TANZANIA

A Quick Scan on Improving the Economic Viability of Coffee Farming

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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

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ANALYTICAL PROCESS TO DEVELOP A BUSINESS CASE FOR COFFEE FARMING

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Approach	Model Inputs	Model Outputs
1 Define producer types	• Farm size • Coffee yields • Coffee quality metrics • Production volume • Number of growers	• Farmer types
2 Establish farmer financial benefits	• Coffee price premiums • Potential increase in yield • Incremental changes to costs	• Potential increase in net income for farmer
3 Describe value chain structure	• Key actors in value chain • Costs and margins • Share of value captured	• Map of supply chain • Supply chain overview
4 Present recommendations	• Selected opportunities to optimize business case	• 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

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POTENTIAL ANNUAL VALUE ADD OF $131M ACROSS 220K FARMERS

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Potential for yield improvements in Arabica

- There is high potential for value add through yield improvements
- Yields are currently low at 449 kg green / ha for Arabica smallholders
- Key levers are farm rejuvenation, adoption of best practices, and access to climate smart planting materials and affordable inputs. The Tanzanian government is implementing its coffee sector strategic plan to increase production to 100,000 MT by 2020 and is currently conducting a mid-term evaluation of its strategy

Price premiums from improved processing

- There is moderate potential for value add through improved processing
- Tanzanian Arabica coffee has potential to achieve higher premiums for quality, but lack of consistent quality due to home processing is an obstacle

Supply chain efficiency

- Farmer share of the export price is ~70%, with higher farmer share in Robusta where farmers sell directly to exporters. Though taxes and other deductions were previously estimated to be around 10-20%, they have been recently reduced to 5-10%

Opportunity in Robusta production

- Though this study focuses on Arabica smallholders, there is also potential to improve yields and increase value to farmers in Robusta production, which accounts for around 30-40% of the production

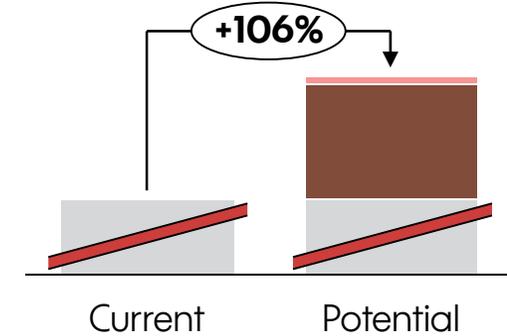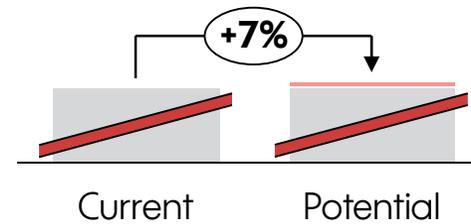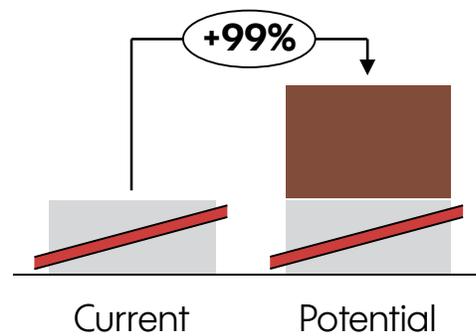# POTENTIAL REVENUE INCREASE FROM HIGHER YIELD AND PRICE PREMIUMS

Net income from yield improvements ($ / ha)

+

Net income from price premiums ($ / ha)

=

Total net income increase ($ / ha)

+99%

Current   Potential

+7%

Current   Potential

+106%

Current   Potential

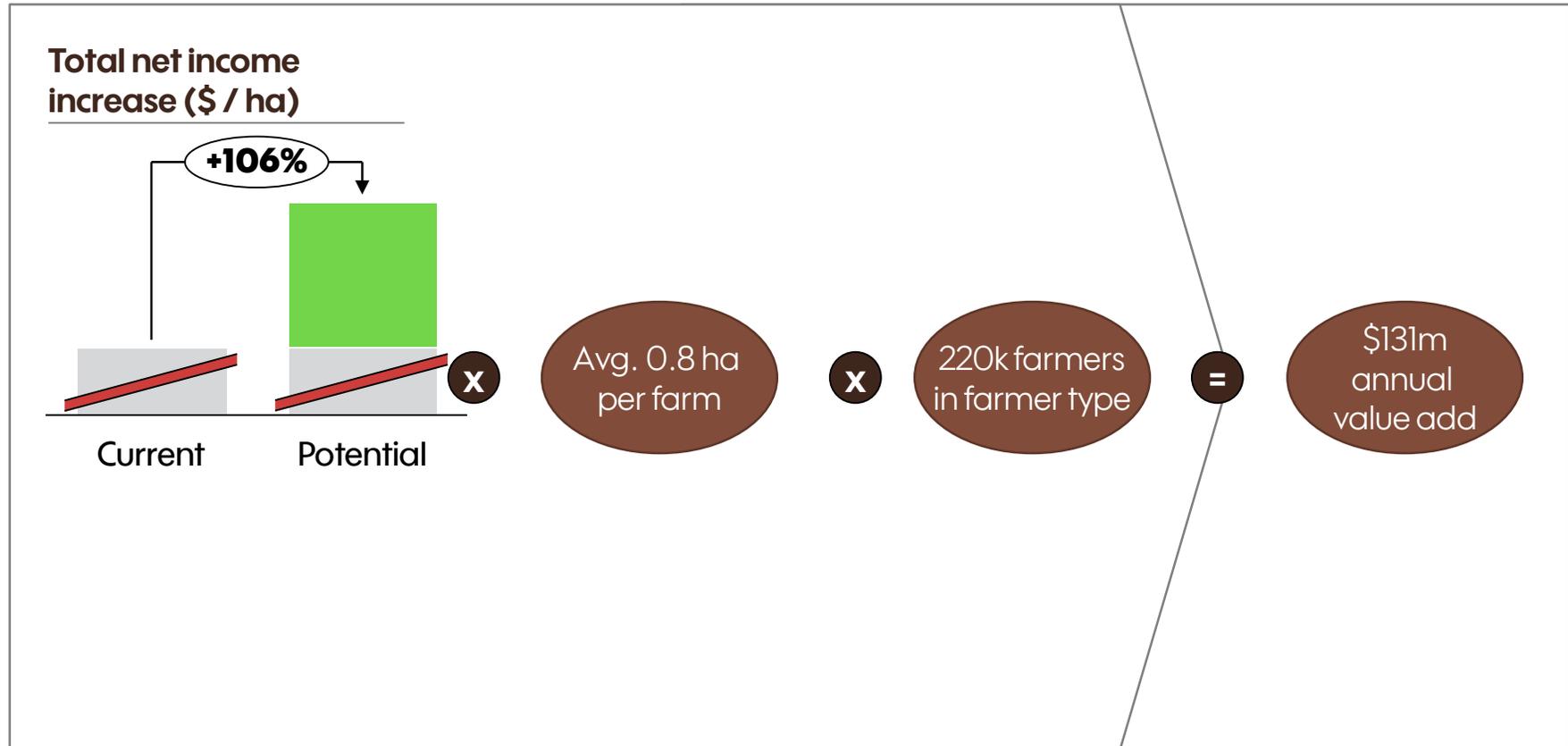■ Yield improvements   ■ Processing improvements   ■ Certification premiums

- Productivity is average to low at 449 kg green / ha for Arabica farmers and could be increased by 80% on average
- Key issues are:
  - Low adoption of good agricultural practices, such as fertilizer usage and pest/disease control
  - High number of older coffee trees

- There is potential to improve processing and increase price premiums at a relatively low cost
- Tanzanian coffee production has the potential to yield high quality coffee, but lack of consistent quality due to home processing tends to limit price differentials

- There is potential to increase yields through good agricultural practices and farm rejuvenation, suggesting need for access to credit and training
- There is potential to improve processing and thus attain higher premiums for farmers

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

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$131 MILLION OF POTENTIAL INCREMENTAL VALUE ANNUALLY

Total net income increase ($ / ha)

+106%

Current   Potential

x   Avg. 0.8 ha per farm   **x**   220k farmers in farmer type   **=** $131m annual value add

- There is an opportunity for a 106% increase in profitability for farmers, which translates into an estimated $131m annual potential value across the 220k farmers in this farmer type (Arabica smallholders)

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

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IDENTIFYING FARMER TYPE WITH HIGHEST POTENTIAL IMPACT

Farmer types by number of farmers
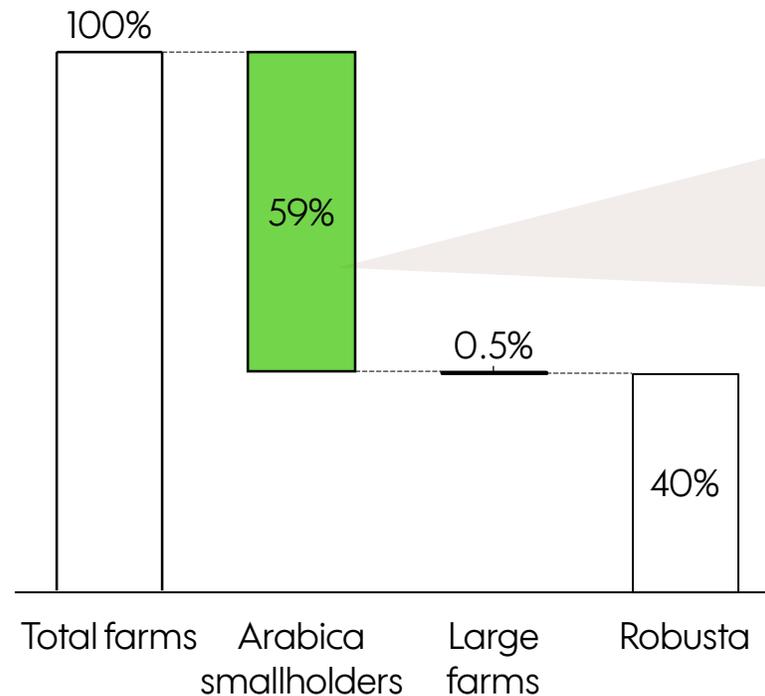
- ~90% of the production is grown by smallholders

- 55-60% of the production is Arabica

- This study focuses on Arabica smallholders as the segment of farmers with highest potential impact, given that there is more room for yield and quality improvement in Arabica coffee. However, there is also significant potential for improvements for Robusta farmers

Source: TechnoServe analysis based on Agri-Logic (2016), 2012/13 agricultural census (2013), stakeholder interviews

SUPPLY CHAIN OVERVIEW

Farmer	Aggregator	Processor	Exporter

| Farmer | Exporters via direct export market, managed by the Tanzania Coffee Board | | |
| | Licensed coffee buyers, cooperatives, farmer groups, associations | | Exporters via auction, managed by the Tanzania Coffee Board |

Farmer
- Smallholders sell to buyers in form of wet processed parchment or dried cherry
- Arabica is usually wet processed, while Robusta is dry processed

Aggregator / Processor
- Buyers will take coffee purchased from farmers for drying and milling to produce green beans. Green coffee is then sold to exporters through coffee auctions held by the Tanzania Coffee Board
- Producers of premium top grade coffee with direct contact with buyers are allowed to by-pass the coffee auctions
- Farmer groups can market on the behalf of their members through the auction, which allows farmers to significantly increase revenue

Exporter
- Direct sales are approved by the TCB when prices are proven to be higher than auction
- Though market is liberalized, both internal and external trade is subject to government regulation

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SUPPLY CHAIN COST BREAKDOWN FROM FARM TO EXPORT

Supply chain cost breakdown (US $ per lb green)
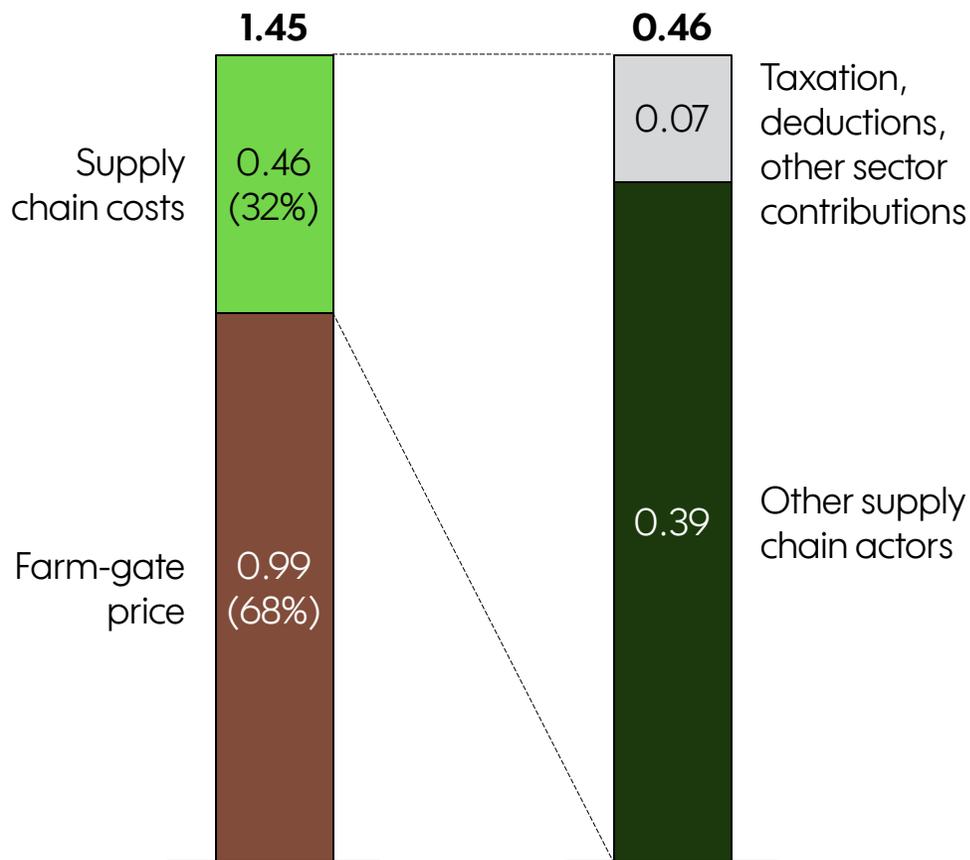
- Farmer share of export price is ~70%

- Taxation, deductions, and other sector contributions account for 5-10% of the export price

- Plantations with direct links to buyers tend to receive a higher portion of the export price

Source: Agri-Logic (2016), Tanzania Coffee Board (2017), stakeholder interviews

APPENDIX

DETAIL ON FARMER TYPES

Type	Region	Farm size (ha)	Variety	Number of farms
Arabica smallholders	N/A	<3 ha	Arabica	220,000
Large farms	N/A	>3 ha	Arabica	1,375
Robusta	N/A	N/A	Robusta	150,000

Note: Tanzania Bureau of Statics estimates total number of farmers to be 450,000.Number of farmers registered with Tanzania Coffee Board is 259,000 and it's estimated that currently around 70% are registered.
Source: TechnoServe analysis based on Agri-Logic (2016), 2012/13 agricultural census (2013), stakeholder interviews

DETAILED DATA APPLICABLE TO SELECTED FARMER TYPE

Data point	Unit	Data
Farmer data		
Average coffee farm size	ha	0.83
Number of farmers in type	#	220,000
Assumptions		
Exchange rate	USD to LCU	2,180
Market Data		
Farm-gate price	cts / lb	99
Average FOB export price	cts / lb	145
Yield		
Average coffee yield	lb / ha	990
Potential yield increase	%	80%
Price		
Potential quality premium	cts / lb	20
% of production eligible for quality premium	%	25%
Potential certification premium	cts / lb	0
% of production eligible for certification	%	3%

Data point	Unit	Data
Production costs		
Operations	$ / ha	0
Inputs	$ / ha	151
Labor	$ / ha	130
Incremental costs of increasing yield	$ / ha	104
Processing costs		
Paid processing labor	$ / ha	9
Drying service	$ / ha	0
Other	$ / ha	5
Incremental costs of improving processing	$ / ha	5
Third-party costs		
Other	$ / ha	0
Incremental costs of certification	$ / ha	0
Outputs		
Current revenue	$ / ha	976
Potential increase in net income from:		
Yield improvements	$ / ha	677
Processing improvements	$ / ha	45
Certification premiums	$ / ha	0

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

SOURCES

Organization	Data inputs	Detailed references
Agri-Logic	Farmer data, market data, yield, price, costs, supply chain	African Coffee Sector: addressing national investment agendas on a continental scale, Agri-Logic and GCP (2016)
Enveritas	Farmer data, yield, costs	Stakeholder interview (2017)
Tanzania Coffee Board	Farmer data, market data, supply chain	Stakeholder interview (2017)
Other	Farmer data, yield	USDA, GAIN Report: Coffee, Tanzania (2017)
	Farmer data, market data, yield, costs	NORC at the University of Chicago, Coffee Partnership for Tanzania (CPT) (2015); Coffee Partnership for Tanzania (CPT) Baseline Survey: Data Analysis and Findings (2013)
	Certification	ICO, The State of Sustainability Initiatives Review 2014 – Standards and the Green Economy (2014)
	Farmer data, market data, yield	Hans R. Neumann Stiftung, Quantitative Assessment of the Food-Cash-Crop Approach of HRNS Tanzania in 2015/16 (2017)

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.

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.