



# UGANDA

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
<p><b>1</b> Define producer types</p>	<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>
<p><b>2</b> Establish farmer financial benefits</p>	<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>
<p><b>3</b> Describe value chain structure</p>	<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>
<p><b>4</b> Present recommendations</p>	<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 ADD OF \$82M ACROSS 1.2M FARMERS



## Potential for yield improvements

- There is high potential to value add through yield improvements.
- Yields are comparatively low at 625 kg green / ha and could increase by 86%
- There is potential for investments to produce and distribute improved varieties/seedlings, offer extension support, improve access to inputs, and adopt improve agronomic practices
- Key levers include farm rejuvenation, agronomic best practices, and harvesting suggesting need for additional training for smallholder farmers

## Potential for improved processing

- There is limited potential for value add through hulling improvements by improving conversion ratios
- Though not modelled in this study, if farmers are able to hull independently through farmer groups, they can increase revenue

## Certification premiums

- There is limited potential for value creation through certification premiums
- An estimated 20% of Ugandan supply is certified, but a relatively small portion of the supply is sold as such, implying that supply exceeds demand
- Though there may be some value to farmers in certification premiums, small farm sizes and high fixed costs make the financial returns more difficult than in other markets

## Other

- Though supply chain is efficient, some farmers tend to sell ahead of harvest and are unable to realize the full value
- Farmers are also at risk of droughts and rains and may need support to mitigate the risk

# POTENTIAL REVENUE INCREASE FROM HIGHER YIELD AND PRICE PREMIUMS



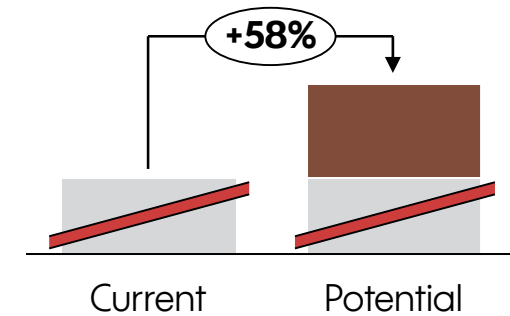
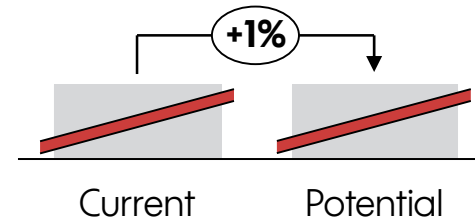
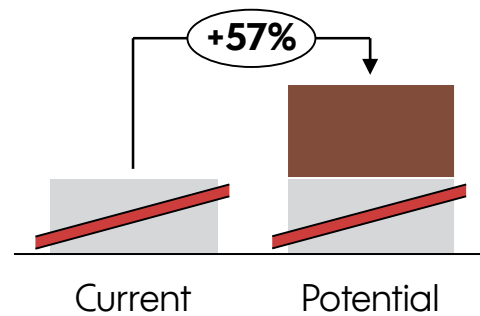
**Net income from yield improvements (\$ / ha)**



**Net income from price premiums (\$ / ha)**



**Total net income increase (\$ / ha)**



Yield improvements
  Processing improvements
  Certification premiums

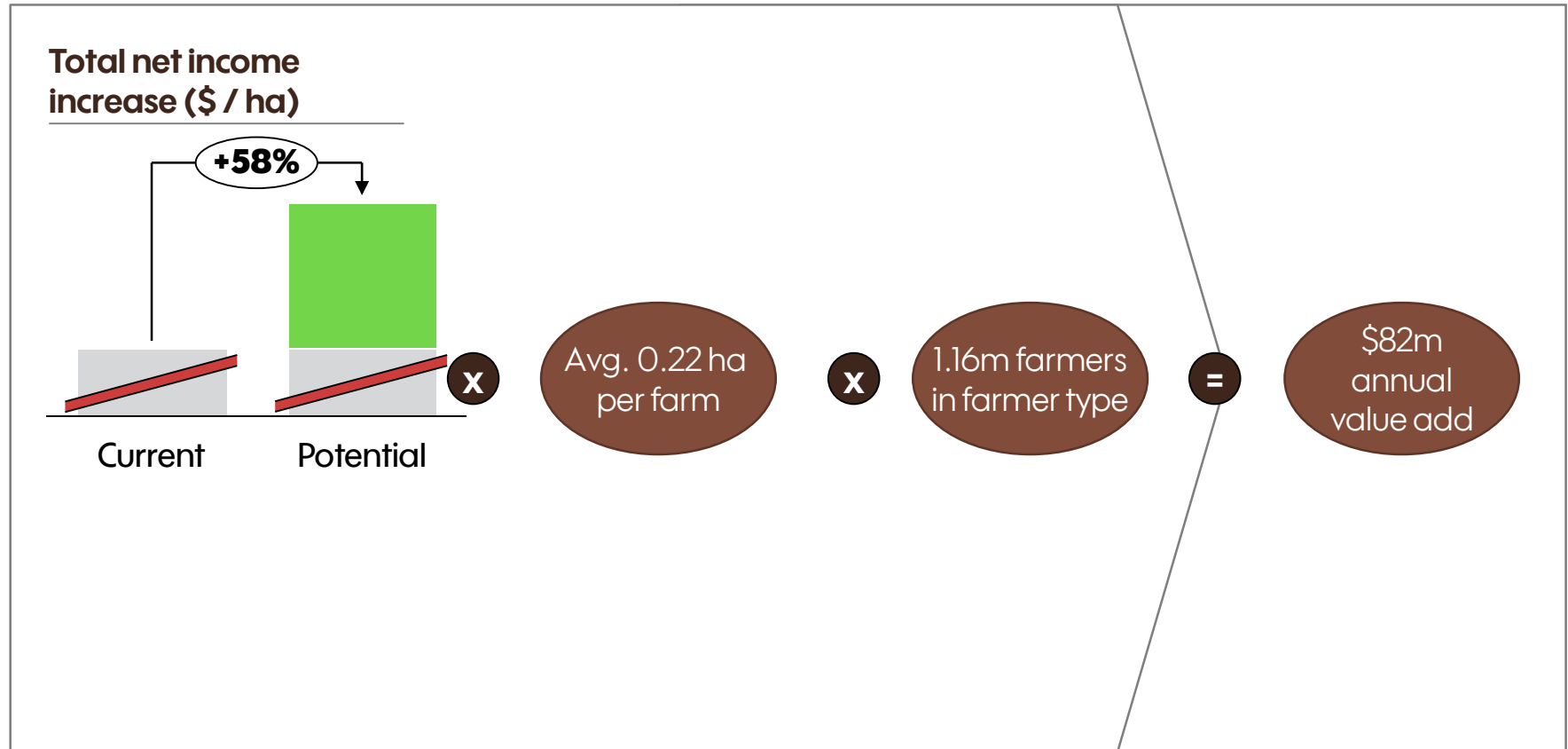
- Current yield is comparatively low, with potential to increase
- Most farmers do not apply sufficient quantities of compost or inorganic fertilizers, due to both lack of access to reliable inputs and financing to purchase them
- Key levers include:
  - Rejuvenation and stumping
  - Adoption of best practices (fertilization and shading)

- Though the potential value add is lower than yield improvements, hulling improvements could improve conversion ratios by 5-6% and can generate additional income
- Certification costs may be higher than most farmers would like given small farm sizes and a relatively small portion of current certified supply is sold as such

- There is significant opportunity to increase value through yield improvement
- Farmers can capture a higher share through processing improvements or hulling directly through farmer groups, though associated costs will need to be detailed

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

# \$82 MILLION OF POTENTIAL INCREMENTAL VALUE ANNUALLY

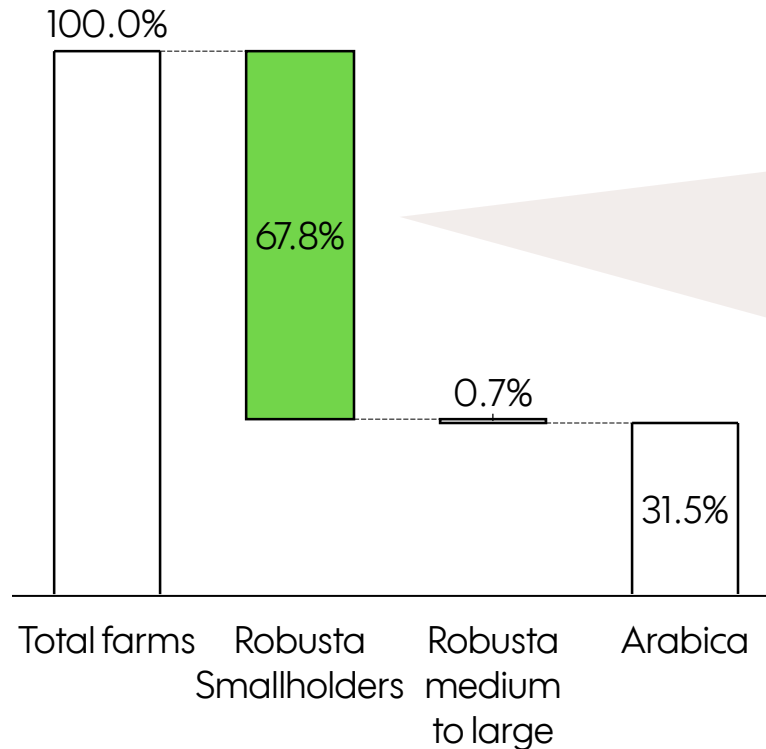


- There is an opportunity for a 58% increase in profitability for farmers, which translates into an estimated \$82m annual potential value across the 1.16m farmers in this farmer type (smallholder Robusta farmers)

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

# IDENTIFYING FARMER ARCHETYPE WITH HIGHEST POTENTIAL IMPACT

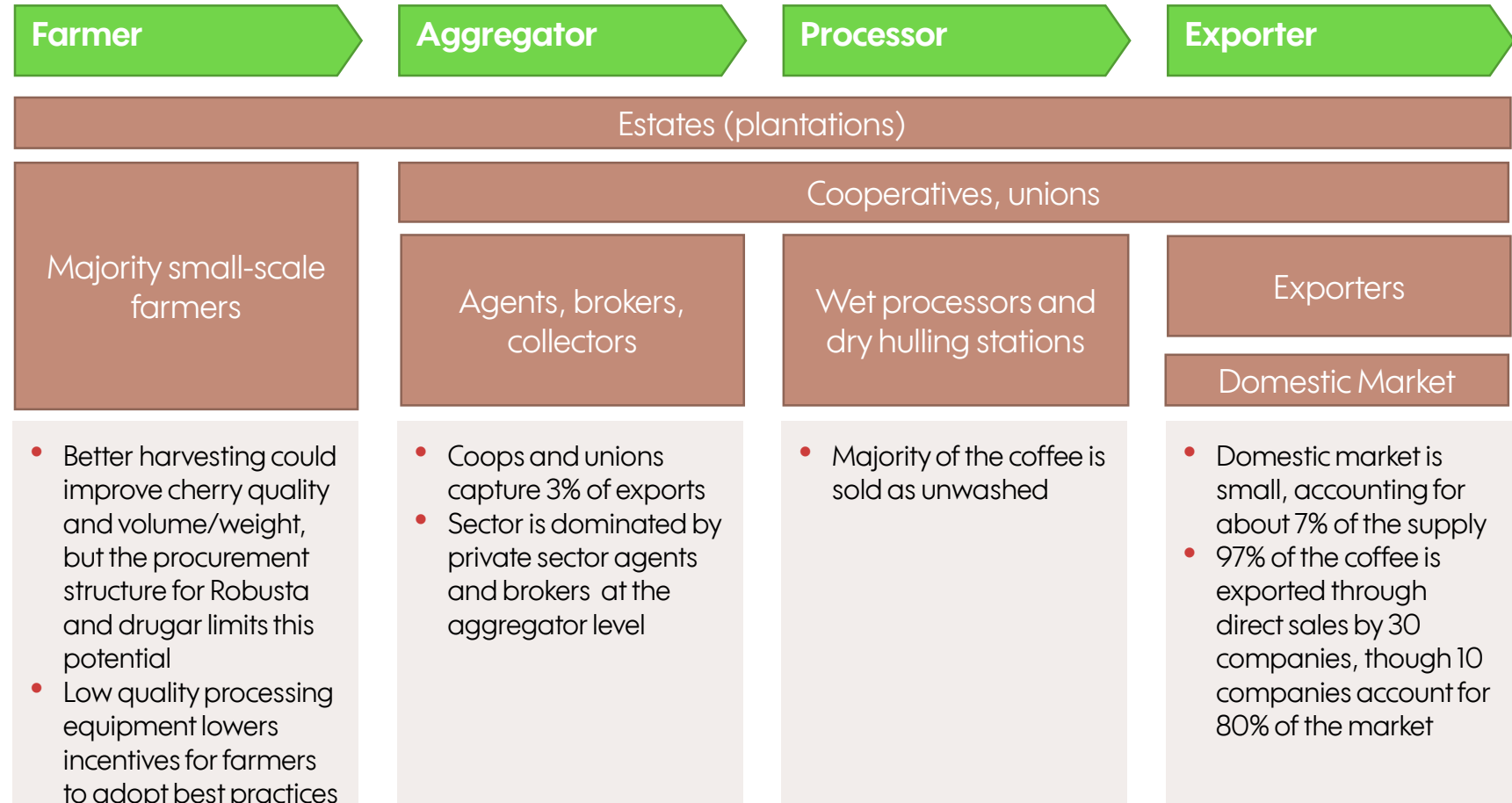
## Percentage of farmers by archetype



- 70% of the coffee farmers are smallholders growing Robusta
- 73% of the coffee production volume in Uganda is Robusta
- 76% of the coffee is unwashed
- Average coffee farm size is 0.22 ha. and is decreasing as plots are sub-divided due to population growth
- Area dedicated to coffee may increase due to the ongoing government sponsored replanting program, as well as private sector and CSO efforts on rehabilitation. However, some farmers, especially those closer to urban areas, may shift from coffee to horticulture in order to sell to the urban population

\* Estimates for number of coffee farmers vary and many farmers also grow other crops. This study uses the UCDA estimate.  
Source: UCDA (2015), Agri-Logic (2016), IDH (2013)

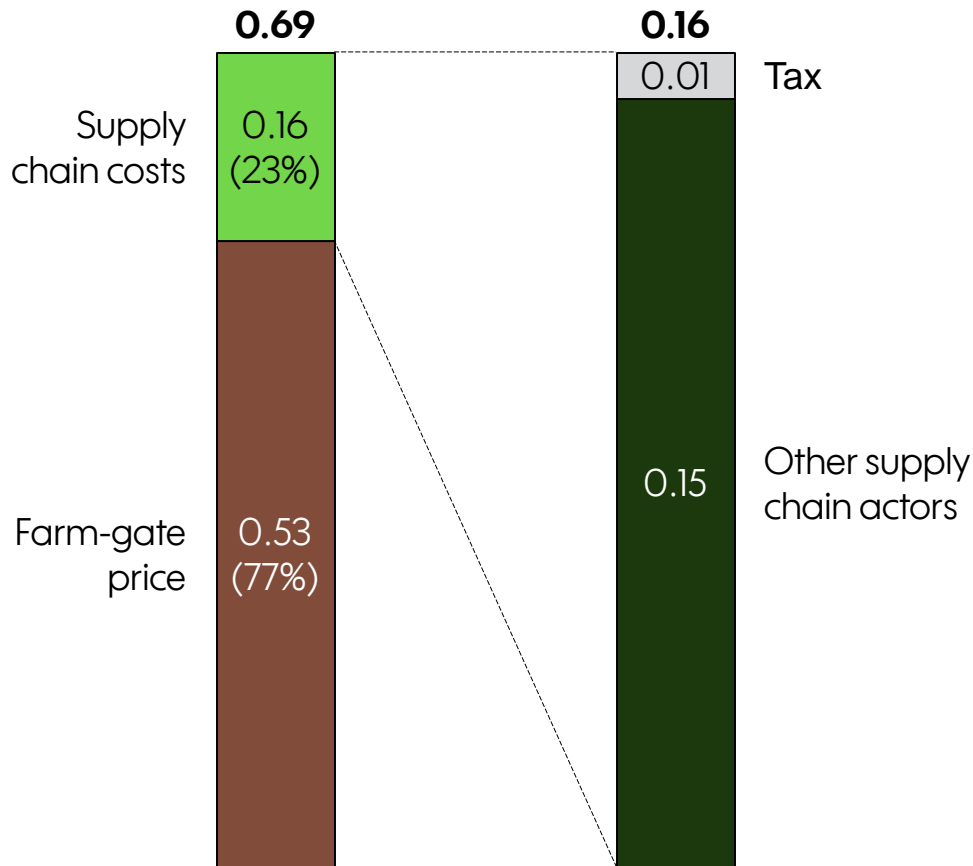
# SUPPLY CHAIN OVERVIEW





# SUPPLY CHAIN COST BREAKDOWN FROM FARM TO EXPORT

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



- Farmer share of export price is relatively high at 77%
- However, some farmers may not receive the full farm-gate price as large proportion of coffee is sold ahead of the harvest, implying higher potential income improvements possible
- At 1%, taxation represents a small cost in the supply chain
- Industry policy is governed by the National Coffee Policy, launched in 2013. Its key objectives are to increase productivity; to expand coffee acreage; and to improve the business environment

Note: Export price based on FOT for Uganda.  
Source: TNS (2014), Agri-Logic (2016)



# APPENDIX

## DETAIL ON FARMER TYPES



Type	Region	Farm size (ha)	Variety	Number of farms
Robusta Smallholders	N/A	Small (under 0.5 ha)	Robusta	1,161,000
Robusta medium to large farms	N/A	Medium to large (over 0.5 ha)	Robusta	12,000
Arabica	N/A	N/A	Arabica	540,000

# DETAILED DATA APPLICABLE TO SELECTED FARMER TYPE



Data point	Unit	Data
<b>Farmer data</b>		
Average coffee farm size	ha	0.22
Number of farmers in type	#	1,161,000
<b>Assumptions</b>		
Exchange rate	USD to LCU	3,300
<b>Market Data</b>		
Farm-gate price	cts/lb	53
Average FOT export price	cts/lb	69
<b>Yield</b>		
Average coffee yield	lb/ha	1,378
Potential yield increase	%	86%
<b>Price</b>		
Potential quality premium	cts/lb	2
% of production eligible for quality premium	%	N/A
Potential certification premium	cts/lb	1
% of production eligible for certification	%	6%

\* Some sources indicate that some farmers are starting to use hired labor and that price of labor is increasing.

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	22
Inputs	\$/ha	157
Labor	\$/ha	0
Incremental costs of increasing yield	\$/ha	324
<b>Processing costs</b>		
Paid processing labor*	\$/ha	0
Drying service	\$/ha	0
Other	\$/ha	20
Incremental costs of improving processing	\$/ha	25
<b>Third-party costs</b>		
Other	\$/ha	0
Incremental costs of certification	\$/ha	1
<b>Outputs</b>		
Current revenue	\$/ha	736
Potential increase in net income from:		
Yield improvements	\$/ha	307
Processing improvements	\$/ha	6
Certification premiums	\$/ha	0

# SOURCES



Organization	Data inputs	Detailed references
TechnoServe	Farmer data, market data, yield, price, costs, supply chain	IDH and TechnoServe, Uganda: A business case for sustainable coffee production (2013); Stakeholder interviews (2015)
Agri-Logic	Farmer data, market data, yield, price, costs	African Coffee Sector: addressing national investment agendas on a continental scale, Agri-Logic and GCP (2016)
USAID	Market data, yield, cost	Feed the Future Uganda Commodity Production and Marketing Activity: Scaling out tested and proven interventions by strengthening partnerships to better serve farmers in Uganda (2016); stakeholder interview (2017)
Enveritas	Farmer data, yield	Stakeholder interview (2017)
Other	Farmer data	USDA, GAIN Report: Coffee, Uganda (2016)
	Price premiums	ICO, The State of Sustainability Initiatives Review 2014 – Standards and the Green Economy (2014)
	Farmer data, market data	UCDA Database (2016)
	Farmer data	Development of Inclusive Markets in Agriculture and Trade, Kilimo Trust (2012)



## 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**

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### **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.