Value Chain Analysis for the Coffee Sector in Rwanda

Report for the CBI – 27 July 2018

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Contents

Glossary

AFI	Alliance for Financial Inclusion
AGLC	Africa Great Lakes Region Coffee Support Program
ARFIC	L'Autorité de Régulation de la Filière Café (Coffee Board Burundi)
BCI	Business Case Idea
BRD	Rwanda Development Bank
BSO	Business Support Organisation
CAGR	Compound Annual Growth Rate
CBD	Coffee Berry Disease
CBI	Centre for the Promotion of Imports from developing countries
CCAFS	CGIAR Research Program on Climate Change, Agriculture and Food Security
CEPAR	Coffee Exporters and Processors Association of Rwanda
CGIAR	Consultative Group on International Agricultural Research
CHF	Swiss Franc
CIAT	International Centre for Tropical Agriculture
CSR	Corporate Social Responsibility
CWS	Coffee Washing Station
DFID	Department for International Development (UK)
DRC	Democratic Republic of Congo
EDPRS	Economic Development and Poverty Reduction Strategy Rwanda
ESA	European Space Agency
EUR	Euro (currency)
FAO	Food and Agricultural Organization of the United Nations
FiBL	Forschungsinstitut für biologischen Landbau (Research Institute of Organic Agriculture)
FOB	Free on Board
FOT	Free on Truck
FSC	Farmer Support Centre
FTA	Free Trade Agreement
GCP	Global Coffee Platform
GIS	Geographic Information System
GiZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Corporation for International Cooperation)
ICO	International Coffee Association
IFAD	International Fund for Agricultural Development
IFOAM	Organics International
IGC	International Growth Center
IMF	International Monetary Fund
IT	Information Technology
ITC	International Trade Centre
IWCA	International Women's Coffee Alliance
JDE	Jacob Douwe Egberts
JICA	Japan International Cooperation Agency
KfW	German Government-Owned Development Bank
KOICA	Korea International Cooperation Agency
KPI	Key Performance Indicator
LPI	Logistics Performance Index
MFI	Micro Finance Institution
MIFOTRA	Ministry of Public Service and Labour
MIGEPROF	Ministry of Gender and Family Promotion
MINAGRI	Ministry of Agriculture and Animal Resources
MINEACOM	Ministry of Trade and East African Community Affairs
MINICOM	Ministry of Commerce
MT	Metric Tonne
MYICT	Ministry of Youth and ICT
NAEB	National Agricultural Export Development Board
NCA	National Coffee Association
NISR	National Institute of Statistics Rwanda
NYC	National Youth Council
OCIBU	Office du Café du Burundi
OOH	Out of Home

OYE	Opportunities for Youth Employment
PDCRE	Smallholder Cash and Export Crops Development Project
PEARL	Partnership to Enhance Agriculture in Rwanda through Linkages
PRC	People's Republic of China
PRICE	Project for Rural Incomes through Exports Rwanda
PSACC	Private Sector Adaptation to Climate Change
PSF	Private Sector Federation
PSTA	Plan for the Transformation of Agriculture Rwanda
PTD	Potato Taste Defect
RA	Rainforest Alliance
RAB	Rwanda Agricultural Board
RSB	Rwanda Standard Board
RCCF	Rwandan Coffee Cooperatives Federation
REST	Roundtable on the Elimination of Child Labour for Sustainable Tea Forum
RFCC	Rwanda Farmers Coffee Cooperative
ROW	Rest of the World
RURA	Rwanda Utility Regulatory Authority
RWF	Rwandan Franc
RYAF	Rwanda Youth in Agribusiness Forum
SACCO	Savings and Credit Cooperation
SCA	Specialty Coffee Association
SCC	Sustainable Coffee Challenge
SME	Small or Medium Sized Enterprise
SPREAD	Sustaining Partnership to enhance Rural Enterprises and Agribusiness Development
UNIDO	United Nations Industrial Development Organization
USADF	US African Development Fund
USAID	United States Agency for International Development
USD	United States Dollar
VCA	Value Chain Analysis
VCS	Value Chain Selection
WB	The World Bank
WTO	World Trade Organization

Introduction

Rationale

CBI (Centre for the Promotion of Imports from developing countries) is part of the Netherlands Enterprise Agency, funded by the Dutch Ministry of Foreign Affairs. The mission of CBI is to connect small and medium-sized enterprises (SMEs) in developing countries with the European market and so contribute to sustainable and inclusive economic growth. CBI does this by implementing three to five-year projects in a specific export value chain (VC) in a specific country, focusing on seizing opportunities for exports to Europe and tackling obstacles that hamper or hinder these exports. They are integrated projects, meaning they involve both SME exporters and the enabling environment.

CBI develops and implements projects in several consecutive phases.

1. Value Chain Selection (VCS) phase: based on preliminary research, the most promising value chain in the target country is selected
2. Business Case Idea (BCI) phase: an initial idea for a project is formulated focusing on the selected value chain
3. Value Chain Analysis (VCA) phase: an in-depth analysis of the VC is conducted
4. Business Case phase: a detailed business case for a project is developed
5. Implementation and Performance Management phase: the project is implemented and the success of the project is monitored
6. Audit and Evaluation phase: after completion, the project is audited and evaluated.

The second phase led to the third phase of this Value Chain Analysis, with the specialty coffee sector in Rwanda being selected for the following reasons:

- The European market for specialty coffee is growing.
- There are opportunities for Rwanda to increase exports of speciality coffee. The average quality and intrinsic value of the coffee in Rwanda is good, meaning it meets specialty coffee requirements.
- The organisation of the coffee VC in Rwanda is strong, meaning opportunities can be seized and issues addressed collectively. Some issues related to quality are already being addressed, such as final quality coffee control through the National Agricultural Export Board and the provision of inputs to farmers. A new strategy for the coffee sector is being developed.
- Many of the coffee exporters in Rwanda are motivated to grow their business by exporting to Europe. However, they lack knowledge of and access to the European market. There is also a lack of awareness on the European market that Rwanda is an interesting source of specialty coffee.
- Other economic development projects in the sector in Rwanda are not connecting coffee companies to the European market or providing follow-up coaching.

Objective

The objective of this Value Chain Analysis study is to conduct an in-depth analysis in order to provide answers to the following questions.

- What does the European export market look like? This information is required to both confirm findings in the earlier phases of project development and to gain a better understanding of the specific markets and segments a project could focus on.
- What is the composition of the value chain? This should include an analysis of the key actors, chain supporters and influencers.
- What are the salient corporate social responsibility (CSR) issues?
- What are the main opportunities for export to Europe and which obstacles prevent export?
- What interventions and support activities are needed to seize opportunities and tackle obstacles?
- How and to what extent will these interventions and support activities help seize opportunities and tackle obstacles?
- Who can take up which interventions and support activities?
- What the risks are for a project and how can these risks be mitigated?

Approach

The approach used was a multi-stage one in which six phases were identified.

Phase 1:	Developing an action plan which includes a description of the value chain, time frame of the study, roles and responsibilities and methodologies used.
Phase 2:	Conducting desk research based on documentation and research provided by CBI, documentation already available at Agri-Logic and internet research.
Phase 3:	Conducting field research in which key stakeholders in Rwanda are interviewed, as well as European buyers of Rwandan coffees.
Phase 4:	Validating information as final part of the study itself, whereby the collected data and information is validated with the coffee stakeholders in Rwanda.
Phases 5 & 6:	Incorporating feedback from the validation workshop in the report, which can then be publicised.

Structure

The Value Chain Analysis comprises four elements, which is reflected in the chapter titles.

Element 1. Export market and value chain competitiveness
Element 2. Structure, governance and sustainability of the value chain
Element 3. Opportunities and obstacles in the value chain
Element 4. Possible interventions and support activities in the value chain

Limitations

Specialty coffee is not well defined, and each market and sometimes even each buyer has a slightly different definition of what specialty coffee is. Statistics also do not differentiate between the specialty qualities and the more commercial grades, which makes it difficult to find data on consumption, production and trade for Rwanda, but also for the European market.

Data was obtained from different sources, such as Rwanda's National Agricultural Export Development Board (NAEB), the International Trade Centre (ITC), International Coffee Organisation (ICO) and the US Department of Agriculture (USDA). Figures such as volumes and values differed depending on the source, so for the analysis it was decided to mainly use one source, in order to be able to show trends. Absolute figures therefore might differ from other existing sources.

Unlike for some of its neighbouring coffee-producing countries, such as Burundi and Uganda, export figures are hard to come by in Rwanda and are not published by the NAEB. In addition, the sector other than the large buyers is very fragmented. We have tried to speak with and interview as diverse a group of stakeholders as possible, to cross-check data found during the secondary data research; however, unintentional bias might still exist.

Executive Summary

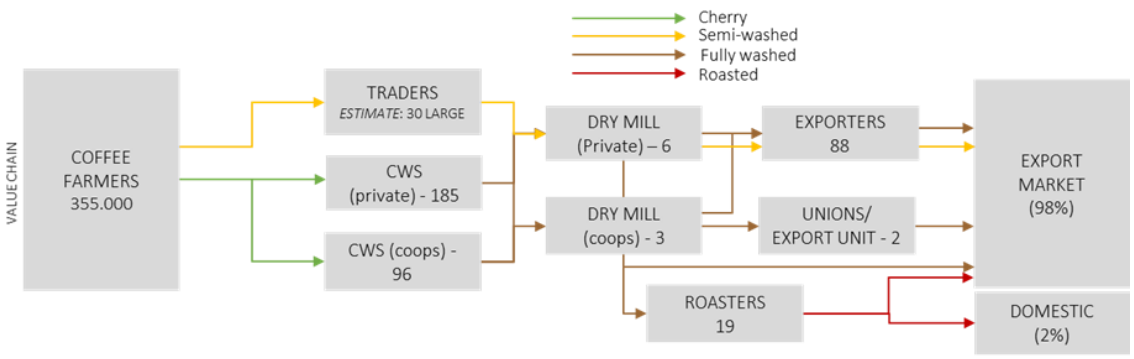
The mission of CBI (Centre for the Promotion of Imports from developing countries) is to connect small and medium-sized enterprises (SMEs) in developing countries with the European market and thereby contribute to sustainable and inclusive economic growth. The goal of this value chain analysis is to serve as input for the development of a detailed business case for a three to five-year project that focuses on seizing opportunities for exports to Europe and tackling obstacles that hamper or hinder these exports.

In Element 1, the export market and value chain competitiveness is explored. Almost all of Rwanda's coffees are exported, amounting to 18,000 metric tonnes (MT). Rwanda exports its semi-washed coffees mostly to Switzerland, and the fully washed and higher grades coffees mostly to the US. Other coffees exported from Rwanda are robusta varieties, roasted coffees, and since recently also natural and honey processed coffees. Over the years production has slightly decreased, but qualities have gone up considerably: from 30% fully washed coffees in 2010, to 60% in 2016. However, this was not directly translated into value, because of low coffee prices and declining volume. Wet processing facilities are considered of good quality, and have shown an enormous increase in numbers: from two coffee washing stations (CWSs) in 2002 to nearly 300 today. In addition, since 2012 Rwanda has gone from five trade partners worldwide to over 40, showing the effectiveness of the investments made over the years in processing capacity and marketing.

The growth of the European coffee market is slower than other markets, although a clear premiumisation trend can be identified. Certification is important as a way to access the market, reflecting credibility. However, for the specialty buyer this is less relevant, as quality prevails. Organic might be the exception though, as there is a clear trend in all markets towards more organically produced and certified products. According to trade statistics, countries within Europe showing potential growth in the specialty market segment are the UK, France, the Netherlands, Norway and Poland. This is backed up by the buyers, who indicate both the Scandinavian countries and eastern Europe to be good growth markets for specialty. Germany shows potential according to the ITC, but the value per kilogram and value growth is relatively low. Since Rwanda is a small country, volume is less relevant. Opportunities probably mostly lie in focusing on the smaller consumer countries exhibiting faster growth, countries that appreciate high-value coffees. Targeting these markets will help increase market share and improve brand recognition.

If only quality and volume are taken into consideration, Rwanda has little competitive advantage compared to the other specialty coffee producing countries in East Africa. Its competitive advantage is very much related to its relatively consistent good qualities, its "storytelling" capacity, its (current) pricing, its CWS infrastructure, and the ease of traveling and doing business. Rwanda does show high potential though for further quality improvements, as well as improvements in processing efficiencies.

Figure 1. Rwandan coffee value chain



In Element 2, the structure, governance and sustainability of the value chain was elaborated upon (see also Figure 1). On the production side, there is an asymmetry to be observed between the fragmented small coffee washing stations (CWSs) and the other larger processors and exporters. Rwanda's coffee industry is dominated by a few medium to large traders and exporters, such as RTC, IMPEXCOR, Dormans and RWACOF. Many of them are related to the larger international trading houses. Together they control 64% of the theoretical capacity, but they are thought to be responsible for at least 85% of the exported volume. Their vertical integration into the value chain has reduced the bargaining power of suppliers and considerably increased competition for the raw material (cherries). The smaller processors and exporters are seen struggling in such an environment.

There are different challenges at each level of the supply chain. On the farmer side they relate to low productivity, which has multiple causes, such as low soil fertility and increased pest and disease pressure, and which is also due to changing weather patterns. Farmers are tempted to invest in other subsidised crops that fetch higher prices in the market, including horticultural crops and irrigated crops, such as maize and rice.

Due to the highly competitive environment, the scarcity and quality of raw material, the lack of business skills and the very small size of the operations, smaller CWSs have a weak position in the market. They have difficulty obtaining finance and accessing the services and knowledge required to be able to successfully compete. Although operating costs will always be relatively high for Rwanda, given that it is a landlocked country with limited resources, there are many improvements that can be made in terms of efficiency. Both at the CWS itself, by applying better cost control systems, as well as more sector-wide, by improving the coordination between the smaller processors and exporters.

With regard to sustainability, climate change interventions are still very small-scale, though it is a serious threat to the sector and is already being felt by many of the growers. There seems to be limited focus on youth employment. Opportunities here lie especially in improving the skills of labourers, increasing employment as business service providers to the sector and potentially also as promotors of Rwandan coffee domestically, as well as in the tourism industry as baristas and/or guides.

Labour risks can be identified at CWS level, including occupational health & safety hazards for workers and unfair terms of employment. This is because labourers work in the informal sector and are therefore not protected by law. Interventions should support CWSs to obtain certification, such as Rainforest Alliance/UTZ or Fairtrade, as these apply strict labour standards which are audited regularly.

Rwanda's enabling environment provides a lot of opportunities. It is structured, there is a supportive government and it is easily accessible, so many possible synergies can be created. It has a relatively high level of internet and mobile phone penetration, supporting communication and helping to monitor business performance. Intervention activities for the specialty value chain should, as this analysis concludes, focus on improved coordination between the smaller processors and exporters, improved access to finance, and improved processing efficiencies, in order to achieve better qualities, better business relationships and increased competitiveness. Improving quality and volume at farmer level also greatly depends on policy developments. In the meantime, farmers and labourers should be supported to further contribute to a thriving specialty sector in the country of a thousand hills.

As there are many major coffee projects ongoing and planned for the near future, we advise CBI to first and foremost link up with the most important stakeholders involved, to align activities and find the synergies needed to bring the SMEs in the sector to a higher level.

Element 1. Export Market and Value Chain Competitiveness

1.1 Specialty coffee

Specialty coffee refers to the entire process, from farmer to cup, and includes the roasting, packaging, grind and brew. Although the term specialty does not have a strict definition, a high cupping score is a common characteristic of specialty coffee.

Specialty, as defined by the Specialty Coffee Association (SCA) Q grading, comprises coffees with a cupping scores of over 80. Specialty coffee can be further classified as "Very Good", "Excellent" or "Outstanding" (Figure 2). However, markets and even individual buyers have shown that they differ in their perception of what specialty coffee entails. Generally speaking, in the US and Asia we see that a cupping score over 85 is required to qualify as specialty coffee. For Europe, when talking to buyers, this seems to be over 80.

Figure 2. Varying definitions of specialty coffee based on cupping scores

SPECIALTY COFFEE - Q GRADE SCORE SHEET

SCORE	GRADE	SPECIALTY YES/NO
90-100	Outstanding	Specialty Coffee
85-89.99	Excellent	Specialty Coffee
80-84.99	Very Good	Specialty Coffee
>80.0	Below Specialty Quality	Not Specialty Coffee

FINAL SCORE	CLASSIFICATION
95-100	Super Premium Specialty
90-94	Premium Specialty
85-89	Specialty
80-84	Premium
75-79	Usual Good Quality (UGQ)
70-74	Average Quality
60-70	Exchange Grade
50-60	Commercial Grade
40-50	Below Grade
< 40	< 40 Off Grade

Source: SCA

Total production of specialty coffee is estimated at 14% of the total coffee volume including the premium, mostly sold under a brand (see Table 1).

Table 1. Global coffee volume in % per market segment

	Private label	Brand owners	Out of home	TOTAL
SPECIALTY 85+	**0%**	**3%**	**1%**	**4%**
SPECIALTY (80–85)	**1%**	**7%**	**2%**	**10%**
Mainstream	5%	45%	15%	65%
Low quality	2%	15%	4%	21%

Source: ITC in TWIN&TMEA, 2018

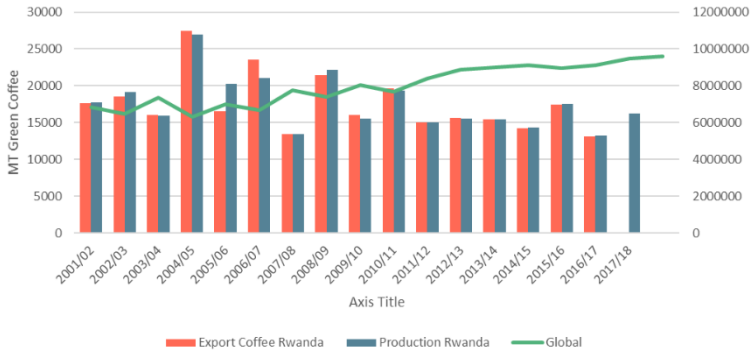
1.2 Coffee production in Rwanda

1.2.1 General

Rwanda is a low-income country with a population of 12.5 million (2018) and GDP of USD 8.4 billion. Goods and services account for respectively 50.8% and 49.2% of exports. During the last five years the exports of Rwanda have increased at an annualised rate of 9.7%, from USD 554 million in 2011 to USD 869 million in 2016. The most recent exports are led by gold, which represents 20.5% of total Rwandan exports, followed by tea, which accounts for 13.3%. Coffee represents about 7% of total export value, and 20% of the total agricultural export value from Rwanda (OEC, 2016).

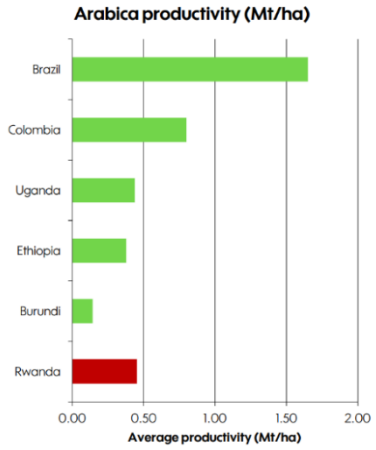
The total coffee production for Rwanda ranges between 15,000 MT and 22,000 MT and has been relatively stable, but is slightly on the decline (ICO, 2017; NAEB, 2017). The volume represents about 0.2% of the global coffee production. Of this volume about 98% is arabica, mainly of the "Bourbon" variety, and the rest is robusta, according to the National Agricultural Export Development Board (NAEB). The NAEB data show that the coffee is grown on 37,500 hectares by about 355,000 coffee farmers. Coffee represents about 2% of the total agricultural production area in Rwanda (OEC, 2016). The average farm size in Rwanda is 0.08 hectares (GCP, 2016; NAEB, 2017). Productivity is 450 kg/ha, or about 2–3 kg per tree, and consistent with the average for Sub-Saharan Africa (GCP, 2016). The harvesting season is between April and July, with coffee arriving in Europe between August and November.

Figure 3. Production vs exports of green coffee from Rwanda and global exports 2000–2017



Source: NAEB, ICO

Figure 4. Arabica productivity



Source: GCP, 2016

The number of coffee washing stations (CWSs) has shown impressive growth over the last decade, due to the efforts by the government and its partners to improve the quality of Rwanda's coffees. From only two in 2002, there are now 282 CWSs operational in the country. Of these 282, some 186 (66%) are privately owned. More information on the CWSs can be found in the next chapters.

Although production volumes over time have fluctuated, over the last five years total production seems to have stabilised and has even shown a small increase. According to the experts interviewed, this is mainly due to the impact of recent large-scale coffee projects, which will further be elaborated on in Element 2.

1.2.2 Coffee quality

Coffees in Rwanda can be classified into semi-washed, or "Ordinary Coffee", and fully washed. The semi-washed is processed at home and generally traded via middlemen and not via coffee washing stations. As can be seen from Figure 3, the percentage of fully washed coffees over the total production has increased from 35% in 2011/12 to about 60% of production for the 2016/17 season. Fully washed represents about 75% of the earnings from coffee. The NAEB estimates 75% is premium and specialty grades.

The Rwandan government discourages semi-washed coffee, in order to control quality and make Rwanda's coffee more competitive on the world market, which means that the Rwanda Development Bank (BRD) does not finance semi-processed coffee purchases. However, the Ordinary Coffees are still an important market outlet for the farmers in Rwanda, representing about 24% of the volume and 17% of the value (Figure 3).

The main reason for semi-washed coffee still being produced is that farmers find that they often cannot rely on their CWS due to issues such as bankruptcy (caused by overenthusiastic investors, ignorant of how the sector works) or just due to the generally poor CWS management (Twin & TMEA, 2018). Earlier research by the International Growth Centre (IGC) based on 2011–2012 data also finds similar constraints, while also mentioning lack of contract enforcement mechanisms, which includes tracking purchases, sales and inventories, and the limited access to working capital (Macchiavello & Morjaria, 2015).

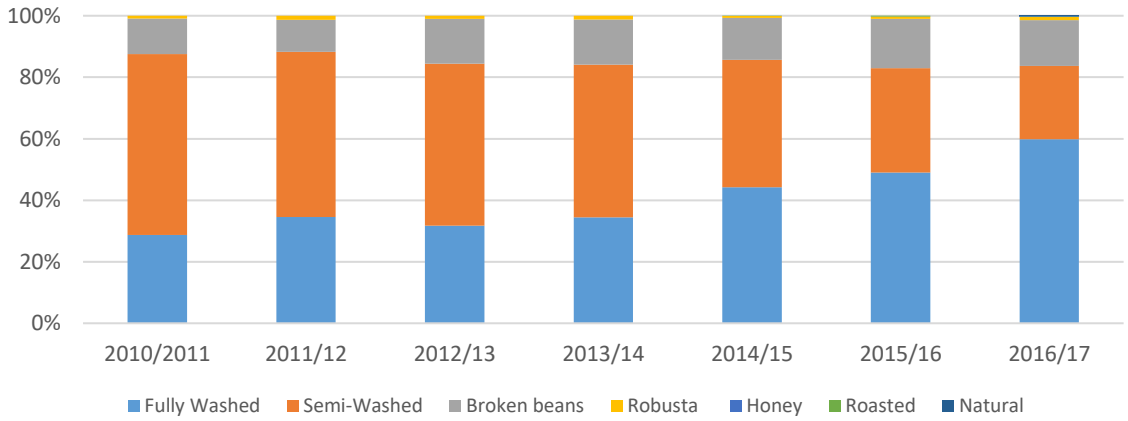
A notable issue is that broken beans (triage) have not significantly decreased. This is thought to be mainly due to the low quality of the cherries delivered to CWSs. However, inefficient processing and poor quality control at the wet mills could also cause this. Beans that are too dry, for example, break easily.

Natural & honey processed coffees

Innovations in coffee processing in Rwanda are the natural processed coffees and honey processed coffees which have been exported in small quantities over the last years. Natural processing means that the coffee is dried and no layers are removed. With the honey process, skin and pulp are removed, but some or all of the mucilage (*honey*) remains (see Annex VII for more explanation on the processing). The NAEB has only officially included it in its statistics in 2017, when it indicated an export of 130 MT of "Naturals" and a little under 50 MT of "Honey".

According to their website, the first Rwandan honey and natural processed coffees which were officially recognised by the NAEB came from Muraho Trading Company, from the coffee washing stations Kilimbi and Rugali. Through sister company Rwanda Trading Company (RTC), Falcon Coffee have also experimented with natural and honey processed coffees at the Gatare, Nyungwe, Muhura and Gishyita CWSs. Others include Buf Coffee with coffee washing station Umurage and Twongerekawa Coko in the Gakenke district (honey processed). Exports from Rwanda of natural processed coffees have increased exponentially over the last few years according to experts, though figures from previous seasons have not been made available.

Figure 5. Coffee qualities as percentage of total coffee production in Rwanda



Source: NAEB Annual Reports

Table 2. Value in USD/kg of green coffee

USD/kg	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Fully Washed	6.13	3.72	3.98	3.45	4.31	4.01	4.42
Semi-Washed	4.79	3.04	2.63	2.54	2.64	2.54	2.59
Broken beans	1.77	1.06	1.07	1.20	1.80	1.54	1.77
Robusta	1.80	1.49	1.74	1.14	0.89	1.28	2.31

Source: NAEB

Certification

Although not a quality in itself, certification has often been considered a quality spec by the market, and premium levels are generally lower than of the mainstream certified coffees, which are UTZ/Rainforest Alliance and Fairtrade certified. Since 2014 a large share of the Rwandan coffee production has been certified or verified (e.g. 4C and CAFE practices). Currently production in Rwanda of UTZ is 1,372 MT (UTZ/RA), while for Fairtrade this is 3,340 MT (of which 60% organic certified). The two already represent 30% of production. According to FiBL statistics (2016), the total area under organic coffee production is 203 ha, which is less than 1% of the total area on which coffee is produced. Other certifications are C.A.F.E. Practices initiated by Starbucks, Nespresso's AAA Sustainable Quality Program and 4C Compliant Coffee.

The share of certified coffees is expected to continue to rise, especially organic certified due to the growing demand for organic, further elaborated upon in the section "Trends".

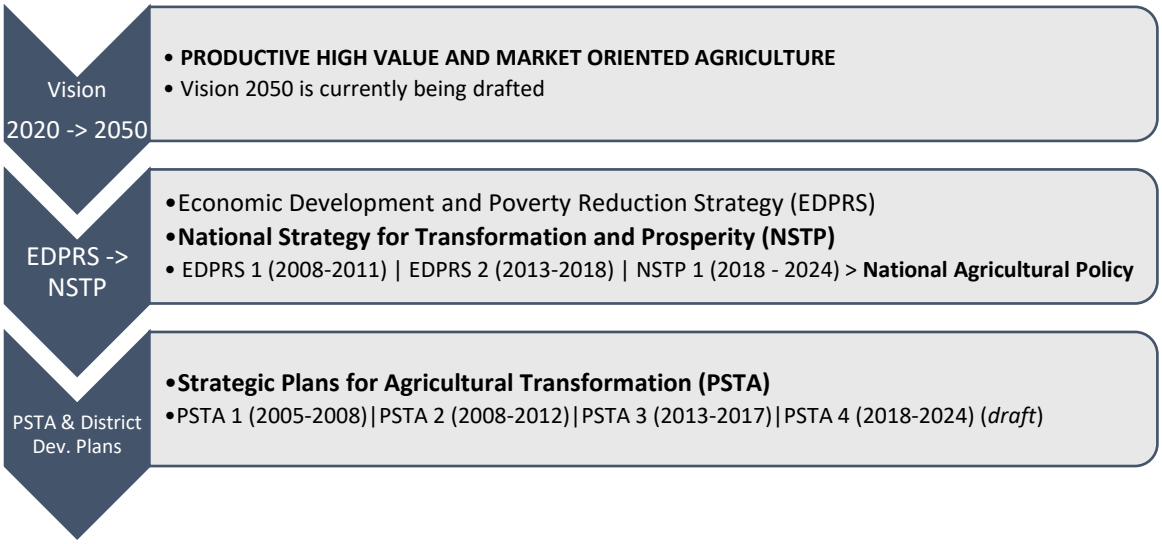
1.2.3 Developments

National policy

In order to gauge future developments, it is necessary to view the sector's political context. The overall development framework of the Government of Rwanda is set out in the Economic Development and Poverty Reduction Strategy (EDPRS), stemming from the country's Vision 2020. The agricultural component of the EDPRS is operationalised in Strategic Plans for the Transformation of Agriculture (PSTA), developed and implemented by the Ministry of Agriculture and Animal Resources (MINAGRI).

The below figure depicts the relationship between the strategies, which go from long to short term.

Figure 6. National strategies overview Rwanda



EDPRS 3 (2018–2024), which will be known as the National Strategy for Transformation and Prosperity (NSTP 1), is planned to come into effect mid-2018. The PSTA 4 (2018–2024) is currently being drafted and describes the main policy framework for agriculture development in Rwanda. It represents the implementation plan under the National Agricultural Policy 2017–2030.

Rwanda's limiting production factor is land. Agricultural growth therefore mainly comes through increased productivity and additional value creation. Coffee and tea are seen as the traditional export crops, and are expected to remain important in future. However, according to the policy documents under PSTA 3 the focus has already very much shifted towards food crops and high-impact commodities (horticulture and animal resources).

A draft version of the NSTP 1 shows that the percentage of fully washed coffee is targeted at 80% of total production by 2024, while the productivity per tree should by that time have increased to 4 kg (GoR, 2017 draft; MINAGRI, 2017). Processing industries will be facilitated to access raw materials by working with farmers and the private sector through contract farming and industrial blocs, among others. Strategies for increasing productivity include expanding the cultivated area, replacing old trees and increasing (mineral) fertiliser application. The coffee-planted area overall will only increase slightly from 37,500 ha (2017) to 40,000 ha, with land being the limitation. However, production levels are projected at 32,500 MT (MINAGRI, 2017). The increase in acreage will be 6%, but the planned production increase over 60%.

The draft version of the NAEB medium term strategic plan 2018–2024 (NAEB, 2017) identifies four key areas of intervention.

1. Enabling environment and responsive institutions in the coffee value chain
2. Efficient and inclusive markets and value addition in the coffee value chain (*including traceability, certification, promotion of domestic consumption, marketing & branding and communication*)
3. Sustainable, resilient production and productivity in coffee (*improved agronomical practices, extension services and agricultural inputs*)
4. Research, innovation, and empowerment in the coffee value chain (*varieties, services, fertiliser application*)

The policy actions include further expanding the zoning intervention model (further explained in Element 2), to improve services to farmers and ensure effective traceability and quality management. Further support

will include a conducive regulatory and legal framework, developing infrastructure and increasing the competitiveness of the Rwandan coffees through certification (i.e. organic, Rainforest Alliance, Fairtrade), as well as the promotion of specialty, traceability and local coffee consumption as forms of value addition.

Even though coffee is still mentioned in all major agricultural policy documents, it does seem to have lost its priority status to other crops, such as maize, beans, rice, wheat and cassava (Clay & Bizoza, 2018).

International Organisation

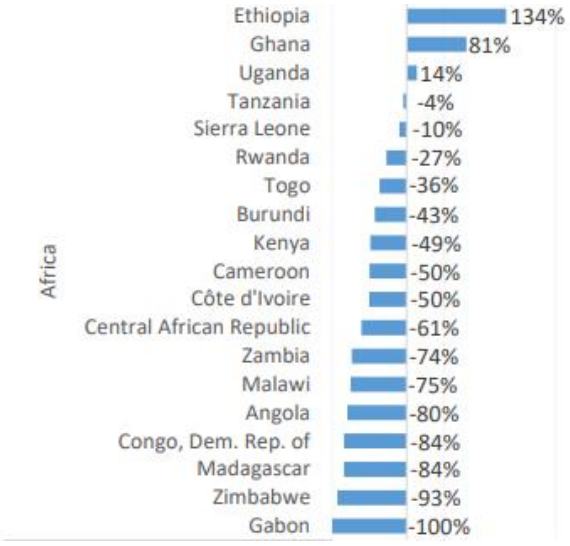
There is much interest from the international organisations, both private and public, in investing in coffees from Africa. In Annex VI, an overview is included of the publicly known projects that are currently being implemented in coffee. The private initiatives by specialty buyers, such as those of This Side Up, Union hand-Roasted Coffee, Taylors of Harrogate, GEPA, etc., are not addressed here. This, however, is not something only taking place in recent years.

How these projects and policies will influence productivity and quality remains to be seen, and will depend on how the enabling environment will develop itself, how well Rwanda will be able to control the quality defects and how efficiently it can run its coffee production units compared to East African neighbours in order to keep its competitive advantage.

1.3 Exports

While the Asian regions were able to obtain significant growth rates in exports, the African exports suffered a significant decrease (−18%) due to an average 50% reduction in coffee production in most African countries (although Ugandan exports increased by 14% and Ethiopian exports stand out with a strong growth of 134%). Rwanda showed a decline of −27% in 1992–1996 and 2012–2016 (ICO, 2018). There is no single reason that can be put forward for this: it seems to be a combination of many different factors that have a negative influence (i.e. old trees, production practices, policies, climate change, prices).

Figure 7. Growth of coffee exports by country in 1992–1996 and 2012–2016 in %



Source: ICO, 2018

In Rwanda in 2017 there were 88 registered exporters (Annex II). The largest importer of Rwandan coffee is Switzerland, with an average over

Box 1 PEARL and SPREAD

Both PEARL and the SPREAD projects were designed to develop high-value markets with the potential to increase the incomes of farmers and others in the coffee value chain. PEARL focused on rapidly improving quality, processing and management standards in Rwanda's coffee industry. This was done by training (young) Rwandans in cupping and quality control and supporting farmers to improve coffee growing and processing techniques.

Most importantly, PEARL built new washing stations and formed farmer-owned cooperatives, giving farmers more control of their product and a further economic stake in the quality of their coffee. The projects also introduced the Cup of Excellence in 2008. Rwanda was the first country in Africa to hold the prestigious "Cup of Excellence", one of the world's top international speciality coffee competitions.

SPREAD was a continuation of PEARL. Both projects overall were seen as very successful and have opened up the markets to the US specialty market.

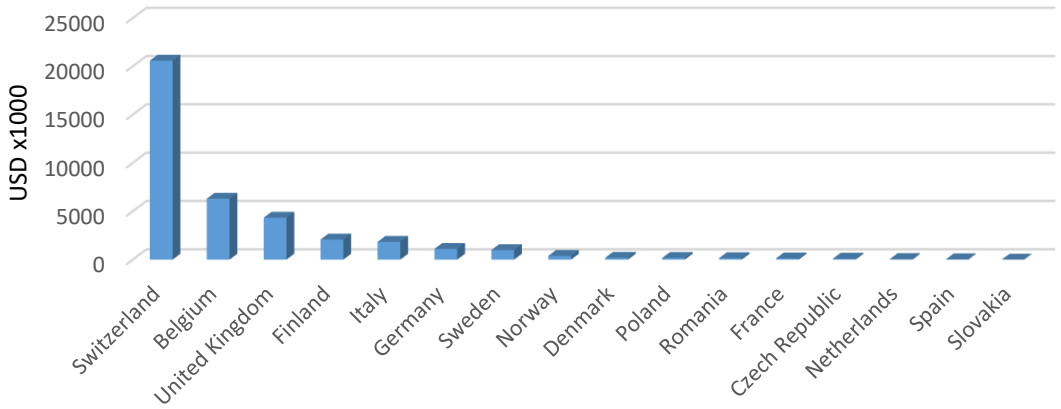
the last three years of almost 40% of total export value (NAEB, 2015; NAEB, 2016; NAEB, 2017; ITC, 2017). Almost all of the semi-washed and low grades go to Europe, estimated at more than 80%. This is mostly done through Sucafina and Supremo. An estimated one third of the fully washed goes to Europe.

After Switzerland, the US is the major importer of Rwandan coffee in terms of volume. Growth in this market, both in tons and export revenue is due in large part to the successful implementation of the USAID coffee projects, such as PEARL I and II[1] (2000–2006) and SPREAD[2] (2006–2011), as well as the support of STABEX[3] (2004–2008), a previous EU programme supporting the modernisation of Rwanda's coffee and tea sectors.

Since 2012, Rwanda went from five trade partners to over 40 (Figure 9). It shows the effectiveness of the investments made in the CWSs and the marketing efforts leading to more specialty outlets. However, overall volumes and values have decreased over the years.

Besides Switzerland and the US, Belgium and UK have also been consistent export partners for Rwandan coffee, representing about 10–15% of the value. The largest volumes going to Europe are of the semi-washed qualities. The specialty market for Rwanda is mainly the US and Asia is growing.

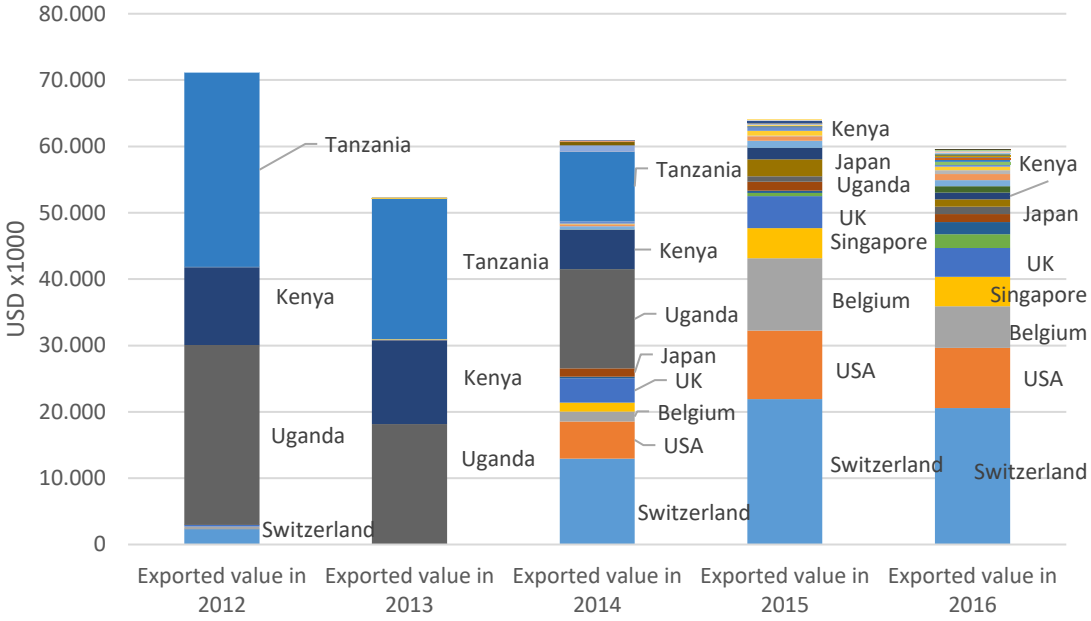
Figure 8. Exported value of Rwandan coffee in 2016 to EU & EFTA



Source ITC: Trade Map

[1] PEARL: Partnership to Enhance Agriculture in Rwanda through Linkages
[2] SPREAD: Sustaining Partnership to enhance Rural Enterprises and Agribusiness Development
[3] STABEX: Stabilisation of Exports fund

Figure 9. Export destinations of Rwandan coffee in 2012–2016



Source: ITC Trade Map

1.3.1 Margins in the coffee trade

Conventional high-volume coffees are traded on the London or New York futures market, while many of the more niche specialty coffees are traded on the spot market. Margins on conventional bulk coffees are low. For the high grades of fully washed arabicas traded on the futures market, margins are at 2–3%, while on bulk robustas, margins on the physical coffee have disappeared and are obtained by taking on speculative positions on the futures market.

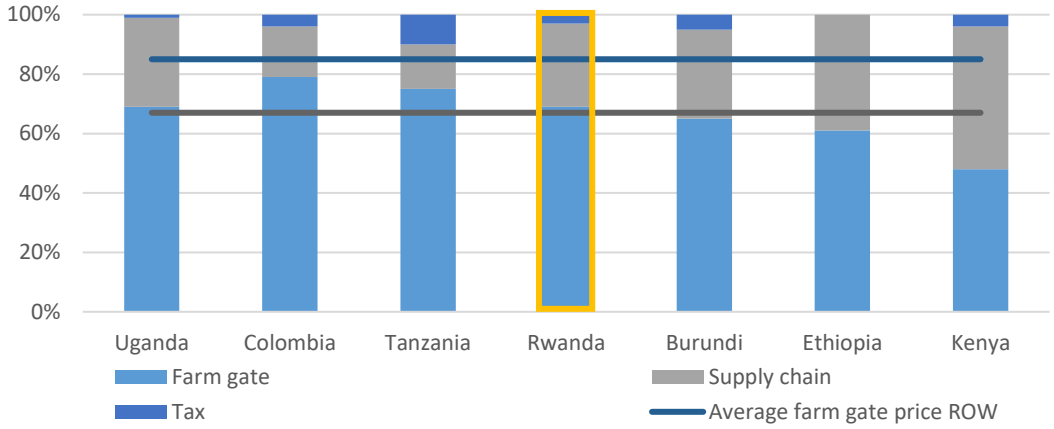
For the premium specialty coffees, which trade in much lower volumes and at spot prices, margins for trade differ greatly depending on how the coffee is valued by the market. Some examples of small niche traders that source from Rwanda indicate gross margins of 25–80%. Often though, the very small niche specialty buyers bear higher costs, as they purchase cherries at much higher prices than the current farm gate prices and support small CWSs and local communities in small development projects. Net margins come to 4–8%.

The more mainstream the specialty fully washed coffees become, the more pressure on the margins, and the more buyers will start to look for ways to differentiate. The trends further discussed in the sections below will show that the specialty market is moving towards more differentiation in order to prevent margins decreasing. Differentiation can, for example, be done via storytelling (e.g. women-grown coffee) or through different processing techniques. Increasing efficiency is another way to protect margins. This, however, is difficult to achieve in countries that are generally quite low-tech such as Rwanda.

1.3.2 Supply chain costs

At the beginning of each season a fixed minimum price is set by the NAEB. On average, farmers receive 69% of the FOB value, which is better than most smallholders in Africa obtain.

Figure 10. Value distribution as % of FOB/FOT in Rwanda and benchmark arabica origins

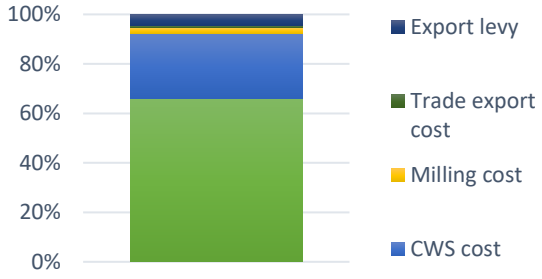


Source: GCP, Agri-Logic in Twin & TMEA, 2018

Farm gate prices have been going up quite substantially, compared to the market, as Rwanda aims for better income for the farmers. However, this comes with its own challenges, as it makes the coffees less competitive compared to the other coffees in the East Africa region. The increase in farm gate price should either be accompanied by increases in quality and/or higher efficiency at CWS level.

Breaking down the supply chain costs, the additional milling fee after washing is about 0.28 USD/lb (16% FOT) and trade export costs are at about 0.13 USD/lb (7.5% FOT). The government charges an additional 3% fee on the export value of semi-washed coffees payable to the NAEB, which is used to cover its overheads. Additional levies are charged for fertilisers and pesticides more on this in section 2.1.

Figure 11. FOT cost price build-up in % Rwanda

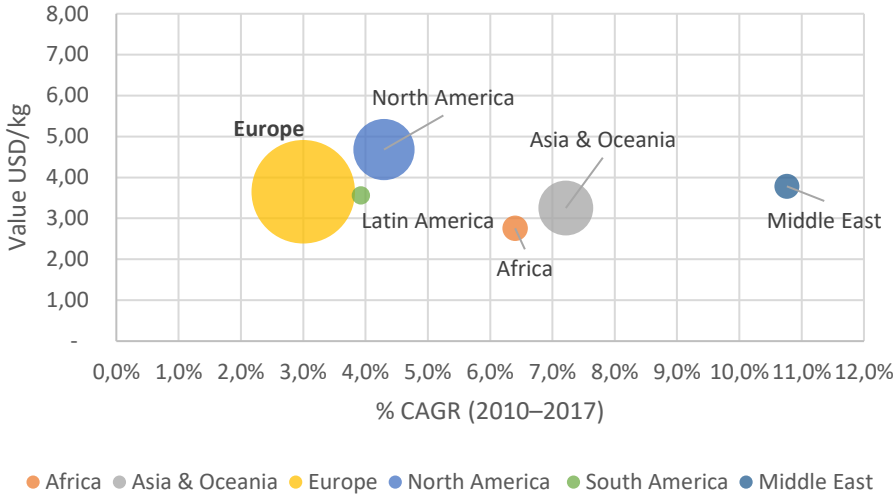


Source: ICO, Agri-Logic

1.4 European market demand

If the European coffee market is set against the other coffee markets (Figure 12), it is easily observed that Europe is the largest coffee importer at a volume of 5 million MT (2017), representing 55% of total exports. About 10% of this volume is re-exported to outside of Europe according to Eurostat, whereby the largest buyers of coffees imported into Europe are the US, the Russian Federation, Australia and Ukraine. Europe clearly shows a mature market: over the period 2010–2016 volume growth has been 2.2% and value growth 3%. Emerging markets, such as Brazil, China, Russia, Indonesia and others, are expected to account for 50% of total global consumption (Uhlenbrock, 2014).

Figure 12. Value, value growth CAGR 2010–2017 and volume (bubble size)

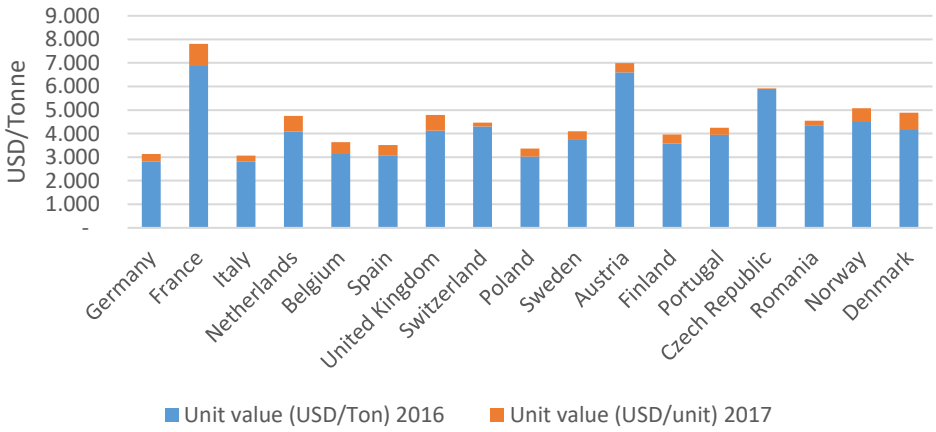


Source: ITC Trade Map

The majority of European consumers still purchase cheaper mainstream coffee, usually in the form of standard blends. Recent research suggests that most European consumers still cannot distinguish between low and high quality coffees (Giacalone, et al., 2016). This indicates that there is lack of consumer awareness and education regarding speciality coffee (CBI, 2018).

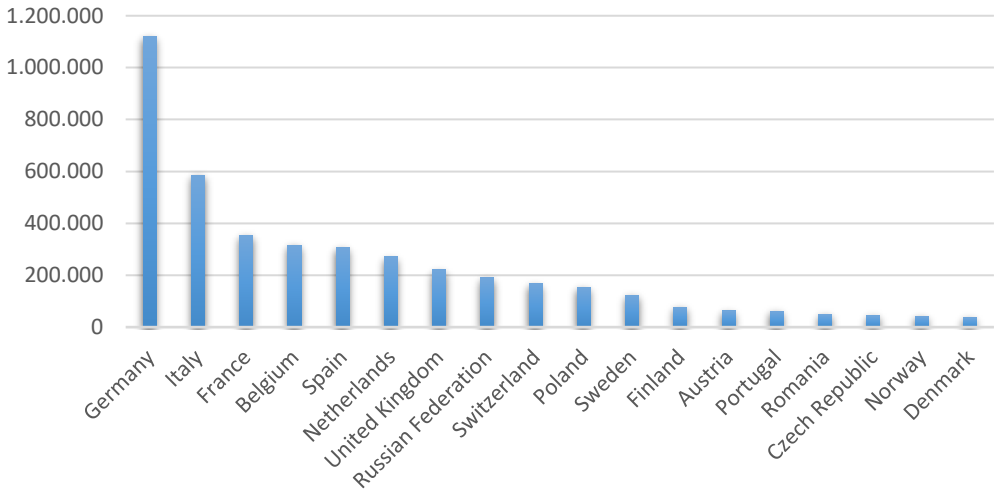
The below figures depict the value of the imports of coffee, its growth, as well as the volumes in the largest European coffee countries. Average overall value growth per ton in Europe was 6% between 2016 and 2017 (ITC, 2017), while volumes decreased by 4%, indicating a premiumisation of the coffee. In Figure 15 this is further detailed. Coffee value per tonne has increased in most countries over the last year. This trend is expected to continue and is something that Rwanda could tap into.

Figure 13. Growth in value between 2016 and 2017 for the fifteen largest coffee countries in Europe



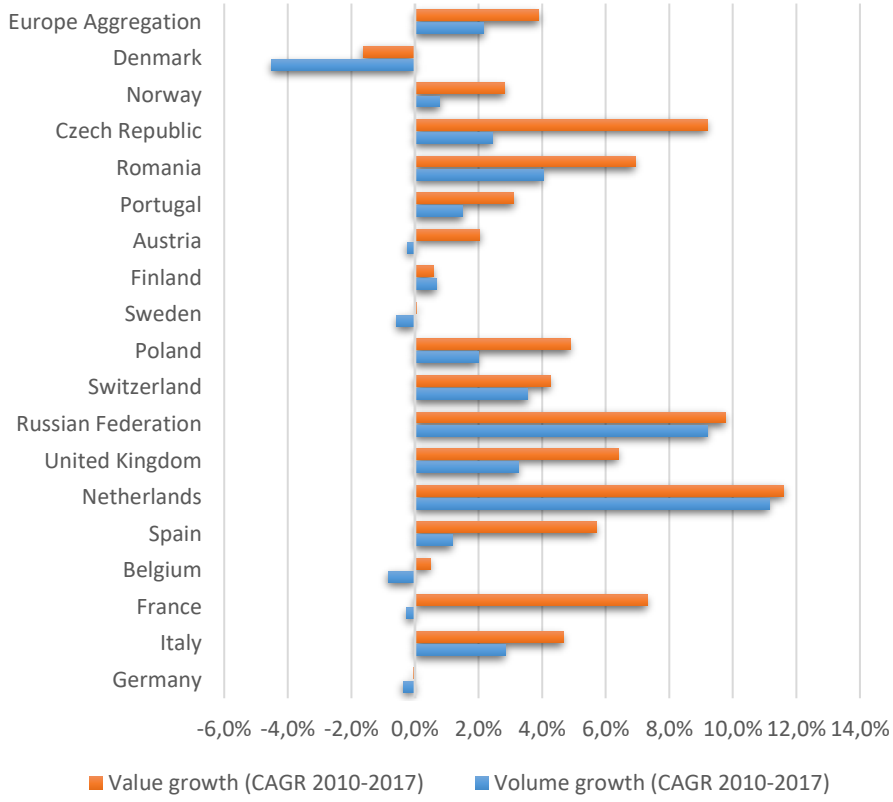
Source: ITC Trade Map, 2017

Figure 14. Volumes imported in MT for the fifteen largest coffee countries in Europe



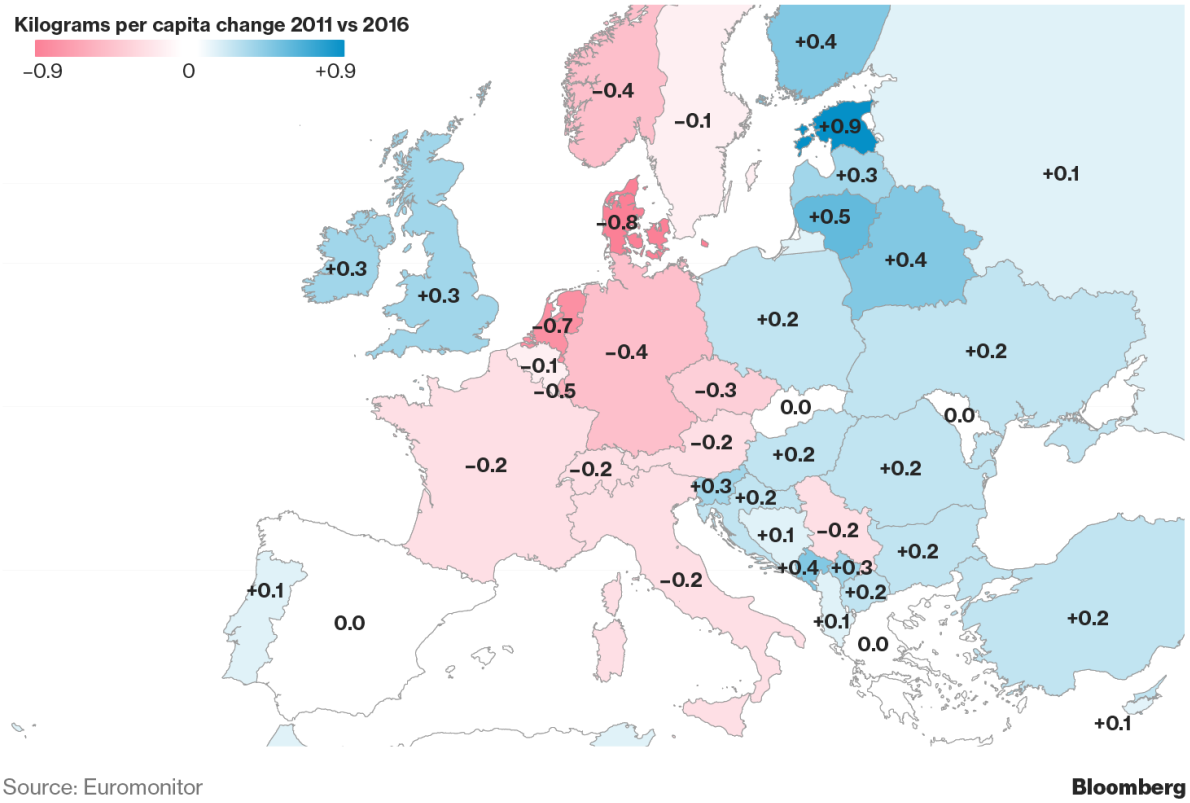
Source: ITC Trade Map, 2017

Figure 15. Volume and value growth CAGR 2010–2017



Source: ITC Trade Map

Figure 16. Appetite for coffee in Europe



Source: Euromonitor in Bloomberg Quint, 2017

Premiumisation can be explained by both the transfer from ground coffee to pods and the increased interest for higher quality beans. This is true for France, the Netherlands and Belgium, which have all seen double-digit growth in volume and in value in 2013–2017.

This increased interest in more premium coffees is also reflected in the growing number of coffee bars and chains, small roasters, small local brands and baristas (CBI, 2018). Since 2010, the number of cafes and retail sales have declined, while coffee focused shops have experienced significant growth. During that same period the total number of coffee focused shops grew by 50%, aligning with the retail sales decline. This is driven by increases in almost all western European countries, with especially Spain, France, and the Netherlands seeing significant growth in coffee focused shops (SCA, 2017).

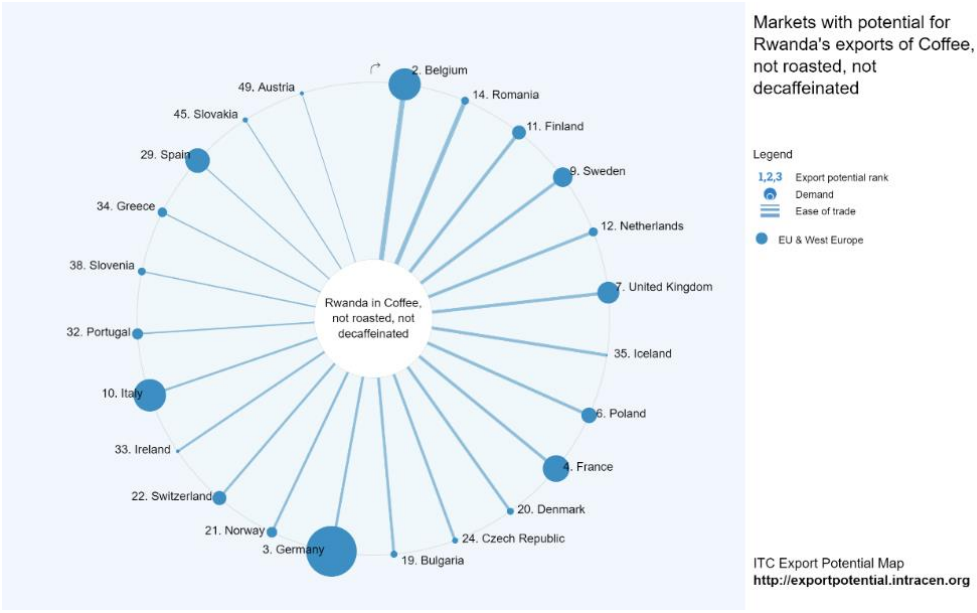
Specific Europe-wide data on the consumption of speciality coffee is not available, partly because there is no industry consensus on a clear-cut definition of speciality coffee (CBI, 2018). When talking to traders about the specialty niche market in Europe, the UK, eastern Europe and Scandinavia are often mentioned, whereby Norway stands out in particular among the Scandinavian countries.

The ITC Export Potential Maps (Figure 15, Figure 17 and Figure 18) show that Belgium, Germany and France have the largest market potential. Earlier figures, however, do indicate that growth in value addition in Belgium and Germany are not as high as in, for example, France and Norway (Figure 13), which are therefore likely to be better markets for specialty.

Figure 17. Potential (or standard) export value based on supply, demand and market access conditions

Source: ITC Export Potential Map

Figure 18. Ease of Trade Ranking
Line width shows ease of trade with the market independent of size or complementarity in trade structure



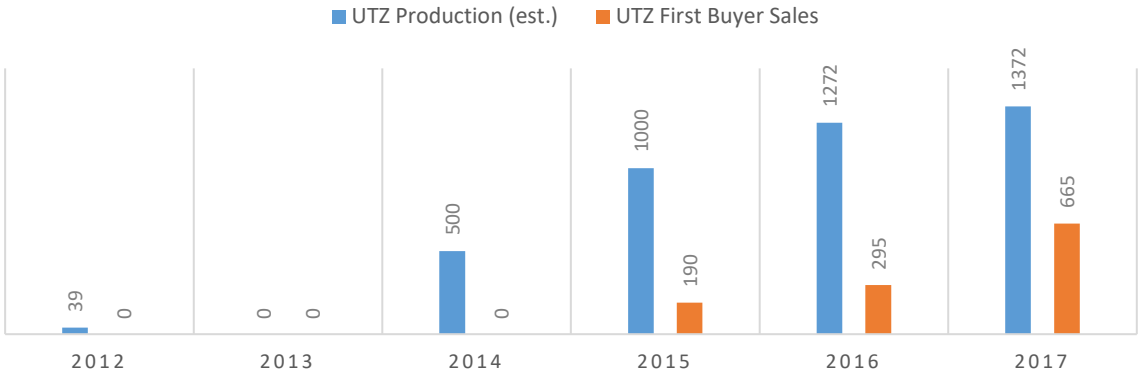
Source: ITC Export Potential Map

Certification

European consumers are increasingly concerned about the social and ecological impact of their consumption, which is impacting the demand for certified goods (CBI, 2018). All voluntary sustainability standards have been able to grow their volumes of certified and verified coffee at farm level worldwide, although only 20% of this is also procured and sold as certified (Panhuysen & Pierrot, 2018). There are a few

reasons for this: one is that coffee yields different qualities, and only the premium qualities are sold as certified. Secondly, there is more supply than demand of coffee. The figure below shows the production versus sales for UTZ certified coffees from Rwanda. With regard to Fairtrade we know that for 2016, of the coffees produced Fairtrade in Rwanda, 67% was sold.

Figure 19. Production & sales of UTZ certified green coffee in Rwanda



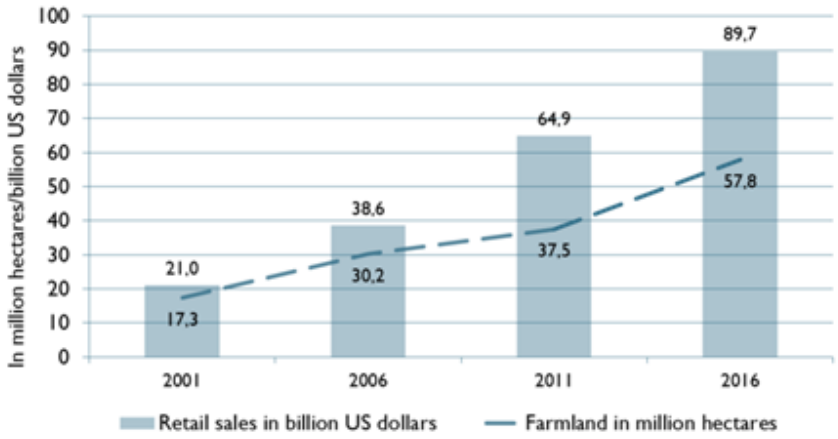
Note that we were not able to obtain figures on the Rainforest Alliance or organic sales from Rwanda, only on production and acreage under certification
Source: UTZ

Certification has become a market requirement of several buyers and retailers, especially for the medium and large coffee companies. Drivers for the smaller coffee roasters and the speciality segment are quality, combined with storytelling (CBI, 2018).

Generally speaking, the certification standards, such as Rainforest Alliance, UTZ and Fairtrade, have little direct additional value for growers, when only taking the premium into account. On the other hand, it does provide the grower with an access to another market and a higher skills set.

Organic certification is valued higher by the market than other certification, and there is a clear trend towards more organic certified products. This is reflected by the sales statistics (Figure 20), but also has been confirmed by the buyers. Potential constraints on the organic production side are that it is a long-term investment, it can reduce coffee yield by up to 20% when mineral fertilisers are used, and it can deplete soils if no adequate soil care measures are put in place. It therefore requires high investment and skill levels.

Figure 20. Growth in organic food & drinks sales and farmland 2001–2016



Source: ECOVIA Intelligence 2018 in The World of Organic Agriculture – Statistics & Emerging Trends (FiBL & IFOAM, 2018)

1.4.1 Image that buyers have of Rwandan specialty coffee

We spoke to about twenty experienced European buyers, both micro-roasters and specialty green bean traders, including those associated with large traders. All had slightly different opinions and perceptions of Rwandan coffees. Below a summary of the points that were put forward.

Buying coffee from Rwanda was said to be very much about its origin and the story that goes with it: relationship coffee. The coffee is produced in a country that is politically stable and easily accessible for buyers, making it thus also easy to closely collaborate with the CWSs.

Furthermore, the wet processing infrastructure is good, allowing coffee of relatively consistent good quality and traceability to be produced. On pricing, the coffees are still competitive, although developments in the country have been such that prices have been increasing while quality has not necessarily increased. This concern was mentioned by quite a few buyers.

Something else which stood out: most of the buyers mentioned that the flavour of Rwandan coffee beans is not that unique compared to other higher qualities coming, for example, from Tanzania (Kilimanjaro), Burundi and Ethiopia. The question put to buyers about Rwanda's comparative and competitive advantage, in comparison to other countries in East Africa, was one which they found difficult to answer. The Burundian coffees, for example, score higher on flavour uniqueness, mainly due to the higher altitudes, while DRC coffees tend to have a better character and Tanzanians offer more flexibility.

According to the buyers, Rwandan coffee as a specialty and single origin is still somewhat unknown, and demand is low in Europe. This is also one of the reasons that it is mostly used in blends in Europe. However, the buyers operating in the niche section of the specialty market indicated that demand is picking up, as differentials compared to, for example, Kenyan coffees are so much more favourable, and there is of course exceptionally good quality coffee from Rwanda.

The "potato taste defect"

The "potato taste defect", or PTD, is considered the major constraint for buyers of Rwandan coffees. It prevents roasters and green bean traders from buying Rwandan coffee, including specialty coffees. Coffees from the African Great Lakes region are prone to it, but especially Rwanda and Burundi are infamous for it.

PTD makes the coffee taste and smell like raw potatoes. It only takes a single afflicted bean to spoil the brew.

The risk of infection, though rare, is difficult to trace and is a reason why some of the roasters are still quite wary of purchasing Rwandan coffees. PTD is thought to be caused by specific bacteria that infect the cherry through the holes drilled through the skin by the antestia bug (*Antestiopsis*), causing the raw potato taste. Different studies including those conducted by the Rwandan Agriculture Board (RAB) show that by controlling antestia, PTD can be reduced (Gerard & Bigirimana, 2018). There are a few ways to treat the problem which help reduce the risk, such as pruning, removing the green beans attacked by the antestia bug, target spraying (which can be organic), application of strict post-harvest sorting protocols and floating the coffee cherries. This requires sensitisation and training of the farmers.

The buyers interviewed for this study do admit that the defect is much less common than it used to be and some see the risk similar to that of corked wine, whereby the high quality of the coffees generally justify the rare risk of the defect. On the other hand, it does still make some European buyers completely avoid Rwandan coffees.

1.4.2 Developments in specialty coffees

Within the market for specialty coffee there are three developments that stand out: signature blends, single origin and micro-lots (CBI, 2018).

Signature blends: These are carefully selected coffees from various origins which achieve unique taste palettes. They cater for specific consumer tastes and communicate balance and quality. Union Roasted, for example, have a signature espresso blend called “Revelation”, which is a blend of coffees from Guatemala, Costa Rica, Rwanda and Sumatra (Union, 2018). According to the buyers in Europe, Rwandan coffees are mostly used in blends, including signature blends. The market still views Rwandan coffee as exotic, and together with the high acidity of the African coffees in general, is most likely the reason why it ends up in blends. It is also a coffee that is quite easily replaceable by other coffees, when there are supply or quality issues (e.g. PTD). In the US, where due to the large scale marketing efforts the coffee is much more widely known, more single origin coffees from Rwanda can be found.

Single origin: The origins of coffee are receiving increasing attention from the industry and consumers. Single origin is associated with high quality and uniqueness connected to a certain region or country. Rwandan single origin is (as stated previously) still quite rare in Europe. Examples of Rwandan single origin coffees are: Rwanda Lake Kivu, from Taylors of Harrogate; Starbucks’ Rwanda Umushanana; and Rwanda Red Bourbon from Beans Coffee.

Micro-lots: A micro-lot refers to beans that can be traced back to their original source – be it a specific farm, field or harvest – and tend to be the pick of a particular crop. Supply is often limited, as yields can vary from year to year, and even the smallest of climatic variations can affect their delicate flavours. Buyers often enter into a relationship with a grower in order to ensure that certain processes are adhered to. There has been an increase in sales of micro-lot coffees. The Nordic Approach, a green bean importer to Norway, has quite a few micro-lots from Rwanda, such as Gitantu Remera Lot# RW-2017-27, from crop year 2017, with a cupping score of 86.

Besides the aforementioned differentiations, there are also ones made by traders, using names such as “Prestige” or “Terroir”, like green bean trader Belco does. It is important to market the coffees right, so that the buyer for whom it is intended knows what to expect and ask for.

1.5 Trends

1.5.1 Social

Third Wave

A well-known and often cited trend in the coffee markets is referred to as the *Third Wave*. The Third Wave is characterised by an increasing coffee quality, more direct trade, a greater emphasis on sustainability (people, planet, profit), transparency and innovative brew methods – these are all intrinsic to Third Wave coffee (Perfect Daily Grind, 2017). Consumers can trace the heritage of their favourite coffee to the very farm from which it was harvested. The soil, altitude and method of processing become important decision factors in purchases. The consumers are not necessarily drinking more coffee, but are ready to pay more for a more sustainable coffee and value the story behind it.

Part of the Third Wave is also to increase transparency of the chain. Direct trade is a term used by coffee roasters who buy directly from the growers, cutting out the traditional middlemen. Sometimes exporters and/or importers are still used to facilitate the process.

The relationship between the roaster and the grower generally has two goals: expanding the supply of quality beans and improving the livelihoods of the growers and their communities. Direct trade has also encouraged the development of micro-lots and serves as a good marketing tool. By promoting relationships with farmers and by telling the stories of the coffees they sell, valued is added to the products. Since Rwanda is also very accessible, there are many roasters and green bean traders that build up these direct chains. Examples include This Side Up (TSU) and Union Roasted, but there are many others in Rwanda that are building these relationships. Technological developments, such as blockchain, support this trend.

All "natural"

There is a trend in the food sector towards "raw" and "natural". In coffee this translates to natural and honey processed coffees, as well as organic. The first two are related to processing techniques, with the result often referred to as Washed, Natural and Honey Coffee. See Annex VII for more information on the processing techniques.

Natural processing

Rwanda has been exporting natural processed coffees in recent years. In natural or dry processing, the cherry is sun-dried to separate seeds ("bean") from the pulp. The processing method is very old, but was always seen as a lesser processing method when compared to washed processes, which are thought to yield a cleaner and more balanced profile, with fewer defects (PerfectDailyGrind, 2017). In contrast, natural processed coffee can offer a sweet, smooth cup, with a heavy body; there is clearly an increased popularity and demand for these kind of coffees in the market. The largest competitor in East Africa is Ethiopia, which does quite large volumes of natural processed coffees. A problem for Rwanda is the limited amount of space available for drying, so drying beds are a constraint.

Honey processing

Like natural processed coffees, honey processed coffees also were exported from Rwanda last season. There are three types of honey processed coffee – White, Yellow and Red & Black – depending on the percentage of mucilage left on the bean, which in turn depends on the amount of light and drying time the beans are exposed to (PerfectDailyGrind, 2017). Producers of these kinds of coffees are mainly from Brazil, where it was first pioneered, and countries such as Costa Rica and El Salvador.

Organic (certified)

Demand for organic has been on the rise for all types of food and beverages. Organic retail in the EU was EUR 30.7 billion, second after the US. In the entire European market, the highest shares of organic are found in Denmark, Luxembourg, Sweden and Austria. Switzerland, Denmark and Sweden have the highest per capita consumption worldwide. The rise in demand for organic has also been acknowledged by the buyers (Figure 20).

Feminism

In 2017, *Time* magazine's Person of the Year were the "Silent Breakers" related to the #MeToo movement. The movement started after the sexual assault allegations against US film producer Harvey Weinstein, and has spread globally, including to the European countries. The term "feminism" was "Word of the Year" according to the online dictionary Merriam-Webster, as searches went up by 70%. Also in April 2017, the UK government introduced new gender pay gap (GPG) transparency regulations, which received a lot of media attention.

For Rwanda, which actually scored fourth place in the Global Gender Gap Index of 2017, after Iceland, Norway and Finland (World Economic Forum, 2017), opportunities related to this trend lie in promoting women-grown coffees to the market.

1.5.2 Technological

Today, virtual reality (VR), augmented reality (AR), artificial intelligence (AI) and blockchain are redefining IT and business, as well as society in general.

Blockchain

In the specialty coffee industry, maintaining traceability and integrity is an important part of the value of the coffee in order for customers to make informed purchases that match their values and preferences. Therefore, there are many initiatives that are working on creating that transparent and fair chain, whereby blockchain seems to be the answer. Moyee Coffee, Starbucks, Progreso, Bext360, Coffeecoin, IBM, Microsoft, Infosys, SourceMap and many more are working on tying crypto to coffee. Blockchain is particularly valuable in low-trust environments where participants cannot trade directly or lack an intermediary. Blockchain's core advantages are decentralisation, cryptographic security, transparency, and immutability. It allows information to be verified and value to be exchanged without having to rely on a third-party authority (McKinsey&Company, 2018). The initial benefits for agriculture is especially cost reduction as it will drive operational efficiencies. The decentralisation aspect of blockchain could potentially be in conflict with the centralised way the coffee sector is managed in Rwanda.

Blockchain is still very much in its infancy, and with recent incidences in the crypto currency market, trust in the system has been hurt. Small-scale pilots and experimentation with blockchain and other technological developments, also in Rwanda, will improve the learning curve and make any larger-scale interventions at a later stage easier.

Examples of a pilot already in place is that of Starbucks, which announced March of this year that it will pilot "bean-to-cup" traceability with new technology (incl. blockchain) in collaboration with coffee farmers from Costa Rica, Colombia and Rwanda. Mobile phone technology will be at its core. From their press release:

"Starbucks hopes to develop and demonstrate over the next two years how technology and innovative data platforms can give coffee farmers even more financial independence and confidence. Conservation International will measure the impact of traceability to understand the benefits farmers will receive from this

technology. True to their open-source philosophy, Starbucks plans to share this system and what it learns openly." (Starbucks, 2018)

Another ongoing initiative is that of Progreso. Through Beyond Coffee (BEYCO), they have been professionalising access to markets by providing a global coffee connection platform to connect producer organisations with buyers, facilitating trade; more on this can be found here. In addition, IOHK (builder of Cardano blockchain) recently signed an MoU with the Ethiopian government to pilot blockchain technology in the coffee sector. This will allow all participants in the supply chain to trace and track coffee as it makes its way from rural farms to wholesale buyers. Bext360 has partnered with Great Lakes Coffee, a Uganda-based coffee exporter, and Coda Coffee, a Denver-based coffee roaster, to launch a pilot programme using the bextmachine to trace coffee from Uganda to Denver, Colorado in the US.

Big-data collection on crop and farm performance

Nano-satellites and other farm monitoring tools

Nano-satellites can provide information on crop yields and test interventions. If combined with weather, soil and other big data, it could be used to create crop disease and weather alerts, for example, allowing crop monitoring and forecasting, crop insurance and certification. Quite a few organisations, such as WaterWatch, are already experimenting with this, often in collaboration with the European Space Agency (ESA). A concern though, with nano-satellites, has been the "space-waste" created.

Farm monitoring has also become increasingly important, in order to prove impact, as certification has been failing in that respect. Organisations like GeoTraceability, SourceMap, Farmline, SMS (ECOM), OFIS (Olam) and Agri-Logic with its Farmer Field Book have seized this opportunity.

Mobile phone penetration

The penetration of mobile phones and internet is expected continue to increase. Subscribers numbers are expected to rise globally from 66% in 2017 to 71% in 2022 (GSMA, 2018), and internet penetration from 43% in 2017 to 63% in 2022. Rwanda already has 75.5% subscriber penetration in Rwanda (RURA, 2018). This comes with many opportunities such as access to finance, farm data collection and analysis (apps). Rwanda is already experiencing rapid growth in the use of ICT-related products, while more than 40% of the population is currently connected to internet (RURA, 2018), creating a real opportunity.

1.5.3 Ecological

It is estimated that the areas suitable for coffee cultivation will decrease substantially by 2020 due to climate change. Several coffee varieties are also endangered, raising concerns of roasters, importers and other industry players. Climate change can affect the global coffee production due to prolonged droughts, rising temperatures, biodiversity loss and heavy rains (CBI, 2018).

Therefore, the focus of the coffee sector as a whole is to make the farmers more resilient to climate change and diversify farm risk. The Sustainable Coffee Challenge's commitments portal confirms this, and shows that climate, forest protection and technical assistance have surpassed certification as the main focus.

Standards that are actively working on this are Rainforest Alliance and Smithsonian Bird Friendly (the latter provides certification for the more niche markets). For Rwanda specifically more information climate related issues in the following chapter.

What should also be considered (which might fall more under political developments) is the strong commitment of the EU efforts to tackle climate change, which is reflected in its trade policies. More information on labelling is required regarding a product's environmental footprint, action is being taken on

false “green” claims, and circular economy criteria are now being used in public procurement. This could potentially create more barriers to imports from outside the EU. For Rwanda this means that should also move in this direction with regard to their exports, as it is not only the European markets making these new demands.

1.5.4 Economic

Economic growth

The coffee market is moving towards a larger premium and specialty segment, and will likely grow with the European economies. According to professional services firm PwC, the economic outlook for Europe (2018–2022) is positive, although growth is expected to slow down. In 2018 and 2019, the growth of the economies is set to continue and remain solid, with growth of 2.3% and 2.0% respectively in both the euro area and EU in general (ec.Europa.eu). The Netherlands, Austria and Germany are expected to outperform their EU peers. Consumer spending is expected to grow (PwC).

Rwanda’s long-term development goals are defined in “Vision 2020”. The second Economic Development and Poverty Reduction Strategy (EDPRS 2) aims to: raise Gross Domestic Product (GDP) per capita to USD 1000; reduce the percentage of the population living below the poverty line to less than 30%; and reduce the percentage of the population living in extreme poverty to less than 9% (World Bank). Rwanda is one of the faster growing economies in Central Africa. Rwanda’s economy grew 6.1% over 2017 but is expected to grow further in 2018 to 7.2% according to the IMF. The projected growth will be largely driven by the services sector, with tourism and conferences being expected to act as major drivers. The government is keen on developing value addition in the agriculture sector to maintain the sector’s contribution to sustainable economic growth (New Times, 2018). Further developing the specialty coffee sector is part of this strategy to encourage more sustainable economic growth.

Part of the strategy of the Rwandan government is to also promote local consumption. Bourbon Coffee and Question Coffee, with coffee shops in Kigali, are an example of this. In addition, there are already 18 roasters in the country, roasting coffee mainly for local consumption. Coffee is quite expensive, in comparison to alternatives. It is not considered a staple like in Ethiopia, where more than half of the local production is domestically consumed. Generally speaking, coffee is perceived as a luxury product, which means that coffee consumption will depend on rising incomes. Consequently, when incomes increase, so too does the demand for coffee.

Consolidation of the coffee market

While the destination of trade flows is becoming more diversified, the coffee industry is undergoing a process of consolidation (ICO, 2018). After years of unrivalled market leadership, Nestlé’s global dominance of the coffee market is being challenged by JAB Holding Co., a German investment firm owned by the Reimann billionaire family. The Top 10 roasters have a 35% share of the coffee market (Coffee Barometer, 2018). Since 2015 there have been nine coffee deals made by JAB Holding Co. In third position after Nestlé and JAB Holding is likely to be Lavazza. Lavazza has been buying multiple brands in the EU and North America, including premium French coffee brand Carte Noire, making France its second largest market after Italy. Recently, Lavazza also branched out to North America, taking a majority stake in Kicking Horse, a Canadian company specialised in Fairtrade and organic certified coffee (Coffee Barometer, 2018).

The majority stake in Kicking Horse shows that, besides the consolidation trend, there is also a trend towards capturing market share through portfolio premiumisation. Starbucks has retailed high-end coffees under its Starbucks Reserve Brand since 2015. Nestlé acquired specialty coffee roaster Blue Bottle Coffee in 2017. The

trend appears similar to what has been happening in the beer industry, where Heineken and AB-InBev have started acquiring craft breweries to protect and grow their market share.

In Rwanda, consolidation is also occurring, for example the acquisition of Schluter by Olam. What this trend appears to mean for Rwanda is that in the future it will likely have to deal with larger buyers. Buyer power would then increase and the negotiating power of the Rwandan suppliers decrease.

1.5.5 Political

Coffee is one of the world's most traded commodities. It is an important source of foreign revenue for many of the producing countries, and is a strong part of the culture of many of the EU countries. Therefore it has a high profile and many activities are related to the sector, such as the Global Coffee Platform (GCP) and the Sustainable Coffee Challenge (SCC). The SCC was set up in 2017, with actors from governments, NGOs, industry, trade and research coming together for joint action towards making coffee sustainable. It is an attempt to approach sustainability in a more holistic and impactful way. Rwanda and Mexico were the first countries to join this challenge. Rwanda's commitments include efforts to increase the production and yield per coffee tree, improve soil fertility, strengthen farmer organisations, and improve traceability in the value chain.

Recently, in May 2018, Arsenal signed a three-year sponsorship deal with Rwanda, as part of a broader Rwandan strategy to double its income from tourism by 2024. Though in itself not directly related to the coffee sector, it has created quite some political debate in countries that invest aid money in Rwanda. Among these countries is the Netherlands, where the issue was heavily debated in politics. However, the Dutch government did underline the importance of Rwanda marketing its tourism, and has shown support for Rwanda's efforts to become economically self-sufficient. There is increased support for economic development projects, however. The political climate in Europe is such that there appears to be a clear anti-aid sentiment growing among the population, which could affect future European development investments in Rwanda, also in the coffee sector.

Trade

The UK will formally leave the EU in March 2019. The process towards this is bringing many uncertainties to market. About 40% of the coffee imports to the UK are via mainland Europe, of which 64% comes from France, Germany and Italy (OEC, 2016). What effect this will have on trade and specifically trade from Rwanda is uncertain, as the future trade agreements are still unclear.

On macro-economic level, global trade continues to accelerate both in volumes and complexity, with the World Trade Organization's (WTO) most recent trade forecast revised to show improved growth in world merchandise trade volume. At the same time the complexity of conducting global trade and complying effectively to the growing regulatory and licensing requirements has increased, due to political unrest, numerous trade agreement revisions and additions, rising protectionist measures, the e-commerce explosion, and the sheer growth in types and numbers of products imported and exported around the world on a daily basis (GlobalTrade, 2017). Europe has, however, been showing willingness to open the market, with numerous new free trade agreements (FTA) that were enacted by the EU over the last two years.

Increased protectionism could lead to increased tariffs on roasted coffees, in order to maintain the added value in Europe. The push from consumers towards more ethical and environmentally and/or animal friendly traded products is also influencing politics. Stricter rules on food safety, transparency and traceability for imported foods and beverages are likely to make it more difficult to import into the EU. This could drive a

trend towards more regional East African coffee trade, and/or towards more trade with Asia, given its fast growing (specialty) coffee market.

Towards collaboration

Although the coffee sector is very fragmented, things have been changing. The larger players in the coffee sector have been collaborating more constructively on cross-cutting issues related to the sector. Examples include the Global Coffee Platform (GCP) and the SCC, often with support from governments, research and NGOs. This indicates that slowly but surely a joint vision is being created by the sector stakeholders of what a sustainable future for the sector should look like.

1.6 European requirements

In Rwanda the European requirements (i.e. food safety, labelling and packaging) for export are generally well known to the exporters, and there does not seem to be much of a compliance constraint for the green bean export. The cooperative CWSs generally export through MISOZI or RWASHOSCCO, which were put in place to facilitate exports. The size of the CWSs, their access to working capital and their management capacity and ability to market themselves seem to be much larger bottlenecks and shall be further detailed upon, in the chapter entitled Element 2.

The export requirements that premium specialty buyers must adhere to are proving to be more of a challenge. Many of the premium specialty coffees are traded in micro-lots, that is, lots specifically selected for uniqueness in character and flavour, which are separated from the rest of the harvest because of their exceptional quality. This is quality that did not exist a year prior and which will not necessarily exist the following year (PerfectDailyGrind, 2017). So it is important that the pre-shipment samples sent to the buyers are from the exact same lots that are being shipped. Any difference in flavour profile and cupping score and the lot is “worthless” to the buyer. There is a high level of professionalism associated with this.

1.6.1 Tariffs

Tariffs are generally lower for raw and unprocessed products than for finished products. The EU charges a tariff of 7.5% on roasted coffee. Below is an overview of tariffs charged on green coffee (excl. roasted and decaffeinated) and roasted coffee (excl. decaffeinated) for a number of countries.

Table 3. Tariffs on green and roasted coffee from selected countries and regions

Country/Region*	EU	PRC	NO	AU	CH	RK	USA
Coffee (excl. roasted and decaffeinated) 090111	0%	8%	0%	0%	0%	2%	0%
Roasted coffee (excl. decaffeinated) 090121	7.5%	15%	0%	0%	CHF 63 per 100 kg brut	8%	0%

** European Union (EU), China (PRC), Norway (NO), Australia (AU), Switzerland (CH), Republic of Korea (RK) and the United States of America (USA). Source: WTO Tariff data*

1.7 Comparative and competitive advantage

1.7.1 Rwanda's comparative and competitive advantage

On a more macro level, it can be said that, with the exception of Burundi, the other East African countries have a stronger competitive position than Rwanda in terms of volumes and flexibility in supply, and they do not carry the high risk of PTD. Pricing of Rwandan coffees has been relatively competitive for the region, but with the fixed farm gate prices going up, relative to the market, and efficiencies not improving further up the value chain, this competitive edge is also thought to be diminishing. However, this is much more relevant for the mainstream, more commercial specialties, where pricing is very much linked to the futures market.

So what does make Rwandan coffees interesting to buyers (as mentioned earlier) is that it is a country which is safe and can easily be travelled to, unlike some of the other coffee countries in the region. Rwanda is well organised, politically stable (currently not the case for Tanzania or Burundi), there is a decent infrastructure, and the washed coffees from the CWSs are of good quality. There are also still many smallholder coffee farmers, who are not able to obtain a living income from coffee. Improving the relationships and adding value in this way is an important opportunity for the sector and its growers in Rwanda.

1.7.2 Scoring

To analyse Rwanda's competitive advantage, we compared its performance in the sector and more generally in trade against Colombia, Ethiopia, Uganda and Tanzania. The following criteria were used to score the countries against each other (see also Annex IX).

- Macro-Economic Performance: GDP, level of foreign direct investment, unemployment and ease of doing business
- Production Capacity: volumes produced, productivity, productive area, average farm size
- Exports: volume of arabica coffee exported, value of coffee exported, ease of trade across borders
- Certification: Rainforest Alliance, UTZ, Fairtrade and organic certification levels
- Coffee Value: farm gate prices % FOB, differential trade
- Youth & Women: labour force participation women and youth, youth unemployment, ranking women, peace and security index

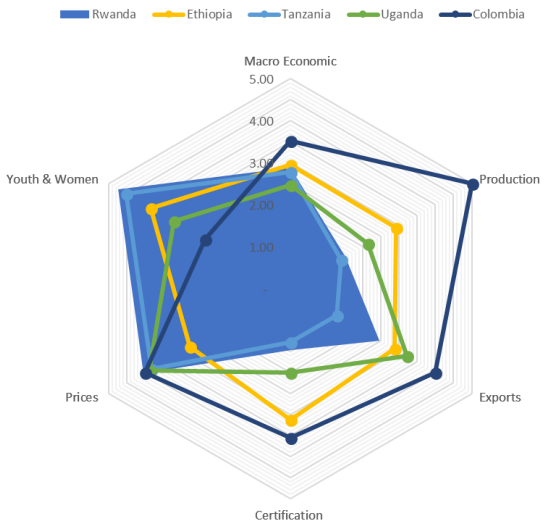
The results were as follows.

Table 4 Scoring against six indicators of Rwanda, Burundi, Kenya, Ethiopia, Tanzania, Uganda and Colombia

	Weight	Rwanda	Burundi	Kenya	Ethiopia	Tanzania	Uganda	Colombia
Macro-Economic	17%	2.87	2.33	2.82	2.95	2.78	2.46	**3.52**
Production	17%	1.51	1.05	1.44	2.91	1.40	2.14	**5.00**
Exports	17%	2.47	2.70	2.44	2.87	1.29	3.21	**3.99**
Certification	17%	1.72	1.75	1.55	**3.28**	1.53	2.00	3.26
Prices	17%	**4.03**	3.65	1.50	2.75	3.81	3.88	4.00
Youth & Women	17%	**4.74**	3.18	1.41	3.85	4.51	3.20	2.35
TOTAL Score		**2.89**	**2.44**	**1.86**	**3.10**	**2.55**	**2.82**	**3.69**

Colombia clearly scored highest overall. In the figure on the next page, the data from Table 4 are represented graphically for Rwanda, Uganda, Tanzania, Ethiopia and Colombia.

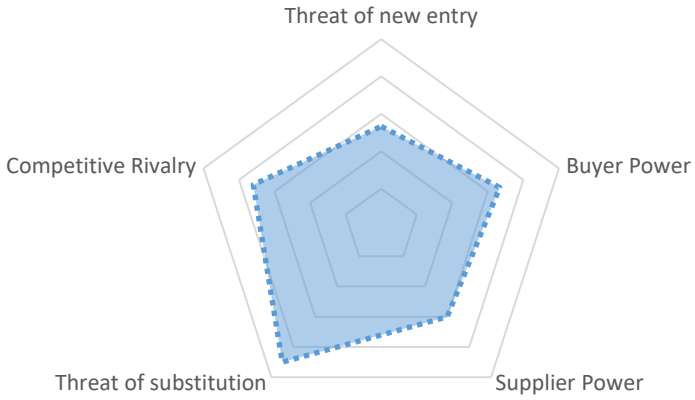
Figure 21. Comparison between Rwanda, Uganda, Tanzania, Ethiopia and Colombia using six main criteria



1.7.3 Porter's Five Forces applied to specialty coffee

A graphical representation of Rwanda's competitive advantage, using Porter's Five Forces analysis, is shown below.

Figure 22. Porter's Five Forces applied to the coffees from Rwanda



Barriers to entry by other coffee-growing countries in the region are medium to high, as larger coffee-growing countries, such as Uganda, traditionally a robusta growing country, are quickly catching up on their washed arabicas, obtaining cupping scores up to specialty. For smaller countries such as Malawi, also mentioned by one of the buyers as a potential competitor, it will be more difficult to set up a similar structure for washed coffees.

Buyer power is relatively large. A buyer has limited switching costs, and can easily go for another Ethiopian or lower quality Kenyan coffee as a substitute for Rwandan coffees. Only the very small niche buyers, that buy the coffees because of the origin, and/or specific locality of trees, for example, cannot switch.

Supplier power is medium, and depends somewhat on the perspective which is taken. There are many CWSs in Rwanda, with the majority of them capable of providing the skills and capacity required to supply the volumes and qualities demanded by the market, especially when also taking the multinationals into account.

However, the trend towards market consolidation, mentioned earlier in the document, will create additional buyer power and reduce supplier power overall, as the merged buyers will have more options with regard to supply.

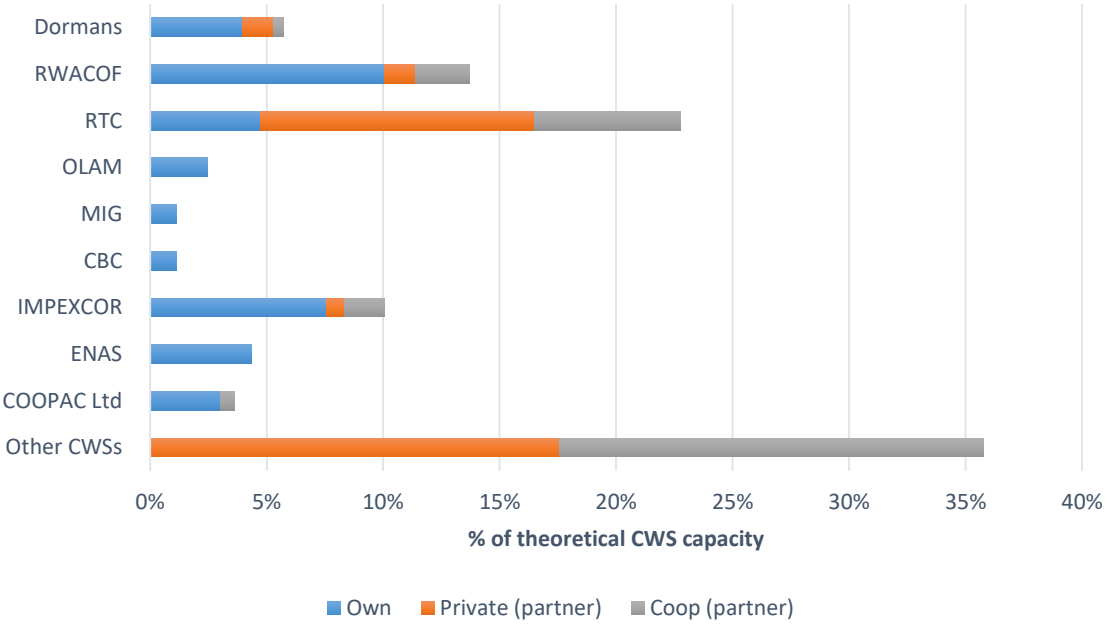
Threat of substitution is high, since there are many different coffees that could be purchased as substitute to the Rwandan coffees.

Competitive rivalry is high, as Ethiopia and Uganda have been successfully increasing production to satisfy the market. As mentioned in the sections above, there seems to be no direct competitive advantage for Rwandan coffees when comparing them to the other East African countries.

Local vs foreign owned

Out of the 96 cooperative CWSs, 40% have (exclusive) partnerships with large buyers (i.e. the Rwanda Trading Company (RTC) and RWACOF/SUCAFINA); for more information see the next chapter. Together with its partners, RTC has the largest share of theoretical CWS capacity, at 23%. Of the privately owned CWSs, a little over 50% (59 out 110) are linked to an international buyer, either through ownership or through partnerships.

Figure 23. Ownership and partnerships of the CWSs in percentage (2017) based on theoretical CWS capacity



Source: NAEB

The CWSs that are not directly linked to larger buyers, about 19% of Cooperative CWS and 21% of private CWSs are very fragmented and unorganised, each operating very much on its own.

According to ITC's SMEs competitiveness analysis, the small firms in Rwanda perform well with regard to offering formal training programmes to employees and obtaining foreign technology licences. They underperform, however, with regard to having bank accounts and business websites. The largest gap between small and large firms lies in the use of email. The country performs well with regard to the ease of obtaining credit. The problem generally identified by the CWS in interviews, however, is that the timeliness

and affordability of such credit are a problem, as well as the lack of financial literacy of the CWS staff (little knowledge of cost control).

1.8 Potential for local value addition

Natural & honey processed and other processing methods

Natural and honey processed coffees seem to be a growing trend. Such processing can help create unusual flavour profiles that add value to the coffee (Annex VII). In the previous section (1.2.2), some additional information was provided on the status of natural and honey processed coffees in Rwanda.

For natural processed coffees, the cost of processing is lower than for fully washed, as no water is used in making the coffee. However, prices paid for it in the market are similar to those of washed coffees. An additional advantage is that, besides much lower operational costs, the water footprint is drastically lowered. Disadvantages are that the period after harvest needs to be dry to allow sun drying, that it is time-consuming, and that defects like PTD are less easy to control. The other problem with natural processed coffees is that the market is not (yet) really able to differentiate between high-quality naturals and floaters or rejects from the washing process, which sometimes tend to also be sold as naturals.

Innovation in processing is ongoing, in the search for better coffees and profiles. Drivers for innovation in the coffee industry differ, but can generally be divided into these three: creating a consistently higher-quality product, strengthening the product to prevent damage and deterioration on its way to the consumer, and making farms more sustainable. Producers are experimenting with the absence of oxygen for fermentation (anaerobic lactic acid process), while others are looking at catalysts to speed up fermentation. Some are also looking closer at their environmental impact, and trying to process coffees while cutting down on the use of water. New machinery and knowledge-sharing are also helping to create more unique cup profiles (The Perfect Daily Grind, 2016).

Experimentation with innovation is an opportunity for Rwanda, and not just because of the increased demand from the consumer side, translating into new flavours. Knowledge gained could also provide support in better adapting to climate change (e.g. less water usage, quicker processes). Sharing knowledge and coordinating these processes is thus important.

Organic certified

The growth in demand for organic coffees and its limited availability in East Africa make the coffees highly valued. Most of the organic coffees currently come from Ethiopia. If Rwanda is able to produce a high-quality organic coffee at market prices much more competitive than Ethiopia's, there could potentially be a good market. Organic certification is difficult to obtain and requires highly skilled management practices, something that other countries might not be able to easily imitate. The constraint on Rwandan organic production is that fertilisers and pesticides are freely distributed by government, making producing organically more of a challenge, according to some stakeholders interviewed.

Cascara

The new buzz in the coffee sector is "cascara", also known as coffee cherry tea. Niche coffee makers were concerned about the environmental impact of coffee and were starting to make tea from it (The Times, 2018). Cascara, which means "husk," "peel" or "skin" in Spanish, refers to the dried skins of coffee cherries. These pulped skins are collected after the seeds have been removed from the cherries. They are then dried in the sun before they are packaged and shipped off. Coffee retailers – including Starbucks, Stumptown Coffee Roasters and Blue Bottle – have recently started using cascara coffee husks in carbonated beverages

and coffee drinks (TheDailyMeal, 2018; Bloomberg, 2018). Thanks to their demand, the coffee husk now often fetches a higher price than the bean itself does (Bloomberg, 2018).

A few observations with regards to cascara must be made. In May the UK and Germany started enforcing the Novel Food Act of 1997, which restricted the sale of cascara in these countries. The Novel Food Act of 1997 states: "A Novel Food is defined as food that has not been consumed to a significant degree in the EU prior to 1997…". Cascara falls under this regulation and therefore must be authorised to be able to be sold for consumption. Companies must apply to an EU Member State, presenting scientific information and a safety assessment that shows that the product is safe. The national authority then decides if an additional assessment by the European Food Safety Authority is necessary. The national authority can then allow the product if the European Commission and other EU countries do not object (PerfectDailyGrind, 2017). Changes in Novel Food regulations are upcoming this year, which might make it easier to obtain approval, though as for now it is considered by the EU (unlike the US) to be a product unfit for consumption.

Another observation is that the quality of cascara is very much related to both organic coffee growing and natural coffee processing. It is related to organic coffee growing because of food safety, and to natural processing because the skin to stays on the cherry for longer, which in turn allows the flavours to enter into the husk. A better quality of cascara can be obtained.

There is a lot of talk about cascara, but the real demand in Europe still needs to be proven once EU restrictions have been lifted. Like for organic, for Rwanda the constraint might lie in the current widespread use of fertilisers and pesticides.

Innovations

Rwanda is a small country, which is well connected and has an active policy on mobile and IT technology development. The country lends itself well to testing technological innovations and could set standards for the future. This could (at least for the short and medium term) mean more investments and value addition in the coffee sector.

Roasted coffee

Adding value by roasting the beans at origin is an option. Quite a good deal of small-scale roasting is already being done, such as for the Maraba coffee and Gorilla's Coffee produced by the Rwanda Farmers Coffee Company (RFCC), which recently struck a deal with a US company. Direct trade and providing added value in origin is becoming more and more of a trend. Difficulties lie in maintaining qualities during transit.

Development of local consumption

Although this would be more of a long-term effort, given that Rwanda is traditionally a tea drinking country and coffee is relatively expensive compared to other drinks, it might be an effective channel for the more mainstream fully washed coffees, as this is where Rwanda might have difficulty competing in the export markets in future. Bourbon coffee and Question Coffee are good examples of how local consumption could be promoted.

Storytelling

As already touched upon in previous sections, storytelling is an important part of marketing coffee, especially for Rwanda. Further building on this will create value and help support the position of the Rwandan coffee sector in the region.

1.9 Conclusion to Element 1

European demand for specialty coffee has been on the rise and is expected to continue to grow. Although Rwandan specialty coffees are already known to European buyers, they are still seen as exotic when it comes to specialty. The coffee is also still very much associated with the potato taste defect (PTD).

In the US this is a different story, due to the effectiveness of the PEARL and SPREAD projects implemented between 2000 and 2011, which besides impressively increasing the qualities, also successfully promoted Rwandan coffee with specialty buyers in the US. Interventions should target the promotion of Rwandan coffees with the European buyers and roasters. An opportunity might lie in finding synergies with Rwanda's tourism strategy.

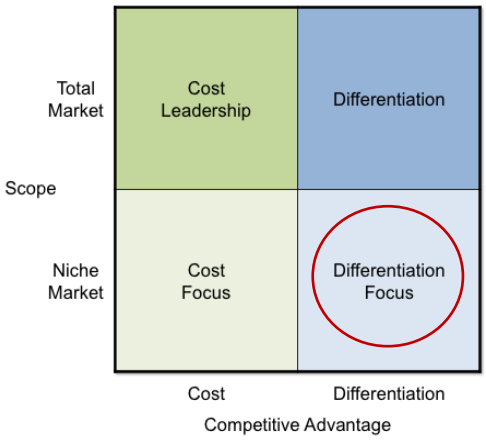
As to PTD: research is being conducted and there are some promising results. Continued support of this research and its application at CWS level should further help control PTD and help improve the reputation of Rwanda's coffees.

According to the trade statistics, opportunities for specialty in Europe can be found particularly in the UK, France, the Netherlands, Norway and Poland. This was backed up by the buyers, who indicated that the Scandinavian countries as well as eastern Europe to be good growth markets for specialty. Germany shows potential according to the ITC, although value/kg and value growth is relatively low. As a small country, volume is less relevant for Rwanda, so most opportunities likely lie in focusing on the smaller consumer countries exhibiting faster growth, where high-value coffees are appreciated, in order to establish market share and brand recognition.

Taking only into account quality and volume, Rwanda has little competitive advantage compared to the other specialty coffee producing countries in East Arica. Its competitive advantage is very much related to its "storytelling" capacity, its pricing (for now), its CWS infrastructure, and the ease of traveling and doing business. The country also shows significant potential for further improvements in cost efficiency and quality.

Porter's Generic Strategies help in showing how Rwanda should position itself. Being landlocked and not benefiting from economies of scale due to its limited land size, differentiation seems to be the best strategy. Differentiating factors that could be interesting for Rwanda are origin (story), further growth in organic production, micro-lots, tech innovations, and different processing techniques such as natural and honey. All of these differentiating factors require increased skills from farmers and (exporting) CWS management. This is where CBI could provide support.

Figure 24. Porter's Generic Strategies

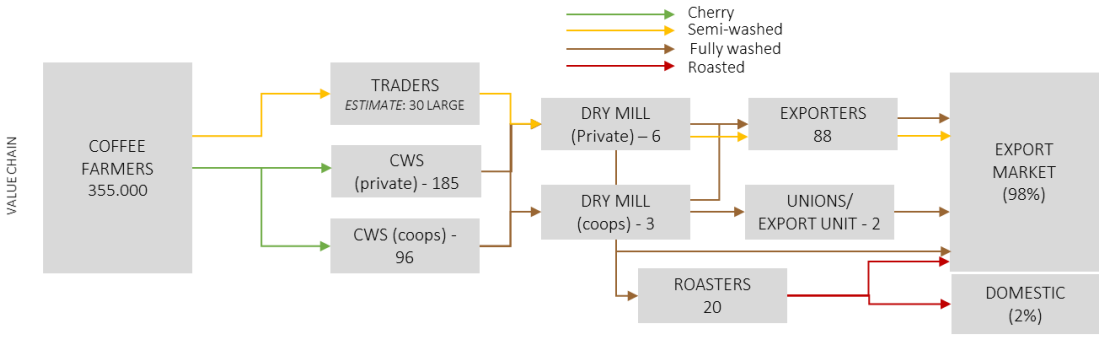


Element 2. Structure, Governance and Sustainability of the Value Chain

2.1 The coffee value chain

2.1.1 General overview of the coffee sector

Figure 25. Rwanda's coffee value chain



Source: adapted from TWIN & TMEA, 2018

The Rwandan coffee value chain is depicted above. As mentioned earlier, there are two main qualities that are recognised for export in Rwanda: fully washed and semi-washed (ordinary).

For the fully washed process, cherries harvested by farmers are carried to CWSs, within six hours of harvest, for wet processing within their zone. The CWSs are either run by cooperatives or private-sector companies. Quality control is done before entering the mill. This includes cupping, checks on moisture content, weight composition ratio, the physical appearance of the bean and the presence of a fermentation odour (JICA, 2014).

The parchment which serves as raw material for semi-washed is home-processed by farmers, often from the cherries refused by the CWS, and is done using a hand-powered pulping machine. This parchment is sold as "Ordinary" to local middlemen and is collected by the dry mill via a vast network of middlemen, who are pre-financed to purchase the parchment. The quality control criteria are similar, except that the parchment is not cupped. In addition, there is no traceability on the parchment as it is collected from all over the country from small intermediaries.

The green beans from the fully washed process are either exported or used for local roasting. All of the semi-washed is exported. There are many different exporters, mostly working with the large international logistical companies Bolloré or Diamond as freight forwarders. Coffee is exported via Dar es Salaam in Tanzania or Mombasa in Kenya.

The sector faces relatively high operational costs, as a landlocked country with few own resources. Electricity and fuel costs are relatively high compared to the region.

The National Agricultural Export Development Board (NAEB) samples all lots before they are exported and performs an evaluation based on the official quality standards which can be found in the Annex VIII. However, the various exporters all maintain different grading standards, as the official standards are not sufficiently recognised by the sector (JICA, 2014).

Largest export destinations are Switzerland for the semi-washed and the US for specialties. Natural and honey processed coffees have recently been on the rise. However, together with the roasted coffee the latter do not represent more than 0.5% of the total export value and 0.3% of the volume exported (NAEB, 2017).

2.1.2 Governance & pricing

The most influential actors in the coffee value chain are the NAEB, the Coffee Exporters and Processors Association of Rwanda (CEPAR) and the large national and international buyers that have CWS and dry mill infrastructure (such as RTC, RWACOF/SUCAFINA, Dormans/ECOM, IMPEXCOR, OLAM), as they are financing a large part of the sector.

The NAEB sets the policy for the sector and determines the annual floor price in collaboration with the sector stakeholders, including the Association of Coffee Processors and Exporters of Rwanda (CEPAR). The farm gate price is always fixed at the beginning of the picking season and can be revised every time when there is a variation of USD 0.10 per pound (lb) on the international market price as agreed with the stakeholders (MINAGRI, 2018).

In the model used, the farm gate price is computed based on the international coffee price (New York "C" Market), the exchange rate, the cost of processing and other export charges. Fertiliser and pesticide fees are also included in the model (MINAGRI, 2018). The NAEB charges 97 RWF/kg (USD 0.11) for fertilisers and 11 RWF/kg (USD 0.13) for pesticides. This is collected by the CEPAR, which is responsible for the import of the pesticide and fertilisers. The CEPAR is responsible for purchasing and distribution to the communities.

Though continuous improvements have been made in the price calculation model, there has been criticism of the floor price calculation methods, saying that the estimated farmer production costs do not represent current realities, that they are too low, and that the New York futures price plays too strong a role in the calculation, considering most of the coffees produced in Rwanda are of specialty grade (Clay & Bizoza, 2018).

The below table shows the floor price and the average price paid to the farmer. Since 2010 cherry prices on average have always been higher than the floor price, due to the strong competition.

Table 5. Development of farm gate prices over the years

		2010	2011	2012	2013	2014	2015	2016	2017	2018
RWF/USD*		594.45	603.95	631.46	670.08	694.37	747.41	819.79	844.99	861.82
Cherry										
Min. price	RWF	145	165	170	130	150	180	150	264	240
	USD*	0.24	0.27	0.27	0.19	0.22	0.24	0.18	0.31	0.28
Avg. price	RWF	198	258	187	140	210	220	170	270	300
	USD	0.33	0.43	0.30	0.21	0.30	0.29	0.21	0.32	0.35
Parchment										
Avg. price	RWF	750	1,350	700	500	800	900	600	900	1,000
	USD	1.26	2.24	1.11	0.75	1.15	1.20	0.73	1.07	1.16

* Exchange rate of December of each year (BNR)

Source: NAEB

Another policy greatly influencing the sector is the zoning policy implemented in 2016. Geographic zones were created around the CWSs. The principle of the zoning policy is that a CWS may only purchase coffee cherries from farmers in its zone, while farmers in turn may only sell to the CWS assigned to their zone. The stated purpose of this policy is to better organise the industry, improve the relationship between CWSs and farmers, improve traceability of coffee, and reduce the role of middlemen. Coffee washing stations and mills are also called upon to extend support to farmers in the areas where they operate (Gerard, et al., 2017). A

survey conducted as part of the AGLC project shows that there are lessons to be learned, and that some improvements could be made. The suggestion was therefore made to regularly assess – with the stakeholders involved – what its impact is, to prevent any unintended outcomes (Clay, et al., 2016). Lower competition might lower the purchasing prices, which could disincentivise farmers, according to a number of stakeholders we spoke with.

For each value chain level, the following sections will describe the most relevant actors, their roles and the main obstacles they face, starting off with the coffee growers.

2.2 Coffee farmers

2.2.1 General overview

According to the last coffee census of 2015, there are 355,771 coffee growers in Rwanda, cultivating a total of some 35,000 ha of coffee. Some 66,095 are members of associations or cooperatives. Cooperative members represent over 18% of the coffee growers. The cooperative market share in coffee exports is under 10%. Currently there are 267 coffee associations and cooperatives in the country, with an average of 247 members. Only 80 of the 267 receive support from NGOs and/or government projects.

The low level of membership weakens farmers' organisations and hinders coffee sector training and monitoring initiatives, while also giving them less of a voice when policies are being developed.

As mentioned earlier, productivity is low, though comparable to the other East African coffee-growing regions. The NAEB identifies the following five drivers for the low productivity: 1. poor soil fertility; 2. poor application of mineral fertilisers; 3. yield loss due to pests and diseases; 4. lack of good agricultural practices (GAP); and 5. old trees (AGLC, 2017). Land fragmentation and the effects of climate change (one of the causes of pests and diseases) can be also added to this list.

Price is also said to also be a major contributing factor to low productivity, according to the stakeholders interviewed. The low farm gate prices (see Table 5) make coffee a less attractive option than products such as maize, potatoes or passion fruit, for which higher prices can be obtained. The mean cost of production (excl. transport) was 177 RWF/kg according to a recent AGLC (2016) study, indicating how low margins have been. The same study shows that in 2015 over one third of the growers suffered a net loss.

Coffee farmers are now said to be clearing their coffee trees to plant alternative crops. Most affected by this are the larger coffee plantation owners, with more than 1000 trees, as this group keeps a close watch on profit margins, not investing when prices are low, and thus keeping overall productivity low (Clay & Bizoza, 2018). Clay and Bizoza (2018) further make the point that a small productivity gain on these large plantations, to the level of 2.17 kg/tree, would impact production by 46%. However, this group keeps a close watch on profit margins and when prices are low they do not invest, keeping overall productivity low.

Most farmers hire labour during harvest season. Savings and advance pay from washing stations are generally used to pay these seasonal workers (JICA, 2014). Labour is generally found to be in plentiful supply, which keeps wages low, a social risk for the sector as there is no official minimum wage (see also section 2.7.1).

As a national strategy to further increase the value of the coffee from Rwanda, coffee farmers are strongly encouraged to sell their cherries to CWSs for wet processing. In most cases, CWSs are located within a radius of 3–5 km from the farmers. Either the farmers bring the cherries to the CWS or they are picked up by CWS collectors from the designated zone. Though restricted by law, side-selling of coffee by members is still quite

common due to the differences in prices paid for the cherries by the CWS and the fact that of CWSs not always having the funds available (on time).

Prices differing from the floor price (Table 5) mostly has to do with the competitiveness of the zone and to a lesser degree with quality specifications. It is common for farmers to be paid twice. First payment occurs when they sell the cherries, and the second payment at the end of the season, often called a "bonus" when it comes from a cooperative or association. It is paid from the additional premiums received.

2.2.2 Challenges at producer level

Poor soil fertility and insufficient fertilisers (est. 34% coverage)

Insufficient application of appropriate fertilisers has been a major contributing factor to the stagnation of volume growth and improvement of quality. To address the issue of poor soil fertility, the government has installed levies on the exported coffee, from which inputs are to be purchased and distributed to cooperatives and other private coffee washing station owners, which will in turn distributed to coffee farmers across Rwanda, CEPAR. However, delays often occur and only an estimated 34% of the demand for inputs is covered. In addition, because the way the distribution system works is not well understood by its beneficiaries, not all agricultural inputs reach the farmers.

Old trees meaning low productivity

Currently one in four coffee trees are above productive age (30+ years) (NAEB, 2017). Efforts are being made through government projects funded by IFAD to plant new trees, mainly in Eastern and Northern Province, but replacing all non-productive trees will still require a lot of effort. Other support was previously given through the STABEX programme of the EU. These kind of programmes require substantial financial means.

Replacing old trees represent a considerable investment by farmers, as newly planted trees will only cherry after three years. The old trees are said to often be owned by ageing farmers, who are no longer motivated to invest in a new coffee plantation. Unless a new generation of coffee farmers can be attracted to coffee, through higher returns and the potential for growth, these younger farmers will continue to turn to other more profitable crops, particularly those that receive subsidies, such as horticultural crops (vegetables & fruits) and irrigated crops)e.g. rice and maize).

Inadequate GAP application, due to low motivation and poor or poorly coordinated extension services

Adequate extension services at farmer level remains a challenge. Over the years, the Rwandan government has reduced the number of staff made available for agricultural extension services. Per administrative sector, there is only one extension agent in charge of all crops. Private CWSs and cooperatives are encouraged by the NAEB to hire their own extension staff in their coffee zone, and to produce seedlings and distribute inputs.

Improving this situation may require a radical change, whereby government is no longer responsible for the extension services and these are privatised. CWSs would become responsible for hiring agronomists, producing and distributing seedlings, as well as fertiliser and fungicide distribution, all at the level of the CWS rather than district level. This could be beneficial, as the CWSs recognise the benefits of ensuring that good farming practices, fertilisers and fungicides are used in their area.

Low prices compared to competing crops: farmers poorly motivated to keep growing coffee

In order to motivate farmers to invest in coffee, compensation for cherry needs to be adjusted to reflect the true cost of production and provide margins for ensuring profitability and growth. If this is not adequately addressed, this will serve as a barrier to the sector's sustainability.

Despite undeniable potential and many projects making efforts to support quality improvement at farm level, the quality of cherries has not improved much. Farmers currently have little or no incentive to improve cherry quality as they receive a set price for their product even if their cherries are of a superior quality to another seller's.

Pest and diseases

Pests and diseases may reduce Rwanda's production by as much as 50% a year at farm level. Three pests and diseases in particular are causing most of the damage. These are leaf rust, coffee berry disease (CBD), berry borer and the antestia bug which causes PTD (see 1.4.1). Increased severity of leaf rust and CBD is witnessed due mainly to climate change. Drought has a huge impact during the pre-harvest period when coffee cherries are maturing and increases the severity of leaf rust, while a high moisture rate following heavy rains increases CBD severity. Good agricultural practices (GAP) also influence this greatly.

Farmers apply pesticides annually, but this does have sufficient impact. Since there is a market demand trend towards organic, chemical pesticides will no longer be acceptable to certain groups of buyers, especially in the US and Japan. Hence, Rwandan farmers will be obliged to use more integrated pest management systems.

2.3 Primary processing

2.3.1 General overview

Since 2002, the number of CWSs in the country has grown at an incredible pace. In 2018, there were 299 CWSs of which 276 were operational. The total theoretical processing capacity of the operational CWSs equalled 131,750 MT of cherries (or 20,000 MT of green bean) (NAEB, 2018). Nationwide the CWSs operate on average at 60% of their capacity. It should though be noted that the theoretical installed capacity figures could be somewhat inflated.

The Transparency.com website set up by Technoserve provides the location of 200 of these CWSs, and for a number of these some primary information is available.

Table 6 Summary of CWSs per province in 2018

Provinces	Total number of CWSs in 2017	Cherries capacity of all CWSs (incl. non-operating CWSs) (MT)	Number of CWSs not or not yet operating in 2018
West	129	60,400	7
South	82	34,050	10
East	60	28,750	5
North & Kig.	28	14,800	1
G/TOTAL	**299**	**138,000**	**23**

Source: NAEB, 2018

The buying practices of the CWSs differ: farmers usually bring their cherries to a collection site on a designated date. The CWS provides a truck for the purchase and collection of cherries. Other options are

that CWS collectors or middlemen buy the cherries from the farmers or that farmers bring cherries directly to the CWS.

All cherries delivered to the CWSs go through primary processing. Cherries of particularly high quality are separated for processing (such as those for micro-lots or the women-grown coffees).

At the CWS the cherries are pulped, fermented and graded using flotation channels. The wet parchment is then soaked for 24 hours, before being pre-dried, sorted and dried again. Parchment is then transported to secondary processing facilities to process into green coffee beans. There are often too few drying tables, which is a risk to the quality. In addition, they are often built on-site, with timber from trees that were felled nearby, which forms an environmental risk.

The cherry volumes that CWSs can obtain is very much dependent on their financial means. Even though zoning is in place, producers still go to the highest bidder, and with competition being high in most regions, it is difficult to obtain the necessary volume to run a CWS efficiently. Strong competition leads to CWSs also having to accept low quality, immature, damaged cherries along with the good ones, while paying a flat rate for them. Some of the CWSs are so eager to buy the cherries that they offer prices way beyond their financial means and go bankrupt. This has very much affected the relationships and reputation of CWSs with both the farmers as well as national and international buyers.

A significant portion of fully washed coffee is of undistinguished quality and does not receive the higher prices that are crucial for the long-term financial stability of CWSs. This is mainly because best practices are not uniformly applied, not only with regard to production, but also processing and marketing. A certain professionalism is lacking.

Many of the CWSs are off-grid: only 29% are connected to the grid, according to an evaluation report published by TripleLine (2017), meaning no electricity, no computers and thus generally a paper based admin system.

General management skills are a major obstacle. One of them is risk management and knowledge of markets and legal frameworks to help manage risks. Recently a Canadian company called “Happy Goat” concluded many contracts with individual CWSs, both private ones and cooperatives, yet did not execute the contract. This situation led to financial problems for the small exporters who were unable to repay their loans. Similar issues occurred at a smaller scale during transactions between in-counties stakeholders.

Over the last couple of years, NGOs and International supporters, such as USAID, IFAD, Technoserve, TWIN, SNV, Sustainable Harvest and Starbucks, have all been building the capacity of coffee processors and exporters (especially cooperatively-owned wet mills) in financial management and the basics of international price hedging and risks mitigation.

In terms of capacity, it is thought that at least 80% of the management staff of the smaller CWSs speaks some level of English (or French) and that this is also true for about 10% of the labour force. Small CWSs still face a good degree of capacity constraints and management skills are limited.

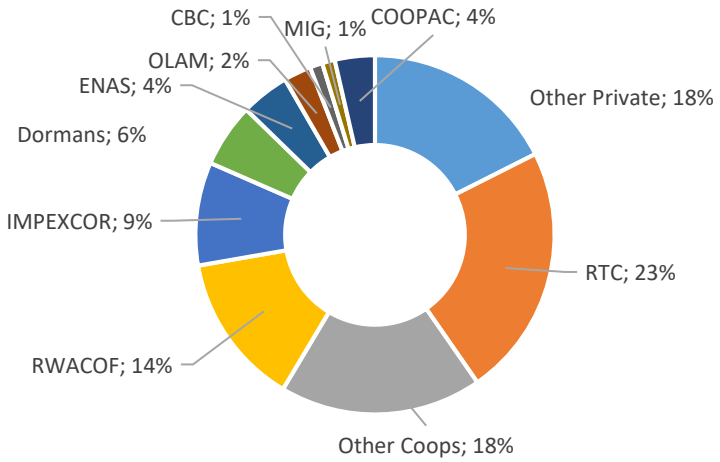
The CWSs have little knowledge of and information on the European market, mainly due to previous experience with USAID projects, so they usually look to the US market as well as emerging markets. Due to their remoteness and limited communication options, it is difficult for CWSs to connect with their international buyers directly. Technological advancement is, however, expected to help improve this soon. WhatsApp has already proved to be an effective tool in improving direct communication with buyers, allowing regular updates.

2.3.2 Ownership

About 70% of all the CWSs in the country are privately owned. RWACOF/SUCAFINA, IMPEXCOR, RTC, Dormans/ECOM, COOPAC, CBC and Olam, together with their CWS partners, represent about 64% of the total available capacity (see Figure 6).

Many valuable services are provided by the large private exporter/buyer, such as financing, market access, quality control and extension services to CWSs and producers. However, there is a lack of trust between the partner CWS and the "Service Provider", which is mainly related to the lack of bargaining power of the smaller partner CWS. At the beginning of each season exclusive partnership contracts are signed between parties, indicating expectations vis-à-vis the other in terms of services delivered, financial and otherwise. They are renewed after each season. Market and price risks are the responsibility of the large exporter/buyer.

Figure 26. Share of CWSs based on theoretical capacity of the main actors (2018), including their CWS partners



Source: NAEB

2.3.3 Exporting by CWSs

For a CWS to sell green or roasted coffee on the international market, it must be licensed by the NAEB. The fee to obtain a license is USD 100. The following documentation must also be provided (NAEB).

- Proof of registration with the Rwandan Development Board (RDB) and current business address in Rwanda
- Business plan for the upcoming year
- Proof of previous history or capability to export a minimum of one shipping container of coffee during the coffee season (case-based exceptions can be made for high-value coffee)

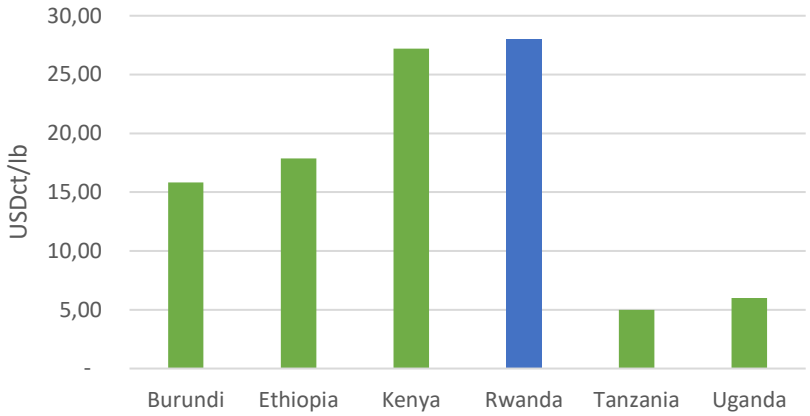
2.3.4 Challenges at CWS level

For the CWSs (cooperative or private) not directly supported their buyers, the following challenges can be summarised.

High operating costs

Processing costs of the wet mills are relatively high compared to the region, which can be seen in the figure below, but also in Figure 10 and Figure 11, on the value distribution.

Figure 27. Arabica export processing costs for Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda



Source: GCP database

Different reasons can be put forward for the inefficiencies at CWS processing level. First of all, being a landlocked country means that costs are generally higher. Quality and volume of the cherries delivered is one aspect. Strong competition for cherries (especially in poor seasons) between CWSs means that cherries are accepted regardless of quality. In addition, the sector is relatively new and many coffee washing stations are still learning how to operate effectively. There is also a lack of adequate business planning and management, as well as a lack of technical knowledge, leading to high maintenance costs, and no access to markets or financial resources.

With regard to the enabling environment, CWS operations also continue to be hampered by infrastructure constraints. Access to water and good transportation networks are cases in point. The quality and quantity of water used for fermenting and washing is a key determinant in the quality of the final product, as is receiving the cherries in on time, which minimises the risks of early fermentation and thus quality loss. The infrastructure constraints mainly are related to poor road networks in rural areas, especially in parts of the country where escarpment defines the landscape, resulting in high transportation costs and risk of quality loss.

Access to finance

For CWSs not directly linked to the larger exporters in the country, access to finance is a major obstacle.

The fact that a number of CWSs run under capacity obviously affects their profitability. It also makes it very difficult to make timely and sufficient repayments to the financial institutions which support them in almost all their activities (infrastructure, cherry purchase, processing, exportation, etc.) and give them loans based on the estimated amount of cherries that will be processed.

CWSs are seen as a high-risk operation for financing, especially the smaller ones. There are price risks, operational risks and quality risks. Often contracts with buyers are relational contracts, so provide no collateral. Even with the zoning, strong competition also undermines the ability to sustain a relationship contract (Machiavello & Morjaria, 2017). Furthermore, the paper-based system and lack of financial literacy makes the CWSs high-risk. Banks are therefore not eager to finance such CWSs, which leads to either no financing, insufficient (incl. late) financing and very high costs of financing for the CWS. In section 2.6.4 there is more on the financial service providers.

Digital solutions, including the use of smartphones (but also blockchain) might provide opportunities in better registering the CWS finances. Successful examples include Technoserve, with its coffee platform for

easy accounting and financial monitoring and transparency, and the NAEB's Internal Management System (IMS) to report on daily production in CWSs.

Weak bargaining power and lack of collaboration and coordination

The CWSs are too small to be competitive and collaboration in one way or another is a necessity to strengthen their position on the market and obtain the right financial, technical, management and agricultural services to achieve their goals. Horizontal integration at both this level and at farmer level remains weak. The coffee industry should primarily attempt to strengthen the weakest nodes to encourage the best possible functioning of the sector as a whole.

2.4 Secondary processing & export

2.4.1 Overview

Dry milling is the final stage green coffee goes through before it is sold and shipped to the roaster. There are twelve dry mills, of which four are privately owned (see the List of Exporters (2017) in Annex II). Most of the mills are located in the vicinity of Kigali, given its strategic location. The dry mill is the final point of quality control before submitting samples to the NAEB for quality certification for export.

There are currently 88 export companies registered, although only half are active coffee exporters. They can be grouped into three categories based on their size (see Annex IIAnnex II).

I) >500 MT of green coffee (*estimated at 85%*)
II) 100–499 MT (*estimated at 10%*)
III) Small exporters <100 MT of green coffee per season (*estimated at 5%*)

In the 2016 season, eight companies were classified in the first category as big exporters and are thought to be responsible of at least 87% of exports.

When not taking into account those CWSs owned by multinationals, there are about 200 CWSs, of which 96 are cooperatives. About half are directly linked to international exporters through financing structures. There are about 30–35 SMEs that export themselves, depending on the year.

2.4.2 Exporter unions

Rwanda Small Holder Specialty Coffee (RWASHOSCCO) and MISOZI are exporting companies representing a number of cooperative washing stations.

RWASHOSCCO

RWASHOSCCO is composed of five cooperatives and one private CWS. It were founded in 2005 as a joint venture. RWASHOSCCO's board is made up of representatives from these cooperatives and it provides export support, in terms of quality control, contract negotiation, contact with buyers and export logistics. It asks a fee of 90 RWF/kg of the green coffee exported. Services delivered can be summed up as follows.

- *Cupping*
- *Marketing*: The company participates in overseas trade fairs, contacts coffee traders found on the Internet and sends green coffee samples to buyers
- *Export management:* Export procedures, distribution arrangements, insurance arrangements, etc.

Technical guidance on cultivation used to be provided at the time they received funding support form USAID. At that time the company has multiple agricultural experts and six selection and processing experts to provide guidance.

Some of RWASHOSCCO'S cooperatives now receive support from TWIN and Sustainable Harvest.

MISOZI

MISOZI was set up 2007. The original idea was the start a union of cooperatives, but this was not allowed under the Rwandan law which says that unions can only be formed by cooperatives that are based in the same district. It therefore registered itself as a company with eight equal shareholders, CWS cooperatives. MISOZI is trading coffee on behalf of its members, and charged mainly with marketing and logistics. The cooperatives sell directly to international buyers, identified by MISOZI, whereby 2% of the total value of the sale goes to MISOZI to cover its operating costs. However, it has not been smooth sailing: out of the eight cooperatives, four have left, while another one joined, leaving it with five cooperatives. MISOZI could benefit from support with regard to the services it provides to the cooperatives, especially where it comes managing a cooperative. Members of MISOZI are currently supported by TWIN, Agriterra and Sustainable Harvest.

Both MISOZI and RWASCHOSCCO have been playing an important role as service provider in the coffee export of coffee cooperatives. However, their expansion is very limited. The biggest companies are leading the value chain and it is likely that they will gain more and more influence in the value chain.

Exporters that own dry mills have a clear plan for expanding their business, while also providing financial and marketing services, and obtaining more assets at primary processing level, continuing their vertical integration.

2.4.3 Challenges for secondary processors and exporters

High operating costs of dry mills

A review of the existing milling units in the country shows an excess capacity relative to actual coffee production. The existing capacities distributed between the nine functioning dry millers/exporters total 45 MT of green coffee per hour, which permits almost 52,000 tonnes per year (3 months at 16 hours/day) to be processed. However, for 2016/17 only 20,000 MT of parchment was brought in.

Lack of transparency and traceability of dry mills

It is assumed that all necessary efforts are made to guarantee transparency and tracking, but this is not always the case. Milling capacity is mainly concentrated in Kigali, and small CWSs do not have enough capacity to control the whole process at the dry mill. This can lead to misunderstanding and mistrust between the CWS and the dry mill. There is a need for capacity-building with regard to the dry mill process for CWSs, and a regulatory framework and monitoring from the NAEB.

Access to market for exporters

Small and medium exporters find it difficult to market their coffees, indicating that prices set by the CWSs are too high. Many also lack the experience and skills needed to successfully market the coffees globally.

2.5 Roasters

Like many producing countries, Rwanda is investing in promoting the consumption of coffee. In March 2015, Rwanda Farmers Coffee Company (RFCC) was inaugurated, with modern coffee roasting machinery that has the capacity to produce 3,000 kilogrammes of roasted coffee per day. The roasting plant was funded by the Bill Clinton Foundation and set up by the NAEB. The goal is to bring additional value-added coffee products to market – including coffee roasted for both the domestic as well as export markets.

There are 20 companies, which include processors and exporters, both private and cooperatives, which are involved in roasting mostly for local consumption (Annex III).

A few roasters are exporting. Gorilla's Coffee of RFCC has recently struck different deals, allowing it to export its coffees to the US and Nigeria. In the roasting there is also a focus on women-grown coffees. RWASHOSCCO currently sells women-grown roasted coffee, but there are also others, such as 3 African Sisters.

This analysis has not looked into the demand and further expansion of export of roasted coffees, as the focus has mainly been on high-grade green bean exports. However current trends, under the *Third Wave* (also mentioned earlier in this document) do show that there is a demand if roasting plants respect the high quality standards of production, and coffee quality can be adequately controlled during shipment.

2.5.1 Challenges at roasting level

The main challenges that were identified were related to the limited experience Rwanda still has in roasting coffee both for the domestic as well as the export market.

Access to roasting & packaging equipment/materials

In Rwanda, for example, it is difficult to find quality propane gas for the roaster, and it is expensive to procure and ship packaging, sealers and other equipment.

Low domestic consumption & low export demand

Not having an existing coffee culture makes staffing a coffee company difficult. Exporting roasted coffee means dealing with marketing and quality consistency constraints. Marketing research and communication needs to be reinforced.

2.6 Enabling environment

2.6.1 Business environment

Ease of doing business

The World Bank's Ease of Doing Business reports are a testament to the tremendous efforts being made. In 2018, the country is ranked second in ease of doing business in Africa (after Mauritius) and ranks 41 globally, up from 143rd out of 181 countries in 2007 (The World Bank, 2017).

ICT in agriculture

As mentioned earlier in section 1.5, Rwanda has invested significant efforts in upgrading its ICT infrastructure over the last decade, the official projections indicating that by 2020 the internet penetration rate will have reached almost 60% of the country's population estimated at 12 million (RURA, 2018).

In Rwandan agriculture, ICT platforms have been used in many ways in the sector, including the following.

- As mobile market information solution which allows farmers and consumers to access market information for agricultural products
- To publish the ICO's daily composite price by the NAEB, which can be accessed by coffee producers and exporters from their mobile telephones
- For Technoserve's text message based bookkeeping system managed by coffee service providers, which helps cooperatives to monitor and access information about their finances and stocks in real time (Coffeetransparency.com, n.d.)

2.6.2 Government

National Agricultural Export Development Board (NAEB)

The NAEB is the key government actor involved at all levels of the coffee value chain. For any project, the NAEB needs to consulted. The NAEB is registered under the Ministry of Agriculture and Animal Resources (MINAGRI). The NAEB participates in the development of the policy and strategies governing the sector and ensures the implementation of policies that affect production, processing, marketing research and training the main actors in the sector. It is dedicated to improving the Rwanda economy through increased agricultural exports. The NAEB supports the production of coffee in Rwanda by marketing and promoting the export of coffee, providing technical assistance and planting materials to farmers, and participating in the development of coffee-related policies and strategies. It is also responsible for determining the floor price (a full list of its activities can be found on the NAEB website).

The new policy and strategic framework in line with the NSTP1 focus on market driven agriculture. The new agriculture export and marketing strategy is under development. National strategies that are currently being drafted and relevant for the sector are the following.

- Vision 2050
- National Agricultural Policy 2017–2030
- National Strategy for Transformation and Prosperity (NSTP 1) 2017–2024
- Strategic Plan for Agricultural Transformation 2018–2024
- NAEB Marketing Strategy 2018–2024

Coffee is still considered an important export commodity for Rwanda, but it should be noted that the government focus under PSTA 4 (PSTA: Plan for the Transformation of Agriculture Rwanda) is and will continue to be on food security and nutrition, as well as on switching to higher-value agricultural commodities, such as horticulture, vegetable, poultry, pork and fisheries.

RAB

The Rwanda Agricultural Board (RAB) has as mission to make agriculture and livestock sector more productive. In the coffee sector they supply improved seedlings to the NAEB, which they propagate and further distribute to CWSs (private & coop), local coffee nurseries, and Farmers' Organisations (cooperatives without coffee washing stations). Any research activities would need to be conducted in collaboration with the RAB.

Others

There are other government actors (both ministries and agencies) involved in supporting the sector (Figure 8). Examples include MINAGRI, the Ministry of Agriculture and Animal Resources, which oversees the NAEB, but the Rwanda Development Board (RDB), Rwanda Cooperative Agency (RCA) and Private Sector Federation (PSF) are also involved in the sector.

2.6.3 Private sector organisations

Coffee Exporters and Processors Association of Rwanda (CEPAR)

CEPAR was founded in 2011 to increase productivity of the sector. One of its main responsibilities is to purchase and ensure the timely availability of the inputs, as well as manage the local administration offices that distribute the fertilisers. However, there are often delays. In addition, statistics have proven too unreliable to plan for input supply since less than half of the producers are reached. Although CEPAR only has 15 private sector members, these are the most influential ones in the sector (Annex IV).

The input suppliers used are local supplier ENAS, which recently also set up a fertiliser factory, and Yara International, in Tanzania.

Rwandan Coffee Cooperatives Federation (RCCF)

The RCCF was set up in 2009, to represent the producers and CWS cooperatives. It is composed of 17 unions and 89 primary cooperatives, and has 38,000 members. The RCCF provides advocacy services to the cooperatives.

2.6.4 Trade & labour unions

Although there are trade and labour unions in Rwanda, these are not very active or visible in the sector. The main organisation representing labourers is Centrale des Syndicats des Travailleurs au Rwanda (CESTRAR), which includes STAVER, the union for workers in Rwanda active in agriculture, fishing, the veterinary field and the environment.

2.6.5 Financial service providers & insurers

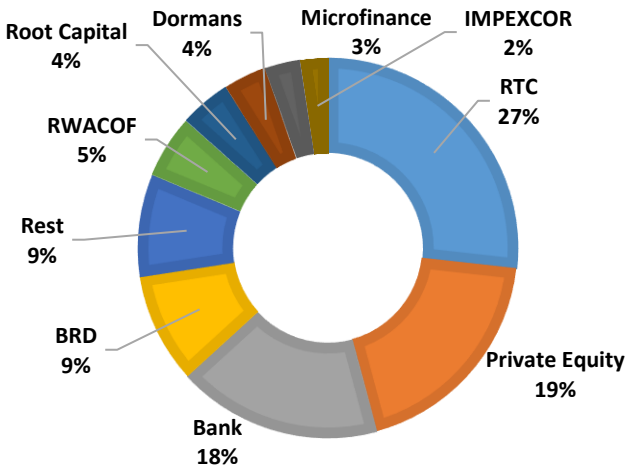
These broadly fall into the following four categories.

- Development banks (e.g. BRD, Rabobank Foundation, Oikocredit)
- Traders (e.g. RTC, RWACOF, Dormans)
- Private impact investors (e.g. Root Capital, Shared Interest, Beautiful Coffee, Fefisol, Inkunga)
- Local commercial banks (e.g. GT Bank, COGEBANK, Microfinance)

While the Rabobank foundation only supports cooperatives, others finance both cooperative and private CWSs. In almost all cases the financing is for working capital (cherry payments). A previous focus group discussion conducted by Agri-Logic with various CWS cooperatives in Rwanda indicated that access to working capital generally is less of a constraint for CWSs than the timeliness of disbursement of funds and their affordability.

Below a figure that shows how the financial service providers are distributed, based on number of cooperatives financed. The data is not complete, but it does provide insight into the available financial sources.

Figure 28. Distribution of financial service providers, based on number of CWSs



Source: NAEB

2.6.6 Transport & logistics

Transport of cherries and parchment is organised locally with small-scale transporters. Larger washing stations own their own lorries and collect directly from the farmer. The coffee is shipped by land in 20-foot shipping containers to Mombasa Port in Kenya or Dar es Salaam Port in Tanzania. Transport by road from Kigali to Mombasa Port takes seven to eight days, and four days from Kigali to Dar es Salaam. From Kigali to arrival in Europe it takes about three weeks in total.

For export logistics, most of the exporters use international freight forwarders Bolloré or Diamond. It is estimated that 80% of the exports go through them.

2.6.7 International organisations and projects

An overview of the projects that are currently running in coffee can be found in Annex VI. Below follows a short description of the relevant ones.

Over the years there have been numerous large-scale projects, including three mentioned earlier: PEARL and SPREAD (USAID projects), but now also the Feed the Future African Great Lakes Region Coffee Support Program (AGLC). The IFAD also has a successful large-scale project, called Project for Rural Income through Exports (PRICE), which will run until 2020.

MARKUP

MARKUP was launched in June 2018. MARKUP aims to build the competitiveness of (M)SMEs in Burundi, Kenya, Rwanda, Tanzania and Uganda, supporting them in increasing production, taking advantage of market-access opportunities and creating more value addition. It intends to support East African (M)SMEs specialised in a variety of sectors: avocado, cocoa, coffee, horticulture, spices and tea. Interventions will focus on: identifying and eliminating barriers to trade; improving competitiveness; strengthening value addition for selected priority sectors; ensuring compliance with international regulations; providing access to trade finance ventures; and supporting the identification of opportunities for trade and foreign direct investments. It has been jointly designed by the European Union, the EAC Secretariat and the governments of all five African countries. The initiative will be implemented by the International Trade Centre (ITC), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the United Nations Industrial Development

Organization (UNIDO) and other national partners. This four-year programme is funded from the Regional Indicative Programme for EAC under the 11th European Development Fund. The MARKUP programme has a total estimated cost of €40 million, including a €35 million contribution from the EU and indicative third-party contributions of about €5 million, and will be implemented over a four-year period (2018–22) (ITC News, 2018). More information on the projects can be found here.

Japan International Cooperation Agency (JICA)

In July 2017, the Japan International Cooperation Agency (JICA), signed on to a three-year project called Coffee Upgrade and Promotion in Rwanda (CUP Rwanda) in partnership with the NAEB. It is designed to increase Rwanda's coffee competitiveness through the creation of well-coordinated value chains and strong monitoring systems, and to increase the visibility of Rwandan coffee on the Japanese market.

Technoserve

Technoserve has been active in Rwanda since 2008, mostly working on the production side of the value chain. With the IFAD/PRICE Project their activities in coffee ended this year, but new coffee projects are likely to lie ahead.

Sustainable Harvest

According to their website, Sustainable Harvest sells specialty coffees from around the world, focusing on creating transparent relationships that increase value throughout the supply chain, while fostering greater sustainability. They call the approach Relationship Coffee (RCI). It is funded by Bloomberg Philanthropies. They have set up Question Coffee, to promote local consumption of coffee, and have built different partnerships supporting the empowerment of women in the coffee sector. They also collaborate with the Ministry of Gender and Family Promotion (MIGEPROF) and regularly organise "Let's Talk Coffee" networking events for the sector. Their monitoring and evaluation (M&E) system is fully digitised and mainly registers social improvement indicators. Their gender approach and M&E system could provide valuable input when going forward with a project, though official approval would need to be sought from the Bloomberg Family Foundation.

Twin

Twin is a non-profit organisation which owns a trading company. Together with Challenges Worldwide, a Scottish organisation, they have a project supporting eight cooperatives, which started in October 2017. Their other project is with Trade Mark East Africa (TMEA), supporting ten cooperatives in Rwanda and ten in Burundi. The objectives include developing and harmonising good coffee washing practices in Rwanda and Burundi, and providing training for technical staff to meet these practices. The aim is to so increase the amount of quality coffee available for sale on speciality markets. Streamlining and harmonising export processes for coffee will reduce the barriers to trade in these countries, decreasing delays and facilitating export.

Agriterra

Agriterra supports five cooperatives members of MISOZI with business management good practices. In total they support nine coffee cooperatives in Rwanda. They actively promote youth and gender inclusivity at cooperative level.

Others

SNV has supported 50 cooperatives and the creation of 40 new coffee cooperatives under the IFAD PRICE project, and has been active in the sector from 2005 up to 2011. It was active in a collaboration with Palladium, a DFID funded international NGO operating in Rwanda.

Together with the International Trade Centre (ITC) and Sucafina, Jacob Douwe Egberts (JDE) set up a new partnership to support coffee exporters, processors and farmers in Rwanda. The collaboration has a particular focus on women's economic empowerment and on ensuring greater participation by women in the coffee supply chain. JDE is currently also investigating possibilities of another project in Rwanda.

Over the last few years, South Korea has imported various quantities of coffees. KOICA, Korea's International Cooperation Agency, is currently discussing the possibilities of setting up a coffee project with the NAEB. Details are not known at the time of writing.

2.6.8 Challenges summarised

Improved access to information on sector performance

Information regarding the performance of the coffee industry and information about the interventions by the various private, NGO and public actors is gathered by the NAEB. Relevant information regarding the sector, however, is not shared freely. During this analysis, it was noticed that each actor had their own vision of how the sector was performing, depending on the level of access to information. Increasing transparency would improve synergies, create a more level playing field (everyone on the same information level), as well as supporting better decision-making by the sector actors, all the while of course respecting antitrust laws.

Focus on food crops

The PSTA 3 which is coming to an end focused on food security and the coffee sector was no longer the priority. This is expected to continue under PSTA 4.

2.7 Sustainability of the value chain

2.7.1 Labour & employment

The coffee sector provides important rural employment opportunities during the harvesting season, when many women and youth are employed in the sector (see also sections Youth & Gender). Asking around, there do not seem to be many projects specifically focusing on preventing labour exploitation in the coffee sector.

Labour is by far the largest investment made by farmers, with a recent study indicating it amounts to 78.2% of the investments (42% household labour and 36.2% hired labour) (Gerard & Bigirimana, 2018). According to 2017 (February) statistics, a little over 1.3 million Rwandans are employed in the agricultural sector. More than 95% operate in the informal sector (NISR, 2017). In the agricultural sector, it is common that employees are contracted as seasonal workers to perform seasonal and labour-intensive work. Seasonal workers are more at risk of labour exploitation than the permanent employees (CSR Risk Check, 2018). Most of the CWSs recruit seasonal employees for three months, mainly for drying operations, and about 80% of the seasonal workers are women.

On-farm

Men are responsible for clearing land, planting seedlings, stumping and pruning the coffee trees (IFAD, 2010; AGLC, 2017). They also generally do the pesticide and fertiliser application. Both men and women dig the holes for planting seedlings, as well as doing the mulching. Harvesting is mainly seen as a female activity, including transport to the CWS (although that is also often done by men). Women do spend more time in the fields and men usually have greater access to extension advice from technicians, hence have a higher level of skill and may have higher yields as a result (IFAD, 2010; SCA, 2018).

Transport and marketing

Men are generally responsible for the transport and marketing, although women are found to do the marketing as well (SCA, 2018; IFAD, 2010).

Processing

A CWS consists of 4–9 permanent management and technical staff, depending on the size. During the harvesting season, depending on size of the CWS, between 50 and 250 temporary workers are hired for processing. The estimate comes, to employment of about 55,000–65,000 seasonal workers and about 2,000 permanent management staff, based on current operational CWS capacity.

Figure 29. Estimated employment levels at CWSs in Rwanda based on averages

Province	Management	Seasonal
East	410	11,500
North	191	4,990
South	576	14,890
West	876	23,070
Total	**2,053**	**54,450**

The Cooperative Law states that the Board of Directors shall take gender aspects into consideration where possible and all institutions are constitutionally required to have at least 30% women in their leadership bodies. As a result, generally there is a reasonable gender balance among the cooperative management. However, higher management positions are still often reserved for men. Male workers are mostly involved in carrying and weighing, while women mostly do the drying and sorting (IFAD, 2010). The staff of CWSs are mostly male and include managers, machine operators and guards. Women typically work as cashiers.

Seasonal workers normally stay on for three to four months, work seven days a week from seven a.m. to five p.m. or longer. Sometimes they will need to work nights, for cherry washing. Health and safety measures are generally lacking and on average they earn 600–1000 RWF/day (EUR 0.60–1.00 day). Most of the labourers have no contracts as part of the informal sector and thus are hardly protected by law. The national minimum wage from 1974 of 100 RWF/day (EUR 0.10) still applies. The government has been in the process of reviewing the 2009 labour law in parliament to comply with international labour obligations, which will also include setting a minimum wage. The process has, however, already been an ongoing process for the last five years and it is not clear when the law will pass. As mentioned earlier, labour unions seem to have little say in the sector.

Health and safety hazards in coffee are related to heat exposure in drying operations, solar radiation, hearing loss or impairment due to noisy machinery, ergonomic problems from hand tools, vibration from machinery and tractors, and cold and humidity from outdoor exposure. Other hazards include poisoning from pesticides, and musculoskeletal disorders from repetitive and forceful movements, and lifting and carrying heavy or awkward loads. Coffee bean dust has been associated with occupational dust diseases and respiratory problems.

Although all relevant ILO conventions have been ratified by Rwanda and there is a control structure in place, the risk of labour exploitation in coffee remains high, as is also confirmed by the stakeholders in the sector. Many sector actors feel that labour is used inefficiently. Workers are hardly skilled and often there are too many labourers for the work at hand. Better planning and higher wages, combined with worker training, could both improve efficiencies of the CWSs and improve the livelihoods of the labourers. On the downside it might result in lower employment.

Child labour

Rwanda has ratified all key international conventions concerning child labour. A National Child Labour Survey conducted by the National Institute of Statistics in Rwanda (NISR) in 2008 indicated that 11.2% of the children (aged 5–17) are employed, and that 6.6% as work as child labourers, while 2.3% perform hazardous work. The latter is most common among the older children aged 16–17 (LO/FTF Council , 2016). The survey (NISR, 2008) indicated that 79.3% of child labour occurred in agriculture and that the Eastern province was the most affected by child labour, followed by the Western Province and the Southern province.

Other data from UNESCO Institute of Statistics, collected in 2014, estimated that 5.2% of children aged 6–14 were employed (USDOL, 2016), over 151,000 individuals, some 69% of them working in agriculture. Improvements have been made over the years. Enforcement and implementation of child labour laws and regulations remain problematic (USDOL, 2016). Although the Ministry of Education established a policy that provides free basic education for 12 years and aims to improve access to education by hiring new teachers and building schools, in practice the costs of uniforms, school supplies, and unofficial school fees may preclude some families from sending their children to school (USDOL, 2016).

There have not been any recent studies specifically on child labour in the coffee sector for Rwanda and we have not found any project directly working on the prevention of child labour. It seems to be especially prevalent on the tea plantations, which led to a *Roundtable on the Elimination of Child Labour for sustainable Tea Forum* (REST). The majority of children affected are engaged in non-paid family work (64%). It is known that smallholder coffee farms generally rely heavily on family labour, where child labour is most likely to occur. Children involved in coffee production often take on a variety of tasks, including picking and sorting berries, pruning trees, weeding, fertilising, and transporting beans and other supplies. Children are even more vulnerable to the risks faced by adult workers in coffee production, particularly carrying heavy loads, exposure to pesticides and dust, and injuries from sharp objects (Vérité, 2017).

The ministries responsible for enforcement of the laws against child labour are the Ministry of Public Service and Labor (MIFOTRA), the Rwandan National Police (RNP), the National Public Prosecution Authority (NPPA) and the Directorate General of Immigration and Emigration. Other ministries and agencies involved in combatting child labour are the Ministry of Gender and Family Promotion (MIGEPROF) and the Ministry of Education (MINEDUC). International agencies and NGOs involved, although none directly in coffee, are the ILO, USDOL, WFP, UNICEF, Winrock, IMPAQ International, Save the Children, Caritas and World Vision.

Lack of a minimum wage, poor enforcement of labour laws, high migration levels from Burundi and a large informal sector create a relatively high risk of labour exploitation and abuse in the sector.

2.7.2 Climate change

Climate change has impacted Rwanda and it has been confronted by floods resulting from heavy rainfall, especially in the north-western highlands of Rwanda, and periodic droughts in the eastern and southern regions (USAID, 2012). The variability of rainfall has a substantial impact on rain-fed agriculture, which also includes coffee. Climate models suggest future increases of maximum and minimum temperatures, greater annual average rainfall, and a shorter and more intense rainy season (USAID, 2012; Climate Expert, n.d.).

Coffee is highly sensitive to climate change. Models indicate that the impact of climate change will be highly negative for arabica coffees, effectively reducing the areas suitable for production by 20–50% by 2050 (CGIAR, 2015). Impacts are highest in low latitudes and at low altitudes (Bunn, et al., 2015).

Weather index based insurance exists in Rwanda, and there have been multiple pilots, such as with MicroEnsure and the IFC's Global Index Insurance Facility (GIIF). Kilimo Salama is a partnership between the

Syngenta Foundation for Sustainable Agriculture, Rwandan insurer SORAS, international reinsurer Swiss Reit and UAP Insurance Rwanda; the agriculture insurance product already launched in 2013. Crop insurance has not yet reached a critical mass of farmers and could still be considered in its infancy stages.

In 2016 a project was set up called the Rwanda Climate Services for Agriculture. The project is a four-year initiative (2016–2019) that seeks to transform Rwanda's rural farming communities and national economy through improved climate risk management. This project is supported by USAID/Rwanda and coordinated by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) (CGIAR, 2016).

Other projects on climate change include ones initiated by Starbucks, Farmer Support Centre (FSC) in collaboration with GIZ. The global programme Private Sector Adaptation to Climate Change (PSACC) supports SMEs in using tools that allow them to analyse the impact that an increase in extreme weather events has on production, sales, and on the delivery of primary products, energy and water. Parabolic drying is one of mitigation measures introduced as a pilot at Muhondo coffee washing station. This technique allows the number of drying days to be reduced from the usual 28 days to 8–12 days. This not only improves the coffee washing station utilisation rate, but also improves the quality, extends the green coffee shelf life, as well as providing a heavier body to the coffee cup profile.

In addition, Sustainable Harvest is involved in a pilot project with the Ministry of Agriculture, funded by FONERWA, which involves the use of climate resilient seed varieties (RAB C15), the practice of inter-cropping coffee bananas and shade trees, and training farmers in pest management and control to mitigate diseases.

2.7.3 Gender

A survey conducted by AGLC among more than a thousand households showed that 18.46% of the households are headed by women (AGLC, 2017). The results show that these women are on average older than the men (58 versus 49 years), are more illiterate, more likely to experience food shortages, have less land, higher costs of production (+20%) and profit less from the coffee (−20%). Though they profit less from coffee, they have a larger share of the income (49% versus 43% for men).

The 1999 succession law has improved the status of landownership among women in Rwanda and the mindset has been changing due to extensive sensitisation efforts. Compared to men, women still often have considerably less ownership and control of land, and they face significant barriers to accessing agriculture training, improved agro-inputs and financial services. These challenges are often made even more difficult by entrenched social norms and traditions (Technoserve, 2013), which are especially prevalent in the more rural areas. When women in these cases do assert their rights to land, they face the traditional restrictions on women's access to dispute resolution institutions. Women who are even more vulnerable are ones in "informal" marriages or consensual unions – including women in polygamous unions – who have virtually no claims to the property their partners bring into the union (USAID, 2014).

As a cash crop, coffee is generally seen as a man's crop, and income from the coffee cherry sales generally goes directly to the man of the household, even though a large part of labour is done by women. The 2017 AGLC survey also confirmed that out of 420 households interviewed 57% of the men received the money and about half of the time the household decides on what to do with the income from the sales.

In Rwanda, cooperatives may not be solely owned and managed by women groups, as it is an open entity based on equity and equal participation. The cooperatives known as "women cooperatives" in the country are cooperatives led by women, and have women chapters that supply the cherries to the CWS, which is then processed and sold separately as "women-grown coffee", thus adding value to the coffee. Only five to eight cooperatives in the country are thought to be led by women. They are often supported by

international organisations. Sustainable Harvest is the most well-known organisation supporting women-grown coffees. However, others in the sector have also started actively supporting women-grown coffees, including specialty roasters.

Besides Sustainable Harvest (see also section 2.6.7), another organisation has been working intensively in the coffee sector with women: the International Women's Coffee Alliance (IWCA). IWCA was set up in 2003 by women in Costa Rica, Nicaragua and the US. It leads women's empowerment in the international coffee industry by supporting a global network of self-organised, self-governing organisations, called "IWCA Chapters". It now has chapters in 22 different countries including Rwanda (IWCA, 2018), where it was registered as an NGO in 2013. CWSs that are supported by IWCA are Sake Coffee, SACOF Ltd and Hingakawa Women Association.

Twin uses the GALS (Gender Action Learning System) approach in its activities, to promote gender inclusivity. It is a community-led empowerment methodology that uses principles of inclusion to improve income, food and nutrition security of vulnerable people in a gender-equitable way. GALS is often used complementary to other value chain development approaches.

2.7.4 Youth

According to statistical data from the NISR (2017), a little over 1.5 million people aged 16–24 reside in the rural areas. Average monthly cash income is RWF 16,900 for this group, with women earning 14% less than men (NISR, 2017). About 35% is neither employed or in education. For youth, the main issue is the ability to establish a suitable economic base to get married and start their own families. Lack of capital, primarily land, is the main constraint they face (IFAD, 2010).

The coffee washing stations, when operational (4–5 months a year) provide considerable employment opportunities for young men and women. According to IFAD (2010), 14% of the men aged 15–19 work as wage labourers, as opposed to only 5% of the women in that age group. Casual labour on the large plantations and at the coffee washing stations involves a large number of young men and women.

In line with the objectives of the EDPRS 2, MINAGRI – in close collaboration with the other relevant ministries and organisations, such as the Ministry of Youth and ICT (MYICT), National Youth Council (NYC), Ministry of Public Sector and Labour (MIFOTRA), Ministry of Trade and East African Community Affairs (MINEACOM), development partners and the Private Sector Federation (PSF) – has set up the Rwanda Youth in Agribusiness Forum (RYAF), which was launched in 2016.

The mission of the RYAF is to promote, inform, advocate and mobilise Rwandan youth in agribusiness, leveraging on support and facilitation from stakeholders, resulting on a stable food market, decent jobs and sustainable and inclusive development (RYAF, 2018). The RYAF is currently a nation-wide platform for youth engaged in agribusiness, with elected representation in all districts and over 1,200 members throughout the country, which are all youth engaged in agri-business. The RYAF is still a young organisation and provides an opportunity for collaboration. Among others, they are supported by the FAO and USAID.

The labour opportunities for youth as workers are only temporary. The main constraint for youth wanting to go into farming is access to land and capital.

AgriProFocus has regularly held different youth business events and hold finance networking days for better access to finance. Agriterra has done similar things to promote youth involvement at its cooperatives. Sustainable Harvest has been working on youth employment to a certain extent, by training baristas and

working on income diversification. COCAGI has worked on increasing access to land for youth by creating a fund that allows land purchases and by providing training for young farmers.

Al though not directly related to the coffee sector, SNV has gained experience in supporting youth employment initiatives under its Opportunities for Youth Employment (OYE) programme, funded by the Mastercard Foundation. In the programme, SNV provided skills and capacity development (push factor), linked youth to market opportunities for employment and enterprise development (match factor), and selected opportunities in growth sectors that have concrete potential for employment creation (pull factor). They worked with youth organisations, vocational training centres, local government and business associations to identify young people who are out-of-school and unemployed, and then coordinate with training providers to carefully screen and select disadvantaged young people to participate. The project just closed, but was implemented in Tanzania, Rwanda and Mozambique. In Rwanda it was very much related to the Biogas sector.

2.7.5 Challenges summarised

There are opportunities to increase the sustainability of the sector. The following corporate social responsibility (CSR) challenges were identified.

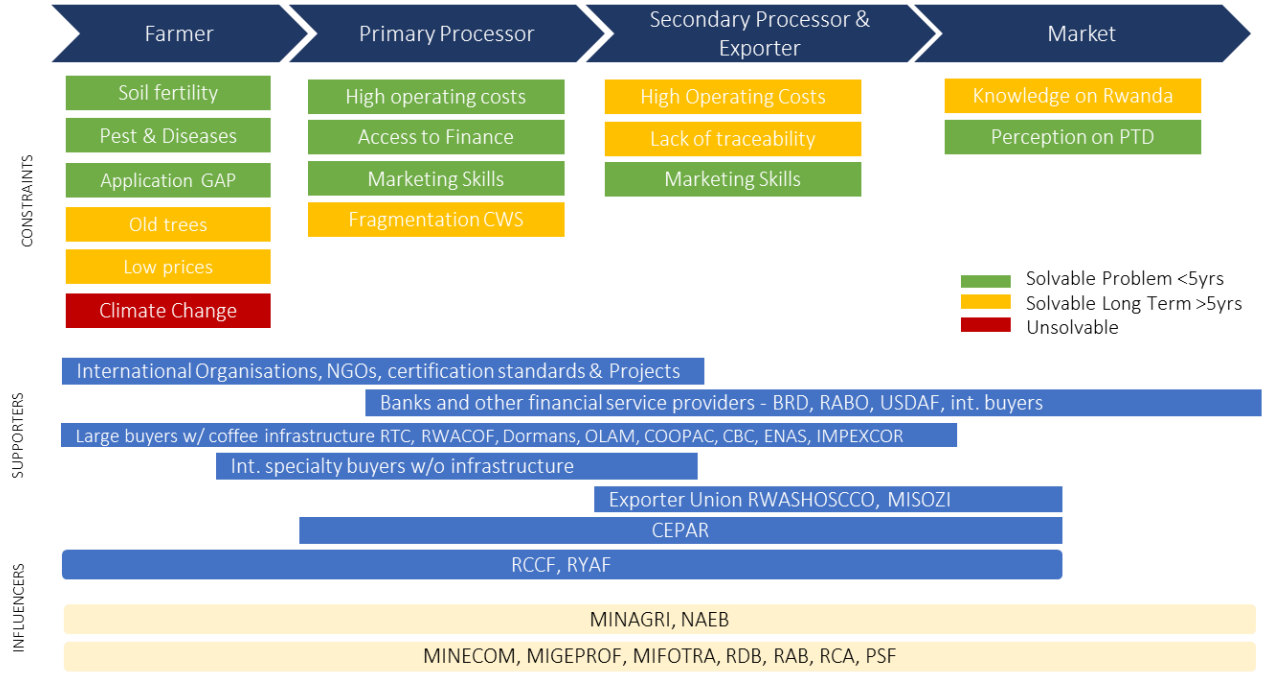
- Climate change threat to the coffee sector
- Climate change and youth employment not high priority in the coffee projects
- High risk of labour exploitation (working hours, low wages, health & safety) and child (family) labour during harvesting
- Trade and labour unions not active in the coffee sector
- Women vulnerable group within coffee sector

Element 3. Identification and Analysis of Opportunities and Obstacles

3.1 Mapping the value chain opportunities and obstacles

The below map shows the value chain obstacles and the supporters and influencers that are involved in supporting the solutions. The relation between the different challenges can be found in Annex X.

Figure 29. Value chain map of opportunities and obstacles



3.2 Key opportunities & challenges

Given the limited area available for agricultural production and the fact it is a landlocked country, Rwanda has difficulty competing on volume and price with the other countries in the region, so it makes sense – as was mentioned in the conclusions of Element 1 – to focus on a differentiation strategy. Differentiation is characterised by a deep and holistic understanding of customers, intensive brand build, jealously guarding customers and commitment to innovation (Lafley & Martin, 2013). On a more strategic level, this is what interventions in the coffee sector should ultimately aim towards to achieve differentiation.

Rwanda has a very favourable geographic profile and climatic conditions for producing high-quality arabica, and the potential to achieve high returns from its participation in the global coffee market. It has developed sufficient processing capacity by now to be able to further improve on its specialty qualities. In order to keep Rwandan coffees on a competitive level, the following opportunities and challenges have been identified for the sector.

3.2.1 Market demand

There is an increased demand for premium specialty coffees. Rwanda has already started to tap into this by exporting small quantities of natural and honey processed coffees, and organic and roasted ones. In relation

to trends such as the *Third Wave* and upcoming *feminism,* Rwanda is also well placed: the coffee quality is high, the supply chain is relatively transparent, the country is stable, it was ranked 4th on the Global Gender Gap Index (2017) and it is already exporting women-grown coffees.

However, Rwanda is still seen as an exotic coffee supplier by European buyers, with a high risk of potato taste defect. Opportunities in improving market demand lie in promoting Rwanda's strengths in the European market, and further adding value by improving existing qualities and introducing new qualities. This should be combined with introducing technological innovations for further transparency and better storytelling purposes.

3.2.2 Managing and improving coffee quality

As stated earlier, Rwanda produces relatively high-quality coffees; however, they do not differ sufficiently from the other higher qualities that are offered in the region. Currently, coffee prices in Rwanda are rising and quality improvements stagnating. To be able to sell Rwanda's coffee at a higher premium, the efficiencies as well as the quality needs to improve from farm level up. The following opportunities and related challenges have been identified with regard to quality.

Quality management at farm level

As can be seen from Figure (and as also identified in section 2.2.2), farmers face major challenges leading to overall lack of motivation to grow coffee as a cash crop. The intervention approach on this level will need to be a combination of managing technical productivity issues and price incentives. By focusing on quality and rewarding quality, production levels are likely to go up as more value is added, and therefore there is more incentive for producers to invest in their plantations.

As also mentioned in section 2.6.7, there are already quite a few actors working at this level, so collaboration and coordination are a necessity, to maximise impact and prevent duplication.

Technical skills related to primary and secondary processing

The coffee washing infrastructure available is generally of high quality and provides potential for increasing qualities from the CWSs. Challenges at CWS level are mostly related to lack of knowledge regarding quality management, machine maintenance and infrastructural issues, such as a lack of drying tables and poor roads.

Good processing practices are needed to increase quality (and efficiencies), such as better cherry selection, water usage, and proper drying and sorting prior to the milling. To make the needed improvements, the labour used needs to become more skilled and have a better understanding of how processing influences quality.

Both the labour and the management would need to be trained in quality management, machine maintenance and operations and new processing techniques, such as "natural" and "honey" that are currently trending. Creating physical coffee cupping facilities, where qualities can be tested, would be an activity in support of this.

3.2.3 Professionalisation of primary and secondary processing operations

Lack of business skills leads to high operating costs, limited access to finance, high risk of bankruptcy, a weak negotiating position, and possible trust issues with buyers and farmers. To professionalise and increase efficiencies, it is therefore necessary to improve both financial as well as marketing skills. This applies to both the smaller processors and exporters, as well as the smaller private and cooperative CWSs.

Financial management skills

The main attention point with regard to financial management skills is financial literacy. This includes cost control, and the capacity to develop bankable business plans and provide collateral. It also allows for the financial transparency needed to solidify business relations.

The second financial skills gap is related to price risk management. Knowledge of markets and legal frameworks is also required to help manage risks. The "Happy Goat" issue has clearly put forward this need (section 2.3.1).

Marketing

To be able to market Rwanda as a unique and distinctive coffee, a deep understanding of the customers, a strong brand and activities that promote customers loyalty are required.

Rwanda has developed a national coffee brand: Second Sunrise. However, as also concluded from Element 1, the coffees need to be further differentiated as well, to improve marketing and promotion opportunities. Stakeholders we spoke to indicated that the technical skills related to marketing and pricing are important, but that there is also a great challenge when it comes soft skills. This relates to building business relationships, and includes improving on communication styles and means.

Sector collaboration between sector SMEs

There is a lack of overall coordination, collaboration and sharing of information between the smaller CWSs. They are very fragmented and need to strengthen their negotiation position in the market, allowing them to also benefit from scale efficiencies. Improved collaboration would benefit skills development for the smaller SMEs, both for learning as well as for joint marketing, if their business is too small to reach out to the demanding export markets.

A market approach build on differentiation also means innovation. Therefore there is a need for the CWSs and processors to be kept up to date on the latest innovations in coffee, so that they can be among the first to experiment. Since Rwanda is small and relatively well connected, it is ideally positioned for this, although collaboration would be needed in order to provide necessary volumes.

Transparency and traceability of dry mill operations

For CWSs, the losses occurring during the milling process are considerable when they do not own the mill. Milling capacity is mainly concentrated in Kigali, and small CWSs neither control the process nor have sufficient negotiation power to do so. Training CWSs on better understanding the milling process itself and improving on increasing transparency at mill level (e.g. with improved ICT infrastructure) could support the CWSs in better managing this process and reducing their milling losses.

3.2.4 Enabling environment

Conducive enabling environment

Rwanda has made impressive strides in improving the business environment and regulatory framework over the last decade, including aggressive reforms that have impacted almost all aspects of its economic life. This is also true for coffee. It brings opportunities, and makes the country easily accessible and welcoming to foreigners on the lookout for coffee imports from Rwanda.

The government is well structured, capable and willing to provide support in further developing the sector. Mobile and internet penetration is high in the country, and there are many new ICT developments, improving access to information to actors in the value chain at a fast pace.

Opportunities lie in innovations and experimentation in the sector itself, involving production, processing, M&E and marketing levels.

Possibility of synergies & partnerships

Many activities are ongoing, and currently a strategy is being drafted by various ministries, including those for the coffee sector. This is therefore the best time to look for synergies between the coffee, tea and tourism industries, for joint promotion.

Different international (regional) programmes are being initiated, which also include the coffee sector. One of them is the new regional project MARKUP; for further information see also 2.6.7. Coordination is needed in order to make interventions efficient and impactful.

3.2.5 CSR

The main corporate social responsibility (CSR) challenges identified were the threat of climate change and the high risk of labour exploitation (working hours, low wages, health & safety) and child (family) labour during harvesting. In section 2.7 more detail is provided on the risks and stakeholders involved. Gender and youth employment are cross cutting issues and best practices from, for example, Sustainable Harvest and Twin could be used.

Solutions with regard to labour issues should be sought in training labourers and CWSs on labour rights, as well as increasing the skill level of labourers in coffee washing so that they become more valuable to the coffee washing stations and higher wages could be asked. Rainforest Alliance/UTZ or Fairtrade certification for CWSs provides support in preventing labour exploitation, as the standards apply strict criteria.

With regard to adapting to climate change, solutions should be sought in a combination of training both the farmers and CWSs, combined with the introduction of new technologies (e.g. drying systems, weather apps) and more resilient varieties.

Element 4. Possible Interventions and Support Activities in the Value Chain

Element 4 of this value chain analysis comprises identifying interventions and support actions needed to seize the key opportunities and tackle the key obstacles identified in Element 3, which are combined under the following five headings:

1. Market demand
2. Managing and improving quality
3. Professionalisation of the sector
4. Enabling environment
5. CSR (*section 4.1.2*)

4.1.1 Interventions and support actions

The key actors mentioned in the below table are indicative and are based on those which have either already shown their willingness to participate in a potential new project, or who were mentioned as key supporters or influencers during our discussions with the sector.

VALUE CHAIN CHALLENGES	INTERVENTIONS	KEY ACTORS	OUTCOMES
1. Market demand	**1.1 Promotion in Europe** a) Promote Rwanda's coffees in the European market (e.g. UK, France, Netherlands, Norway, Poland and others) by informing and introducing buyers to the Rwandan coffees	NAEB, CEPAR, Exporters with support of CBI	Increase demand in the EU market
	1.2. Branding Standardisation and categorisation of product standards for branding and marketing purposes	NAEB, CEPAR, RCCF, RDB, RSB, CWS/Exporters, supported by CBI	Improved brand recognition for the Rwandan specialty coffees
2. Managing and improving quality	**2.1. Quality performance management at farm level** a) GAP training at farmer level c) Quality control and management d) Farm performance monitoring	NAEB, RYAF, Sustainable Harvest, Technoserve, Twin, Agriterra, Starbucks	Improved quality and volume of specialty grades >85
	2.2. Value addition a) Train in e.g. natural and honey processing, coffee roasting, blockchain, storytelling; women-grown coffees, etc. b) Support in obtaining certification: organic + RA/UTZ or Fairtrade	NAEB, CBI, European specialty green coffee buyers and micro-roasters, Technoserve, Twin, Sustainable Harvest, Starbucks, Progreso, other more experienced CWSs, etc.	Improved access to market
	2.3. Technical skills development Training on coffee quality and coffee quality management (e.g. handling micro-lots, selection and sorting, water usage)	RYAF; Agriterra, Technoserve, Twin, Sustainable Harvest etc. local NGOs, private BSOs	Improved skills level for better management and sustainable business
	2.4. CWS infrastructure a) Support in obtaining the needed (improved) drying equipment b) support in obtaining cupping labs	NAEB, CBI, Starbucks	

3. Professionalisation of the sector	**3.1. Sector Collaboration** a) Map, analyse, categorise the small-scale exporters based on similarities and capacities (cooperatives, private companies, sole proprietorship)	NAEB, RCA, CEPAR and PSF with support of CBI, Twin, Agriterra, Sustainable Harvest, Starbucks	Collaboration SMEs on key services (i.e. quality control, capacity building, finance, marketing, IT) to improve bargaining power; increase youth employment and improve access to EU markets
	b) Organise stakeholder meetings to develop and implement a strategy to improve coordination among the smaller actors in the sector, including the development of the business support services for that segment	NAEB, RCA, RYAF, RCCF, CEPAR, MYICT, NYC, CBI, Private Sector, Twin, Starbucks, Agriterra, Sustainable Harvest, AgriProFocus	
	3.2. Financial Training on price risk management and financial and accountancy skills	Urwego bank; Vision fund Rwanda, BDF, USADF, Technoserve, Twin, Sustainable Harvest, Agriterra etc. local NGOs, private BSOs	Better access to finance Better management skills In order to further professionalise and become a trusted partner
	3.3 Marketing & promotion Training on marketing, branding and promotion, both technical and soft skills	NAEB, CBI, Technoserve, Twin, Sustainable Harvest, etc.,	Marketing & pricing strategy and business relationship skills Knowledge of the market to create improved access to market
	3.4 Other technical skills Train on: a) Farm performance management b) machine maintenance b) Computer literacy	NAEB, exporters, Twin, Sustainable harvest, Starbucks, Agriterra	Improved control, better access to services, improved communication skills
	3.5 Transparency of DM operations a) Train CWS on dry mill process and how they could improve control levels b) Work with dry mills on implementing (IT) systems to improve transparency and traceability	NAEB, exporters, Twin, Sustainable harvest, Starbucks, Agriterra	Less losses both in volume and quality for CWS
4. Enabling Environment	**4.1. Create conduce environment** a) Increase transparency and information sharing on the sector by providing a platform which can be accessed by all sector stakeholders (small and large) b) Support government in developing sector strategy, specifically on the marketing, branding and price setting Support government in legal and regulatory framework for the sector (i.e. contract enforcement)	MINAGRI, NAEB, RDB, CBI, coffee sector stakeholders	Level playing field, leverage synergies for impact, improved decision making

	4.2 Synergies & partnerships a) Collaborate with Tourism and Tea sectors for joint promotion b) Various coffee projects ongoing and starting	NAEB, RDB, MINICOM, PSF, private companies operating in the tourism industry MARKUP, Twin, USAID, IFAD etc.	

4.1.2 CSR constraints and interventions

The corporate social responsibility (CSR) constraints and opportunities have been mentioned in section 2.7. There are some activities related to gender, but far fewer regarding youth employment. Land is scarce, so youth are employed in the sector either as skilled labourer or service provider to the smaller processors/exporters, or have jobs promoting Rwandan coffees domestically or working with tourists as barista or tour guide.

As they operate in the informal sector, labourers at CWSs run a relatively high risk of encountering health & safety dangers, as well as unfair employment practices. Certification standards, such as UTZ/Rainforest Alliance and Fairtrade are strict on labour violations. Promotion of the certification standards with the CWS Intervention should focus on improving skill level of the labourers, to increase their productivity.

Climate change is an enormous risk for all arabica coffee growers. There are initiatives in the country, but few are yet applied to the coffee sector. Both growers and wet processors would benefit from exchanges, learning about best practices, within the country or in the region.

CSR Risks	Support Interventions	Key actors	Outcome
Climate change	Collaborate with existing initiatives, promote and share best practices Create exchanges with other countries in the region to which Rwandan producer representatives and SME can participate and learn from successful interventions that resulted in improve resilience to climate change	NAEB, Starbucks, GIZ, IFAD, Sustainable Harvest, Twin, CIAT, AGLC, USAID CBI, NAEB, Starbucks, Technoserve, private sector actors, producer and processors	Climate resilience integrated into project activities Improved resilience to climate change, in order to maintain productivity and quality in changing weather patterns
Occupational health & safety dangers for workers Unfair employment terms	Support CWS in obtaining UTZ, RA, Fairtrade certifications etc. Health & safety education to enable workers to identify health risks and their consequences and to become aware of their right to a healthy working environment	NAEB, certification standards, Twin, Technoserve, Starbucks	Improved labour conditions

CSR Opportunities	Interventions	Key actors	Outcome
Youth employment	Where there is a demand for employment, support interventions that create youth employment, such as: business support activities for CWSs and/or exporters; extension services; skilled labour at CWSs; activities related to the promotion of domestic coffee consumption and/or in tourism, etc.	NAEB, RDB, MYICT, NYC, RYAF, (I)NGOs, SMEs, CBI could promote the use of youth in interventions described in 4.1.1	Increased youth employment
Gender inclusion	All activities include best practices from current projects that apply a gender inclusive approaches Support of women-grown coffee initiatives	MIGEPROF, Sustainable Harvest, Twin, Technoserve, CWS/Exporters. CBI could support the CWSs and exporters in developing and marketing women-grown coffees	Women benefit equally from the programme

4.1.3 Risk assessment

Rwanda is a country that has received quite a lot of aid in the past few decades, which includes the coffee sector. There are many actors and many projects, and for a large part the political environment determines how the value chain is and will be faring. Therefore it is important that the design of a project has the full support of government from the start, or else the risk of failing is high.

MARKUP is a large project, currently putting out its tenders; it is important to be kept well informed on activities and the actors involved, as there is likely to be overlap, therefore synergies should be sought.

The US is a well-known market to the Rwandans and the coffees are also much appreciated by the consumers there. Asia and Oceania are becoming fast growing markets for coffee, given their increasing numbers of consumers, and there are already quite a few actors from these regions promoting these markets. It is unlikely that efforts put into the specialty coffee sector will only benefit one market, which in the case of CBI is the EU.

Risk	Impact	Likelihood	Mitigation
Interventions will benefit other markets than the EU and will not reach CBI's target of growth in export to Europe	L	H	Involve specialty buyers from Europe at an early stage in the design and support of the project
No synergies between MARKUP and other coffee projects	H	M	Assign one person who is regularly in contact with the main coffee projects in the country and align on activities
Resistance to team up in the sector/share information/collaborate	H	M	Involve the NAEB from the start, as well as the other sector platforms such as CEPAR and RCCF
Resistance to change by sector actors	H	M	Involve the NAEB from the start, as well as the other sector platforms such as CEPAR and RCCF
Political instability	H	L	Plan activities after parliamentary elections in 2018 and end programme before presidential election in 2025

Reputation risk due to labour exploitation at CWSs and child labour risk at farm level	H	M/H	Involve relevant stakeholders in providing education on labour rights and health & safety, certify the SMEs involved in the programme. Use platforms for awareness raising

Conclusions

Europe is the largest coffee market, accounting for more than 50% of global consumption. Although traditionally Rwanda has sold most of its specialty coffees to the US market, there is a clear trend observable in Europe towards coffee market premiumisation. Although demand is rising, Rwandan specialty coffees is still seen as an exotic coffee, and also as a "risky" coffee because of the potato taste defect (PTD), which is still very much associated with it.

Though most buyers are of the opinion that the qualities of the coffees produced in Rwanda are high, the unique flavour is something the European roasters and green been traders found difficult to agree upon. There is strong competition from other producing countries in the region, which have higher volumes (more flexibility) and are said to offer more unique flavour profiles and/or character. However, Rwanda does have a few other advantages it can compete on: the coffee pricing is still attractive, though going up; it has good processing infrastructure; it produces a relatively consistent high quality, with a large potential to further improve; it provides easy access to buyers; and there is a story to tell.

There is ample opportunity to grow market demand for Rwandan coffees, if quality continues to improve, product differentiation is promoted and PTD is further controlled.

On the production side, there is an asymmetry to be observed between the fragmented small CWSs and the other concentrated processors and exporters. Rwanda's coffee industry is dominated by a few medium to large processors and exporters. This significantly impacts the competitive position of the smaller processors. Their bargaining power has gone down, compared to that of the buyers, while the rivalry among the existing competitors has increased. The smaller processors and exporters are truly struggling in this environment, making them vulnerable to default and bankruptcy.

To support these smaller processors and exporters in accessing the specialty market in Europe, where the value for these coffees lies, it will be necessary to work on professionalising this segment and helping to strengthen their position in the local market. This also means continuing to address the shortcomings in the value chain, such as low skill levels, high processing costs, scarcity and inconsistent quality of raw material, and poor access to finance. The main intervention strategies should focus on supporting better coordination of the smaller processors and exporters and support them in increasing qualities and efficiencies, as well as working on improving their management and technical skills, which includes marketing and promotion and developing the soft skills to help build long-term relationships, an important attribute of the specialty sector.

References

AGLC, 2017. Guiding Question: How Might We Explore Improvements to Input Delivery? *Innovation Lab for Food Security Policy / African Great Lakes Region Coffee Support Program (AGLC) / Policy Advocacy Roundtable on Farmer Investments in Coffee June,* Volume Backgounder 4.

AGLC, 2017. *Pricing Coffee Cherry to Incentivize Farmers and Improve Quality. Feed the Future Innovation Lab for Food Security Policy Research Brief 43. East Lansing: Michigan State University.* [Online]
Available at: http://foodsecuritypolicy.msu.edu/uploads/resources/Policy_Brief_43.pdf
[Accessed June 2018].

AGLC, 2017. *Topic: Challenges and Opportunities for Women in the Rwandan Coffee Sector. Feed the Future Africa Great Lakes Region Coffee Support Program (AGLC) Policy Roundtable. Michigan State University.* [Online]
Available at:
http://foodsecuritypolicy.msu.edu/uploads/resources/RW_Gender_RW_July_2017_Puebla_for-Print.pdf
[Accessed June 2018].

Amazon, n.d. *aylors of Harrogate Rwanda Lake Kivu Coffee Beans 1 kg.* [Online]
Available at: https://www.amazon.co.uk/Taylors-Harrogate-Rwanda-Coffee-Beans/dp/B00QQB85Y0

APA News, 2018. *Rwanda Internet Penetration Hits 47.8 Percent.* [Online]
Available at: http://apanews.net/index.php/en/news/rwandas-internet-penetration-hits-478-percent
[Accessed July 2018].

Bloomberg Quint, 2017. *Latte Lovers From Moscow to Prague Driving Coffee-Chain Boom.* [Online]
Available at: https://www.bloombergquint.com/markets/2017/12/13/latte-fans-from-moscow-to-prague-help-drive-coffee-chain-boom
[Accessed July 2018].

Bloomberg, 2018. *Coffee Waste Is Now Fetching a 480% Premium Over Coffee Itself.* [Online]
Available at: https://www.bloomberg.com/news/articles/2018-05-22/coffee-waste-is-now-fetching-a-480-premium-over-coffee-itself
[Accessed June 2018].

Bunn, C., Läderlach, P., Rivera, O. O. & Kirschke, D., 2015. A Bitter Cup: Climate Change Profile of Global Production of Arabica and Robusta Coffee. *Climatic Change,* 129(DOI 10.1007/s10584-014-1306-x), pp. 89-101.

CBI, 2018. *What is the Demand for Coffee in Europe?* [Online]
Available at: https://www.cbi.eu/market-information/coffee/trade-statistics/
[Accessed June 2018].

CBI, 2018. *Which Trends Offer Opportunities on the European Coffee Market?* [Online]
Available at: https://www.cbi.eu/market-information/coffee/trends/

CGIAR, 2015. *Climate Change Impacts on African Crop Production. Working Paper No. 19.* [Online]
Available at: https://ccafs.cgiar.org/blog/crops-under-changing-climate-what-are-impacts-africa#.WuBhzpco_b0
[Accessed June 2018].

CGIAR, 2016. *Building Climate Services Capacity in Rwanda.* [Online]
Available at: https://ccafs.cgiar.org/building-climate-services-capacity-rwanda#.WzzzAdIzaUk
[Accessed June 2018].

Clay, D. et al., 2016. *Determinants of Farmer Investment in Coffee Production:Finding a Path to Sustainable Growth in Rwanda's Coffee Sector. Research Paper 32. East Lansing: Michigan State University.* [Online]
Available at: http://foodsecuritypolicy.msu.edu/uploads/resources/FSP_Research_Paper_32.pdf
[Accessed June 2018].

Clay, D. C. & Bizoza, A., 2018. *The Challenge to Sustainable Growth in Rwanda's Coffee Sector. Feed the Future Innovation Lab for Food Security Policy Research Paper 100. East Lansing: Michigan State University..* [Online]
Available at: http://foodsecuritypolicy.msu.edu/uploads/resources/FSP_Research_Paper_100.pdf
[Accessed June 2018].

Climate Expert, n.d. *Climate Risk Management & Business Opportunities – Agro Processing of Tea and Coffee in Rwanda – Why Adaptation to Climate Change Matters for Businesses! Implemented by GiZ in cooperation with Adelphi.* [Online]
Available at: https://www.climate-expert.org/fileadmin/user_upload/Infosheet_Climate_Expert_Rwanda_Agro_EN.pdf

Coffee Barometer, 2018. *hivos.org.* [Online]
Available at: https://hivos.org/sites/default/files/coffee_barometer_2018.pdf
[Accessed June 2018].

Coffeetransparency.com, n.d. *Technoserve – Coffee Transparency.* [Online]
Available at: http://www.coffeetransparency.com/c/rw/

CSR Risk Check, 2018. *Rwanda Coffee and Coffee Subsitutes,* s.l.: MVONederland & Ministry of Foreign Affairs.

FiBL & IFOAM, 2018. *The World of Organic Agriculture – Statistics & Emerging Trends.* [Online]
Available at: https://shop.fibl.org/CHen/mwdownloads/download/link/id/1093/?ref=1
[Accessed June 2018].

GCP, 2016. *African Coffee Investment Agenda – Rwanda.* [Online]
Available at: http://www.globalcoffeeplatform.org/assets/files/Documents/African-Coffee-Investment-Agendas/African-Coffee-Investment-Agendas_Rwanda_Full_Report.pdf

Gerard, A. & Bigirimana, J., 2018. *Mitigating Antestia Bug Damage and the Potato Taste Defect in Rwandan Coffee. Feed the Future Innovation Lab for Food Security Policy Research Brief 63. East Lansing: Michigan State University.* [Online]
Available at: http://foodsecuritypolicy.msu.edu/uploads/resources/Policy_Brief_63.pdf
[Accessed June 2018].

Gerard, A., Clay, D. C. & Claudia Lopez, M., 2017. *Stakeholder Perceptions on Geographic Zoning in Rwanda's Coffee Sector Feed the Future Innovation Lab for Food Security Policy Research Brief 42. East Lansing: Michigan State University.* [Online]
Available at: http://foodsecuritypolicy.msu.edu/uploads/resources/Policy_Brief_42.pdf
[Accessed June 2018].

Giacalone, D., Reinhold Fosgaard, T., Steen, I. & Münchow, M., 2016. *"Quality Does Not Sell Itself": Divergence Between "Objective" Product Quality and Preference for Coffee in Naïve Consumers. British Food Journal, Vol. 118 Issue: 10, pp.2462-2474, Emerald Group Publishing Limited 2016.* [Online]
Available at: https://www.emeraldinsight.com/doi/abs/10.1108/BFJ-03-2016-0127

GKI, 2014. *On the Path to Eliminating Coffee Potato Taste Defect.* [Online]
Available at: http://globalknowledgeinitiative.org/2014/12/21/on-the-path-to-eliminating-coffee-potato-taste-defect/
[Accessed June 2018].

GlobalTrade, 2017. *Six Global Supply Chain Trends to Watch in 2018.* [Online]
Available at: http://www.globaltrademag.com/global-trade-daily/commentary/six-global-supply-chain-trends-watch-2018
[Accessed June 2018].

GoR, 2017 draft. *National Strategy for Transformation and Prosperity (NSTP 1),* s.l.: s.n.

GSMA, 2018. *The Mobile Economy.* [Online]
Available at: https://www.gsma.com/mobileeconomy/
[Accessed June 2018].

Hakorimana, F. & Akcaoz, H., 2017. The Climate Change and Rwandan Coffee Sector. *Turkish Journal of Agriculture – Food Science and Technology,* 5(10), pp. 1206-2015.

ICO, 2017. *Historical Data on the Global Coffee Trade.* [Online]
Available at: http://www.ico.org/new_historical.asp

ICO, 2018. *Development of Coffee Trade Flows.* [Online]
Available at: http://www.ico.org/documents/cy2017-18/icc-121-4e-trade-flows.pdf
[Accessed June 2018].

ICO, 2018. *World Coffee Consumption.* [Online]
Available at: http://www.ico.org/prices/new-consumption-table.pdf
[Accessed June 2018].

IFAD, 2010. *Gender and Study Report: Youth in the Tea and Coffee Value Chains – Smallholder Cash and Export Crops Development (PDCRE).* [Online]
Available at: https://www.ifad.org/documents/10180/518776af-1649-4613-bdee-7702d53c97e5
[Accessed June 2018].

ITC News, 2018. *MARKUP Initiative to Boost Market Access to Europe for East African SMEs.* [Online]
Available at: http://www.intracen.org/news/MARKUP-initiative-to-boost-market-access-to-Europe-for-East-African-SMEs/
[Accessed June 2018].

ITC, 2011. *The Coffee Exporter's Guide – Third Edition.* [Online]
Available at: http://www.intracen.org/The-Coffee-Exporters-Guide---Third-Edition/

ITC, 2017. *ITC's SheTrades Initiative Launched in Rwanda.* [Online]
Available at: http://www.intracen.org/news/ITCs-SheTrades-initiative-launched-in-Rwanda/
[Accessed July 2018].

ITC, 2017. *Trade Map.* [Online]
Available at: www.trademap.org

IWCA, 2018. *International Women's Coffee Alliance.* [Online]
Available at: https://www.womenincoffee.org/what-we-do/

JICA, 2014. *Data Collection Survey on Coffee Growing and Marketing in the Republic of Rwanda. Japan International Cooperation Agency (JICA) Africa Department.* [Online]
Available at: http://open_jicareport.jica.go.jp/pdf/1000016725.pdf
[Accessed June 2018].

Lafley, A. & Martin, R. L., 2013. *Playing to Win: How Strategy Really Works.* 1st edition ed. s.l.:Harvard Business Review Press.

LMCP, 2015. *Unlikely Heroes Fighting the Potato Defect.* [Online]
Available at: http://www.longmilescoffeeproject.com/heroes-fighting-potato-defect/
[Accessed June 2018].

LO/FTF Council , 2016. *Labour Market Profile Danish Trade Council.* [Online]
Available at:
http://www.ulandssekretariatet.dk/sites/default/files/uploads/public/PDF/LMP/lmp_rwanda_2016_final.pdf
[Accessed June 2018].

Macchiavello, R. & Morjaria, A., 2015. *Coffee Washing Stations Rwanda.* [Online]
Available at: https://www.theigc.org/wp-content/uploads/2015/02/Macciavello-and-Morjaria-2015-Project-Memo.pdf
[Accessed June 2018].

Machiavello, R. & Morjaria, A., 2017. *Competition and Relational Contracts: Evidence from Rwanda's Coffee Mills.* [Online]
Available at: https://cepr.org/sites/default/files/Morjaria,%20Ameet.pdf

McKinsey&Company, 2018. *Blockchain Beyond the Hype: What Is the Strategic Business Value?* [Online]
Available at: https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/blockchain-beyond-the-hype-what-is-the-strategic-business-value
[Accessed June 2018].

MINAGRI, 2016-2020. *National ICT Strategy for Rwanda Agriculture (2016–2020).* [Online]
Available at:
http://www.minagri.gov.rw/fileadmin/user_upload/documents/policies_and_strategy/ICT4RAg_STRATEGIC_PLAN_2016-2020_final__final__3_.pdf
[Accessed June 2018].

MINAGRI, 2017. *PSTA 4 – Strategic Plan for Agricultural Transformation 2018–24,* s.l.: Ministry of Agriculture and Animal Resources Rwanda.

MINAGRI, 2018. *Rwandan Farmers Cheerful as Coffee Prices Increase.* [Online]
Available at:
http://www.minagri.gov.rw/index.php?id=469&tx_ttnews%5Btt_news%5D=1486&cHash=a499b61a43283799c9ef0a5dd9f54c6e

NAEB, 2012. *Annual Report 2011–2012.* [Online]
Available at: http://www.naeb.gov.rw/fileadmin/Reports-Annual/ANNUAL_REPORT_2011-2012.pdf

NAEB, 2013. *Annual Report 2012–2013.* [Online]
Available at: http://www.naeb.gov.rw/fileadmin/Reports-Annual/ANNUAL_REPORT_2012-2013.pdf

NAEB, 2014. *Annual Report 2013–2014.* [Online]
Available at: http://www.naeb.gov.rw/fileadmin/Reports-Annual/ANNUAL_REPORT_2013-2014.pdf

NAEB, 2015. *Annual Report 2014–2015.* [Online]
Available at: http://www.naeb.gov.rw/index.php?id=171

NAEB, 2016. *Annual Report 2015–2016.* [Online]
Available at: http://www.naeb.gov.rw/fileadmin/Reports-Annual/ANNUAL_REPORT_2015-2016..pdf

NAEB, 2017. *Annual Report 2016–2017.* [Online]
Available at: http://www.naeb.gov.rw/fileadmin/Reports-Annual/ANNUAL_REPORT_2016-2017.pdf

NAEB, 2017. *NAEB Medium Term Strategic Plan 2018–2024,* s.l.: NAEB.

NISR, 2017. *Labour Force Survey.* [Online]
Available at: http://www.statistics.gov.rw/datasource/labour-force-survey-2017
[Accessed June 2018].

OEC, 2016. *Rwanda.* [Online]
Available at: https://atlas.media.mit.edu/en/profile/country/rwa/
[Accessed June 2018].

OEC, 2016. *Where Does the United Kingdom Import Coffee From? (2016).* [Online]
Available at: https://atlas.media.mit.edu/en/visualize/tree_map/hs92/import/gbr/show/0901/2016/
[Accessed June 2018].

Oxfam Novib, 2014. *Gender Action Learning System, Practical Guide for Transforming Unequal Power Relations in Value Chains.* [Online]
Available at:
https://www.oxfamnovib.nl/Redactie/Downloads/English/publications/150115_Practical%20guide%20GALS%20summary%20Phase%201-2%20lr.pdf
[Accessed July 2018].

Panhuysen, S. & Pierrot, J., 2018. *Coffee Barometer 2018.* [Online]
Available at: https://hivos.org/sites/default/files/coffee_barometer_2018.pdf
[Accessed June 2018].

Perfect Daily Grind, 2017. *What Is "Third Wave Coffee" & How Is It Different to Specialty?* [Online]
Available at: https://www.perfectdailygrind.com/2017/04/third-wave-coffee-different-specialty/
[Accessed June 2018].

PerfectDailyGrind, 2017. *Is Cascara ACTUALLY Banned? Mixed Messages in the EU.* [Online]
Available at: https://www.perfectdailygrind.com/2017/03/cascara-banned-mixed-messages-eu/
[Accessed June 2018].

PerfectDailyGrind, 2017. *Micro Lot vs Macro Lot: What's the Difference?* [Online]
Available at: https://www.perfectdailygrind.com/2017/12/micro-lot-vs-macro-lot-whats-difference/
[Accessed June 2018].

PerfectDailyGrind, 2017. *Should Natural Coffees Be Judged Differently?* [Online]
Available at: https://www.perfectdailygrind.com/2017/02/natural-coffees-judged-differently/
[Accessed June 2018].

PerfectDailyGrind, 2017. *Yellow, Red, & Black Honey Processed Coffees: What's the Difference?* [Online]
Available at: https://www.perfectdailygrind.com/2017/02/yellow-red-black-honey-processed-coffees-whats-difference/
[Accessed June 2018].

Royal, 2018. *Potato Taste Defect: What Roasters Need to Know.* [Online]
Available at: https://royalcoffee.com/potato-taste-defect-what-roasters-need-to-know/
[Accessed June 2018].

RURA, 2018. *Annual Report 2016-2017,* s.l.: Rwanda Utilities Regulatory Authority.

RYAF, 2018. *About Ryaf.* [Online]
Available at: www.ryaf.rw
[Accessed June 2018].

SCA, 2014. *Risk, Responsibility, and Potatoes? A Rwandan Coffee Story.* [Online]
Available at: http://www.scanews.coffee/2014/07/07/risk-responsibility-and-potatoes-a-rwandan-coffee-story/
[Accessed June 2018].

SCA, 2017. *SCA News.* [Online]
Available at: http://www.scanews.coffee/2017/11/28/2017-western-european-coffee-market-size-report/
[Accessed June 2018].

SCA, 2018. *An SCA White Paper: Gender Equality and Coffee: Minimizing the Gender Gap in Agriculture.* [Online]
Available at: https://www.scaa.org/PDF/scaa-white-paper-gender-equality.pdf
[Accessed June 2018].

SCC, 2018. *The Sustainable Coffee Challenge.* [Online]
Available at: https://www.sustaincoffee.org/commitments/
[Accessed June 2018].

Simsch, S., 2014. *Seattle Coffee Works Blog What on Earth Is Honey Process?* [Online]
Available at: http://blog.seattlecoffeeworks.com/roastery/earth-honey-process/
[Accessed June 2018].

Starbucks, 2018. *Starbucks to Pilot "Bean to Cup" Traceability with New Technology.* [Online]
Available at: https://news.starbucks.com/news/starbucks-to-pilot-bean-to-cup-traceability
[Accessed June 2018].

Technoserve, 2013. *The Coffee Initiative 2008-2011: Lessons Learned.* [Online]
Available at: http://www.technoserve.org/files/downloads/coffee-initiative-lessons-learned.pdf
[Accessed June 2018].

The Perfect Daily Grind, 2016. *Washed, Natural, Honey: Coffee Processing 101.* [Online]
Available at: https://www.perfectdailygrind.com/2016/07/washed-natural-honey-coffee-processing-

101/
[Accessed July 2018].

The Times, 2018. *Waste from Coffee Plants Is New Gold Blend Amid Bean Price Crash.* [Online]
Available at: https://www.thetimes.co.uk/article/waste-from-coffee-plants-is-new-gold-blend-amid-bean-price-crash-dt9cwntpm
[Accessed June 2018].

TheDailyMeal, 2018. *Starbucks To Roll Out 2 New Cold Foam Tea Lemonades.* [Online]
Available at: https://www.thedailymeal.com/drink/starbucks-cold-foam-lemonade/062118
[Accessed June 2018].

TripleLine, 2017. *Evaluation of the TechnoServe East Africa Coffee Initiative.* [Online]
Available at: http://www.technoserve.org/files/downloads/triple-line-evaluation-of-the-coffee-initiative.pdf
[Accessed July 2018].

Twin & TMEA, 2018. *Coffee Export Capabilities.* [Online]
Available at: http://www.twin.org.uk/assets/TWIN-TMEA-Export-Capability-Study-narrative-report-final.pdf

Uhlenbrock, S., 2014. *F.O. Licht Commodity Analysts – World Supply and Demand Outlook – ICO Coffee Seminar.* [Online]
Available at: http://www.ico.org/documents/cy2013-14/presentations/seminar%20march%202014%20presentations/seminar-march2014-stefan-uhlenbrock-e.pdf
[Accessed June 2018].

Union, 2018. *Blends.* [Online]
Available at: https://www.unionroasted.com/coffees/blends.html

USAID, 2012. *Climate Change Adaptation in RWANDA.* [Online]
Available at:
https://www.climatelinks.org/sites/default/files/asset/document/rwanda_adaptation_fact_sheet_jan2012.pdf
[Accessed June 2018].

USAID, 2014. *The Gendered Nature of Land and Property Rights in Post-Reform Rwanda.* [Online]
Available at: https://www.land-links.org/wp-content/uploads/2016/09/USAID_Land_Tenure_Rwanda_LAND_Report_Gendered_Nature_Land_Rights.pdf
[Accessed June 2018].

USAID, n.d. *Climatelinks: Rwanda.* [Online]
Available at: https://www.climatelinks.org/countries/rwanda
[Accessed June 2018].

USDOL, 2016. *Findings on the Worst Forms of Child Labor.* [Online]
Available at: http://www.refworld.org/pdfid/5448a85f0.pdf
[Accessed June 2018].

Vérité, 2017. *Summary of Key Trafficking in Persons Issues in Coffee Production.* [Online]
Available at: https://www.verite.org/africa/explore-by-commodity/coffee/
[Accessed June 2018].

Weissman, M., 2017. *Is Direct Trade Fair?* [Online]
Available at: https://sprudge.com/is-direct-trade-fair-110410.html
[Accessed June 2018].

World Economic Forum, 2017. *Global Gender Gap Report, Insight Report.* [Online]
Available at: http://www3.weforum.org/docs/WEF_GGGR_2017.pdf
[Accessed July 2018].

Annex I Map of Rwanda

Figure 241. Administrative map of Rwanda

Source: http://ontheworldmap.com

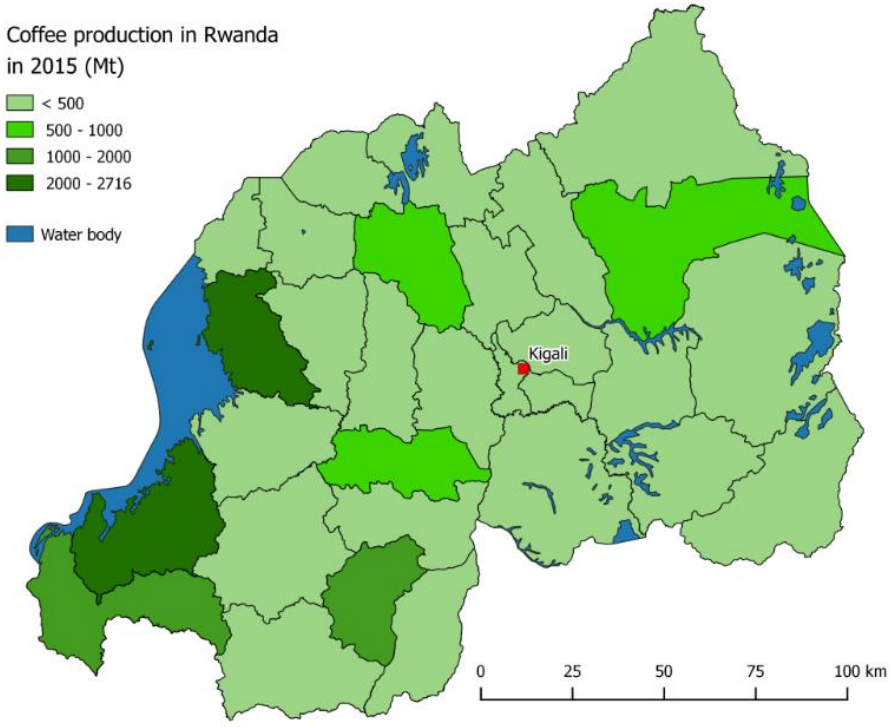


Figure 252. Coffee production areas in Rwanda (GCP, 2016)

Annex II List of Exporters (2017)

Nº	REGISTERED EXPORTER	Coop/Private	Size*	CWS	DM	Export to**	Observations	Exported in 2017
1	1000 Hills Products Rwanda Ltd.							✓
2	AMAYAGA HIGHLANDS COFFEE LTD	P						
3	ARABICA COFFEE COOPERATIVE	P				Republic of Korea		
4	BIG COFFEE LTD	P	III			Gabon, Uganda		✓
5	BOURBON COFFEE	P	II			Switzerland		✓
6	BOND COFFEE EXPORTERS	P	III					✓
7	BUJYUJYU COFFEE	P	III	✓				✓
8	CAFÉ DE GISAGARA LTD	P				Republic of Korea	NGO from Korea Project	
9	COCAMU	P					COCAMU is a farmer-owned coffee cooperative operating a CWS since 2007	
10	Coffee & Tea Africa (COFTERICA) LTD	P	II			Republic of Korea, DRC		✓
11	COFFEE BUSINESS CENTER LTD (CBC)	P	I	✓	✓	Belgium, Australia, Switzerland, USA	Rwandan. Main importer for Sustainable Harvest	✓
12	Coopérative pour La promotion des Activités Café (COOPAC)	P	I	✓	✓	USA, Switzerland, Italy	Rwandan. Partners: USAID and ACDI VOCA	✓
13	CYAHINDA COFFEE	P	III	✓		Japan		✓
14	DALLAS Investments Ltd	P	III	✓		South Africa		✓
15	DORMANS	P	I	✓	✓	Singapore, UK		✓
16	EASY WAY LTD	P				USA, Singapore		
17	Ets NKUBILI Alfred & SONS (ENAS CAFFEX)	P	I	✓	✓	Switzerland, Singapore	Rwandan. Also does soil analysis and soil fertilisers and dairy & beef farming. Works with Dutch organisation SoilCares	✓
18	FARMER TO CUSTOMER	P				Germany		
19	GIC CO. LTD	P				Uganda		✓
20	GOMA DUTY FREE LTD	P	III			USA	International	✓
21	Greater International Grain (G.I.G) CO. LTD	P				Republic of Korea		
22	GREEN LAND COFFEE CO. LTD	P	III			Uganda		✓
23	Green Mountain Coffee	P	III	✓		Uganda	Rwandan	✓
24	HIDDEN WEALTH Ltd	P				Finland, Switzerland		
25	HIROES COFFEE LTD	P						

26	IMPEXCOR	P	I	✓	?	Switzerland, Australia	Supported by Oikocredit loan of USD 1,000,000	✓
27	INGOBOKA Cooperative LTD	P						
28	John's Coffee company Ltd.	P						
29	JURU Coffee	P	II	✓		Japan		✓
30	K.A.M.G Ltd	P				Republic of Korea, DRC		✓
31	KANANI SUPPLY Co. Ltd	P						
32	KARENGERA COFFEE	P						
33	Kigasali General Supply Ltd.	P						
34	KISCO SUPPLIER	P						
35	LAND OF 1,000 HILLS COFFEE	P	III	✓		US	US	✓
36	LETSEQUOIA COFFEE	P	III			Switzerland, Republic of Korea		✓
37	LIFE MATE COFFEE	P						
38	MAHEMBE Coffee	P	III	✓		Switzerland		✓
39	MIBILIZI COFFEE & FOOD STUFS (MICOF LTD)	P	II	✓	✓	Switzerland, Republic of Korea		✓
40	MISOZI COFFEE - ABAKUNDAKAWA - COOCAMU - KOPAKAKI - KOPAKAMA - TWONGEREKAWA	C	 II III II II III	 ✓ ✓ ✓ ✓ ✓	 ✓ 	Switzerland	Rwandan Coop Export Union (5 coops). Created with IFAD support.	✓
45	Mountain Coffee Ltd.	P	III	✓		UK		✓
46	Mubuga Coffee Ltd.	P	III	✓				✓
47	MUHONDO COFFEE COMPANY LTD	P	III	✓		Switzerland		✓
48	Muraho Trading Co. Ltd	P				USA, UK, Australia		
49	NEZA Trading Co	P	III	✓				✓
50	NORTH HILLS COMPANY (NHC) LTD	P				Switzerland		
51	NOVA COFFEE	P						✓
52	OIT RWANDA LTD	P						
53	OLAM Rwanda	P	I	✓	✓			✓
54	R&B Import Export Trading	P						✓
55	REGIONAL COFFEE Co LTD	P				Australia, Canada, Germany, Finland, USA, Denmark		✓
56	RUSIZI Specialty coffee LTD	P				Switzerland		
57	RWAMATAMU COFFEE LTD	P	III	✓				✓
58	Rwanda Coffee Exporters & Processors (RWACOF)	P	I	✓	✓	Switzerland, Sweden, USA, Russia	Subsidiary SUCAFINA (CH)	✓
59	Rwanda Coffee Farmers Company (RFCC)	P	II			UK, USA, Italy		✓

60	RWANDA MOUNTAIN COFFEE	P	III	✓		Belgium		✓
61	Rwanda Professional Dealer Ltd.	P						✓
62	Rwanda Small Holder Specialty Coffee (RWASHOSCCO)					Switzerland, Norway, UK	Rwandan Coop Export Union (6 coops). Partnered with US African Development Foundation.	✓
	- BUF	P	II	✓				
	- COCAGI	C	II	✓				
	- COCAHU	C	III	✓				
	- GENERALITIES Ltd	C	III	✓				
	- GISUMS	C	III	✓				
	- KOAKAKA	C	II	✓				
	- MUSASA	C	II	✓				
	- NYAMPINGA	C	III	✓				
	- SHOLI	C	III	✓				
	- SIMBI	C	III	✓				
	- TWONGERUMUSARURO	C	III	✓				
73	RWANDA TRADING COMPANY (RTC)	P	I	✓	✓	Switzerland, Netherlands, Germany, Norway	US based HQ, sister company to FALCON Coffee UK	✓
74	SAASA Coffee (SACOF)	P					Rwandan	
75	SAKE Farm LTD	P						
76	SCENSION COFFEE Ltd	P						
77	SHINING COFFEE	P				China		
78	SIMBA SUPERMARKET LTD	P						
79	SIMBI Coffee Investment Ltd.	P						
80	Société Commerce Représentation Café (SOCOR CAFÉ)	P					Rwandan	
81	Société de Production et d'Exportation de Café (SOPECAF)	P						
82	Sustainable Harvest	P					US Headquarters	
83	Tropic Coffee Company	P						✓
84	UNGUKA MUHINZI LTD	P				Switzerland		✓
85	VOLCANO COFFEES LTD	P				Uganda		
86	WEST HILLS COFFEE	P				Sweden, Slovakia, USA		
87	YAHINDA Coffee Ltd	P						
88	ZEBRA COFFEE LTD.	P				Swaziland		
Number of exporters 2017								57

** Own estimate*

***Based on data from the Rwanda Development Board RDB*

Annex III List of Roasters

No	Company Name	Brand Name
1	BOURBON Coffee Ltd	Bourbon Coffee
2	Café Connexion Ltd	Café Connexion
3	CAFERWA Ltd	Tora Coffee
4	COOPAC & SACOF Ltd	Kivu Burbon Coffee
5	Easy Way Ltd	Rugali Coffee
6	ENAS Ltd	Migongo Coffee
7	GANOLA Coffee	RAFI Coffee
8	Huye Mountain Coffee Ltd	Huye Mountain Coffee
9	Kigasali General Supplier	Izimano Coffee
10	LETSEQUOIA Ltd	L Coffee
11	LIFEMATE Ltd	Aromec
12	Micro Roasters	Hotels and Coffee Shops
13	North Hills Ltd	Everfresh Coffee
14	RFCC Ltd	Gorilla's Coffee
15	Rwashoscco Ltd	Maraba
16	SAKE farm Ltd	Sake Coffee
17	Socor Café Ltd	Kinunu Coffee
18	Sustainable Harvest	Question Coffee
19	West Hills Coffee Ltd	West Hills Coffee
20	3 African Sisters Coffee	3 African Sisters Coffee

Registered roasters in Rwanda

Source: NAEB, interview Agri-Logic

Annex IV Members of CEPAR

01. Coffee Business Centre Ltd (CBC)	09. RWACOF Exports
02. Dormans	10. Rwanda Farmers Coffee Company (RFCC)
03. ENAS	11. Rwanda Trading Company
04. GOMA DUTY FREE Ltd	12. RWASCHOSCCO
05. IMPEXCOR	13. Sake farm Ltd.
06. MIBIRIZI Coffee & Foodstuffs (MICOF Ltd)	14. TEUSCHER INVESTMENT
07. Muhando Coffee	15. UNGUKA MUHINZI Ltd
08. Nyakizu Mountain Coffee	

Source: CEPAR 2018

Annex V Stakeholder Assessment Grid

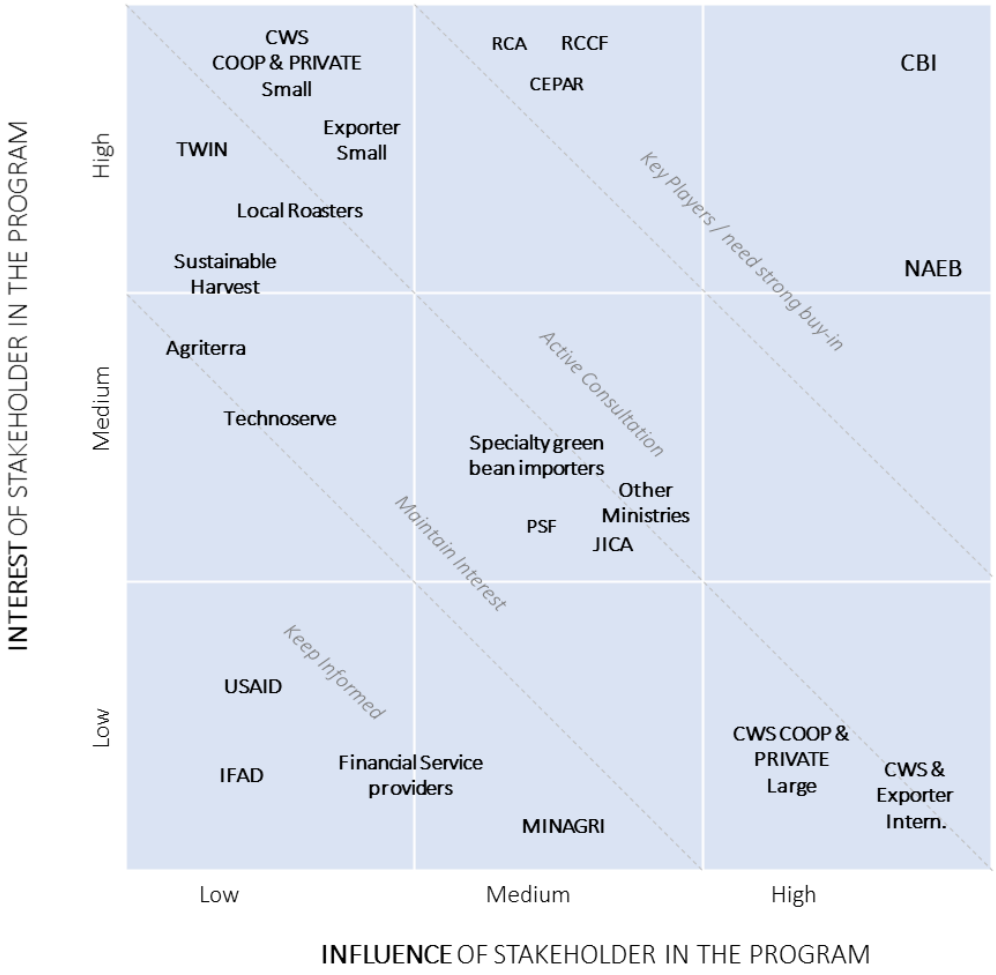


Figure 33.

Annex VI List of Coffee Projects

	Farm	CWS	Gender	Youth	Finance	Innovation / R&D	Climate	Markets	Policy
Starbucks	X	X	X			X	X	X	
Twin	X	X	X		X			X	
Sustainable Harvest 69 cooperatives (29 have a CWS)	X	X	X		X	X	X	X	
PRICE / IFAD USD 57 m 2014-2018	X	X	X		X	X	X	X	
CUP Rwanda / JICA 2017–2020	X	X						X	X
MARKUP USD 35 m + USD 5 m 2018–2022	X	X			X			X	
AGLC	X					X			X
Agriterra (6 coffee coops)		X	X	X	X			X	

Details on some of the above mentioned projects:

	Objective (topics/keywords)	**Donor**	**Partners & Implementing Agencies**	**Countries**
PRICE – Project for Rural Income through Exports	Raise smallholder farmers' income. To achieve this, the project's development objective is to promote sustainable increased returns to farmers from key export-driven agricultural value chains through increased volumes and quality of production, improved marketing, and access to finance and effective farmer organisations. Export commodities targeted: coffee, tea, silk, horticulture.	IFAD	NAEB	RW
CUP Rwanda – Coffee Upgrade & Promotion in Rwanda	Enhance competitiveness in the market by strengthening the Rwanda coffee value chain	JICA	NAEB (Implementing Agent) ; CABI-Africa (Executing Agent)	RW

MARKUP – Market Access Upgrade Programme	MARKUP aims to build the competitiveness of (M)SMEs across the region, and support them in increasing production, taking advantage of market access opportunities and creating more value addition. It sets out to support East African (M)SMEs specialised in a variety of sectors, including avocado, cocoa, **coffee**, horticulture, spices and tea. Interventions will focus on the identification and elimination of barriers to trade; improving competitiveness; strengthening of value addition for selected priority sectors; ensuring compliance with international regulations; providing access to trade finance ventures; and supporting the identification of opportunities for trade and foreign direct investments.	EU	ITC and GiZ (partnerships with multinationals) supervised by EAC secretariat	RW, TZ, UG, BU, KE

Annex VII Washed, Natural and Honey Coffee

There are generally three processing techniques that can be identified in coffee (Simsch, 2014):

1. *Natural Process* or "Dried in the Fruit" process – no layers are removed.
2. *Honey Process* – skin and pulp are removed, but some or all of the mucilage (Honey) remains.
3. *Washed Process* – skin, pulp, and mucilage are removed using water and fermentation. Also called "Fully Washed". This is the conventional form of arabica coffee processing used in most parts of the world. It is possible to skip the fermentation step by using a high-tech pressure washing machine to remove the skin, pulp and some or all of the mucilage. This process is called "Pulped Natural".

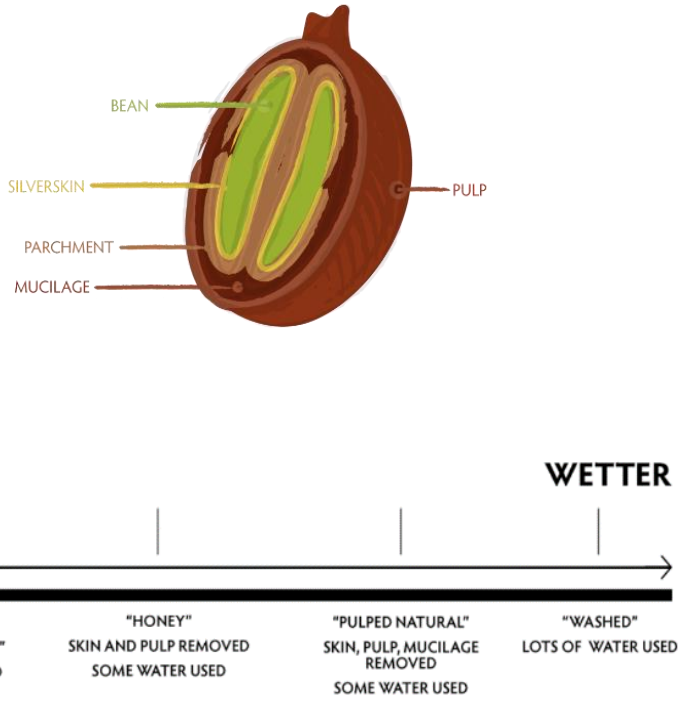


Figure 34. Anatomy of a coffee cherry and the different processing techniques according to water usage (Simsch, 2014)

Annex VIII Quality Standards in Rwanda

Fully Washed Coffees

Super Specialty	Cup score of 90 points or higher; less than 5 defects per 300 g and no primary defects; by screen; no dead beans among roasted beans; moisture content of 9–12.5%
Specialty	Cup score of 80 points or higher; less than 8 defects per 300 g; by screen; no more than 3 dead beans among roasted beans; moisture content of 9–12.5%
G1	Cup score of 70 points or higher; less than 23 defects per 300 g; by screen; no more than 5 dead beans among roasted beans; moisture content of 9–12.5%.
G2	Cup score of 60 points or higher; less than 86 defects per 300 g
G3	Cup score of 50 points or higher; less than 86 defects per 300 g

Semi-Washed Coffees

G1	Cup score of 71–80 points; less than 23 defects per 300 g; by screen; no more than 3 dead beans among roasted beans; moisture content of 9–12.5%
G2	Cup score of 55 points or less; less than 30 defects per 300 g; by screen; no more than 3 dead beans among roasted beans; moisture content of 9–12.5%.
G3	Cup score of 40 points or higher or abnormal odour in two cups or less; less than 50 defects per 300 g
G4	Cup score of 60 points or higher; less than 86 defects per 300 g
G5	Cup score of 50 points or higher; less than 86 defects per 300 g

Indicators of Rating:

1. Screen Size (allowable deviation of 5%)

18.5	AA
17	A
15	B
12	C
10	D

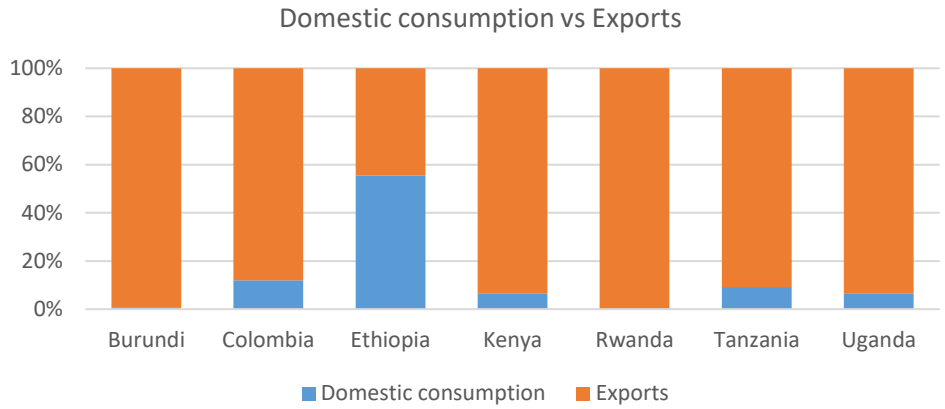
2. Secondary

Parchment	1/3–1/2
Dried pulp	1/3–1/2
Broken beans	1/5
Insect damaged beans	1/5–1/2
Partially black beans	1/3–1/2
Partially fermented beans	1/3–1/2
Beans that float in water	1/5
Shell beans	1/5
Small stones	1
Small twigs	1
Beans with water damage	1/5–1/2

From NAEB in JICA, 2014

Annex IX Competitive & Comparative Advantage Scoring

Macro Economic			Rwanda	Burundi	Kenya	Ethiopia	Tanzania	Uganda	Colombia
FDI US$ million (2016)			254	0	393	3,989	1,365	523	13,849
FDI Rank	3%	17%	1	1	1	2	1	1	5
Agricultural GDP Billion US$ (2016)			3	1	25	27	15	6	20
Agricultural GDP Rank	3%	17%	1	1	5	5	3	2	4
Agricultural GDP Growth in % (2016)			0	0	0	0	0	0	0
GDP Growth Rank	3%	17%	4	5	4	5	4	3	1
GDP per capita (PPP) US$ (2017 est)			2,100	800	3,500	2,100	3,300	2,400	14,500
GDP per capita Rank	3%	17%	1	1	2	1	2	1	5
Unemployment Rate			3	2	11	5	3	2	9
Unemployment Rate Rank	3%	17%	5	5	1	3	5	5	2
Ease of doing business			41	164	80	161	137	122	59
Ease of doing business Rank	3%	17%	5	1	4	1	2	2	4
Production									
Arabica coffee volumes (2017)			16,200	15,000	47,400	459,000	36,000	57,280	840,000
Arabica volumes Rank	4%	25%	1.0	1.0	1.2	3.2	1.1	1.2	5.0
Production Kg/Ha (2015)			0.547	0.235	0.417	0.501	0.260	0.702	0.843
Production Rank	4%	25%	3.1	1.0	2.2	2.8	1.2	4.1	5.0
Total Coffee Acreage Ha (2015)			32,000	70,000	113,500	804,000	215,000	312,000	997,500
Total production area Rank	4%	25%	1.0	1.2	1.3	4.2	1.8	2.2	5.0
Average farm size			0.1	0.1	0.1	0.7	0.7	0.2	4.5
Average farm size Rank	4%	25%	1.0	1.0	1.1	1.5	1.6	1.1	5.0
Exports									
Coffee Exports (2016)			15,756	13,811	43,623	179,098	42,535	215,736	762,983
Coffee Export Rank	7%	40%	1.0	1.0	1.2	1.9	1.2	2.1	5.0
% of export value (vegetable products)			32%	65%	9%	42%	13%	47%	45%
Export Value Rank	3%	20%	2.7	5.0	1.0	3.4	1.3	3.7	3.6
Time to Export - Border Compliance (hrs)			93	59	21	51	96	64	112
Time to Export Border Compliance Rank	2%	10%	1.8	3.3	5.0	3.7	1.7	3.1	1.0
Time to Export - Document Compliance (hrs)			42	120	19	76	96	51	60
Time to Export - Document Compliance I	2%	10%	4.1	1.0	5.0	2.7	2.0	3.7	3.4
Cost to export - Border Compliance (US$)			183.0	136.0	143.0	172.0	1,160	209.0	545.0
Cost to export - Border Compliance (US$	2%	10%	4.8	5.0	5.0	4.9	1.0	4.7	3.4
Cost to export - Document Compliance (US$)			110.0	150.0	191.0	175.0	275.0	102.0	90.0
Cost to export - Border Compliance (US$	2%	10%	4.6	3.7	2.8	3.2	1.0	4.7	5.0
Certification									
Certified RA (ha) 2015 Rwanda - Coffee			3,406	46	14,449	43,691	19,208	14,082	39,438
Certified RA (ha) 2015 - Rank	4%	25%	1.3	1.0	2.3	5.0	2.8	2.3	4.6
Certified UTZ as % of export			9%	17%	11%	9%	8%	8%	13%
Certified UTZ Ranking	1%	8%	1.3	5.0	2.1	1.4	1.1	1.0	3.3
Sold as UTZ - 2017 (%)			48%	61%	24%	17%	21%	26%	34%
Sold as UTZ Rank	1%	8%	3.8	5.0	1.6	1.0	1.3	1.8	2.5
Premiums UTZ (2017)			2.4		6.8	3.0	2.4	4.1	6.0
Premium UTZ Rank	1%	8%	1.0	-	5.0	1.6	1.0	2.5	4.3
Organic Coffee (ha)			203	-	1,262	161,113	-	65,570	10,495
Organic Rank	4%	25%	1.0	-	1.0	5.0	-	2.6	1.3
Fairtrade # Cooperatives (2017)			15	1	18	6	7	10	108
Fairtrade # Cooperatives Rank	4%	25%	1.5	1.0	1.6	1.2	1.2	1.3	5.0
Prices									
Farmgate Price as % of FOB			69%	65%	48%	61%	75%	69%	79%
Farmgate Price as % of FOB Rank	13%	75%	3.7	3.2	1.0	2.7	4.5	3.7	5.0
Differentials			(6.00)	(6.00)	4.08	4.08	10.00	(3.00)	14.00
Differential Rank	4%	25%	5.0	5.0	3.0	3.0	1.8	4.4	1.0
Youth and Women									
Labor force participation women (2017)			88	81	63	80	81	68	64
Labor force participation women Rank	4%	25%	5.0	4.0	1.0	3.7	3.9	1.8	1.1
Labor force participation youth (2017)			76	53	34	75	72	53	54
Labor force participation youth Rank	4%	25%	5.0	2.8	1.0	4.9	4.7	2.8	2.9
Youth unemployment rate (%)			3.3	3	22.1	7.6	5.4	4	19.5
Youth unemployment Rank (%)	4%	25%	4.9	5.0	1.0	4.0	4.5	4.8	1.5
Ranking Women, Peace and Security Index			94	122	107	106	85	100	96
Women, Peace and Security Ranking	4%	25%	4.0	1.0	2.6	2.7	5.0	3.4	3.8



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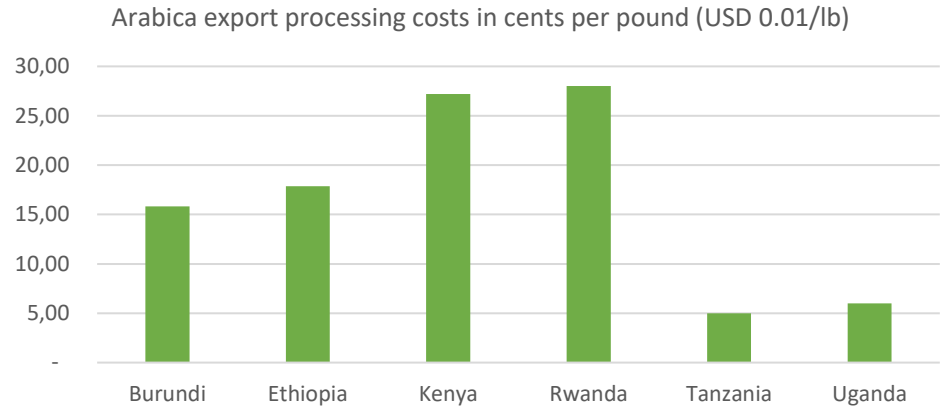
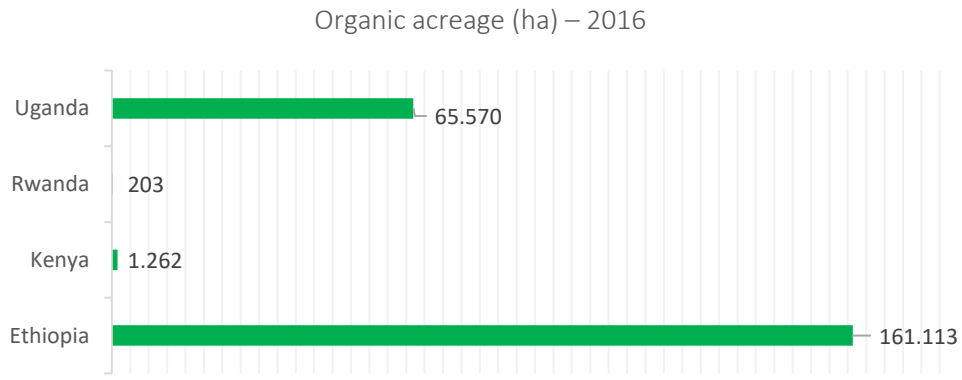


Source: different sources GCP database



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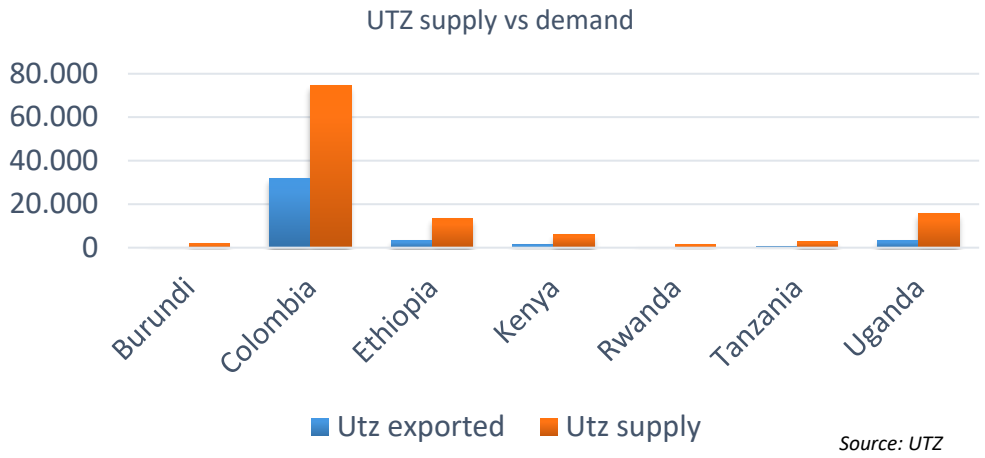
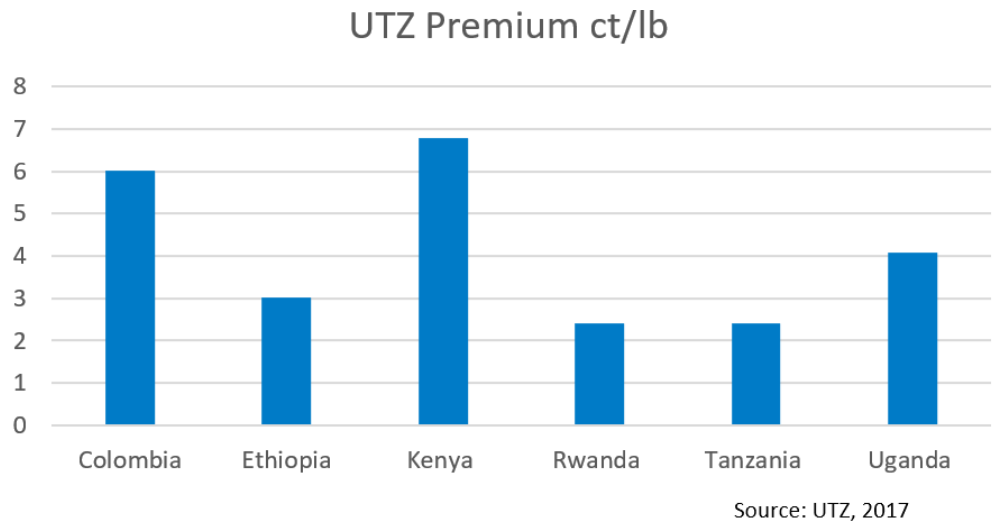


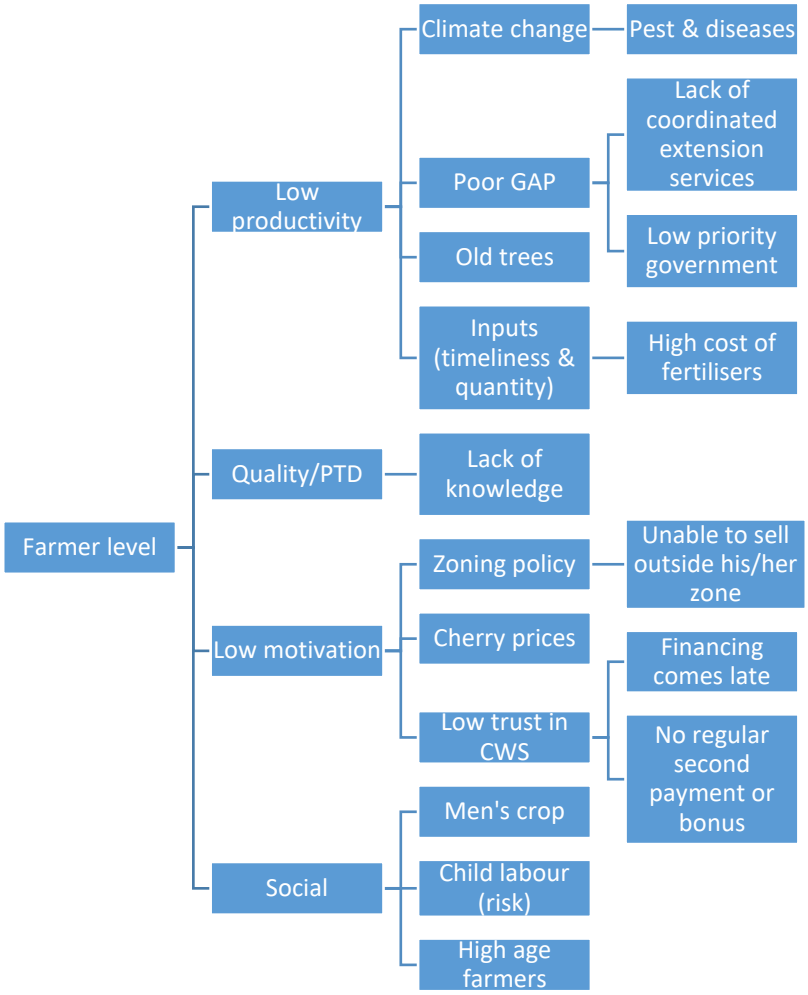
Source: UTZ



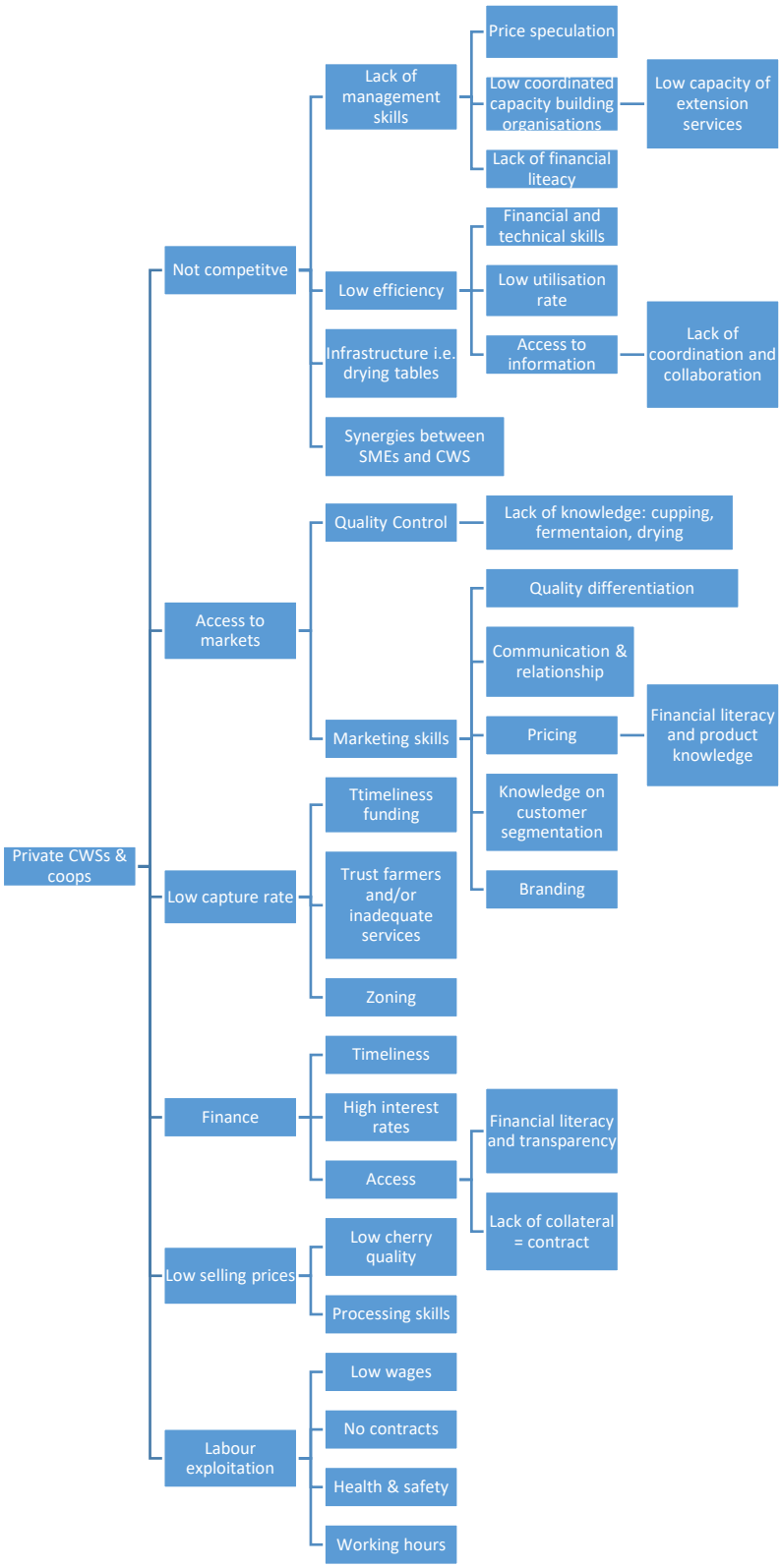
Source: UTZ, 2017

Annex X Constraints in the Value Chain

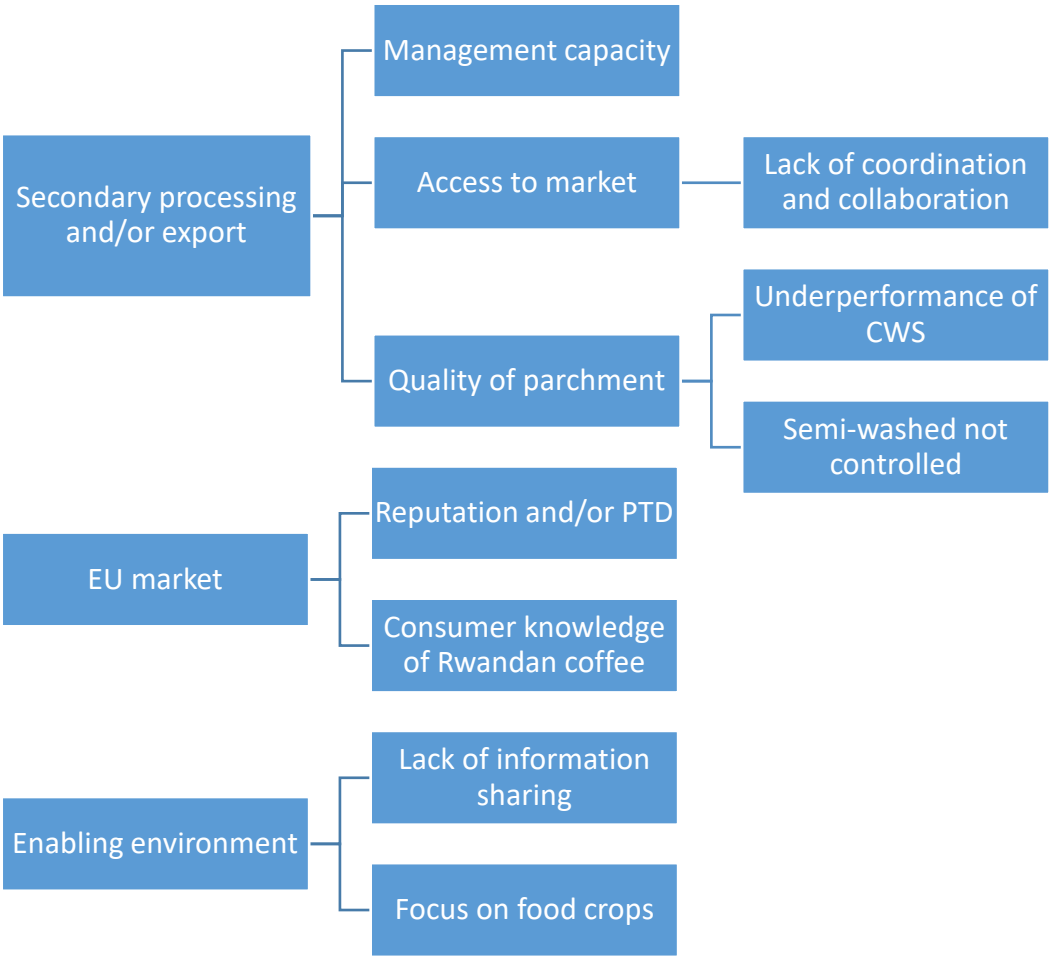
Farmer level



Coffee washing stations



Secondary processing marketing & enabling environment



Annex XI SWOT Specialty Coffee Sector Rwanda

	HELPFUL	HARMFUL
INTERNAL	**Strengths** ▪ Well-organised sector and administrative environment ▪ Easy access for buyers ▪ Coffee quality high ▪ Knowledge and experience available in the country with regard to obtaining the highest qualities ▪ Ranked high on ease of doing business ▪ Successful experiences with projects such as PEARL and SPREAD ▪ Extensive knowledge on exports (>95% exported) ▪ Relationship coffee ▪ Financing available ▪ High traceability of FWC ▪ Roasting capacity and experience available ▪ Women-grown coffees on the market ▪ Common branding of Rwandan coffees ▪ Political stability ▪ Government's willingness to support coffee sector ▪ Continuous improvement of quality coffee	**Weaknesses** ▪ Production and productivity declining ▪ Inputs insufficient ▪ Low farmer motivation ▪ CWS inefficiencies ▪ Low CWS management capacity ▪ Overcapacity installed vs production ▪ Risk of labour exploitation ▪ Coffee is a men's crop ▪ No regular assessment of zoning policy ▪ Low drying capacity ▪ Low capture rate of private CWS and/or side-selling by farmers ▪ High dominance of international players ▪ Quality control from farmer level (i.e. PTD) ▪ Low level of IT and marketing skills of SMEs ▪ Finance timeliness and rates
EXTERNAL	**Opportunities** ▪ High profile commodity many investment opportunities ▪ Rwanda part of the SCC ▪ Next AFCA in Rwanda ▪ Markets available for uptake of Rwandan coffees, especially US and Asia, but also EU ▪ Fast tech development (blockchain pilots) ▪ New processing techniques, such as "natural" and "honey", use less water ▪ New techniques being developed to deal with climate change, such as parabolic dryer	**Threats** ▪ Little competitive advantage compared to neighbouring East African countries ▪ African coffees not to the taste of European buyers (as single origin) ▪ EU skipped as specialty market outlet, because of growing well-known US market and quickly upcoming Asian market ▪ Consolidation of the coffee market leading to lower supplier power ▪ Climate change

Annex XII Value Chain Baseline Measurement

Stakeholder	Indicator	Value (2018)
With SMEs	Number of SMEs operating in this sector	Farm level: none Primary processors: 200 excl. those owned by multinationals of which 96 are cooperatives Export: about 33 of the above also export
	Number of SMEs with international business contacts (EU/EFTA and non-EU/EFTA)	101 CWSs have international business contacts, of which 13 SMEs fall under MISOZI and RWASHOSCCO
	Number of exporting SMEs in this specific value chain	There are 88 exporters, of which about half export and 8 are considered large. There are about 40–50 SME exporters operational
With business support organisations and sector associations	Number of business support organisations and sector associations active in this value chain	INGOs (6): Sustainable Harvest; Twin; Technoserve; Agriterra; SNV; AgriProFocus Sector organisations (2): CEPAR and RCCF Financial service providers (30–35) Many local NGOs >20
	Type of export-enabling services provided by business support organisations and sector associations	NGOs: Certification, GAP, market access, marketing & branding, financial management, youth and gender inclusion, quality (cupping), climate resilience Others: Financial services, input provision, price setting, advocacy, marketing
	Level of cooperation between the private sector, government, NGOs and knowledge institutions	Different sector meetings organised by the NAEB, CEPAR and Sustainable Harvest. Less regular are those of AGLC and AgriProfocus, which organises non-sector related events. The broader sector generally does not meet up
With local government	Production figures of main products in this value chain (esp. those products that CBI would want to focus on) incl. product pricing	The total coffee production for Rwanda ranges between 15,000 MT and 22,000 MT. Farm gate pricing is set by government. Export market prices should be in the range of 4–7 USD/kg for specialty.
	Direct export to the EU/EFTA in volumes and EUR, incl. growth in %	The NAEB estimates that 75% exported as specialty, which equals about USD 22.5 m. Target is to increase volume of specialty coffee with cupping score 85 and above.
	Main export destinations	UK, France, Netherlands, Norway and Poland etc.
	Level of foreign investments	TBD with the NAEB for the sector N/A
In this value chain	Main bottlenecks in this value chain for exporting SMEs	High competitive environment; management and technical skills to efficiently run operations and; receive adequate and timely access to finance
	Main certification standards in this value chain in this country	UTZ/RA and Fairtrade, 4C, CAFÉ practices, organic is on the rise