producción en el sector cafetero colombiano (2014); Solidaridad-IDH Field Level Reports (2016); stakeholder interviews (2017)
FNC	Farmer data, market data, yield	FNC statistics (2016), accessible at <a href="https://www.federaciondecafeteros.org">https://www.federaciondecafeteros.org</a>
Fair Trade USA	Farmer data, market data, yield, cost	Cost of Sustainable Production: An overview of farm-level production analyses in Latin America (2017)
Other	Costs	Echavarría et. al., Commission on Coffee Competitiveness in Colombia (2015)
	Farmer data	USDA, GAIN Report: Coffee, Colombia (2016)
	Certification	Tuinstra, A. and Deugd, M., Rainforest Alliance Certification in Coffee Production: An analysis of Costs and Revenues in Latin America 2010-11 (2011); ICO, The State of Sustainability Initiatives Review 2014 - Standards and the Green Economy (2014)
	Yield, cost	ICO, Assessing the economic sustainability of coffee growing (2016)
	Supply chain	Asoexport, Stakeholder interview (2017)
	Price, costs	García, C. et. al., Costos y beneficios de la implementación de Estándares Voluntarios de Sostenibilidad en café. Un estudio de Caso en Colombia (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.



### **Acknowledgments**

Solidaridad, Nespresso, Bernhard Rothfos, OLAM, Innovakit, FNC, ECOM

### **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.