
Uganda



A Business Case For Sustainable Coffee Production

An industry study by TechnoServe for the Sustainable Coffee Program, powered by IDH.

18% of the world's coffee farmers are Ugandans. Uganda has more coffee farmers than any other country. The average coffee farm size is extremely small – less than 0.25 hectares – and getting smaller.

Only 2% of Uganda's exports are verified or certified "sustainable". The high cost of working with large numbers of very small farmers poses unique challenges for investing in the sector and growing this percentage.

A shift in focus, from meeting standards to boosting yields, is recommended. This shift is necessary to improve both the viability of coffee farming for smallholders and the economics of certification / verification for coffee companies.

Yields could be doubled. This does not require scientific breakthroughs or large-scale replanting; it requires intensive farmer training upfront and gradual increases in farm investment over time.

There are incentives for farmers, government and the coffee industry to address these challenges and improve coffee farmers' livelihoods and long-term coffee supply. However, "business as usual" is unlikely to unlock these actions. A catalyst will be required.

DECEMBER 2013

Executive Summary

Uganda is Africa's largest Robusta producer, accounting for 7% of global Robusta exports. Cost of production is low as result of smallholders using family labor and few inputs. Yields, however, are also low and have shown vulnerability to repeated disease outbreaks. The supply chain is liberalized and efficient relative to other East African countries. These attributes give Uganda a long-term competitive advantage as a low-cost Robusta supplier, but do not constitute a solid foundation for future growth.

Uganda's coffee comes from 1.7 million smallholder farmers, the highest coffee farmer population in the world. Uganda's farmers are dispersed across the country and generally grow coffee as part of a diversified portfolio of food and cash crops. Farm sizes are extremely small and have been growing smaller as parents divide their land holdings to pass onto their children. Most farmers are not organized in groups or cooperatives and sell their coffee to local collectors, who aggregate volumes for delivery to exporters.

The high transaction cost of working with large numbers of very small farmers poses unique challenges to sustainability efforts. The economics of organizing farmers and assisting them to get verified / certified are not attractive for the private sector to invest in without donor support. As result, current exports of "sustainable" coffees are only around 2%, below the global average of 8%. If Uganda is to keep pace with industry demand for "sustainable" coffees, it will need to boost the output per farmer and develop a more cost-effective model of verifying / certifying smallholders' coffee production.

Uganda should focus first on increasing productivity, then on meeting international sustainability standards. Resources should be focused on rolling out an ambitious, nationwide training program to reach the 1 million most active coffee farmers and assist them to double yields. Such a program would take at least 10 years to implement and come at a cost of approximately \$70 million. However, it would position Uganda's coffee sector to become more globally competitive and attractive for farmers in the long run.

There is a compelling business case for public-private partnerships to drive this transformation. Farmers stand to benefit from higher yields, higher income, and a livelihood from coffee that can be sustained for future generations. The Ugandan government, which currently derives about 18% of export earnings from coffee, has a strong interest in growing the sector and delivering benefits back to the rural economy. The local private sector and the global coffee industry have a clear interest in seeing volumes rise. The alternative to boosting productivity is likely to be a gradual attrition of farmers out of coffee and a diminishing importance for Ugandan coffee to the rest of world. These threats, which may seem distant now, should serve as a call to action for co-investment in training and reinforcing more sustainable coffee production methods.

Context

Global demand for sustainable coffee is rising

Under the IDH umbrella, major coffee roasters have set a goal of increasing global sustainable coffee sales from 8% to 25% by 2015. This ambitious target can only be met through coordinated effort on the part of stakeholders and targeted investments at different stages in the supply chain.

Not all countries and producers will be able to meet this demand

Many of the world's coffee farmers will find it challenging to be verified or certified. These challenges vary by country and type of producer. In some cases, rising costs of production make it hard to absorb the additional cost of sustainability certification or verification relative to the economic benefits. In other situations, farmers are not of sufficient scale or are not aggregated in such a way that the economics can be justified.

Uganda is at a disadvantaged starting point

Uganda is among the countries likely to struggle most at meeting this demand. Sustainable sales currently comprise only 2% of Uganda's exports, the lowest share of the four countries considered in this study (see Exhibit 1). Uganda's high number of farmers and low coffee output per farmer make exporter-driven sustainability programs far more expensive than in other countries (see Exhibit 2). Moreover, the high cost of running certification / verification programs in Uganda cannot be readily absorbed by the supply chain. Upstream actors (i.e., exporters and aggregators) face high competition and have little margin to take on additional costs. Transferring the cost onto roasters would make Ugandan Robusta far more expensive than other origins (see Exhibit 3), reducing its attractiveness as a blend component for mainstream buyers.

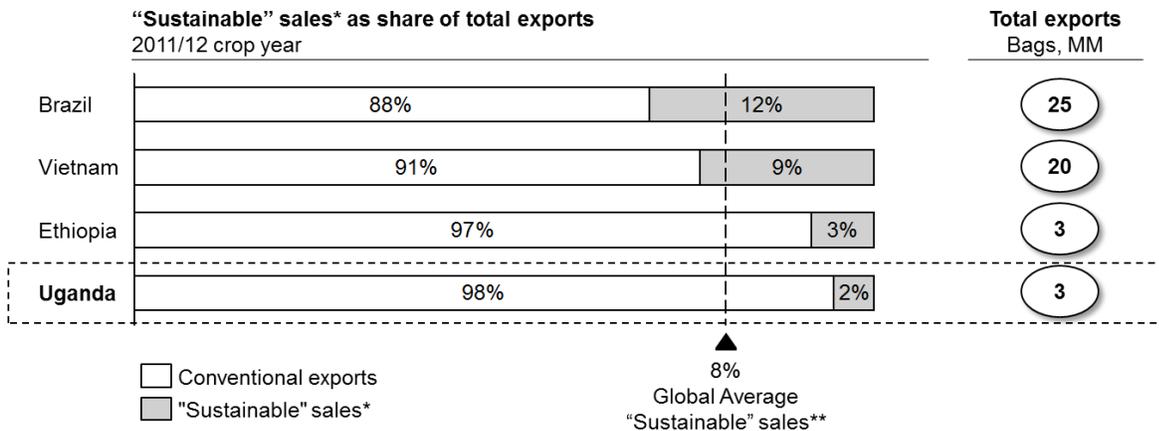
These factors put Uganda at a disadvantaged starting point and conspire to hold back future potential. If Uganda is to keep pace with industry demand for sustainable sales, it will need to either boost the output per farmer or develop a more cost-effective model of verifying / certifying smallholders' coffee production.

Uganda is an important case study

Although Uganda is a relatively small coffee producer, it provides an important case study for the world. Many of the world's coffee farmers have similar characteristics - small farms and low yields - that test the economics of certification / verification (see Exhibit 4). In other countries, however, the coffee export sector is either a low priority for the government (e.g., Indonesia) or closely regulated (e.g., Ethiopia). For Uganda, coffee is the most important export and a source of livelihood for one in every five households. Uganda has a dynamic private sector that is willing to invest if the incentives are right and that is enabled by the most open and deregulated coffee policy environment in East Africa.

Uganda's experience is important because if an inclusive model of sustainability can be created here, then a similar model should be broadly applicable and scalable to a large portion of the smallholder farmers elsewhere in the world.

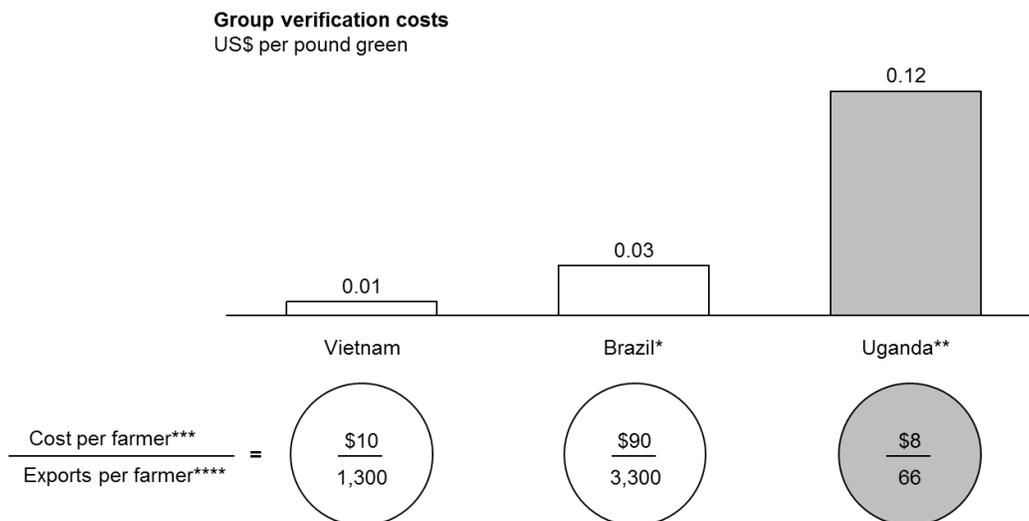
Exhibit 1 Ugandan exports of "sustainable" coffee are behind the global average



* "Sustainable" includes Utz, 4C, RF, Fair Trade, Organic certified and/or verified coffee exports

** Global exports estimated at 100MM bags in 2011/12, of which 8.1MM bags "sustainable"; does NOT count Nespresso AAA or Starbucks C.A.F.E. Practices
Source: UCDA; TCC Coffee Barometer 2012

Exhibit 2 Low output per farmer makes verification more expensive in Uganda



* Small family farm (5 ha, Arabica)

** Average of Robusta and Arabica

*** Annual cost; includes auditing, one training session (group, classroom-based), and basic Internal Control System (ICS) management

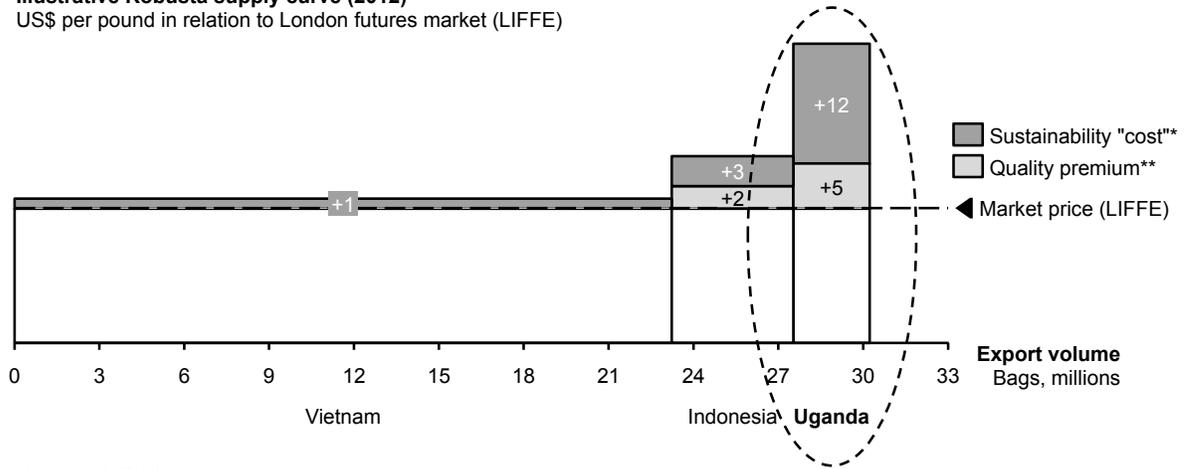
**** Pounds; assumes 25% of farmers' total verified production is exported as "sustainable"

Source: TechnoServe analysis; Kuit Consultancy; P&A;

Exhibit 3

It will be difficult to pass a higher sustainability "cost" for Uganda onto roasters

Illustrative Robusta supply curve (2012)
 US\$ per pound in relation to London futures market (LIFFE)



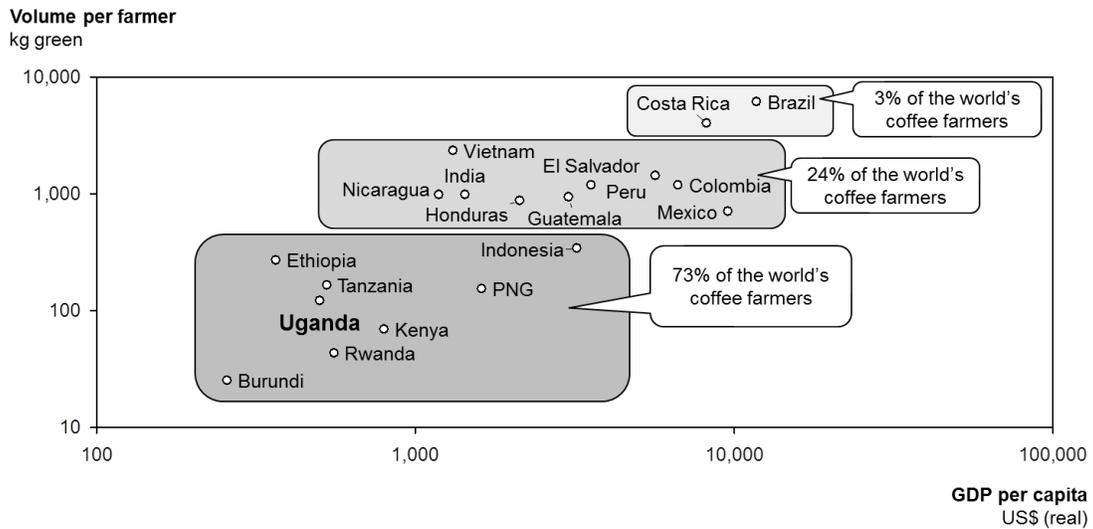
* See calculations in Exhibit 2

** Based on historical market differentials (Indonesia +\$50 per ton; Uganda +\$100 per ton)

Source: USDA global production figures; interviews with international trading houses; TechnoServe analysis

Exhibit 4

The majority of the world's coffee farms face similar challenges of low productivity and rural poverty



Source: TechnoServe analysis; World Bank

Economics of Coffee Production in Uganda

18% of the world's coffee farmers

Coffee provides a livelihood for an estimated 1.7 million smallholder farmers, more than any other origin. Over 98% of Uganda's coffee is grown on small family farms averaging 200 trees (0.18 ha coffee). Farm sizes have been growing smaller as families subdivide their plots to pass land onto their descendants (see Exhibit 5).

A diverse portfolio of cash and food crops

Coffee represents less than 20% of the average family plot, but provides over 50% of cash income in an average year. Other common crops include bananas, maize and beans, which are primarily used for household subsistence but can also provide supplementary income. Coffee is not the only viable cash crop for Ugandan farmers, but options diminish with distance from Kampala (the capital) and other major towns. The low opportunity cost of family labor and the lack of competing options for agricultural land make for a relatively stable coffee production base even in years of low coffee prices (barring the impact of disease or weather events).

Low yields

The factors that contribute to Uganda's low cost of production result in low levels of farm investment and consequently low yields. Plant nutrition is suboptimal as most farmers do not regularly apply sufficient quantities of compost or inorganic fertilizers (e.g., NPKs). Intercropping, which can offer synergies for production if done properly and with the right combination of crops (e.g., coffee with bananas), can hold back yields if performed improperly or with competing crops (e.g., coffee and maize). Poor management practices and aging trees also leave farmers highly susceptible to coffee disease and pest outbreaks. For instance, a coffee wilt disease epidemic in the late 1990s and early 2000s killed as much as half of the country's Robusta tree stock.

Yields could be increased through training on good agricultural practices and by expanding agro-input usage. Although distribution networks and financing methods can be improved, there are no structural or regulatory impediments to expanding input usage. The primary constraint is effectively transmitting knowledge to farmers of good agricultural practices. This includes not only which inputs to use and when to apply them but also other beneficial practices such as pruning, integrated pest management, optimized intercropping, weeding, mulching, and erosion control.

An enabling environment that promotes efficiency

The enabling environment in Uganda's coffee sector promotes efficiency and lowers costs. Reforms in the 1990s transferred roles in the coffee industry from the state to the private sector. Strong private sector competition combined with few taxes, levies, quotas or production controls has led to an efficient industry where intermediary costs are low and coffee farmers receive a high share of the export price (see Exhibit 6).

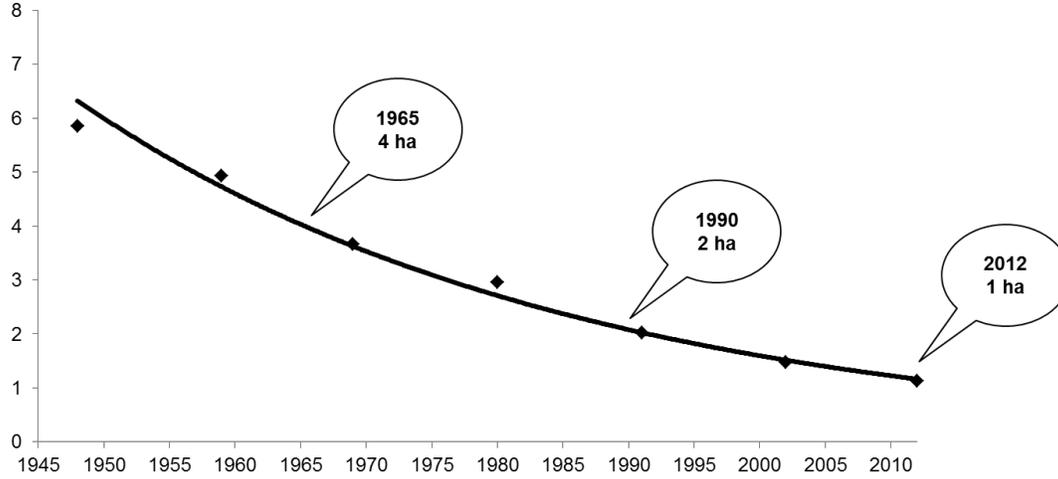
A competitive cost position with opportunities for growth and higher farmer incomes

The combination of a smallholder farming base that has few cash costs and an efficient private sector gives Uganda a competitive cost position in the market. These fundamentals should enable Uganda to maintain its spot as Africa's leading Robusta producer for the foreseeable future. Future growth potential, however, can only come from boosting Uganda's smallholder yields. Higher productivity will drive increases in farmers' incomes and with it a more secure and sustainable livelihood for Uganda's farming families.

Exhibit 5

Ugandan farm sizes have been growing smaller

Average smallholder farm size (all crops)
Hectares

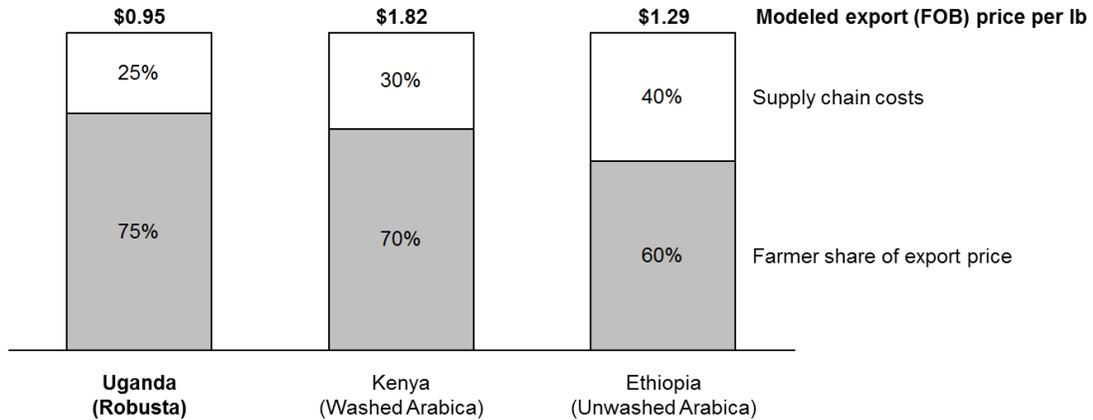


Source: Uganda agricultural census (2008/9), World Bank, UCA; TNS analysis

Exhibit 6

Uganda has an efficient supply chain

East Africa major coffee supply chains' efficiency comparison*
US\$ per pound green



* Prices are normalized to 2012/13 average commodity prices – Arabica (ICE “C”) \$1.50, Robusta (LIFFE) \$2000 per ton (\$0.91/ lb)
Source: trade statistics; UCDA; Ethiopia and Vietnam business case results; TNS analysis

Emerging Sustainability Trends

Only 2% of production currently “sustainable”

Coffee buyers in the European Union – the market for 80% of Uganda’s coffee – have set ambitious targets for increasing sustainable sales. By the end of 2012, the share of sustainable coffee sales from Uganda reached 2%, below the global average of 8%.

For Robusta, which represents roughly 80% of overall exports, only 1% of sales have been certified. Most of the certification efforts implemented to date have either been facilitated through donor support or focused on niche markets (e.g., organic), which offer high premiums.

High costs, uncertain premiums

Economic constraints have inhibited the expansion of certification in Uganda. As result of the very low average output per farmer, it is far more expensive (on a per ton basis) to implement supply chain-led sustainability programs in Uganda than in other countries (see again Exhibit 2). These costs are well in excess of the current premiums associated with mainstream certified coffees.

As result of trends occurring elsewhere in the world, it is possible that premiums for certified and verified coffees may start to decline. Vietnam, the world’s leading Robusta exporter, is leveraging its cost advantage in the market to rapidly scale up supply of sustainably-verified coffees. The impact of sustainability verification becoming “mainstreamed” in Vietnam could be falling premiums for sustainable Robusta sales worldwide.

A shift in focus: from auditing compliance to boosting yields

Uganda would need a significant change to “business as usual” in order to catch up. One option would be to dramatically collapse the costs of verifying sustainability practices, for instance, on a national level rather through individual supply chains. This would make the economics of investing in supply of verified / certified coffees from Uganda look more compelling in comparison to other origins.

A second option would be to focus efforts on increasing the yield per farmer. Many in the Ugandan coffee industry feel that low productivity is the country’s greatest threat to sustainable production. They acknowledge that the verification process, while providing a framework for sustainable production, is unlikely to change farmers’ yields or management practices.

This report also recommends a shift in focus of sustainability efforts in Uganda, from verifying compliance levels against international standards to increasing productivity. While both options can be pursued in tandem, the second holds greater potential to drive sustained industry growth and bring about increases in farmers’ incomes.

The Opportunity to Double Yields

A 6 million bag producer by 2023

Ugandan farmers could be supported to double their coffee yields (see Exhibit 7). The current Robusta yield is less than 700 kg/ha, whereas yields of 1,500 kg/ha are achievable for smallholders. Similar potential exists for Arabica trees. If performed on a national scale, Uganda could become a 6 million bag coffee producer by 2023.

Good Agricultural Practices as the starting point

Improved farming practices such as tree rejuvenation (e.g., stumping, pruning, etc.), fertilization (both organic and nonorganic), integrated pest management, and optimized intercropping would form the foundation of a program to boost yields. In addition, farmers could be trained to gradually replant aging or damaged tree stock with new higher-yielding, disease-resistant varieties. Adherence to these practices also positions farmers to become certified or verified in the future.

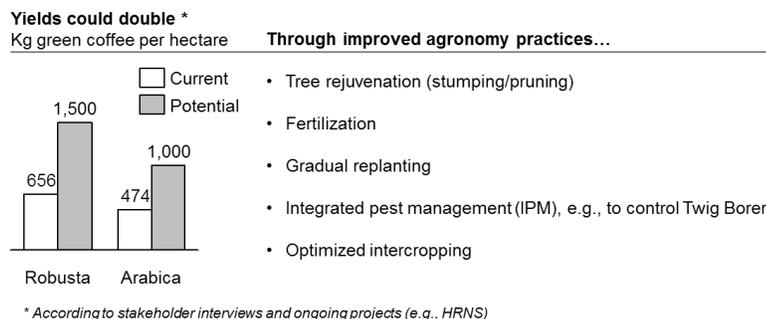
Minimal cash outlay required by farmers upfront

Access to finance and disruptions to cash flow need to be considered in order to maximize farmers' uptake of new practices. There are challenges making input credit or other financial services available to large numbers of farmers. These challenges include limited experience on the part of banks and weak presence of alternative financial institutions (e.g., microfinance) in rural areas. While financing opportunities do exist, it is also possible for farmers to make gradual changes in their agronomic practices and to minimize the initial upfront cash requirement. Farmers are also more likely to adopt practices which do not require significant upfront cash outlays. For instance, yields can first be increased through better husbandry methods (e.g., weeding, pruning, etc.), providing additional income which farmers can subsequently invest in fertilizer or use to offset cash that is lost during replanting phases.

Gradual replanting and intensification of input use

Although aging tree stock and disease resistance are important concerns for farmers, farmers are typically recommended to replace their trees gradually over a 5 to 10 year period. This practice minimizes disruptions to cash flow and provides a mechanism for future cycling of tree stock, either through stumping or additional replanting. Similarly, farmers would be recommended to gradually intensify their production methods through increased fertilizer use. The implication of this approach is that yield gains may take longer to manifest, but adoption rates are likely to be higher because farmers do not have to make short-term sacrifices in income or costly upfront investments.

Exhibit 7 Yields could be increased through improved agronomy



A Strategy for Getting It Done

Intensive, practical farm training

There are existing projects in Uganda that illustrate the quality and intensity of training required to shift farmers' practices. Typically the most effective training approach is a "farmer field school". A farmer field school in Uganda costs about \$35 per farmer per year (when running at large scale) and features small group sessions, demonstration plots, local trainers, and participatory teaching methods. In comparison, a traditional, classroom or lecture-based training program could be run for less than \$10 per farmer per year, but is unlikely to deliver comparable yield or adoption-rate impacts.

Focus on the 1 million more "active" farmers

Out of Uganda's 1.7 million coffee farmers, the top 1 million "active" farmers could be prioritized for training. Less active farmers include farmers who have very few coffee trees (e.g., less than 100) and/or who derive a higher share of income from other crops or sources. There is also likely to be attrition among active farmers who opt not to participate in training. Although all farmers should be invited to participate, these factors are likely to result in about 40% of farmers self-selecting out of the program.

Closely involve women and youth

Typically, more than 50% of farming activities are performed by women in Uganda. Research is ongoing, but a growing body of evidence suggests that adoption of agronomic practices increases if both the female and male heads of household participate in training. Thus, both female and male farmers should be targeted for training efforts.

Youth can also be targeted and integrated into training programs. The majority of Uganda's population is under the age of 18. Lack of labor in rural areas is a growing problem, with many young people immigrating to urban areas and having little interest in coffee farming. Programs can employ loyal youth as farmer trainers, creating rural jobs and motivating them to sustain coffee farming into the next generation.

Promote efficiency gains in farmer aggregation

Uganda's supply chain is already efficient relative to peer countries, but there still remain opportunities to improve quality and post-harvest processing and to reduce supply chain costs and wastage. We estimate that up to \$100 per ton could be unlocked for farmers through efficiency gains. This could be accomplished by helping middlemen to professionalize their operations and achieve improved quality differentiation and economies of scale. Alternatively, new business models that bypass the middleman, including farmer groups and exporter-led integration, can also deliver value and higher prices to farmers.

Competition among these different models is necessary to optimize impact and ensure that farmers have competing options to choose from. Over time, these efficiency gains could position exporters, middlemen and farmer groups to assume responsibilities related to training and sustainability programs.

Funding Options for Farmer Training

A pre-competitive investment of \$70 million to train 1 million farmers

The cost of training the roughly 1 million farmers for two years of intensive support through a farmer field school type methodology would be \$67 million. This represents roughly one-quarter of 2012 export revenues and is therefore a steep price tag for the industry. A pre-competitive investment with a rigorous framework for monitoring impact would be the more cost-effective means of funding the training, as compared to supply-chain led approaches which lack the same economies of scale and may cause some regions to become highly concentrated with training activities and other areas neglected. Several funding structures have been considered and discussed below.

Option A Introduce a new national tax (cess)

Uganda could pay for a nationwide agronomic training program by temporarily increasing the coffee exports tax (cess) from current levels of 1% to around 4%. The cess could be gradually increased to coincide with the scale-up of the training program, and then reduced as the program begins to wind down. The model shown in Exhibit 8 would enable 1 million farmers to be trained within 10 years.

Option B Raise voluntary contributions from the local private sector

Alternatively, the Ugandan industry could finance the training program by raising voluntary contributions from private exporters. This would have the same overall effect as the national export tax, but with greater autonomy from government intervention. The Ugandan government has been apprehensive about the perception of raising taxes; similarly, there is a concern about the efficiency or effectiveness of the government channeling tax revenues into training programs. On the other hand, it would be difficult to enforce and ensure equal participation of exporters in a voluntary deduction scheme.

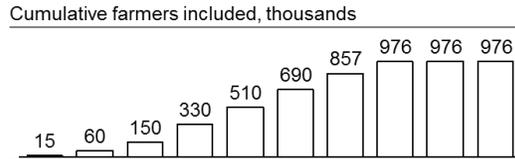
Option C Leverage coffee sector financing to attract public funds

A third option is to leverage financing from coffee roasters (including the IDH members), the local private sector, and potentially the Ugandan government to attract public funds. A large scale public-private partnership could offset some of the risks that are currently perceived by the private sector, but at the same time motivate more equal participation among different actors.

Exhibit 8

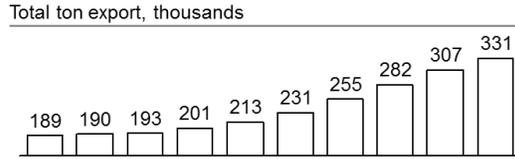
A nationwide training program could be financed by a higher “cess”

The training of farmers can be scaled up over time



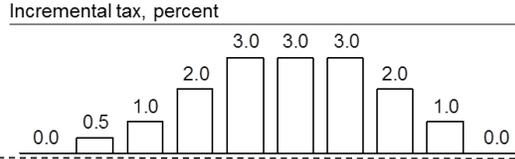
- Initial small scale pilot to test approaches and training service providers
- All farmers with >100 trees targeted, but assumes only 75% come to training
- This helps prioritize and incentivize farmers who are serious about coffee farming

Resulting in an increase of export volume through yield improvement



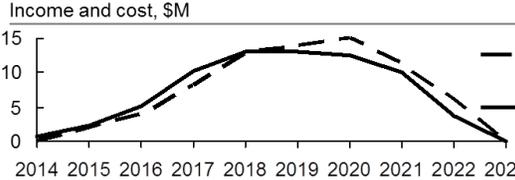
- Increase in yield modeled based on number of farmers trained – no indirect effects or new planting modeled
- Overall production increase of 75% (to 5.5 mln bags) by 2023; production expected to eventually reach 6.1 mln bags by 2026

Simultaneously increasing export tax over time



- National export tax increase required to fund the intensive training program
- Increase over time to limit initial effect on farmers before yield increase is effective

Requiring a kick-start of total \$5M in first years to manage cash flow



- Use donor money or alternatively a loan to cover initial program cost and gaps in tax financing

Exhibit 9

The majority of benefits would go into the rural economy

National impact of increasing Uganda smallholder farmer productivity
US\$ millions per year (steady state, after 10 years)



** Applied only to free cash flow items, i.e., farmer incomes, wages, profits, and taxes.

Returns on the Investment

Farmer incomes could be doubled

More sustainable farming practices could help 1 million coffee farmers double their incomes, from a base of about \$180 per year. In addition to having significant impact in the rural economy, higher incomes would translate into numerous social benefits in education, health, and nutrition. In a country where one out of five people depends on coffee for income, there are few economic levers that offer greater potential to change lives.

Increased export revenues of \$200-\$300M

On a national scale, a doubling of yields would generate \$280 million in incremental coffee revenues. Assuming constant production elsewhere in the world, Uganda would move from being the number 11 coffee producer currently to the number 6 spot by 2023.

The majority of benefits go directly to the rural economy

The majority of added export revenues would be captured by farmers and the rural economy (see Exhibit 9). Farmers would receive approximately half of the added revenues as increases in net income (after factoring in the added costs of fertilizer, seed, and other inputs). New jobs would be created and wages paid into rural areas. The supply chain would also benefit greatly by higher capacity utilization (e.g., in hulling stations) and through increased profits. As these benefits represent free cash flow injected into the economy, there is likely to be a multiplier effect of 2-3 times on the overall Gross National Product (GNP).

Improved economics of certification / verification

A national, pre-competitive farmer training program in Uganda is likely to improve the economics of certification / verification in three ways. First, higher coffee output per farmer stands to improve the economics of supply-chain led sustainability programs - a doubling of yield would halve the cost (per ton) of verification / certification efforts. Second, higher volumes for the industry will allow for improved capacity utilization of processing assets and presumably reduced supply chain costs. Third, the good agricultural practices training curriculum is likely to prepare farmers for higher levels of compliance with international sustainability standards, thereby reducing the need for (and cost of) additional sustainability training. These changes will greatly improve the business case for supply chain actors to invest in sustainability verification / certification and assume service provision for farmers who are "graduating" from the pre-competitive training program.

Growth in agri-services for the coffee sector

There is also a positive business case for agri-service companies to co-invest and grow to better serve the needs of farmers. Fertilizer provision can be expanded and ideally optimized on the basis of soil and leaf tests. Seedling distribution should be prioritized and can be decentralized to lower costs and reduce losses due to transplanting problems. Finally, farm implements such as pruning shears and hacksaws will be required by farmers in far greater quantities in order to adopt new practices. Collectively, a \$70 to \$80 million agri-service sector will be required to support a 6 million bag Ugandan coffee industry.

A Road Map for the Sector

Building a foundation for long-term growth

The coffee supply chain is not prepared to start this work tomorrow. Economies of scale are necessary to realize the most efficient cost structures. The best practices for farmers to implement and the best approaches for reaching them are not readily available “off the shelf”. Consistent monitoring and evaluation methods are needed so that impact can be established transparently and benchmarked across different initiatives.

To start, some specific activities are required to compare training approaches, harmonize curricula, and evaluate the scalability potential of different organizations (particularly leveraging projects already underway in Uganda). The output of these activities would be to create a set of tools – including a national agronomy and sustainability curriculum – that can be scaled-up.

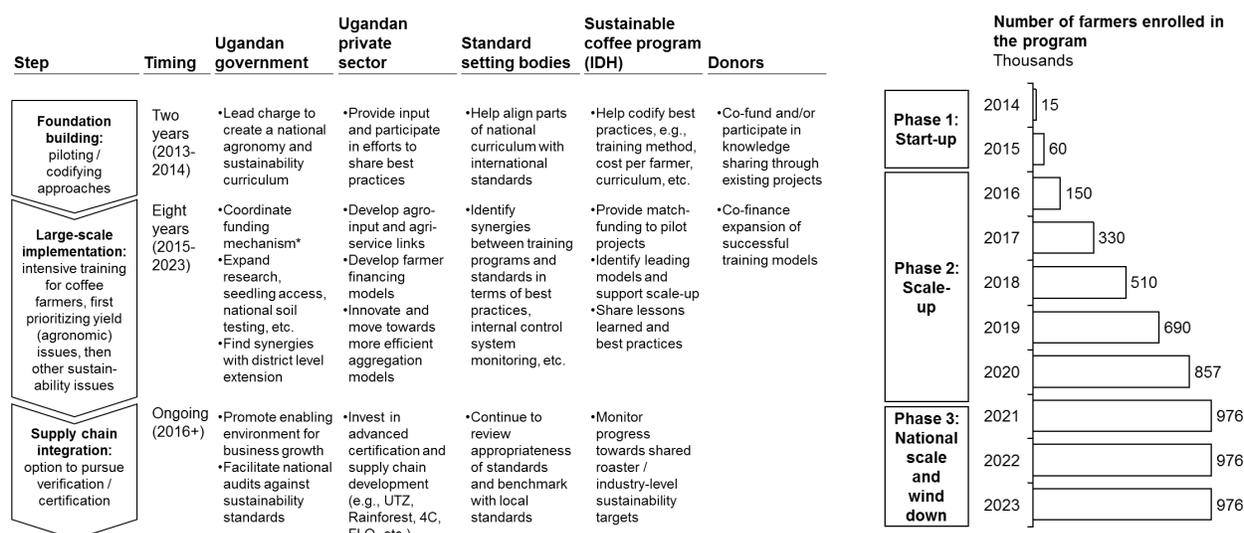
An ambitious, nationwide training program

A phased implementation approach to reach 1 million farmers is recommended. Donor and coffee industry resources can be focused on funding training programs to help farmers adopt best practices and increase yields. The overall investment required for training is estimated at \$67 million (about \$70 per farmer), building up over 7-10 years. To make this work, proper governance structures should be in place to ensure that the Ugandan coffee sector has decision power on using the revenue, in a transparent and accountable manner. The degree to which these processes are managed by the government or through an autonomous coordinating body would need to be decided by the sector.

A collaborative framework that creates opportunities for supply chains to sustain future growth

These pre-competitive, nationwide investments build capacity in the government and supply chain actors to continue extension training or pursue more advanced verification / certification in the future. These components require collaboration upfront, but build a foundation for successful implementation later on. The Sustainable Coffee Program is investing in a collaborative framework among stakeholders in Uganda and the international coffee industry to embark on this path forward.

Exhibit 10 A road map for the sector



Acknowledgements

Key sources

Institutions: 4C Association; aBi Trust; Africa Coffee Academy; African Fine Coffees Association (AFCA); Armajaro; Café Africa, Kawacom; Kyagalanyi; Hans R. Neumann Stiftung (HRNS); International Women's Coffee Association (IWCA); Ministry of Agriculture (MAAIF); National Coffee Research Institute (NACORI); Rainforest Alliance; Solidaridad; Uganda Coffee Development Authority (UCDA); Uganda Coffee Farmers Alliance (UCFA); Uganda Coffee Federation (UCF); Uganda Quality Coffee Traders and Processors Association (UQCTPA); UTZ Certified.

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About The Sustainable Trade Initiative

The Sustainable Trade Initiative (IDH) accelerates and up-scales sustainable trade by building impact oriented coalitions of front running multinationals, civil society organizations, governments and other stakeholders. Through convening public and private interests, strengths and knowledge, IDH programs help create shared value for all partners. This will help make sustainability the new norm and will deliver impact on the Millennium Development goals.

The Sustainable Coffee Program (SCP) is a mainstream public/private consortium supported by IDH, major coffee industry representatives, trade and export partners, civil society organizations, governments and standard setting organizations.

Contact

Jenny Kwan
coffee@idhsustainabletrade.com
www.idhsustainabletrade.com/coffee

About TechnoServe

TechnoServe is a non-profit organization that works with enterprising people in the developing world to build competitive farms, businesses and industries. TechnoServe develops business solutions to poverty by linking people to information, capital and markets. Our work is rooted in the idea that hardworking people can generate income, jobs and wealth for their families and communities. With more than four decades of proven results, we believe in the power of private enterprise to transform lives.

Contact

Carl Cervone
corporatepartnerships@technoserve.org
www.technoserve.org

ioh the sustainable
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