

Final paper

# Ugandan Arabica coffee value chain opportunities

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May 2018

When citing this paper, please  
use the title and the following  
reference number:  
F-43410-UGA-1

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# 1. Introduction

Uganda is known to the wider world for many things. Gorillas, the Nile, the Mountains of the Moon and even Hemingway's holidays, but it is not much known for its coffee. Which should surprise. Its central plains are a major source of Robusta coffee while the slopes of the Rwenzori mountains to the west and Mount Elgon in the east are together one of the largest Arabica producing areas in Africa. Top quality Ugandan Arabica coffees are among the best coffees in the world.<sup>2</sup>

With mountains over 2,000 metres high, red and black volcanic soils and a tropical rainy season Uganda has ideal growing conditions in three regions for producing high quality Arabica coffee. The trees planted in the early 1900s remain the basis for a thriving coffee industry today.

The established coffee industry fell into disrepair under the time of Idi Amin and is only now being fully restored. Starting on Mount Elgon, production investments and careful work with farmers to ensure good farm practices are beginning to ensure consistently high-quality coffee production.

This paper sets out our view that the current perception of Ugandan coffee both in trade and among end consumers lags reality by several years. By raising awareness among end consumers and improving both awareness and forms of contracting we believe the premiums earned by Ugandan coffee can be increased substantially.

Further, we believe the advances achieved recently in the east of the country can be expanded to the west. There, potentially reaching one hundred thousand farmers<sup>3</sup>, this represents one of the largest rural development opportunities available to policymakers in Uganda.

The Ugandan coffee sector has set itself the goal of achieving twenty million 60 kg bags of coffee production, up from three and a half million in 2015. This paper makes recommendations that support a number of levers listed in the 2020 coffee Roadmap to get to this point. In our view, the most important recommendations contribute to driving overall demand for Ugandan coffee. The second sets of recommendations aim to improve value through higher margins. In addition, the recommendations contribute to value addition for local value chain players and smaller farmers through improved primary processing.

In framing and scoping this exercise we decided to focus solely on Arabica because of its high profile in end-consumer markets and its ability to raise both trade and consumer awareness. We recognize the great potential of Robusta, particularly in driving much of the volume needed to reach the twenty million bag goal. Strength in the Arabica value chain in both marketing and operational performance is expected to have positive side effects for Robusta and lead to a general increase in demand for and investment in the sector.

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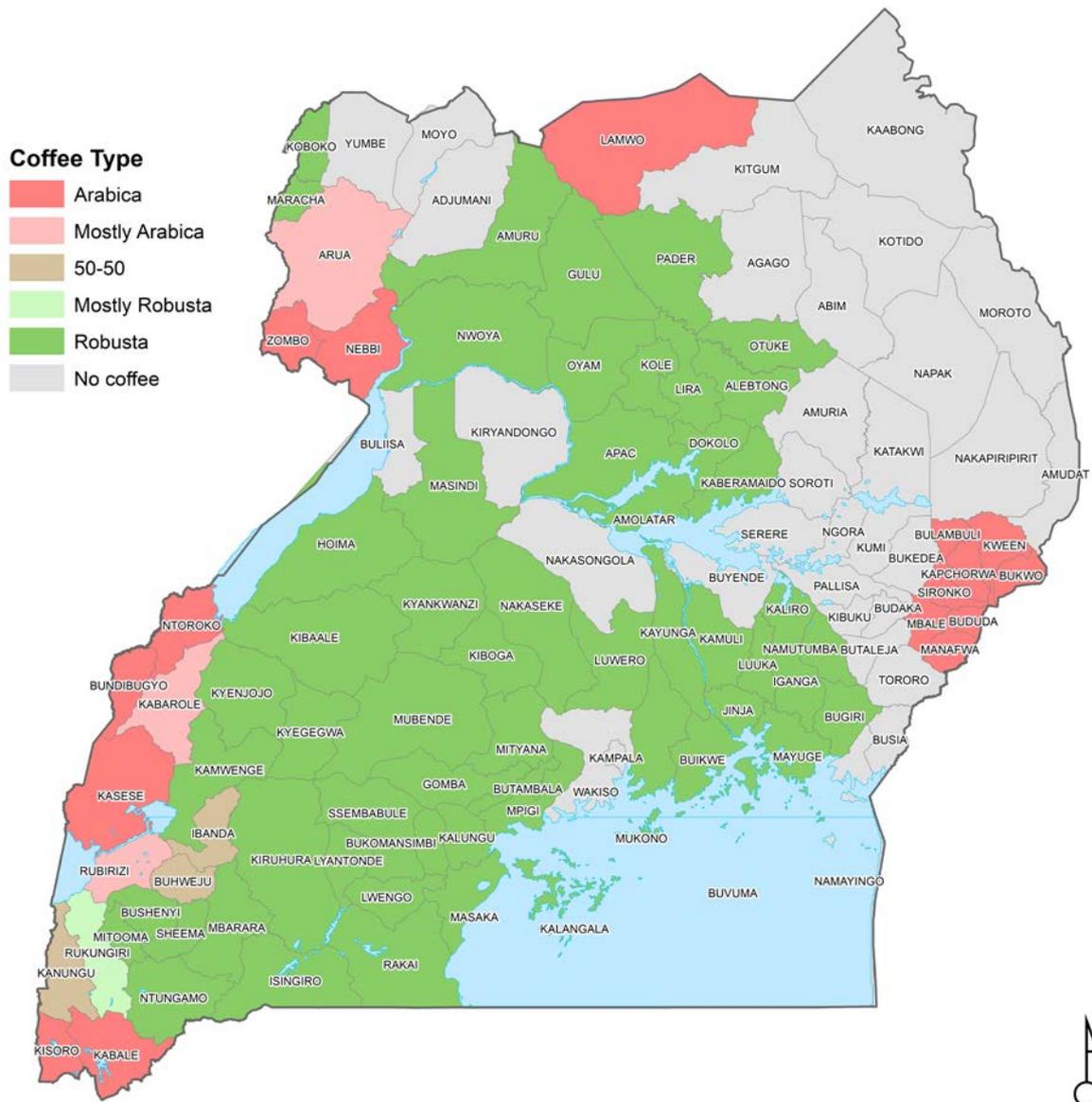
<sup>2</sup> Coffee Review, "Top Coffees of 2017," <http://www.coffeereview.com/top-30-coffees-2017/page/2/>

<sup>3</sup> An approximate calculation that represents the lower bound of estimates of farmers in the region

## 2. The state of Ugandan Arabica coffee

With around half a million coffee farmers<sup>4</sup> Uganda has one of the highest concentrations of coffee growers in the world. Robusta is grown in the centre of the country at lower altitudes of up to 800 metres above sea level while Arabica grows at the mountainous borders upwards of 1,500 metres altitude. Both crops are a vital source of cash income for subsistence farmers living in relatively highly populated rural areas.

**Figure 1: Distribution of coffee varieties in Uganda**

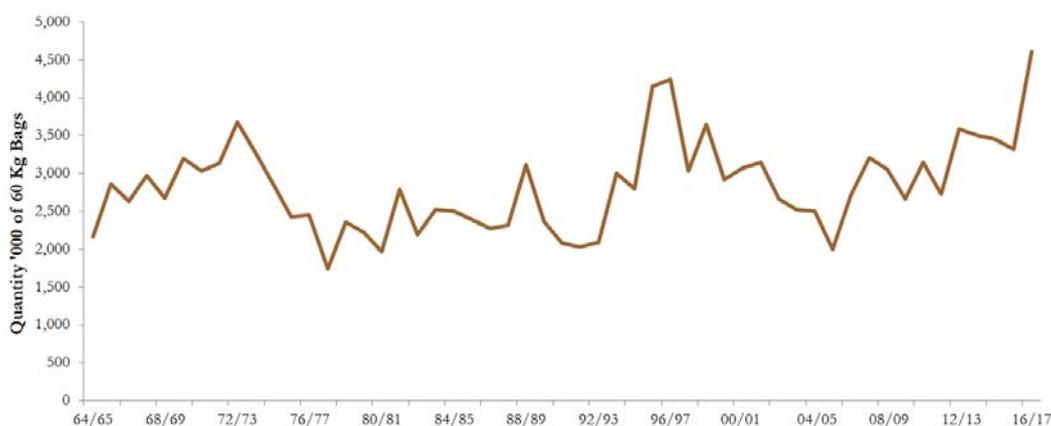


Source: Authors' calculation using Ugandan Bureau of Statistics (UBOS) 2014 that populates coffee trees from the Agricultural Census of 2008/09. Coffee type is calculated using number of productive coffee tree types in a district. "Arabica" or "Robusta" denotes the district having more than 90% of its coffee tree stock as Arabica or Robusta trees, "Mostly Arabica" or "Mostly Robusta" denotes more than 75% of the district having more than 75% of its tree stock as Arabica or Robusta trees. "50-50" indicates district has close to equal amounts of Arabica and Robusta trees. "Grey areas", indicate no coffee trees in those districts. GIS district boundary files for Uganda are obtained from <https://africaopendata.org>, boundaries are used for the year 2014 to match the UBOS 2014 census data.

<sup>4</sup> 532,000 per the National Population and Housing Census (2014)

Uganda produces 6% of global Robusta and 1% of the world's Arabica coffee.<sup>5</sup> Export volumes have risen in the past ten years including a 40% increase in 2016/2017 to 4.6 million bags driven mainly by a positive Robusta crop. However, the long-term average has remained at around 2.8 million bags per year. While the trend looks good, production can be volatile so that several more years of growth are needed before a fully positive trend can be identified.

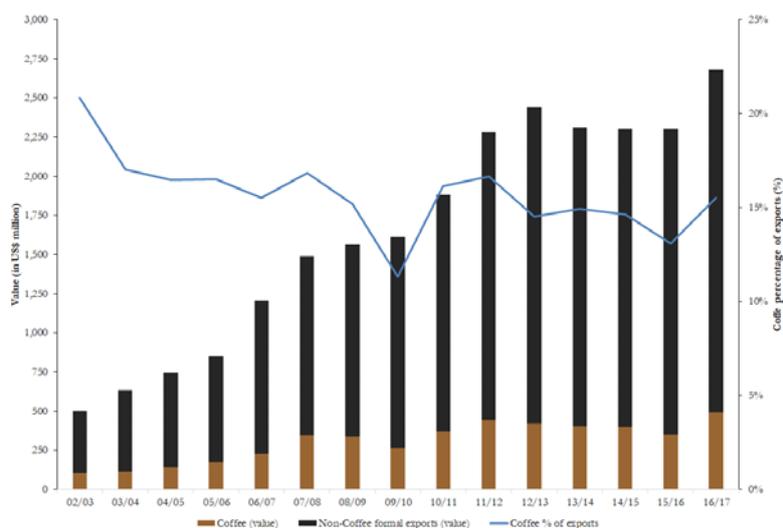
**Figure 2: Export Volumes of Ugandan Coffee ('000, 60 Kg Bags), 1964 - 2017**



Source: Uganda Coffee Development Authority (UCDA) Statistics 1964/65-2016/17, author's analysis

Coffee is a vital crop for Uganda's economy. It has stably generated around 15% of export earnings for the past fifteen years. This even as other exports have risen. Coffee has kept pace since 2000 driven by both rising volumes and value.

**Figure 3: Coffee share of export earnings (US\$ million, %), 2002 - 2016**



Source: UCDA, authors' analysis

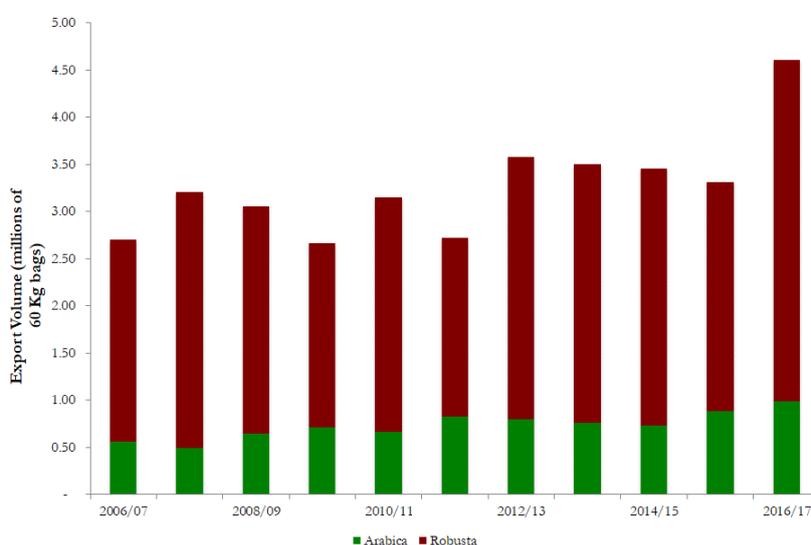
Ugandan farmers receive a particularly high share of coffee export prices. The pass-through rate of export sale revenues to farmers can be between sixty and eighty percent depending

<sup>5</sup> United States Department of Agriculture, 2017

upon the year.<sup>6</sup> However, this is not to say that the overall margin received by farmers is higher than in other countries – the export price can be lowered by exporter pricing and product handling. It does, however, indicate that farmers’ livelihoods can be improved by increasing the volumes and values of coffee exports. Increases in the margin earned by coffee farmers in the 1990s coincided with a sharp drop in poverty rates in coffee growing areas in Uganda.<sup>7</sup>

Arabica makes up around 20% of coffee exports by volume and 25% by value. It is Arabica that makes up most of the coffee that is traded as single origin; branded by country, located by estate or farmer, sought after by specialty traders and consumers and drunk as espresso. Investments in value chain upgrades and marketing investment thus have a strong effect on the premiums earned by Arabica where similar investments for Robusta have more limited effect. The higher the quality Arabica produced and successfully marketed, the greater the margin available throughout the value chain and the easier it is for farmers to increase their incomes.

**Figure 4: Export Volumes of Ugandan Coffee by type (60 Kg Bags, ‘000), 2006 - 2016**



Source: UCDA

There are approximately three hundred thousand Arabica farmers split one third in the east and two thirds in the west.<sup>8</sup> An average farmer has a quarter to half an acre planted and produces one to two tonnes of coffee cherries.<sup>9</sup> Beyond coffee the farmers are growing bananas, rice, maize and cassava for food on their land. The proceeds from coffee are, however, a vital source of cash funds.

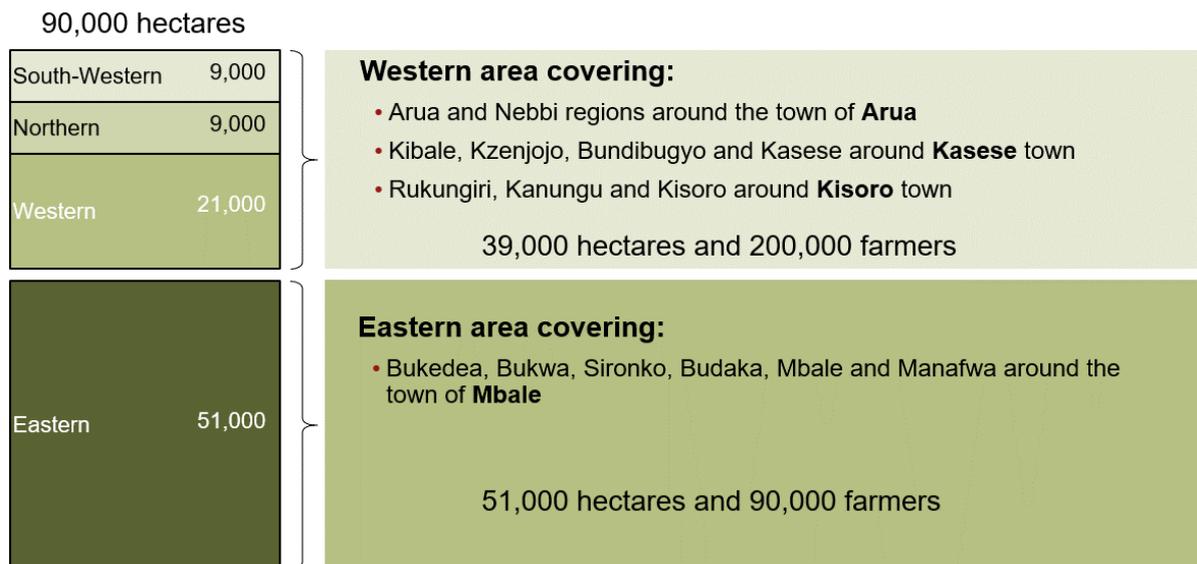
<sup>6</sup> See Morjaria (2017), Understanding Constraints to Value Addition in Agricultural Exports: Insights from Uganda’s Coffee Sector, IGC Policy Brief, December 2017.

<sup>7</sup> Baffes, John. “Restructuring Uganda’s Coffee Industry: Why Going Back to Basics Matters,” World Bank Policy Research Paper 4020, 2006

<sup>8</sup> While trade and government actors estimate there to be around 90,000 farmers in the eastern Mount Elgon region the number of farmers in the west across the West Nile and the Rwenzori complex is largely unknown. 200,000 is an estimate based upon volumes traded, but is approximate and affected by farmer plot sizes, imports from the DR Congo and more.

<sup>9</sup> Interviews with coffee farmers, traders and processors in both the Mount Elgon and Rwenzori regions

**Figure 5: Distribution of Arabica planting by region (hectares)**

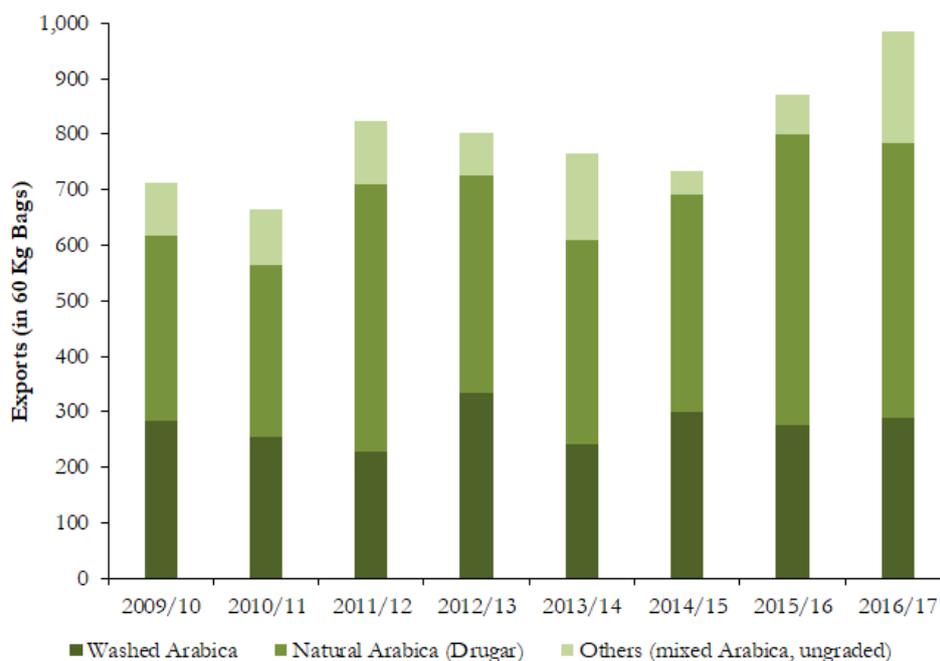


Source: UCDA, project interviews

Within overall Arabica production there are three main quality groups: ‘washed’; ‘naturals’ – called DRUGAR (DRy UGandan ARabica); and lowest quality group ‘others.’

The east has the majority of the washed Arabica while DRUGAR comes from the three western regions. Mixed is poor quality Arabica and sometimes includes admixture of Robusta. The harvesting season is between October and December. Washed Arabica tends to be higher quality due to crop screening and uniform processing at washing stations leading to a more consistent produce.

**Figure 6: Arabica exports by type (60 kg bags), 2009 - 2016**



Source: International Coffee Organization

The relative importance of Uganda's Arabica crop is growing. World demand for coffee is rising steadily at 1.3% per year driven in part by changing tastes in Asia, especially China on the one hand and demand for premium coffees on the other. At the same time supply in some countries is stable or falling. Kenyan production has declined by half since 1996 from over 1.5 million 60 kg bags to 783 thousand in 2016/17. Ethiopian Arabica production has declined slightly since 2012.<sup>10</sup>

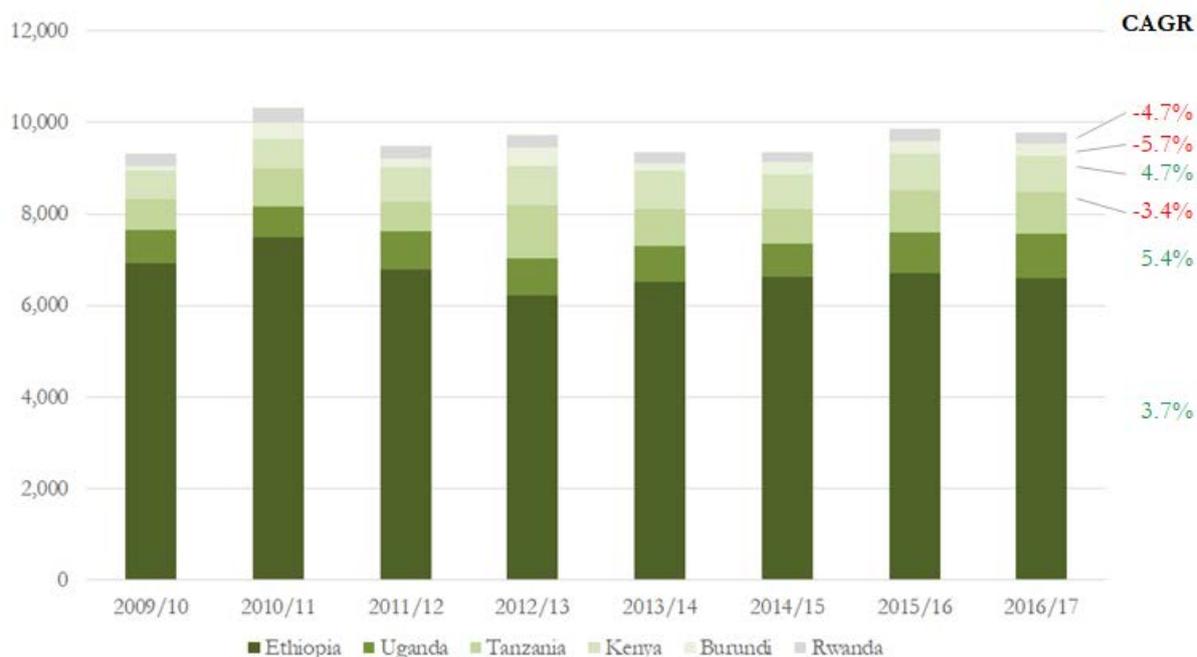
Uganda has a place in filling this gap. It had the second largest Arabica production volume in Africa after Ethiopia in 2016/2017. Despite being relatively unknown and under-rated, it is already producing high quality Arabica to meet growing demand. Finally, it meets the needs of roasters and trading companies who are seeking out new supplies from so-called frontier countries in Africa in order to meet demand for both additional volumes as well as new and original marketing stories.<sup>11</sup>

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<sup>10</sup> International Coffee Organization, historical data reports

<sup>11</sup> Terazono and Aglionby, "Africa Buzzing as Next Frontier for Coffee Drinkers." *Financial Times* (London), October 14<sup>th</sup>, 2015.

**Figure 7: East African Arabica production by country ('000 60 kg bags, CAGR<sup>12</sup>), 2009 to 2016**



Source: International Coffee Organization (ICO)

Even as its importance is rising, awareness of it is not. Rwanda, Tanzania and Burundi have recently established their names as coffee producing countries, but by comparison, Ugandan coffee has been overlooked by both trade and consumers.

Uganda has historically been a centre of Robusta production, leaving its Arabica relatively under-invested. Roughly four times as much Robusta is produced compared to Arabica. The sector was, from its beginnings, based on production by smallholders. Therefore it lacked the scale and coordination seen in other, especially Latin American countries built more on an estate model. On top of this, the industry declined during the 1970s and 1980s due to political instability, high taxation on coffee production and other policy and trading constraints.<sup>13</sup> Manufacturing and supply chain assets as well as marketing activity declined leaving Ugandan Arabica as a lower quality, lower priced source compared to its Kenyan, Tanzanian and Latin American competitors.

Ugandan coffee producers lost the ability to produce a consistent Arabica product.<sup>14</sup> Farming practices were not controlled enough across farms and regions and from year to year to maintain stable quality. Farmers would strip branches of coffee cherries rather than picking them. They put unripe green cherries into production rather than waiting for the fully ripened red colour.

Trade buyers therefore viewed Ugandan Arabica as low quality, unable to compete in international markets.<sup>15</sup> It tended not to be marketed as a single-origin coffee, but was

<sup>12</sup> Compound Annual Growth Rate

<sup>13</sup> Baffes, John. "Restructuring Uganda's Coffee Industry: Why Going Back to Basics Matters," World Bank Policy Research Paper 4020, 2006

<sup>14</sup> Ibid

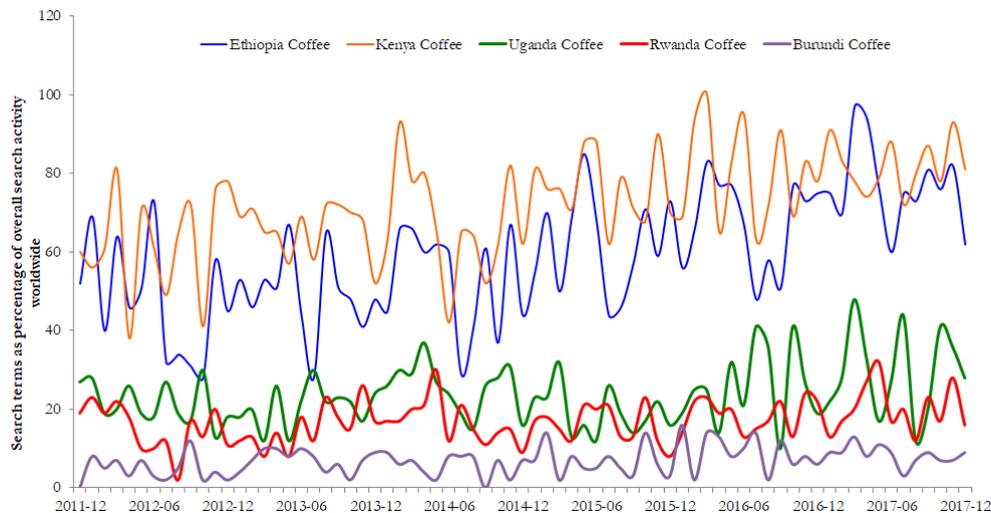
<sup>15</sup> Feedback from several interviews with international coffee traders

instead combined with Kenyan or Tanzanian beans and marketed as a regional blend. The largest buyers in recent years have been German traders importing for own-label supermarket blends.<sup>16</sup>

Further, Ugandan coffee has not been marketed in a way to build end-consumer awareness and demand. Diverse brands carry Ugandan coffee including: Good African Coffee, Rwenzori Coffee, Great Lakes, Bugisu, East Africa 'regional coffee' and more.

The result has been a lasting market perception that Ugandan coffee is of low quality and no market draw. Low levels of awareness can be seen in comparisons of internet searches for the different types of regional African coffee.

**Figure 8: Google Trends analysis of East African coffee searches, 2011 - 2017**



Source: Google Trends

As a consequence of continuing poor awareness among consumers and trade and especially roasters, Ugandan Arabica is not earning the same export margins as coffee of comparable quality from similar countries. Ugandan Arabica trades at a greater discount to international benchmark prices than Ugandan Robusta – see figure 9 below. It trades up to 40% below other milds and up to 30% below Brazilian naturals. With a third of the Ugandan Arabica crop currently washed, its overall average value should be at or close to parity with Brazilian naturals.

<sup>16</sup> UCDA annual reports as well as interviews with coffee traders

**Figure 9: Spreads between Ugandan Arabica and Robusta and international prices (%), 2000 - 2016**

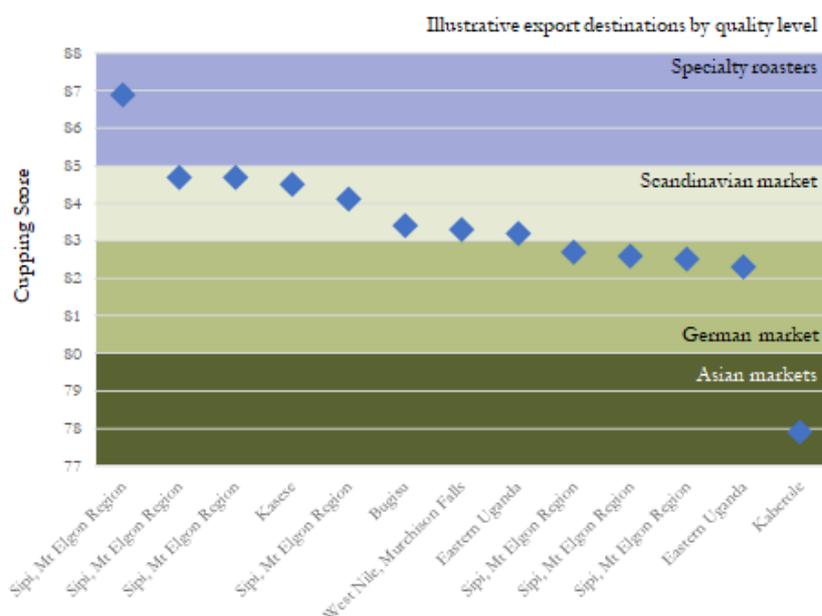


Source: ICO benchmark prices

This discounted price position means lower revenue to the sector, lower foreign currency earnings, lower farmer income and finally that indistinct, but valuable commodity: lost international awareness of Uganda as a country that can lead to tourism, trade and investment.

Uganda’s Arabica quality is better than its reputation. Firstly, a few pockets of high quality production have survived throughout the disruptive years. Certain single origin coffees have been maintained for instance Bugisu AA and Elgon A.

**Figure 10: Arabica cupping quality by selected regions (cupping score), 2017**



Source: African Fine Coffees Association / International Trade Centre, “Taste of Harvest Report” 2017

Secondly, quality has risen steadily in the eastern Mount Elgon area. Multinational coffee traders have invested in seven washing stations in the past ten years. Another one is run by a local co-operative. Consistent quality control on incoming coffee beans together with steady process improvement in production from farm to dry mill has raised the cupping quality from 78/80 which trades at board prices or below to 84/85, and in some cases up to 86 which is quality that attracts premium Scandinavian buyers and specialty roasters.

Extension teams run by the washing station owners to train farmers in better farm practices as well as steadily rising demands for quality on incoming cherries have driven quality further upwards. In 2016 traders required a minimum of 90% red cherries. On top of this the value chains around the washing station investments have been steadily optimized - for instance, shifting coffee parchment end-drying from the mountain into the valley to better manage high humidity levels.

The results are seen in the destinations reached by Ugandan coffee. Ten years ago most Mount Elgon coffee sold at parity to New York prices or below. Five years ago around half was sold at parity to New York and half at a low premium to German buyers. Today two thirds are sold to German buyers, a fifth to Scandinavian buyers at a higher premium and the balance to niche speciality roasters for even higher premiums.<sup>17</sup>

Arabica from western Uganda in the West Nile and Rwenzori area has not shared this story of increasing quality and improving markets. The west is the source of DRUGAR or DRY UGandan ARabica. In 2015 DRUGAR was over half the Ugandan Arabica crop and is sourced from around two hundred thousand farmers along the western border to Congo, from Kasese in the South to Arua in the north. The exact number of farmers is not known.

DRUGAR is an unwashed, natural product similar to Brazilian naturals – albeit in a far lower volume and greater inconsistency in quality – that trades at a substantial discount to

<sup>17</sup> Input from interviews with market participants

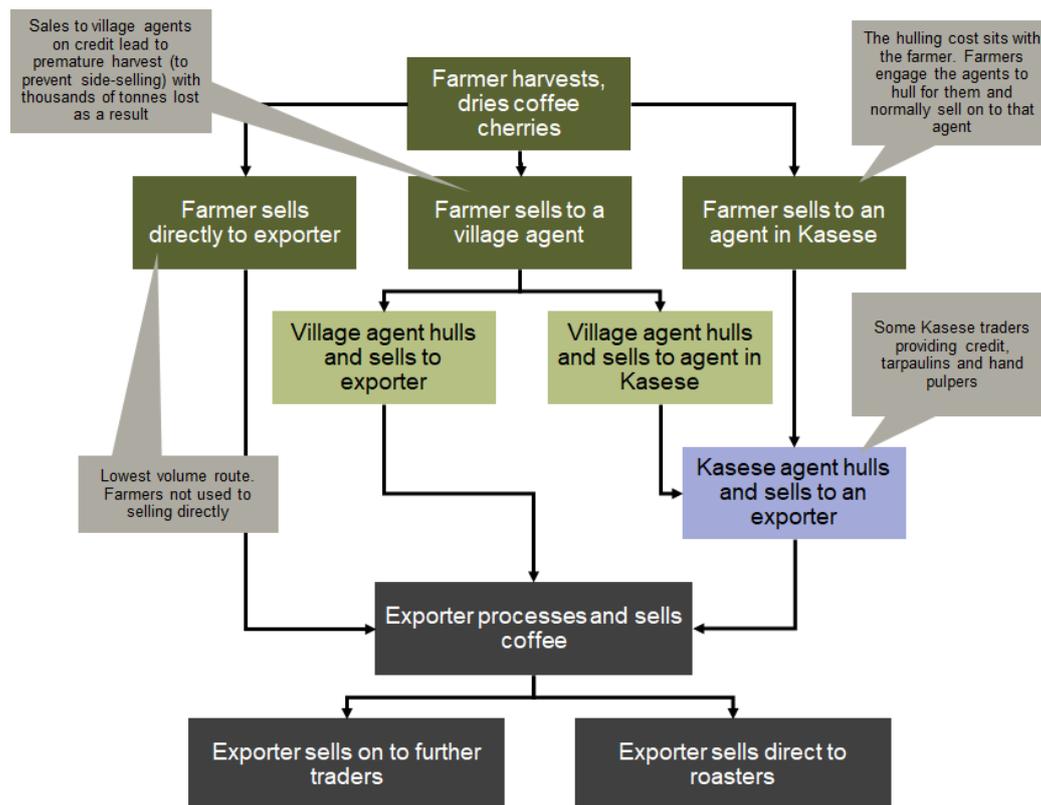
international market prices. The majority trades at between US\$ 20 and US\$ 40 below New York benchmark prices. This reflects the poor quality of farm practices and in handling that creates an inconsistent and low-quality crop.

DRUGAR is, however, exported to Europe for creating regional blends. It is primarily handled by German traders through Bremen and Hamburg.<sup>18</sup>

Quality improvements and production increases in the eastern region were driven in part by a simple industry structure. The two main traders Kyagalanyi and Ecom have forty percent each of the market.<sup>19</sup> Wide access to Arabica cherries with low side-selling enabled them to maintain steady direct contact to farmers and make investments. The companies provided extension services, seedlings, hand pulpers and shade trees while tracking coffee quality and ultimately raising yields. They have consistently required high levels of red cherries – around 90% - in order to ensure quality.

A set of structural trade issues lead to lower prices for Arabica from the western region compared to the east. Far more players are active in the value chain including agents and traders. This raises competition and makes quality management difficult. Quality control from the farm is uneven or not applied at all. Middlemen sometimes add impurities to parchment coffee to add weight or add Robusta. There are only a few companies or cooperatives with processing assets that can be used to add value through further drying or dry milling.

**Figure 11: West Uganda coffee producer and trade steps**



Source: Project team's interviews with market participants

<sup>18</sup> UCDA annual reports, project interviews

<sup>19</sup> Interviews with traders

### 3. Options for developing the sector

The Ugandan coffee industry is fortunate to have a maturing position in its eastern Mount Elgon region and several options for development in the west.

The base of consistent and quality production and management capability in the east creates the possibility to raise the profile of the Ugandan coffee industry as a whole in international markets and improve its contracting methods, structures and earnings.

The production base in the west together with under-utilized assets across the value chain provides an opportunity for expansion. The density of farmers in the west means that any investments will impact a large number of people in a relatively short span of time.

This section sets out two options for developing the Ugandan Arabica sector:

- First in market positioning and pricing for Ugandan coffee in general and for Arabica in particular, led by the developments in quality and consistency in the east.
- Second in structuring higher quality and higher value production in the west.

#### 3.1 Market positioning and pricing

##### ***Option 1: The first option is to do nothing.***

Do nothing. Continue to focus on volume production. Let the market develop itself with international traders continuing to lead the marketing, branding and positioning of Ugandan Arabica. This has the advantage that little investment is needed from the government or other local actors. Mainly multi-national players are likely to continue their investments and increasing the value of Ugandan Arabica as part of their normal trade.

The downside is the full value of Arabica will not be realized. It will continue to trade opportunistically, blended into regional products, not sought out by trade or consumers separately and therefore unable to command a premium. Sales will be spot into trade, rather than with roasters over longer periods and with higher margins.

Further, the identity of Ugandan coffee will continue to develop in a haphazard way under various identities, meeting the various marketing needs of companies, rather than building a consistent Ugandan market presence and recognition.

The focus of Ugandan coffee development would probably stay primarily on Robusta which would be a missed opportunity as large international consuming markets like China move towards Arabica. Uganda would miss the chance that its large volumes, its rising quality and wide unlocked potential give it to become an important player in the Arabica market.

##### ***Option 2: Market-led awareness raising and direct contracting***

Option 2 aims at converting the Ugandan coffee sector from a sector that is pushing its coffee onto the world market and price-taking to become a sector that is pulled onto the world market by consumer and trader demand and is able to influence prices. Both Kenyan and Columbian coffees that trade at stable premiums to the general market are successful examples of this model.

However, achieving this is a market education process involving steady and consistent messages and product branding over years. Colombia's Juan Valdez coffee farmer brand and logo was established in 1958<sup>20</sup>. With steady support it succeeded in differentiating its coffee from regional blends, establishing a price floor and a general perception of quality.

A desirable goal would be to achieve a minimum level of common identity across the many different Ugandan coffee brands in use today. Some industry collaboration or regulatory intervention may be needed to ensure that Uganda is named as the origin. Ideally a strong visual element equivalent to Juan Valdez would be required wherever Uganda coffee is the majority of the content of a package.

In the short-term trade support can accelerate the process. Large-scale marketing deals with roasters with direct customer access whether Nestle, Mondelez, Tchibo or Starbucks can carry Uganda's name in coffee sales across the world. This form of steady trade engagement and targeted sales to speciality roasters promoting single origin coffee in high-value locations will raise the wider perception of Uganda's quality. Direct contracting with roasters will also help reduce Uganda's dependence upon coffee traders and further increase the value earned from Arabica through higher premiums.

Ugandan Arabica on average across all exported quality grades trades at a discount to Brazilian naturals.<sup>21</sup> This is despite the third of the crop being washed,<sup>22</sup> cupping at over 80 and according to trade reports, being able to trade at parity to or at a premium to German import prices. The two thirds balance of production is unwashed DRUGAR and mixed Arabica which are subject to quality issues. Even if the natural DRUGAR does not price at parity to Brazilian naturals, we would expect that combined with premium quality production from Mount Elgon in the east that the overall price would be at the level of Brazilian naturals.

With the discount to Brazilian naturals lying at 25% in the last five years that gives Ugandan Arabica a goal of USD 45 million to be achieved through awareness raising, direct contracting and improved pricing and margin recovery.

An auction could be used to drive awareness and international market access for Ugandan coffee. This can take many forms, however, from an open competition through to a complete industry marketing platform.

The competition auction format was used by Rwanda very successfully to raise international awareness and the value of its high quality Arabica coffees. The Cup of Excellence competition was launched in 2008 allowing cooperatives and private washing stations to submit their best coffee for judging. A jury ran five rounds of tests with those cupping above 85 going on to a final round. Prices for winning coffees were substantially higher than normal contracts – up to three times average prices per lb – and revenues went directly to producers.

A more formal trade auction system has been used in Kenya and Ethiopia to manage all transactions between buyers and sellers. This raises transparency, enables stricter quality controls and eliminates counterparty risk. Against this, however, it can constrain market activity and slow price responsiveness and value recovery for producers. In particular it can prevent direct relationships forming between producers to enable product improvements.

Advertising can be very costly and the returns very hard to establish. Direct consumer advertising may be justified, but only as part of a wider campaign. In 2017 South Sudan

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<sup>20</sup> Federacion Nacional de Cafeteros de Colombia

<sup>21</sup> ICO data, UCDA data

<sup>22</sup> UCDA data

began a campaign together with Nestle and in cooperation with George Clooney, an actor. A heavily supported campaign of this sort with product and channel coordination is needed to have a sustained impact.

### **3.2 Structural changes**

In the western region the three areas of the Rwenzori complex; the West Nile around Arua and the Virunga area around Kisoro give Uganda a large opportunity in coffee value chain improvement and rural development. We estimate there to be around one hundred thousand farmers in the Kasese area alone with at least as many again in the areas around Kisoro and Arua. The Kasese area in particular is densely populated ensuring that investments and initiatives will have a high return in terms of people benefitting.

#### ***Option 1: The first option is to do nothing.***

The coffee industry is beginning to add structure already with the number of players increasing, traders in the region already include Olam, Neumann, Louis Dreyfus, Volcafe and E-com. Local players like Great Lakes coffee and New Bukimbi Coffee Processors and the Bukonzo Joint Co-operative are also building their presence.

Many players are starting to upgrade their assets and expand processing capabilities. Small washing stations are being established. The multinational exporters are establishing direct access to farmers. With no additional support the sector will continue developing along this track, but incrementally. There are however two possible brakes on this development.

The first is competition between the existing agents and among these and any new entrants. Side-selling by farmers is reported that contributes to premature harvesting and persistently low quality. This could intensify without properly structured market development and investment.

The second is that not all traders and exporters may share the incentive to upgrade the coffee sector in the west. For some it provides a source of low cost coffee for blending. The existing structure of high competition between agents balanced with low, but manageable quality could be more valuable for these traders than investing in assets and managing more complex production.

#### ***Option 2: The second option is to raise the profile of DRUGAR.***

Uganda's unwashed naturals have a particular flavour and natural acidity that is valued in certain markets, in particular South Korea and Japan.<sup>23</sup> The quantity is, however, counted in the tens of containers per year and is not major volume.

A view held by some groups in Uganda is that DRUGAR could be established as a mainstream natural product and marketed at a premium. We believe the value of this option is limited. Firstly the market for this type of coffee is currently small. Any action to increase its size would require educating consumers which is high effort with low probability of success. Second, the quality control over cherries and in supply chain handling is in the hands of very many actors. There is no single point of control as with a washing station. That means quality and consistency will remain low thus restricting market opportunities.

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<sup>23</sup> A sub-type of DRUGAR known as WUGAR, semi-washed Arabica is sourced from the north western region and sold for high prices due to its particular characteristics. Notably Erussi Coffee from the Nebbi District.

### **Option 3: The third option is to support the roll out of washing stations**

The main issues in the western regions are poor farming practices combined with limited infrastructure for processing and preparation for export. Washing stations can address both of these issues. Washing station operators mainly buy coffee cherries directly from farmers. This gives them the ability to screen for cherries at the door so raising the quality at intake. Washing station operators also tend to build groups of farmers either directly or through farmers' associations with whom they work to improve farming practices.

The benefit of using washing stations to process Arabica is to raise the consistency and quality of coffee with repeatable processes and systems from cherry screening on intake through to drying and roasting. Consistent products are created that can be marketed effectively on international markets raising premiums earned for the local players involved from farmers through agents to exporters.

With DRUGAR trading at between \$ 40 to \$ 60 below New York board prices per 60 kilogramme bag and washed coffee able to trade at or above those prices, the potential for increasing value is substantial.

We conservatively estimate the potential increased value to be US\$ 0.7 per kilogramme at the point of sale to an exporter. Further gains would be possible along the value chain including reducing losses and increasing yields to bring the total to around US\$ 1.<sup>24</sup> In the Rwenzori region alone this would mean increased value capture of between US\$ 20 and US\$ 36 million per year.<sup>25</sup>

Competitive relations between washing stations are crucial to arrange in order to promote positive outcomes. If there are too few stations then farmers risk not adapting to the new growing methods in the way needed. If there are too many stations competing for access to farmers, the incentive to cooperate with farmers in providing inputs, pre-harvest credit and more will fall. Side selling will prevent operators from investing fully to reap maximum quality and yield benefits.

The owners of washing stations can also play a role in transferring asset value to farmers. If stations are only owned and run by multi-national companies there will possibly be a low margin environment for farmers. Encouraging forms of co-ownership and or co-operatives to own and run stations will provide, at the very least, alternative outlets for farmers' coffee, better information about pricing and ideally a higher margin environment for farmers.

We recognize there are waste water hazard issues with washing stations, but believe these can be addressed sufficiently. Firstly by reducing the amount of water used, secondly by reusing water thirdly by cleaning outgoing water and finally using holding dams for final residues.

Finally, quality management in the western supply chain will need to be addressed. Even after poor farm practices cause losses due to green cherries, variable drying practices at agents and in dry mills cause more losses. Thereafter, mixing product with low quality Arabica, sometimes Robusta and occasionally sand leads to further losses. Actions to raise quality management in the supply chain will be important to enable and protect investments in farm-practices and processing.

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<sup>24</sup> This would be across the value chain to the benefit of all players from farmers to exporters. Wider economic benefits include higher foreign exchange earnings and an improved balance of payments.

<sup>25</sup> Based on authors' calculations with inputs from local players during field trips and market prices. This assumes 100,000 farmers reached in a similar scale of station investment as seen in the east of Uganda.

## 4. Conclusions and recommendations

Arabica is already a vital driver of growth in Uganda's coffee sector, helping the country to achieve its development goals. However, it has a lot more potential.

In the premium Arabica market, quality drives value. Value in turn drives volume through increased demand and investment to meet it. The greater the value generated across the Arabica value chain the more investment will be attracted at all levels and the greater will be the volume increase and the benefit to the economy.

The Arabica sector has proven its ability to produce high quality coffee and in some cases very high quality. The opportunity now is to capitalize on this to capture value, raise margins and drive volumes across the value chain.

There are three areas that players in the Ugandan Arabica sector can support in order to drive growth and meet this agenda and the goals set out in the Coffee Roadmap. These are: 1) improving market positioning and pricing; 2) developing production in the western regions; 3) improving quality management across the value chain.

**Improving market positioning and pricing** means working with larger roasters to improve their awareness of Ugandan coffee and in turn that of end consumers. Ugandan coffee processors will benefit from contact with international buyers, from sharing samples and guidance to improve their production practices to meet international market needs.

These activities could be done by a market mediator between local and international players. It is a role that is currently conducted on a small scale by several government agencies and development groups including the UCDA, Ugandan embassies, US and EU government development agencies and NGOs. The role, scope, operating mandate and ownership for such an agency need to be established. The UCDA is the natural owner of this scoping activity and possibly the agency itself.

Finally, within market positioning, we recommend creating a single Ugandan coffee brand to carry the identity of Uganda's coffee. A symbol carried on all coffee packaging would raise end-consumer awareness of Uganda as a source of high value Arabica and over time help differentiate Uganda from its regional competitors. The effect takes time to build but the long-term value is high. The UCDA is the clear owner of this activity. **Developing production in the western regions** means establishing more structured coffee washing and drying infrastructure than happens today. A series of washing stations with inbound quality controls and centralized processing will improve farm practices, drying methods and handling.

There is scope to build up to twenty stations. An opportunity exists to accelerate the roll out of these stations, to learn from the lessons in Rwanda and elsewhere to optimize the location, operation, supporting infrastructure and the competitive balance between them. Finally, there is an opportunity to involve farmers in co-ownership through joint trade/farmer owned models.

A feasibility study will help understand the full potential of the opportunity, assessing the size, scope, implementation requirements and forms of support needed from government and industry. It would also assess the hurdles to be overcome including security issues, road access, the quality of planted material and climate change. Changes to the community would

also be an important factor to consider, understanding how the pattern of trade would affect wider civil society.

Potential owners of this study are the UCDA, development partners, development finance institutions and the Ministry of Agriculture.

**Improving quality** is the essential requirement for all improvements in Uganda's Arabica sector and it is a critical enabler for the two main recommendations of this paper. Increased value and volumes will come with farmers and local traders steadily increasing their supply of stable, consistent and high quality production. International traders and roasters will increase their interest and investment in Ugandan coffee.

The starting point is weak, however, particularly in the western regions. Quality management interventions are needed across the value chain from on-farm practices, local trader behaviours and credit provision through to washing, milling and transport.

There is a need to fully map the Arabica value chains in the east and the west, to identify points along those chains that can be used as leverage to improve quality with, for instance, certification, approval seals, barcode tracking and alternative credit models. Pilot trials to evaluate the effectiveness of these could inform a wider industry regulation set to enable quality improvement.

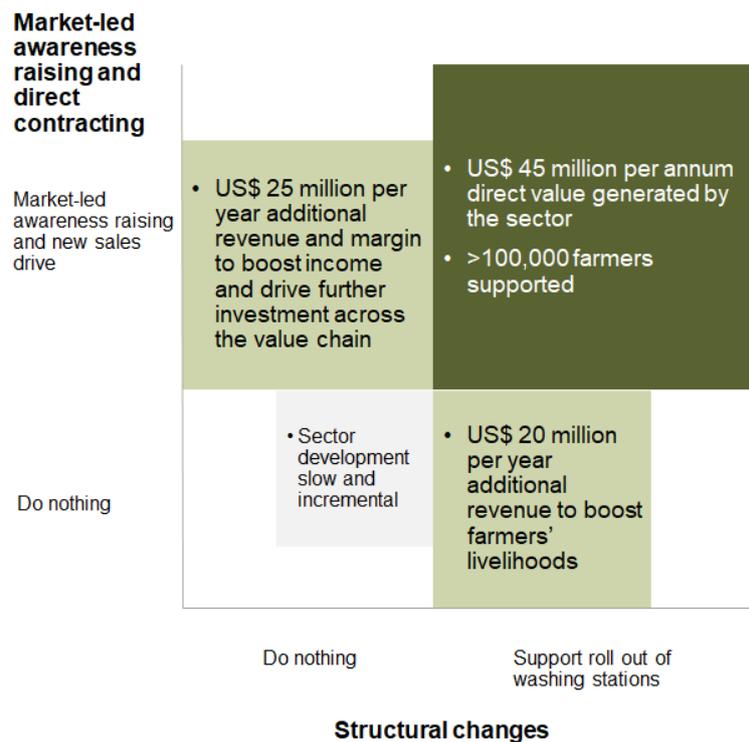
The natural owner of this activity is the UCDA together with academic and research institutions.

The opportunity for Uganda in Arabica is open now. Quality has been established in the east. Roasters are starting to be aware of the potential of the crop. The western regions are still largely undeveloped with coffee washing activities only starting to develop. By acting now to drive Arabica development these developments will be accelerated. Patterns of trade and competition can be formed in beneficial ways. Farmers and smaller players can have a chance to participate in processing investments and new, value-adding market relationships can be created with international roasters.

These recommendations are aligned directly and indirectly to most of the nine Coffee Roadmap initiatives, addressing 'Demand and Value Addition,' 'Production' and 'Enablers.' While the focus in Arabica is on quality management for value it is expected that this will in turn strongly drive yields and volumes and raise overall awareness of and support for Ugandan coffee.

If Uganda were to drive the activities in these recommendations, we conservatively estimate an additional value to the sector of US\$ 45 million per year. This excludes any effect from raised yields and increased exports or side benefits from Robusta exports.

**Figure 12: The Arabica opportunity in Uganda (USD over 2017 base)**



*Source: Project team and authors' calculations*

The total value of USD 45 million increases the value secured by Uganda in its Arabica crop by around thirty percent. We see this as entirely feasible. It has been done before in Colombia in the 1980s, in Vietnam in the 1990s, in Rwanda in the 2000s and in the east of Uganda in the last ten years.

Achieving this will take steady investment over eight to ten years. Our confidence level that major improvements will be seen over this time is high given the strong foundations the Arabica sector has as well as the favourable regulatory environment and strong support from government agencies.

With the size of the Arabica crop already being traded, the established supply chain and processing infrastructure in place and the positive engagement from all players in the sector we believe Ugandan coffee is already on its way to becoming the next international success case in coffee sector growth and development impact.

## 5. Appendix

### 1.1 Approach and methods

This paper was written in the second half of 2017. Research was conducted in the form of interviews with players across the value chain from farmers to roasters. This was combined with data analysis and field trips to both the eastern and western Arabica growing regions.

Desk research was based upon various secondary datasets from UCDA statistics, national and international coffee industry sources.

Interviews were conducted with government officials, farmers, agents, local and international traders operating in Uganda, processors, cooperatives and donor agencies. Interviews were conducted with international coffee traders and roasters in Germany, Switzerland and the United States.

### 1.2 Value calculations

For the recommendations to improve structures in the west we based the value estimate on two different calculations. These are:

#### a. Farmer population-driven value

Farmers	100,000	Based on estimates of up to 200,000 farmers
Hectares per farmer	0.25	Based on field reports and the pattern seen in the east
Trees per hectare	600	Based on field reports
Kgs per tree	2	A very conservative assumption - averages are closer to 3
USD improvement	1	Combined price and value chain effect
<b>Total value uplift</b>	<b>30,000,000</b>	

#### b. Production-driven value calculation

60 kg bags of DRUGAR	490,000	2017 production
Kilogrammes	29,400,000	
Addressable portion of crop	50%	Assumes some areas will be unreachable
Addressable production	14,700,000	
USD improvement	1	Combined price and value chain effect
<b>Total value uplift</b>	<b>14,700,000</b>	

Based on the mid-point of these two figures we estimate a target of **US\$ 20 million** per year of additional value generated across the value chain from washing station investments.

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