



# Multi-stakeholder Initiatives and True Cost Accounting for Sustainable Coffee Production in Colombia

The case study of the *Futureproof Coffee Collective*



## Master Thesis

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## Summary

Coffee is one of the most traded agricultural commodities in the world in terms of volume and value. The production of coffee takes place mainly in developing countries, where 25 million coffee farmers depend directly on coffee cultivation for their livelihoods. The coffee sector has become crowded with competing VSS; producers have their coffee certified by many standards, which indicates a need for collaboration, an example is the rise of multi-stakeholder initiatives (MSI) in the coffee sector. Likewise, there is an urge to move beyond the focus on the financial benefits of certification as a method to improve value chains to account for the full cost of production.

This research used the *Futureproof Coffee Collective (FCC)* as a case study, an MSI initiated by a Dutch NGO active in the Colombian coffee sector using true cost accounting (TCA) for sustainable coffee production. The FCC was compared to two other MSIs operating in the Colombian coffee sector, the Sustainable Trade Platform and the SAFE Platform. Interviews and surveys were conducted with Colombian coffee producers and NGOs, and Dutch coffee SMEs, GO and NGOs, to identify the challenges of coffee production for Colombian coffee producers and how MSIs and TCA could contribute to these challenges. The combination of MSIs and TCA for sustainable coffee production has not been researched before. As MSIs are meant for coffee producers, it is investigated MSIs address the challenges coffee producers experience, while also considering the sustainability of these initiatives once the funding ends.

The results show that the main challenges for coffee producers have to do with price and climate change. MSIs create learning platforms, develop behavioural standards and standardized management processes. MSIs align stakeholders, which creates synergies as well as funding for impact projects for coffee producers. Though for effectively addressing the needs of coffee producers, they need to be more involved in the decision-making process, as the MSIs are created for their challenges. The results show that the TCA tool can serve as a reporting framework in an MSI through which auditing and compliance of results are ensured. Coffee producers can use the TCA tool as a smartphone farm management tool to leverage their position through transparency. Though when using the TCA tool, privacy should be considered when handling the data.

**Keywords:** *Coffee, Colombia, Externalities, Multi-stakeholder initiatives, Small and Medium Enterprises (SMEs), True cost accounting*



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## List of Abbreviations

CSR	Corporate Social Responsibility
DGGF	Dutch Good Growth Fund
FCC	Futureproof Coffee Collective
FNC	Federación Nacional de Cafeteros de Colombia
GME	Guidelines on Multinational Enterprises
GO	Governmental Organisation
IDH	The Sustainable Trade Initiative
MARD	Colombian Ministry of Agriculture and Rural Development
MSI	Multi-stakeholder initiatives
MVO	MVO Nederland
NGO	Nongovernmental organization
NYSE	New York Stock Exchange
RCM	Relationship coffee model
RVO	The Netherlands Enterprise Agency
SAFE	Sustainable Agriculture, Food and Environment Platform
SME	Small and medium-sized enterprises
STP	Sustainable Trade Platform
TCA	True cost accounting
VSS	Voluntary Sustainability Standards



## 1. Introduction

Coffee is one of the most traded agricultural commodities in the world in terms of volume as well as value (Dietz et al., 2019; Giuliani et al., 2017). The production of coffee takes place mainly in developing countries; where smallholder coffee farms are responsible for around 70 per cent of the global coffee production (Dietz et al., 2019; Kolk, 2013) and 25 million coffee farmers depend directly on coffee cultivation for their livelihoods (Dietz et al., 2019). In contrast, coffee is bought and consumed by large global buyers from countries in the Global North such as the United States, Europe and Japan (Giuliani et al., 2017). Another contrast in the coffee sector is the coffee paradox; where producing countries experience a price crisis with decreasing prices, whereas consumer experience increasing coffee prices (Daviron & Ponte, 2005). Due to this connection, the coffee sector is one of the industries that historically has been a frontrunner in sustainability efforts and responsible value chain initiatives. These Voluntary Sustainability Standards (VSS) aim to improve the economic and social sustainability of smallholder farmers in coffee-producing countries (Dietz et al., 2019; Grabs, 2018).

Between 26% to 45% of the global coffee production is certified, and overall, agrifood has seen an emergence of certification schemes that govern global commodity chains (Schleifer & Sun, 2020). The coffee sector has become crowded with competing labels; multilateral and nongovernmental organization (NGO)-led certification such as Fairtrade, Organic, and UTZ and in-house certifications developed by multinational corporations (MNCs), like Nestlé and Starbucks (Bray & Neilson, 2017; Giuliani et al., 2017; Kolk, 2013). It is questioned whether these VSS improve farmers livelihoods in terms of social and environmental performance and provide access to markets and economic performance through higher prices (Giuliani et al., 2017). VSS have high entry barriers for smallholders and often insufficient in addressing poverty and food insecurity issues (Schleifer & Sun, 2020), though also contributing to poverty reduction in certain areas (Tayleur et al., 2018). Similarly, the credibility of company-owned certifications is questioned, as recently *Dispatches*, a British current affairs documentary programme, reported child labour on coffee farms linked to Nestlé and Starbucks in Guatemala. Both MNCs have a zero-tolerance policy for child labour in their supply chain standards (Dowards, 2020). Thus, a genuinely sustainable coffee supply chain has not been managed before (Meckenstock, Barbosa-Póvoa & Carvalho, 2016).



Moreover, the four main VSS seems to operate in a niche market by focussing on specific objectives; Fairtrade on supporting smallholders through premiums, Rainforest Alliance and Organic focus on the protection of ecosystem and biodiversity and UTZ on market-based mainstreaming of sustainability (Kolk, 2013). In 2018, Rainforest Alliance and UTZ merged (UTZ, 2020), suggesting that the best approach could be complimentary, as producers have their coffee certified by many standards, which would require collaboration instead of competition between standards (Kolk, 2013). Likewise, there is an urge to move beyond the focus on financial benefits of certification as a method to improve value chains (Bray & Neilson, 2017; Schleifer & Sun, 2020), to accounting for the full cost of production, by internalizing social as well as environmental externalities (Grabs, 2018).

Collaboration is happening more often in the coffee sector; one of the main findings by the Coffee Barometer 2018 was that the creation of multi-stakeholder initiatives (MSIs) in the coffee sector is on the rise (Panhuysen & Pierrot, 2018). Multi-stakeholder initiatives have emerged as new form and as experimental mechanism of transnational governance arrangement to respond to complex global sustainability challenges (Zeyen, Beckmann & Wolters, 2016). MSI are formed to address social and environmental issues related to either the production of a commodity such as coffee (Baumann-Pauly et al., 2017). An example of an MSI is the *Futureproof Coffee Collective* (FCC), initiated in 2018 by Dutch network organization *MVO Nederland* (MVO). The FCC brings together different stakeholders of the coffee sector; coffee companies, roasters, NGOs and consultants for sustainable coffee production in Colombia.

The FCC uses a true cost accounting (TCA) tool for measuring sustainable coffee production. TCA is the global trend of the mapping and monetization of natural and social impacts (Aerts et al., 2015). In TCA, businesses are said to take the lead in TCA (Aerts et al., 2015) and the FCC is an example where coffee companies are also urged to take the lead and are actively included in the use of TCA. The application of TCA is expected to be increasingly crucial for the agrifood sector for the next five years, due to awareness that raw materials are becoming scarce and environmental pressures must decrease (Dijkman, Morren & de Ruyter, 2018). A challenge is to gain the recognition and support from companies, governments, NGOs and consumers for a consensus around an easily manageable TCA method (Dijkman, Morren & de Ruyter, 2018). The Netherlands has an increasing number of cases around true pricing in agrifood through businesses, consultancies, non-governmental organizations





(NGOs) and universities (Brounen et al., 2019; De Adelhart Toorop et al., 2017; de Groot et al., 2018; Dijkman, Morren & de Ruyter, 2018; Dorst & Bandel, 2017; Verkooijen, de Groot Ruiz & Fobelets, 2016). Consequently, the Netherlands is considered a frontrunner in this field internationally (de Groot Ruiz et al., 2018).

As both MSIs and TCA are relatively new concepts, the question is whether they can combat the challenges Colombian coffee producers face.



## 1.1 Academic Relevance

MSIs that have been investigated include; the Forest Steward Council (Moog, Spencer & Böhm, 2015), Roundtable on Responsible Soy and Roundtable, the Roundtable on Sustainable Palm Oil (Schouten, Leroy, Glasbergen, 2012) and multi-stakeholder initiatives in Bangladesh after Rana Plaza (Kabeer, Haq & Sulaiman, 2019). However, MSIs in the coffee sector researched, accompanied by interviews of different stakeholders has not been done yet. Zeyen, Beckmann & Wolters (2016) proposed that shifting the unit of analysis to the various stakeholder groups would benefit the further advancing of the MSI literature.

The research contributes to true cost accounting (TCA) literature because it is a relatively new concept and is starting to be increasingly used in the agrifood sector. The reports that are made on TCA mostly involve businesses from the developing world or smallholders in developing countries separately. This study aims to integrate this aspect through a case study that combines the perspectives of Colombia coffee producers and NGOs and Dutch coffee SMEs, NGOs and GOs. Moreover, it adds to the literature on businesses that account for externalities and what this potential could be on combatting challenges the coffee production faces.

## 1.2 Societal Relevance

Coffee smallholders' livelihoods are mostly affected as they are first to deal with social and environmental external related to coffee production (Brounen et al., 2019; Dietz et al., 2019; Kolk, 2013; Ibanez & Blackman, 2016). Coffee smallholders are key to the Colombian coffee production, with the low educational level and limited financial ability, they are most vulnerable volatile market condition (Barrucand, Viera, Canziani, 2017; Lambert & Eise, 2020; Machado-Vargas, Nicholls-Estrada & Ríos-Osorio, 2018). Thus, to determine the potential effectiveness of TCA tool and MSIs for sustainable coffee production, adequate knowledge is needed fitting to local challenges (Martinez & Pina, 2018).

Moreover, the *Futureproof Coffee Collective* is a case study of an MSI and the use of TCA. A Dutch NGO creates it for a developing country. This research aimed to add the societal relevance of these initiatives designed by the Global North and applied in the Global South. The funding is also ending; thus, it is also investigated how MSIs can continue once not relying on government funding.



## 2. Case Study

### 2.1 Futureproof Coffee Collective

*True Cost Accounting for Small to Medium enterprises (SMEs) in the Coffee Sector* is a project that MVO, a network organisation for mostly SMEs which aims to achieve sustainability within their businesses network, carries out in partnership with Solidaridad, an international solution-oriented civil society organization. The project is part of *Turnover with Impact*, MVO's international corporate social responsibility (CSR) program that is being carried out on behalf of the Dutch Ministry of Foreign Affairs. The project is financed and supported by the Dutch Good Growth Fund (DGGF). Solidaridad contributes its own time and resources from its existing coffee program in Colombia as a substantive partner to facilitate the rollout in Colombia.

More than 25 Dutch coffee SMEs are part of this program and pay a membership fee for participation. The TCA tool is in an Excel sheet developed by the consultancies: *Soil&More*, a consultancy that combines their agronomic expertise in soil knowledge with impact assessment for the creation of resilient food and agricultural supply networks (Soil&More, 2020); *True Price*, a social enterprise that wants to contribute to a circular and inclusive economy by creating value for all people through provision needed for true pricing, and; EY, a global leader in quality service for tax, transaction and advisory services (Aerts et al., 2015). The TCA tool has the following five indicators: soil quality, climate change, biodiversity, living income and water use. The TCA tool is based on principles of *True Price* and the results of Colombian coffee producers are compared to an overall Colombian benchmark of the five indicators. The TCA tool is currently only accessible to Dutch coffee SMEs part of the FCC and their respective coffee producer cooperatives due to intellectual property rights. *Figure 1* on the following page gives an overview of the project.

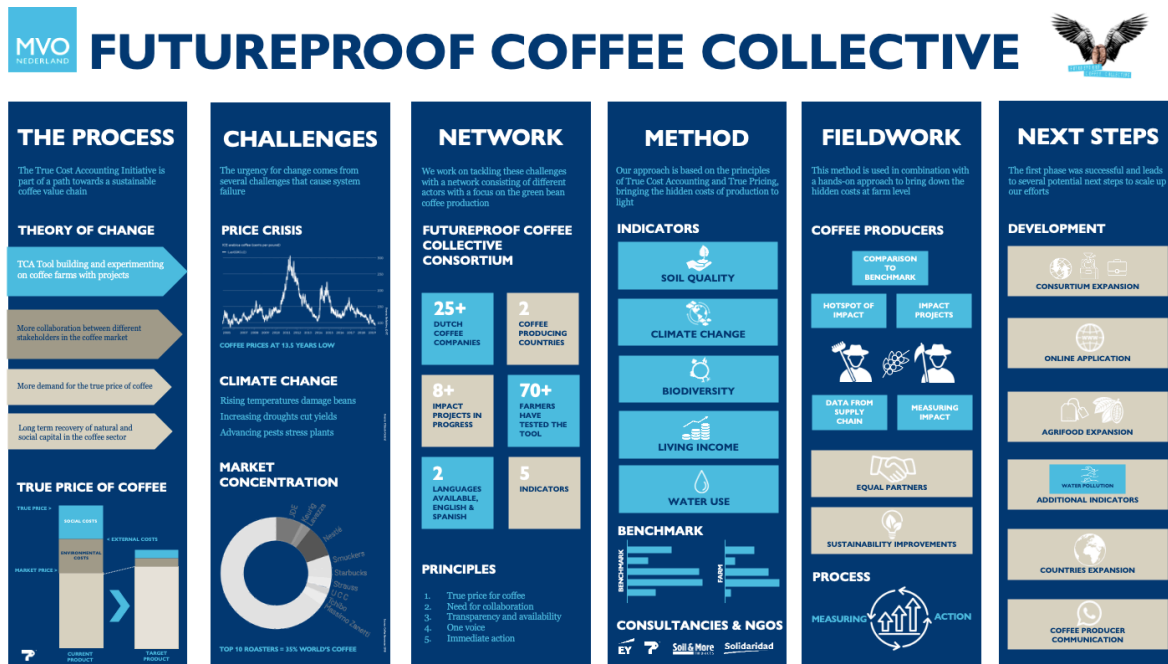


Figure 1 – Futureproof Coffee Collective Process created by the author Ba Ying Visser

In December 2019, over 70 Colombian coffee producers have tested the first version of the TCA tool during a field visit by MVO and were actively involved in the process of improving the TCA tool along with the coffee SMEs, MVO and consultants. Coffee SMEs have made proposed project interventions based on the initial measurements of the TCA tool and are set to start testing the adjusted TCA tool version in June 2020 for their follow-up projects. The type of impact will depend on the type of intervention a company chooses to commit. In June 2020 initial measurement with the TCA tool was supposed to take place but was postponed due to COVID19. The second measurement is planned to be done in December 2020 to see if the true price of coffee has changed. Therefore, this research chooses to focus on the participation in an MSI like the FCC, the perceptions on TCA and whether it addresses the challenges coffee producers face, as the results of the use of the TCA tool can only be concluded in December 2020.

This topic is relevant for the *Sustainable Entrepreneurship and Innovation* annotation, because the FCC is an example of a new form of collaboration with a newly developed tool that focusses a more sustainable production process by collaborating with Colombian coffee farmers and Dutch coffee SMEs. These activities are new to the current business activities of these Dutch coffee SMEs and includes data collection on the perspectives on this newly developed TCA tool.



## 2.2 Coffee Production in Colombia

In Colombia, coffee is the most important agricultural product over bananas and flowers (Andrade & Zapata, 2019); in 2016, coffee was responsible for 12.4% of the agricultural revenue, giving employment to 5530,000 growers of which 95% are smallholders with coffee farms smaller than 5 hectares (Ibanez & Blackman, 2016). In 2018, coffee accounted for 7% of the export revenues and 3,4% of the gross domestic product (IDH, 2018). In 2018, Colombia is the fourth largest supplier of coffee to Europe with 196,000 tons of coffee (CBI, 2019). Colombia is the third biggest producer in arabica coffee (Panhuysen & Pierrot, 2018). The arabica coffee of Colombia is a high quality because of the low degree of mechanization and is harvested all year round on the foothills of the Andes, explaining why it gets a price premium over other coffee varieties (Bastianin, Lanza & Manera, 2018).

The Federación Nacional de Cafeteros de Colombia (FNC), a nonprofit semi-governmental business association, is responsible for implementation of national programs as well as the subsequent extension and support services for coffee producers by for instance promoting coffee varieties (Fox et al., 2015). Most importantly, FNC ensures a guarantee of purchase. Through this, especially smallholders can sell their coffee to the FNC, who then offers an equal or a price that is higher than the New York 'C' coffee prices, including the export tax that is deducted (Dietz et al., 2019). Another actor is the Colombian Ministry of Agriculture and Rural Development (MARD). The MARD also provides agricultural extensionist services, such as support in credit, training on agronomy and farm management, and income support programs for coffee producers (Vellema et al., 2015).

In Colombia, between 60 and 70%, of the coffee produced in the country is certified or verified by one or more VSS, totalling over 9,5 million bags of coffee (Isaza & Bustamante, 2019). Colombia is considered one of the major suppliers of sustainable coffees and has the largest area in the world that is Fairtrade certified (213,000 hectares), the second-largest production area of 4C (354,217 ha), and the third biggest Rainforest Alliance supplier in terms of land (39,600 hectares) (Dietz et al., 2019). Though, a considerable number of coffee producers in Colombia have not received any support, because they are not attractive to companies, as a considerable amount of guidance and investments is required before they would be able to incorporate best practices (Isaza & Bustamante, 2019). The production of coffee is an important source of income for a developing country like Colombia, whilst they also bear the social and environmental externalities (Ibanez & Blackman, 2016). According to



study of Brounen et al. (2019), the main challenges that Colombia faces in coffee production are “soil and water pollution from fertilizer use, underearning of smallholder farmers and underpayment and lack of social security of hired workers” (p. 14). More production challenges that Colombian coffee producers face will be discussed in the literature review.

### 2.3 Coffee Sector in the Netherlands

In 2018, Europe accounted for 33% of the global coffee consumption, making it the largest coffee market in the world as well as the most important market for certified coffee; with the Netherlands being the sixth largest European coffee consumer, accounting for the 5.6% of the consumption (CBI, 2019). The Netherlands is one of the largest consumers of coffee, with high consumption levels per capita and with 25% of the coffee being certified in 2008 (Kolk, 2013). In 2011, the Netherlands was with 40%, the country with a higher share of imported certified coffee than non-certified coffee (Giuliani et al., 2017). As the Max Havelaar label originated in the Netherlands in 1989, the Netherlands has a long history with certified coffee (Ingenbleek & Reinders, 2013; Kolk, 2013).

The Netherlands has been funding multi-stakeholder initiatives in the coffee sector in Colombia. The FCC is funded by the DGGF of the Netherlands Enterprise Agency (RVO), the Sustainable Trade Platform was funded by the Dutch Embassy in Bogota and is now funded by the Dutch Ministry of Foreign Affairs (Appendix A – FCC Colombian NGO 1a). The FCC is currently solely focused on coffee whereas the Sustainable Trade Platform also includes other commodity sectors such as bananas, palm oil and flowers.

### 2.4 Multi-stakeholder Platforms for the Colombian Coffee sector

The largest multi-stakeholder platforms focussing on coffee sector-wide sustainable transformation are the Global Coffee Platform (GCP) and the Sustainable Coffee Challenge (SCC). There are two other MSIs active in the coffee sector in Colombia apart from the FCC. A smaller platform that tend to focus on more specific themes and geographical areas is the Sustainable Agriculture, Food and Environment (SAFE) Platform. Since 2016, the SAFE Platform has been providing knowledge to its members' project that aim to transform the coffee- and cocoa-landscapes in Latin America. Members are encouraged to scale up



innovative approach of the adaptation of sustainable smart and inclusive agricultural practices (Panhuysen & Pierrot, 2018).

There are also national platforms that address critical sustainability issues at a country level, an example is the Sustainable Trade Platform (STP) in Colombia. Since 2013, the STP addresses sustainability issues which affect the coffee production performance in Colombia. The STP comprises of the stakeholders which cover 85% of the coffee volumes in Colombia. Overall, the STP has been able to increase transparency at national level through a non-competitive approach and has been an added value to members through the generation of knowledge, multi-stakeholder projects focused on collaboration and technical sustainability expertise. The targets of STP are set by the coffee sector on a national level and are monitored on annual basis (Panhuysen & Pierrot, 2018).

Earlier multi-stakeholder initiatives in the coffee sector, like IDH (Sustainable Trade Initiative), intended to transform the sector by promotion VSS, whereas these the new collaborations do not intend to do so. They rather focus on the sharing of best practices and the creation of better understanding of collective multi-stakeholder action. Through this, these initiatives aim to align interests of various coffee sector stakeholders and encourage collaborative action and investment. The goals and members are of different MSIs are overlapping, therefore there is a high degree of collaboration and efforts to align (Panhuysen & Pierrot, 2018).

These MSIs have the advantage that they help stakeholders to see challenges in the coffee sector of other and identify opportunities to share the success and best practices through collaboration. Through this, MSIs have the potential to reduce the fragmented sustainability efforts of the coffee sector and create more accountability as well as transparency. Though, a disadvantage of the form of an MSI is that it would slow down the decision-making process, whilst there is a high urgency to act, and decisions are considered on a voluntary basis by stakeholders (Panhuysen & Pierrot, 2018).



## 2.5 Aim of the Research and Research Question

This study aims to find out to what extent MSIs and TCA can contribute to sustainable coffee production through the following:

- (i) By contributing to the literature on the following topics:*
  - a. Challenges in the Colombian coffee production*
  - b. Multi-stakeholder initiatives in relation to the coffee sector*
  - c. True cost accounting in relation to the coffee sector*
- (ii) By identifying the challenges and strategies in coffee production for Colombian coffee producers*
- (iii) By understanding what multi-stakeholder initiatives and true cost accounting entail and investigate how they could combat challenges in Colombian coffee production*

These aims are achieved by answering the following research question and sub questions:

### **Research Question**

*To what extent can multi-stakeholder initiatives and true cost accounting contribute to sustainable coffee production?*

### **Sub questions**

- What challenges do Colombian coffee producers face and what are the strategies to cope with these challenges?*
- What do multi-stakeholder initiatives entail and how could they combat challenges that Colombian coffee producers face?*
- What does true cost accounting entail and how could true cost accounting combat challenges that Colombian coffee producers face?*





### 3. Theoretical Framework

#### 3.1 Complexity of the coffee sector

##### 3.1.1 The Coffee Paradox

Daviron and Ponte (2005) claim that the global value chain of coffee is characterised by a 'coffee paradox', because there is a 'coffee boom' in the Global North consumer countries, whereas there is a 'coffee crisis' in the Global South producer countries. Reasons for this paradox is the oversupply of coffee and the market concentration (Daviron & Ponte, 2005; Pierre, 2007; Schussler, 2009; Valkila, Haaparanta & Niemi, 2010). The latter can be explained by the complexity of the coffee market structure as an oligopsony, where few MNCs such as Starbucks and Nestlé set standards and acquire coffee from smallholders, thus creating a huge dependency for producers as well as decreasing prices (Schussler, 2009; Valkila, Haaparanta & Niemi, 2010).

Moreover, this paradox exists because the green bean coffee sold on the international market is different from what coffee consumers get served in a cup; consumers pay the increasing price for the "latte revolution" due to the material, immaterial and symbolic value that is added (Daviron & Aponte, 2005; Schussler, 2009). In contrast, the commodity nature of green coffee results decreasing and highly unstable production prices for production countries (Galtier, Belletti & Marescotti, 2013). In the coffee market, developed countries, the consumer rich coffee consuming countries, have higher value-added activities, whereas developing countries, the coffee producing countries, have lower value-added activities (Galtier, Belletti & Marescotti, 2013; Gereffi & Fernandez-Stark, 2016).

Certification schemes are offering coffee producers the opportunity to add value to their product as well as ensuring environmental standards are met (Valkila, Haaparanta & Niemi, 2010). Whilst, the market for certified coffee is growing, there is still a gap between the production of certified coffee and the sales of certified coffee (Elliot, 2018; Snider et al., 2017). Producers put in the effort in obtaining certification without the guarantee that there is demand for it (Elliot, 2018). Another option would be certifying parts of the quality attributes (Galtier, Belletti & Marescotti, 2013) through participation in "immaterial" niche market, by producing such as that of "speciality coffee" or "single-origin coffee" (Schussler, 2009), where the quality is key for the price (Fernandez-Stark & Bamber, 2012).

The participation in specialty coffee can potentially offer 100 million smallholders in developing a price premium; accounting for 80% of the global coffee production currently



facing challenges of price fluctuations (Hernandez-Aguilera et al., 2018). Statistics on the exact market share of specialty coffee are scarce, those that do exist show a rapid increase, which is likely to accelerate when big retailers would participate (Vellema et al., 2015). Next to a higher income, specialty coffee can incentivize coffee producers to adopt agro-ecological practices such as shade-grown systems which would in return provide ecological services such preservation of bird habitats (Hernandez-Aguilera et al., 2018). However, specialty coffee also brings additional costs to coffee producers, as there are changes in production needed for participation (Hernandez-Aguilera et al., 2018).

In order to decrease the difference in price of coffee in the production and consumption phase, the number of middlemen can be decreased through direct trade. Direct trade is done by roasters that buy directly from coffee producers, as well as middleman, through transparent negotiation that is valuable characteristic for coffee producing countries (Bramucci & Mulholland, 2011). Through the creation of this link, by offering a premium price, coffee companies invest in long-term capacity and wellbeing of coffee producers (Bramucci & Mulholland, 2011). Direct trade approaches are adjusted by each roaster with what fits best with their coffee company, creating a unique relationship with specific coffee farms by tailoring to their needs through this connection (Badiyan-Eyford, 2013).



## 3.2 Challenges in the Colombian Coffee Sector

### 3.2.1 General Challenges in the Colombian Coffee Sector

Coffee in Colombia is no longer the main national product for agricultural and non-agricultural GDP and generator foreign exchange (Biswas-Tortajada & Biswas, 2015). Colombian coffee producers their income and wages are well below the living income of rural Colombia (Brounen et al., 2019).

Land ownership and especially the plot size, as farmers pass down to their children and low technical efficiency as well as that the government is not trustful with land titles not reflection actual size and number of existing productive plots (Biswas-Tortajada & Biswas, 2015).

The coffee industry is characterized by informality, especially the in coffee picking where there are several problems related to labour rights. Workers are not protected by formal labour regulations and sell their services through verbal and informal contracts (Hawkins, 2018). The underpayment that workers face and lack of social security (Brounen et al., 2019) results in an increased portion of coffee workers migrates to other sectors (Hawkins, 2018).

Coffee producers often have little education with basic reading, writing and mathematical skills, keeping mental records of their budgets and thus seldom have clear idea of income, expenses and losses (Biswas-Tortajada & Biswas, 2015).

Torres (2016) outlines several reasons why coffee farming is often not attractive for young rural people; lack of sufficient educational opportunities, few work alternatives, discouragement because of the low income; lack of social recognition; limited interventions in the coffee farms as parents do not want their children to follow their footsteps, restricted access to land due to property success requirements; small size farm unites limiting the distribution. Torres (2016) proposes the need for new technologies in the coffee sector to build sustainable agricultural practices through for instance the use of smartphones.

In general, there is a rural abandonment because of long-term armed conflict which caused displacement and worsened socio-economic constrains for victims, lack of social inclusion, several socio-economic conditions and environmental problems (Muñoz-Rios, Vargas-Villegas, Suarez, 2020).



### 3.2.2 Climate change and Colombian coffee production

Colombia is a tropical country that is particularly vulnerable to climate change due to its diverse ecosystems: tropical coastal zones, high Andean glacial environments, mountain tropical forests, savannas and mountain agriculture (Barrucund, Vieira & Canziani, 2017). Also in the coffee sector, these changes are felt as arabica coffee is grown in wet tropical regions at an altitude of 400 to 2000 meters with 1,000-3,000 mm annual rainfall; a change in weather patterns leads to heavy erosion and decrease in nutrients, shifting the suitability coffee production to a higher altitudes (Fox et al., 2015).

Most of the Colombian population lives in the elevated Andes (Lambert & Eise, 2020) and Colombian coffee farmers experience a change in; temperature, seasons, and pests and diseases (Fox et al., 2015). This does not only risk the livelihoods of the millions of smallholders increasing inequalities (Eitzinger, Binder & Meyer, 2018), but also causes political and economic instability in Colombia (Córdoba Vargas, Hortúa Romero & León-Sicard, 2020; Lambert & Eise, 2020).

#### *3.2.2.1 Change in weather patterns, landscape and seasons*

##### *Increase in temperatures*

Temperatures in the Colombian mountains regions have risen  $+0.1^{\circ}\text{C}$  to  $+0.22^{\circ}\text{C}$ , reducing the fruit set as the change in temperature affects the maturation rate of coffee cherries (Fox et al., 2015).

##### *Change in seasons*

Colombian coffee producers noticed that the rainy season changed from February to June/July, now extended to the dry season, as coffee is harvested all year long, which influences the maturation of the coffee cherries (Fox et al., 2015; Lambert & Eise, 2020).

##### *Loss in biodiversity*

The coffee production in Colombia has intensified, leaving a negative impact on the landscape by turning into a loss into of biodiversity of microorganisms, plants and animals native to Colombia (Rodríguez, Márquez & Restrepo, 2019).



### *3.2.2.2 Pests and diseases*

#### *Coffee berry borer*

The coffee berry borer is considered the most damaging coffee pest in all coffee-producing countries with its damage only worsening over time and has been found in higher elevations due to rising temperatures across the tropics (Atallah, Gómez & Jaramillo, 2018).

#### *Coffee leaf rust*

The Colombian annual coffee production declined by 40% from 2008 to 2011, which was attributed to a severe fungal outbreak called coffee leaf rust (CLR) that also impacted neighbouring Latin American countries (Bebber, Castilo & Gurr, 2016; Carnemark et al. 2019). The outbreak of CLR was possible because of to the increase in fertilizer prices due to the 2008 financial crisis and the increase in annual rainfall, reduction of sunshine and the decrease in diurnal temperature range favoured the infection rate and reduced the latency infection period (Bebber, Castilo & Gurr, 2016).

#### *El Niño Southern Oscillation*

The shore of Arabica coffee production is on equatorial specific, making it sensitive to El Niño Southern Oscillation, a “naturally occurring phenomenon that changes the global atmospheric circulation and affects sea-level pressure, sea-surface temperatures (SSTs), precipitation, and winds around the globe” (Bastianin, Lanza & Manera, 2018, p. 623).

### *3.2.2.3 Coffee production as climate change mitigation mechanisms*

On the other hand, coffee growing also has the potential to act as a climate change mitigation mechanism, via environmental service of C (carbon) capture, which has very little been explored (Andrade & Zapate, 2019). This can also be done by intercropping shade trees, decreasing temperatures around the coffee berries, whilst also providing source of income for timber (Atallah, Gómez & Jaramillo, 2018; Gaitán, Armbrecht & Graefe, 2016; Gonzáles et al., 2020).

### 3.3 Multi-Stakeholder Initiatives

Multi-stakeholder initiatives have emerged as new form and as experimental mechanism of transnational governance arrangement to respond to complex global sustainability challenges (Zeyen, Beckmann & Wolters, 2016). MSI are formed to address social and environmental issues related to either the production of a commodity (e.g. coffee), the situation in specific countries (e.g. Sustainable Trade Platform in Colombia), specific issues (e.g. child labour) or specific industries (e.g. textiles) (Baumann-Pauly et al., 2017). The emergence of transnational private regulation can be accounted to liberalization and repeated failures to reach intergovernmental agreements for tackling grand sustainability challenges (Arenas, Albareda & Goodman, 2018), as governments are either not willing to or unable to provide the adequate form of regulation at a national or global scale (Mena & Palazzo, 2012; Zeyen, Beckmann & Wolters, 2016).

MSI are not only spaces for dialogue and debate (Moog, Spicer & Böhm, 2015), through soft law, MSIs reflect CSR standards which define the norm of corporate behaviour (Zeyen, Beckmann & Wolters, 2016) and aim to fill the global regulatory gaps (Mena & Palazzo, 2012). National laws tend to have a limited influence on the social as well as environmental externalities produced in global production processes (Mena & Palazzo, 2012). UN Special Representative of the Secretary-General John Gerard Ruggie developed a soft-law framework for the rights and duties of multinationals in the context of human rights, which became an important normative frame of reference for voluntary programmes (Fransen, 2012). 'Soft law' is non-binding and includes voluntary private rules (Mena & Palazzo, 2012) with the strength laying in its societal expectations created once participants join and evaluation by external parties (Rasche, 2012). In contrast to hard law, which is enforced by governmental mechanisms (Mena & Palazzo, 2012), participants face non-legal sanctions in case of not complying with the MSI (Rasche, 2012).

MSIs are said to have several advantages. Firstly, MSIs are an encouragement for creating dialogue with their flexibility of adaptiveness to local circumstances (Rasche, 2012) and their ability to serve as a watchdog (Searcy, 2017), especially when NGOs are involved in it (Fransen, 2012). Secondly, MSIs allow a broad range of actors to become involved in the decision-making process about challenges affecting them, having the potential to help improve social and environmental standards (Moog, Spicer & Böhm, 2015). Thirdly, bringing



together these relevant stakeholders from various background for specific issue increases the notions of 'learning between them' (Fransen, 2012). Fourthly, they are considered relatively stable institutional spaces and are lauded for their ability for creating legitimate solutions to global governance problems (Rasche, 2012). Whilst MSIs might have limited impact on their own, MSIs could mutually reinforce each other and as result, amplify the impact that they have (Kabeer, Haq & Sulaiman, 2019).

However, MSIs are criticized, as seeing social MSIs as the solution to social and environmental challenges could have the opposite effect, as it could limit meaningful public debate as well as regulation (Moog, Spicer & Böhm, 2015). The advantages of MSIs are subject to the level of stakeholder engagement and rigidity and lack of stringency can lead to a lower of MSI's legitimacy (Rasche, 2012). Literature in CSR warned that MSIs can be used by businesses to enhance their power asymmetries against lower powerholder stakeholders or make them less accountable through their participation in MSIs (Arenas, Albareda & Goodman, 2018). MSIs have flexible and voluntary nature, therefore their collaborative approach has not always reached the intended sustained improvement, even though participants complied to sustainability standards (Soundararajan, Brown & Wicks, 2019). Lastly, the level of legitimacy of MSIs is lowered they are said to lack inclusiveness on the local level (Rasche, 2012). Often in roundtable discussions, the inclusion of smallholders, local communities, global development NGOs remains challenging, with consumers especially being left out when decisions are made in the MSIs (Schouten, Leroy & Glasbergen, 2012).

MSI are beginning to increasingly play an important role sustainable supply chains (Searcy, 2017). There is no exact definition of what constitutes a sustainable supply chain, though most definitions include the "triple bottom line" of the economic, environmental and social performance. However, often the greater sustainability context in which supply chains operate; the resources, geographical and sectoral level are often not linked or included (Searcy, 2017). Therefore, global supply chains are an ideal example of understanding the complex relationships across cultural, political, and regulatory boundaries (Soundararajan, Brown & Wicks, 2019). MSI include stakeholders within the supply chain such as the suppliers, but also stakeholder beyond the supply chain such as the government, communities and NGOs (Searcy, 2017).

MSI differ in the function they perform, their scope and their function (Baumann-Pauly et al., 2017). Next to this, there is no universally accepted classification of MSIs



(Soundararajan, Brown & Wicks, 2019). MSIs are generally defined as collaborative form of private governance mechanisms voluntarily involving an array of stakeholders, across the state/non-state and profit/non-profit boundaries, as members and governing social and environmental challenges of production (Fransen, 2012; Mena & Palazzo, 2012 & Rasche, 2012). In the context of CSR, the following four classifications of MSIs are proposed:

1. Providing principles of engagement and learning platforms
2. Developing behavioural standards and standardized management processes
3. Developing reporting frameworks through auditing and compliance of results
4. Issuing criteria for labels and certifications

(Arenas, Albareda & Goodman, 2018; Mena & Palazzo, 2012; Rasche, 2012)

As the advantages of MSIs are subject to the level of stakeholder engagement and rigidity (Rasche, 2012), stakeholder theory suggests that when stakeholders choose to voluntarily participate in MSIs, there is a need for a collective orientation to satisfy their own interests (Harrison & Wicks, 2013; Tantalo & Priem, 2016; Soundararajan, Brown & Wicks, 2019). Stakeholder orientations are “the postures or mindsets on which stakeholders base their mutual interactions” (Soundararajan, Brown & Wicks, 2019, p. 391) and collective stakeholder orientation places the emphasis on structures needed to realign stakeholders realign stakeholders in the process (Soundararajan, Brown & Wicks, 2019). The goal of having overlapping stakeholder orientation suggests that stakeholders in an MSI receive a certain amount of value from this relationship with other stakeholders in the supply chain, which would in return influence their level of engagement in the MSI (Harrison & Wicks, 2013).

For future research about MSI, the four classifications are suggested to investigate in how they help address sustainability challenges and how they contribute to the measuring, verifying and reporting of performance (Searcy, 2017). Moreover, what remains unexplored is what benefits and implications are of MSI when the focus is on the concern of bridging global solutions to social and environmental problems with local parties (Rasche, 2012).





### 3.4 True Cost Accounting

#### 3.4.1 What is True Cost Accounting?

True cost accounting (TCA), also known as ‘environmental-full cost accounting, ‘true cost economics’ (Fitzpatrick & Young, 2017) or ‘true pricing’ (Brounen et al., 2019), is gaining more momentum in agrifood studies as it; highlights issues on the methods of production, procession and destruction, informs policy makers, improves public discussion and has the possibility to inform policy design (Barg, Swanson & Venema, 2005; Fitzpatrick & Young, 2017). The monetization dimension distinguishes environmental accounting from materials accounting and life cycle assessment (Bailey & Soyka, 1996). Also, producers see the internalization of social and environmental externalities method as one of the solutions to combat deep distributional conflicts that are at the core of many value chains (Grabs, 2018).

TCA encompasses the overall picture; agriculture has negative externalities related to environmental costs such as soil degradation, though also positive externalities can arise from agriculture, such as the improvement of biodiversity (Barg, & Swanson, 2004). Externalities are market failures that occur when there is a discrepancy between social costs and private costs; “environmental impacts of production and consumption activities generate benefits (positive externalities) or costs (negative externalities) not compensated for by other parties” (Eidelwein et al., 2018, p. 1316). Often, companies are less concerned with the externalities; the environmental impact they have beyond the legal limits, as a result, there is an urge to include environmental costs in the price (Eidelwein et al., 2018).

The British economist Arthur Pigou was one of the first to introduce the concept of externalities in the early 20<sup>th</sup> century. Pigou not only wished to reduce the tendency for humans to generate externalities, he also wished that through the creation of a playfield including all businesses; businesses that would pass their external cost on to others would be held responsible by paying a compensatory price (Beeks & Lambert, 2018). Critique on Pigou’s idea of governmental taxation and subsidization was that inability of a government or organisation to exactly determine costs to society that were imposed by negative externalities (Beeks & Lambert, 2018). Economist Ronald Coase suggested in 1960 that the costs of pollution should be shared, as neither the sufferer nor polluter can be solely held accountable and thus, he urged for equitable transactions with minimal government involvement (Beeks & Lambert, 2018).



However this idea proposed by Coase could be questioned with the “idea that with common pool resources, the benefits of exploitation accrue to the individual while the costs are borne by all” (Moxnes, 1998, p. 1234), which lead to “Tragedy of Commons” according to Hardin (1968). Thus, the withdrawal of one user of the common pool resources, reduces the amount of the common pool resource that is left for the other user (Ostrom, 1990). Moreover, it introduces the “free rider problem” when the user determines to have access to the common pool resources, though it does not contribute to the maintenance of the common pool resource in question (Ostrom, 1990). This ‘tragedy of commons’ arises when there are ill-defined property rights, and thus externalities, which are harmful effects that occur on third parties which is not accounted for, because the focus is on short-term production or user levels (Libecap, 2009). Coffee as a commodity thus has similar problem (Daviron & Ponte, 2005), due to the global production scale with international actors where developing countries often account for externalities (Brounen et al., 2019; Ibanez & Blackman, 2016).

Atkinson (2000) proposed that here is no definite definition yet for true cost accounting, as can be seen in *Figure 3* below.

True Cost Accounting Definition Overview	
Summary	True Cost Accounting
<p>True cost accounting is a way to objectively asses the sustainability of production through incorporation of all costs and externalities associated by assigning them a monetary value</p>	<p>“attempts to provide exclusively financial information for both private and external costs” (Antheaume, 2004, p. 444)</p>
	<p>“for external costs feasibly covers a range of activities including elementary monitoring of physical indicators (such as environmental pressures), as found currently in some company environmental reports or more sophisticated analysis of the full costs of a firm’s activity, where this is possible” (Atkinson, 2000 p. 239)</p>
	<p>“focuses on the monetary implications of the environmental aspects of an organization, including implications for cash outlays and revenues, other costs (e.g., use of assets, future outlays), and asset valuation (e.g., a property’s worth, in light of: environmental considerations)” (Bailey &amp; Soyka, 1996 p. 2)</p>
	<p>“a system which allows current accounting and economic numbers to incorporate all potential/actual costs and benefits into the equation including environmental (and perhaps) social externalities to get the prices right” (Bebbington et al., 2001, p. 7-8)</p>
	<p>“is a way to objectively assess the sustainability of production. It provides comparable and clear insights into the environmental and social effects to society” (Brounen et al., 2019, p. 7)</p>
	<p>“a method that provides insight into the positive and negative effects of production on the environment” (Dijkman, Morren &amp; de Ruyter, 2018, p. 8)</p>



	<p>“a system of accounting which ensures that the true costs and benefits of different industries and production processes are properly measured” (Fitzpatrick &amp; Young, 2017, p. 14)</p>
	<p>“assigns value to the social, environmental, and health impacts of food production” (Negowetti, 2016, p. 466)</p>

Figure 2 – What True Cost Accounting is according to different literature

### 3.4.2 Businesses Accounting for Externalities

Businesses accounting for externalities can be traced back to corporate social responsibility (CSR) that encompasses the subject of corporate sustainability and business ethics (Busch, Lehmann & Hofman, 2012). CSR falls in line with the trend that makes business more responsible for their impacts on the environment and society (Kaminsky & Deichl, 2018). Economically, as well as competitiveness, businesses cannot escape the numbers of consequences related to emerging issues with regards to sustainability (Schaltegger & Buritt, 2010).

There is an urge for a business case approach to sustainability accounting, where sustainable development considerations are considering with business opportunities and risks (Schaltegger & Buritt, 2010). CSR is an insurance risk and the focus is mostly on negative events. However, the societal and environmental costs of, for instance, climate change, cannot easily be attributed to individual businesses and are the result from collective global action, making it harder to internalize these negative externalities (Busch, Lehmann & Hofman, 2012). Communication is missing between the financial implications of externalities, that would link financial reporting and sustainability reporting of a business (Unerman, Bebbington & O’Dwyer, 2018).

Arguments for CSR are increasingly in the limelight in the context of globalization, with the pursuits of MNCs ‘race to the bottom’ by relocating their production to poorly regulated economies in lower-income countries, often violating internationally agreed labour standards (Kabeer, Haq & Sulaiman, 2019). As companies are expanding their activities transnationally and are sourcing globally, the negative social and environmental externalities of these activities are increasingly criticized (Mena & Palazzo, 2012). There is a need for empirical investigation of the benefits that CSR could bring in reducing a business’s contribution to negative externalities in other research contexts (Busch, Lehmann & Hofman, 2012). Moreover, to extend the literature on businesses accounting for externalities, there is a need



for case studies where innovative companies experiment with accounting for externalities (Unerman, Bebbington & O'Dwyer, 2018).

The Organization for Economic Cooperation and Development's (OECD) created Guidelines on Multinational Enterprises (GME). These GME are non-binding and use a soft law approach, because they do not intent to legislate, but to guide (Reinert, Reinert & Debebe, 2016). Member states are obliged to set up national contact points (NCPs), these are responsible for addressing issues of implementation in specific instances, which is being overseen by representatives of business, trade unions, and NGOs (Khoury & Whyte, 2019). The guidelines are a CSR instrument formally adopted by states operating on a global scale which has been under five amendments, the last one being in 2011 (Khoury & Whyte, 2019). This 2011 update suggests a "risk based due diligence procedure" in Guidelines 12 and 13 for "responsible supply chain management", this recommendations extends beyond the actions of the MNC to their suppliers as well as business partners, and a MNC can thereby in principle be held responsible for the infringements of their business partners (Reinert, Reinert & Debebe, 2016).

#### 3.4.3 What does True Cost Accounting entail for the Futureproof Coffee Collective?

The TCA tool is made and inspired by principles of True Price. True Price is a social enterprise and their mission is "to realize sustainable products that are affordable to all by enabling consumers to see and voluntarily pay the true price of products they buy" (True Price, 2019). True Price aims to monetarize the value of social and environmental externalities through the true pricing framework that leverages new technologies, which allows organisations to quantify their societal impacts (De Adelhart Toorop et al., 2017). The true price can be illustrated on the next page in *Figure 3*.

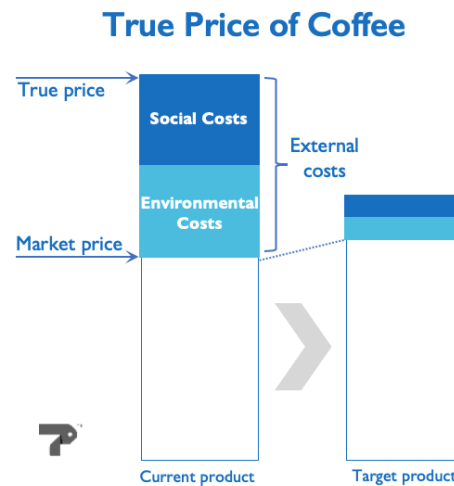


Figure 3 – True Price of Coffee inspired by True Price adopted by the author Ba Ying Visser

True Price defines the true price of product through the following equation:

$$\text{True price of a product} = \text{market price} + \text{external environmental and social costs}$$

The true price quantifies the external costs of production; the market price is paid by the buyer of the product, in this case the consumers, whereas the external environmental- and social costs are not paid by either the seller or buyer, because they are passed on to other parties such as the coffee producers in development countries or the environment (Brounen et al., 2019). The calculation of the true price provides, next to all external costs occurred in the production of coffee, an assessment of a farmer's income through inclusion of underearning in the social external costs and the value of the market price for testing the feasibility criterion related (Brounen et al., 2019). The aim is to provide the coffee producers with benefits that include better risk management, cost reduction, innovation and opportunity for branding through communication of the performance of their coffee product (Verkooijen, de Groot Ruiz, & Fobelets, 2016).



## 4. Methodology

### 4.1 Research Scope and Research Population

This research focusses on challenges in the Colombian coffee production and the role of multi-stakeholder initiatives and true cost accounting in this. A case study was chosen as research approach because the FCC operates in a real-life context as an MSI and uses TCA to combat challenges in the Colombian coffee production. To verify whether the results of the FCC as a case study of an MSI would have a wider application, two other MSIs operating in the Colombian coffee sector, the STP and the SAFE Platform, were also chosen to be investigated.

The results reflect the perspectives of Colombian coffee producers, Colombian NGOs, Dutch coffee SMEs, a Dutch governmental organisation, Dutch NGOs, and a USUK NGO affiliated with the coffee sector. All actors selected are stakeholders in the Colombian coffee sector in order to identify the challenges that the coffee sector face in terms of production.

The selection of the organisations for FCC partners was that all Dutch coffee SMEs were contacted who source their coffee from Colombia. The sample of Dutch coffee SMEs consists of both those that used the TCA tool and those that did not use it, in order to see if there is a difference. From the companies which used the TCA tool it was asked if their respective coffee producer cooperatives could be interviewed or send a Spanish survey. In the end only one coffee producer was able to do an interview, due to COVID19 and the harvest season. In the end, data collection from field visits of MVO was used to reflect the coffee cooperatives' feedback on the TCA tool (Appendix B – Feedback Cooperatives). Also, GOs and NGOs were contacted who actively worked in the creation and expansion of the TCA tool and were affected by the funding that is provided for the FCC by the DGGF. Experts such as the consultancies were in the end not contacted to participate, as they are not active stakeholders in the day to day business of the coffee sector, and thus not part of the coffee supply chain.

In order to compare the views on MSIs, also other organisations part of the SAFE Platform and STP were contacted. This was also to see the views of those part of other MSIs differed from those part of the FCC. From the SAFE Platform, all the actors were contacted who were active in the Colombian coffee sector, as this platform is also active in other



countries in Latin America. All coffee partners from the STP were contacted as this platform is meant solely for the Colombian coffee sector.

Through the interviews it was also the aim to contact coffee producers outside the FCC and who do not participate in MSIs, in order to compare their views. Once an interview was done with an STP or a SAFE Platform member, it was asked if they had contact details of coffee producers who could be contacted for research. Whilst phone numbers and emails were exchanged, there was a low response rate of two coffee producers outside of the FCC.

## 4.2 Data collection methods

### *In-depth interviews*

All actors were contacted for in-depth interview with an interview guide (Appendix C – Interview Guide). The questions focussed Colombian coffee production included the main challenges for coffee producers, if these challenges changed over time, the strategies to combat these challenges and the actors involved in it. The MSI questions revolved around the decision to join, the role of the participants, decision-making process, driver for sustainable coffee production, benefits for coffee producers and inclusiveness and funding. The questions on TCA involved the definition, the indicators, missing topics, benefit for coffee producers, implications and the accessibility. In total 15 semi-structured were conducted with stakeholders. This method was chosen to go more in depth in the topics. It is important to interview those that are part FCC and those opinions outside of this network to gain an overall view on the challenges Colombian production face and how MSIs and true cost accounting can help tackle these challenges.

### *Surveys*

A survey with the same questions was sent out to FCC coffee companies and there were 7 respondents (Appendix C – Interview Guide). This allowed them to anonymously give their opinion on the FCC, which could lead more freely to speak their mind about the MSI.

A Spanish survey with the same questions were sent out to the Colombia coffee producers from the FCC and those not participating in the FCC (Appendix C – Interview Guide). Both were chosen in order to see if the views of coffee producers were different on TCA or MSIs when they were part or not part of it. The survey was translated to Spanish in Google



Forms by native Spanish speaker in order to gather data on the coffee producer's perceptions. The survey was created to make it more accessible for coffee producers and cooperatives to fill in the survey. The questions were like those for other stakeholders in order to compare views with the qualitative data.

### *Ethics*

In order to minimise the risk of harm, the anonymity was protected of the participations and confidentiality promised. Therefore, there is not a list provided of the participants contacted for the research and the participants that contributed to the research. This also allowed the thesis to not be under an embargo. From the participants of the survey and the interviews was informed consent obtained by asking for their consent to record the interview, describing the process and guaranteeing to use their answers anonymously. Respondents in the research were also free stop their participation in research at any given time during the interview.

### *Positionality*

The researcher did an internship at the FCC, therefore for interviewing those of the FCC could have influenced the objectivity of the answers. Moreover, the background of the researcher is from a Global North country, not speaking the language of the Global South country investigated, therefore the positionality of the researcher should be considered. This also influenced that interviews could only be conducted with those that speak English.

### *Validity and reliability of the research*

Validity refers to the fact if the research is interpreted in the right way and consists of internal- and external validity. Internal validity refers to degree of trustworthiness of the cause and effect being tested, not being influenced by other factors. This research focusses on the potential that MSIs and TCA could have in combatting production challenges Colombian coffee producers face, instead of saying that they are a cause and effect. External validity is concerned with the possibility of wider application of the results. This was increased by looking at three MSIs active and in the coffee sector and considering the wider application of MSIs and use of TCA in the agrifood sector.



Reliability refers to the possibility to repeat the study, which is achieved by writing own each step in the methodology that was taken and giving the reasons behind certain decisions during the research process.

### 4.3 Research Strategy

The research strategy is illustrated in *Figure 4* below.

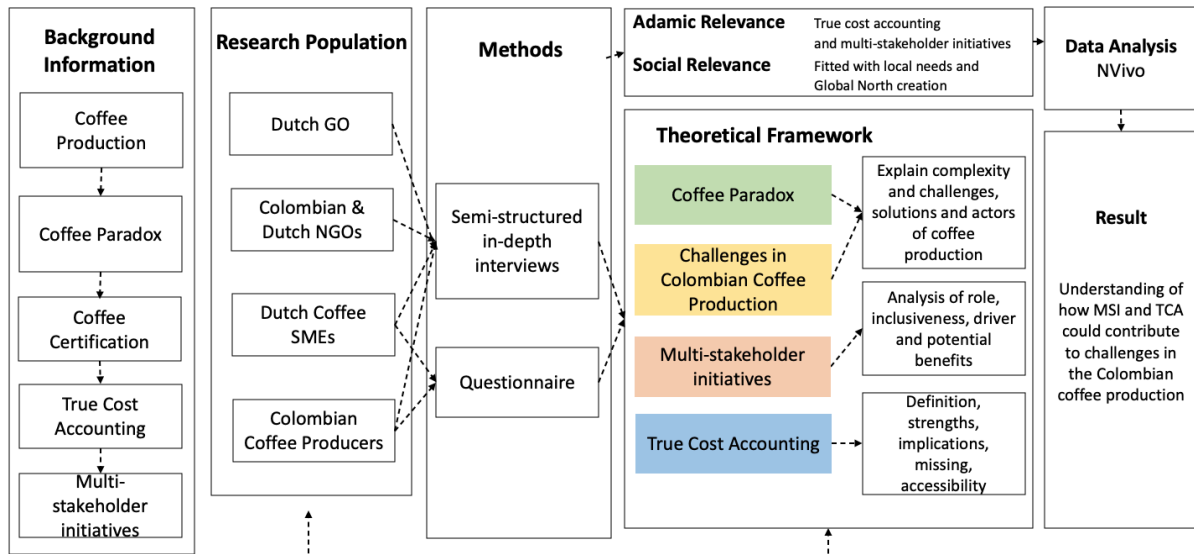


Figure 4 – Research Strategy

### 4.4 Data Analysis

The qualitative interviews were transcribed and ordered manually through classification according to the type of the organisation, for example FCC Dutch Coffee Company 1. Also, the survey results were classified according to the nature of the type of organisation. The transcripts were entered in the NVivo qualitative data software. In NVivo, the transcriptions underwent a data selection process according to three themes of Colombian coffee production, MSIs and TCA and through the manual coding and categorisation, the findings were organized into themes. These themes were created in order to see how different stakeholders think about the topics and if these were coherent with the findings in the theoretical framework.

## 5. Results

### 5.1 Colombian Coffee Production

This section aims to answer to sub question: *What challenges do Colombian coffee producers face and what are the strategies to cope with these challenges?* This is done by identifying the challenges Colombian coffee producers face and the strategies including the actors which combat these challenges according the respondents compared to the literature.

#### 5.1.1 Challenges

In Figure 5 below the challenges identified are summarised.

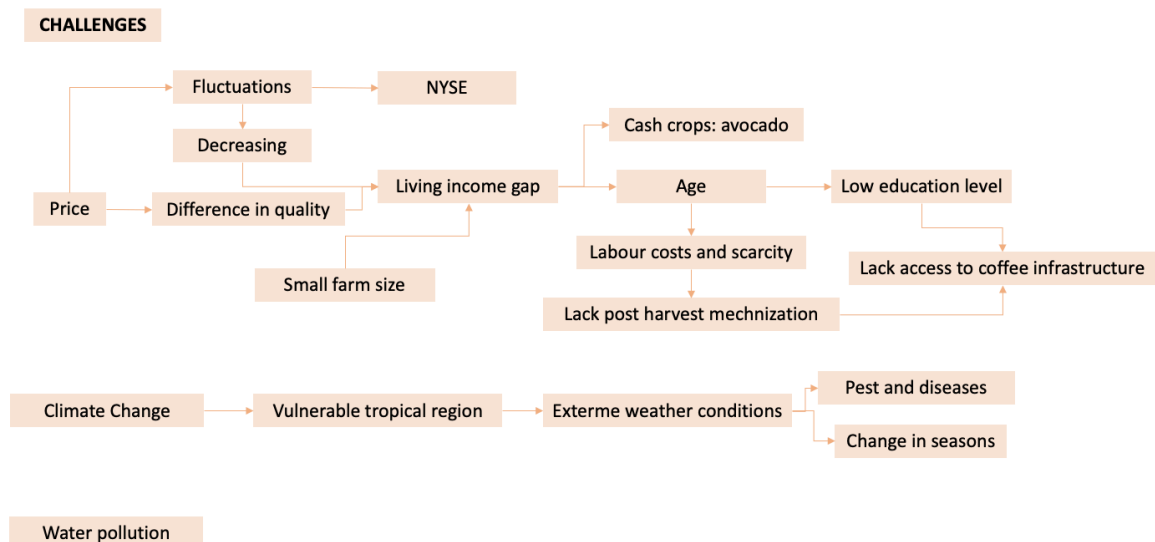


Figure 5 – Summary of challenges for Colombian coffee producers

#### Price

The biggest challenge in coffee production for coffee producers is price, as it was mentioned by 14 respondents of out the 23 respondents, by Dutch as well as Colombian stakeholders. Coffee producing countries experience highly unstable and decreasing production prices (Galtier, Belletti & Marescotti, 2013). The situation in Colombia confirms this, as coffee prices are subject to **fluctuations** (Appendix A – Colombian Coffee Producer 1) and the **low price** for coffee producers is considered the main issue (Appendix A – Colombian NGO 1; Colombian NGO 3; FCC Dutch NGO 2b; USUK NGO 1). The prices paid do not compensate the production costs, they are not enough to sustain their families (Appendix A – FCC Colombian NGO 1a; FCC Dutch Coffee Company 4).



The local market price of coffee is based on the exchange rate between the Colombian peso and the American dollar and it is related to the price of the coffee in the **New York stock Exchange (NYSE)**, with a difference of 30% in the local price in one year (Appendix A – FCC Colombian Coffee Producer 1). At the NYSE, a lot of people speculate and invest who do not have anything to do with coffee, but they do affect the price (Appendix A – Colombian NGO 2; FCC Dutch Coffee Company 3). Coffee producers are price takers and the price decisions are made by big international market players in Europe and the United States (Appendix A – Colombian NGO 3). This resonates with the argument that developed countries have the high-added value-added activities, whereas the producing countries take the lower value-added activities (Galtier, Belletti & Marescotti, 2013; Gereffi & Fernandez-Stark, 2016). Coffee prices are currently historically low, whilst five or ten years ago the prices were much higher (Appendix A – Colombian NGO 2). In the 80s, the international coffee accords ended, and this liberalisation push resulted in huge profits going to international players who add the value (Appendix A – Colombian NGO 3).

There is also a **high differential between the quality of Colombian coffee**, which makes it less attractive on the international markets (Appendix A – USUK NGO 1). This in contrast with the literature stating that Colombia's arabica coffee is known for its high quality (Bastianin, Lanza & Manera, 2018). The FNC is incredibly strong and buys what is on offer, thus not necessarily selecting on quality (Appendix A – FCC Dutch Coffee Company 1) and focussing on high yield and low prices (Appendix A – FCC Dutch NGO 2b). The FNC guarantees a purchase to its members (Dietz et al., 2019).

An important aspect of price is the **living income gap**, as wages and income were identified to be below living income in rural Colombia (Brounen et al., 2019). This issue needs to be addressed first, because it is harder to motivate farmers to invest time and money in other schemes for make the sector more environmentally friendly and sustainable, when they are secondary when it comes to livelihoods (Appendix A – Colombian NGO 1a; FCC Dutch Coffee Company 2; FCC Dutch GO; FCC Dutch NGO 2a ). A challenge that ties into this is that the average **farm size is relatively small**, which makes it a big challenge to have a decent income from coffee (Appendix A – Colombian NGO 3; FCC Dutch NGO 2). This is in line with the argument that farm size is a challenge for coffee producers (Biswas-Tortajada & Biswas, 2015).



### *Cash crops*

Due to international prices dropping, coffee producers cannot meet the production costs (Appendix A – Colombian NGO 2a; Colombian NGO 3) and increasing portion of the coffee workers migrate to other sectors (Hawkins, 2018). Many coffee producers are moving from coffee production to **avocados** because of the high demand and two or three harvests a year with less labour costs (Appendix A – Colombian NGO 2a & Colombian NGO 3). The climate in Colombian allows the agricultural sector to grow anything, thus some coffee producers are switching completely, others are diversifying (Appendix A – Colombian NGO 2a). Not all coffee producers are switching, some fourth or fifth generation do really love the products, and do not want to change, whereas others agricultural families want to grow anything if it has a decent price (Appendix A – Colombian NGO 2a). This must do a lot with the perspective on coffee, because why would a farmer produce coffee when another crop, some illegal, can bring in more cash (Appendix A – FCC Dutch Coffee Company 9).

### *Age*

Coffee farming is often not considered attractive for young rural people (Torres, 2016). Young people do not want to work at the countryside, because it is not profitable (Appendix A – Colombian NGO 2a; FCC Colombian NGO 1b) and as a result move to bigger cities (Appendix A – FCC Dutch Coffee Company 9; FCC Dutch NGO 2a). This increases the average age of the coffee farmer, which is above 50, and these older coffee producers are stubborn in using new practises and digitalisation (Appendix A – FCC Dutch Coffee Company 4). There is a need to change the situation, otherwise there will not be any coffee growers left in 10 years (Appendix A – Colombian NGO 2a). Therefore, coffee must be interesting to young people through for instance coffee education and the organisation of local and national coffee competitions (Appendix A – FCC Dutch Coffee Company 4).

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“Everything is connected, what is your income, what are you being paid for coffee, what is the charm of being a coffee farmer, is it a subsistence crop, no one wants to farm coffee”

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(Appendix A – FCC Dutch NGO 2a)



### *Labour*

The coffee industry is characterized by informality, especially in coffee picking where there are several problems related to labour rights (Brounen et al., 2019). **Scarcity of labour has to do with the cost, availability** (Appendix A – Colombian Coffee Farmer 2) and the fact young people do not want to work in agriculture (Appendix A – FCC Colombian NGO 1b). With COVID19, coffee producers struggle even more to hire labour as people are now not allowed to move around (Appendix A – Colombian NGO 2, FCC Colombian NGO 1b; USUK NGO 1) and the delay in coffee production and obstacles to produce increases the production cost (Appendix A – USUK NGO 1). This scarcity can also be explained due to the lack of decent working conditions for workers as collectors (Appendix A – Colombian Coffee Producer 1; FCC Dutch Coffee Company 7). Labour costs are relatively high per pound/per hectare because of the lack of (post)harvest mechanization (Appendix A – FCC Colombian NGO 1a). This resonates with the argument that Colombian coffee is known for its low degree of mechanization for coffee production (Bastianin, Lanza & Manera, 2018).

### *Access*

The lack of (post)harvest mechanization is due to geographical impediments to mechanizing (Appendix A – Colombian Coffee Producer 2). Coffee farms are located remote areas, often without access to markets (Appendix A – FCC Dutch Coffee Company 6; FCC Dutch Coffee Company 8). COVID-19 has affected producer's access to participation in training sessions and the access to goods and supplies, as well the mobility of shipping and exportation of coffee worldwide (Appendix A – Dutch NGO 1). The delays and cancellations in export of coffee has resulted in delay in payment of the product (Appendix A – USUK NGO 1). Another factor that determines the access is **conflicts** in the region Cauca (Appendix A – FCC Dutch Coffee Company 9) and Nariño (Appendix A – FCC Dutch NGO 2b). Many coffee producers faced imminent threats or indirectly have directly felt the consequences of civil war, with the result that the infrastructure for coffee and security is less developed there (Appendix A – FCC Dutch NGO 2b). The long-term armed conflicted is mentioned as cause of rural abandonment (Muñoz-Rios, Vargas-Villegas, Suarez, 2020).



### Education

Moreover, it is hard to get access to the coffee infrastructure that already exists for coffee producers as they come from a different background, which makes it difficult to invest in their way of production (Appendix A – FCC Dutch NGO 2b). There is a lack of knowledge in processing (Appendix A – Dutch Coffee Company 6) and coffee producers do not have a very high education level (Appendix A – FCC Colombian Coffee Producer 1), often they only had primary education (Appendix B - Colombian Coffee Cooperative 4). This resonates with the argument that coffee producers often have little education, keeping mental records of their budgets and seldom have a clear idea of their income, expenses and losses (Biswas-Tortajada & Biswas, 2015).

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*“They live the day; they don’t have, and they don’t make predictions or make savings for the next crop or they don’t make predictions of how it is going to behave the local price. They do not do strategies; they just leave it a day.”*

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(Appendix A – FCC Colombian Coffee Producer 1)

### Climate Change

Climate change is the second biggest challenge after price, 11 respondents out of the 23 mentioned. Up to 50% of the coffee producing areas is under threat of not becoming suitable to grow in 2050 (Appendix A – FCC Colombian NGO 1a). Coffee is subject to climate change as production takes place in tropical areas, which are particularly vulnerable to extreme weather conditions on mountainous areas and steep hills (Appendix A – FCC Colombian NGO 1b). This resonates with the fact that Colombia as a tropical country is vulnerable to climate change (Barrucund, Vieira & Canziani, 2017). This results in increasing droughts and problems with coffee growing on different altitudes (Appendix A – Colombian NGO 3), as also mentioned by Fox et al. (2015), such as landslides (Appendix A – FCC Dutch Coffee Company 5).

The weather is very important for the growing of the plant, the development of the coffee bean and the drying process and having rainy season change every year affects this (Appendix A – FCC Colombian Coffee Producer 1), also being mentioned by Fox et al. (2015) and Lambert & Eise (2020). More rain makes it more difficult to dry the coffee in a natural way and less flourishing plants (Appendix A - FCC Dutch Coffee Company 4). Moreover,

change in weather conditions through increasing temperatures allows pests like the drill (Appendix A – Colombian Coffee Producer 1) and plagues like roya and broca to manifest and affect the price and possibility of selling coffee beans, as Colombian coffee is traded for its quality (Appendix A – Colombian NGO 3). The literature mentions other pest and diseases such as the coffee borer (Atallah, Gómez & Jaramillo, 2018) and the coffee leaf rust (Bebber, Castillo & Gurr, 2016; Carnemerck et al., 2019) and the El Niño Southern Oscillation (Bastianin, Lanza & Manera, 2018).

*Water pollution*

In coffee production of Colombia, 99% of the coffee is washed and every individual farmer, which are in Colombian half a million, have their own washing station (Appendix A – Colombian NGO 1). Water is contaminated by washing coffee beans (Appendix A – FCC Dutch Coffee Company 8), as no treatment is being done to waste water and it is extremely polluted (Appendix A – Colombian NGO 1).

5.1.2 Strategies and Actors

In *Figure 6* below, there is as summary of the strategies and actors for combatting the production challenges Colombian coffee producers face.

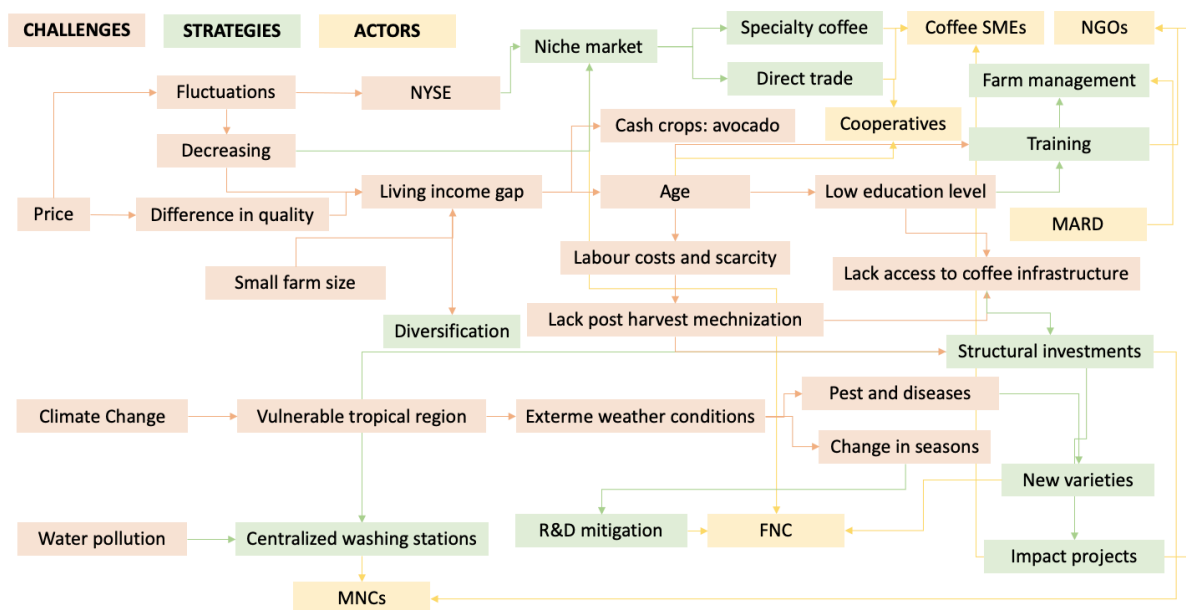


Figure 6 – Summary of challenges, strategies and actors of Colombian coffee production



## Quality

There is a need to create a niche market for Colombian coffee based on quality, in order to compete with the emergence of Vietnamese robusta low quality coffee. Colombia has been successful in getting better prices on average; however, this also incurs higher production costs when needing to meet the quality controls (Appendix A – Colombian NGO 3). This resonates with the argument that there is need for focussing on quality “immaterial” niche market (Schussler, 2009) where quality is key for the price (Fernandez-Stark & Bamber, 2012). This also acknowledges that whilst specialty coffee like certification offers a price premium, this also incurs costs to coffee producers in order to meet the changes in business practices (Hernandez-Aguilera et al., 2018).

**Long term relationship contracts** between the coffee producer and roasters are needed in order have the insurance to have coffee with specifications wanted is a strategy that could be used when focussing on quality rather than quantity (Appendix A – FCC Colombian Coffee Producer 1). The direct market is a growing market where **speciality coffee** attaches great importance to good quality, variety or a story, rather than the anonymous demand for volume (Appendix A – FCC Dutch Coffee Company 3). This resonates with the argument that through direct trade, the premium price ensures that coffee companies commit to a long-term capacity building investment for coffee producers (Bramucci & Mulholland, 2011; Hernandez-Aguilera et al., 2018). Paying more for the same quality of coffee through direct trade would go hand in hand with **transparency and traceability** (Appendix A – FCC Dutch Coffee Company 1 & FCC Dutch NGO 2a).

In order to improve the quality of coffee, structural investments are needed to overcome infrastructure challenges that could make the sector more competitive (Appendix A – Dutch NGO 1).

## *Technical Assistance, Education, Research and Development*

Though most cooperatives would like to export their coffee and have direct relationships with foreign customers, **technical assistance** is needed, as well as education. Massive volumes to export are needed to sell at reasonable price, from micro niches and focus on bigger channels such as supermarkets to make an impact on the farmer (Appendix A – FCC Dutch Coffee Company 4). This resonates with that speciality coffee market size would accelerate when big retailers would participate (Vellema et al., 2015).





It is in the interest of many stakeholders to get more education, to be more resilient and to understand their rights as a person and as a farmer (Appendix A – FCC Dutch NGO 2b). **Farm management** training is needed reach the optimal efficiency point at farm level, linking that to appropriate financial products which are needed for maintenance, renovation and rehabilitation (Appendix A – Dutch NGO 1). The STP works with impact projects centred around topics such as gender with case studies where access to better information as well as trying to coordinate action and activities (Appendix A – FCC Colombian NGO 1b). Technical assistance and education are needed with fresh ideas that inspire the young generations at the origins (Appendix A – FCC Dutch Coffee Company 4).

Moreover, more research and development for adaptation to climate risks next to the work that is already performed by the FNC (Appendix A –Dutch NGO 1). There is also more advise needed on **agronomy** (Appendix A – FCC Dutch Coffee Company 5). Another strategy mentioned was **diversification** to tourism (Appendix A – Colombian Coffee Producer 1).

#### *Fedción Nacional de Cafeteros de Colombia*

FNC has an extensionist service with over 100 agronomists offering technical assistance (Appendix A – Colombian NGO 1), although it may not be enough to cover the totality of farmer's needs (Appendix A – Dutch NGO 1). **FNC has devised several practices such as new varieties** which are more plague resistant to broca and roya, as coffee plants die off after twelve years of production (Appendix A – Colombian NGO 3). The FNC claims to represent 500.000 farmers whilst also acting as a market player; they promote with a specific model focused on quantity and low prices which might not be at the best interest for coffee producers, whilst simultaneously provide technical assistance to farmers who provide coffee to them (Appendix A – FCC Dutch NGO 2b).

#### *Non-governmental organisations*

Four out of twenty-three respondents mentioned NGOs who play a role in increasing productivity and improving coffee production through trainings and facilitating the rollout of impact projects, where three out of the four where NGOs (Dutch NGO 1; FCC Colombian Coffee Producer 1; FCC Colombian NGO 1a; FCC Dutch NGO 2b). Internationally based NGOs with Dutch origins present in the Colombian sector are Progreso, MVO, Solidaridad and ICCO (Appendix A – FCC Dutch NGO 2b).



### *Coffee small and medium-sized enterprises*

Three respondents mentioned their own role as a coffee SME in providing an infrastructure, cash payments and extensive feedback agronomist advice through impact projects and their business model of direct trade or specialty coffee (Appendix A – FCC Dutch Coffee Company 6; FCC Dutch Coffee Company 8; FCC Dutch Coffee Company 9).

### *Colombian government*

Two respondents mentioned that the Colombian government could play a big role in this (Appendix A – FCC Dutch Coffee Company 9) and that their coffee producers already get help from the Colombian government (Appendix A – FCC Dutch Coffee Company 8). This resonates with the fact that the MARD provides agricultural extensionist services and income support programs to coffee producers (Vellema et al., 2015).

### *Cooperatives*

The cooperative has started a program to get the youth invested in growing coffee instead of moving to the city (Appendix A – FCC Dutch Coffee Company 10). Colombian coffee producer got their own export license, through the help of their own surrounding and circle of friends (Appendix A – FCC Dutch Coffee Company 3), in order to be more proactive on future market and to cover for the price and exchange rate fluctuations (Appendix A – USUK NGO 1). Though this export license was difficult to acquire as coffee producers are normally exporting via the FNC (Appendix A – FCC Dutch Coffee Company 3).

### *Multinational corporations*

International traders and roasters are often providing support through producer cooperatives (Appendix A – Dutch NGO 1). **Investments such as a centralized washing stations**, must be done by big endowed firms, such as the Neumann Coffee Group, as one can cost two to three million dollars (Appendix A – Colombian NGO 1). Though the credibility generally is questioned of MNCs creating their own VSS (Dowards, 2020).

### Collaboration

A coffee producer attended three workshops from three different actors on the same topic, but with a different perspective and method. Therefore, there is a need to align actors for more impact (Appendix A – FCC Colombian NGO 1b).

“This week I was invited to three training activities, how to manage nurseries. On Monday I was invited for one cooperative, on Wednesday, I was invited for FNC and on Friday I was invited for SENA that is another organisation who works with farmers here.”

Anecdote from a coffee producer (Appendix A – FCC Colombian NGO 1b)

### 5.2 Multi-stakeholder initiatives

This section aims to answer the sub question: *What do multi-stakeholder initiatives entail and how could they combat challenges that Colombian coffee producers face?* The MSIs are first each separately discussed in terms of their role, driver, benefits they bring to coffee producers, inclusiveness and funding. In Figure 7 below, a summary is given of this section.

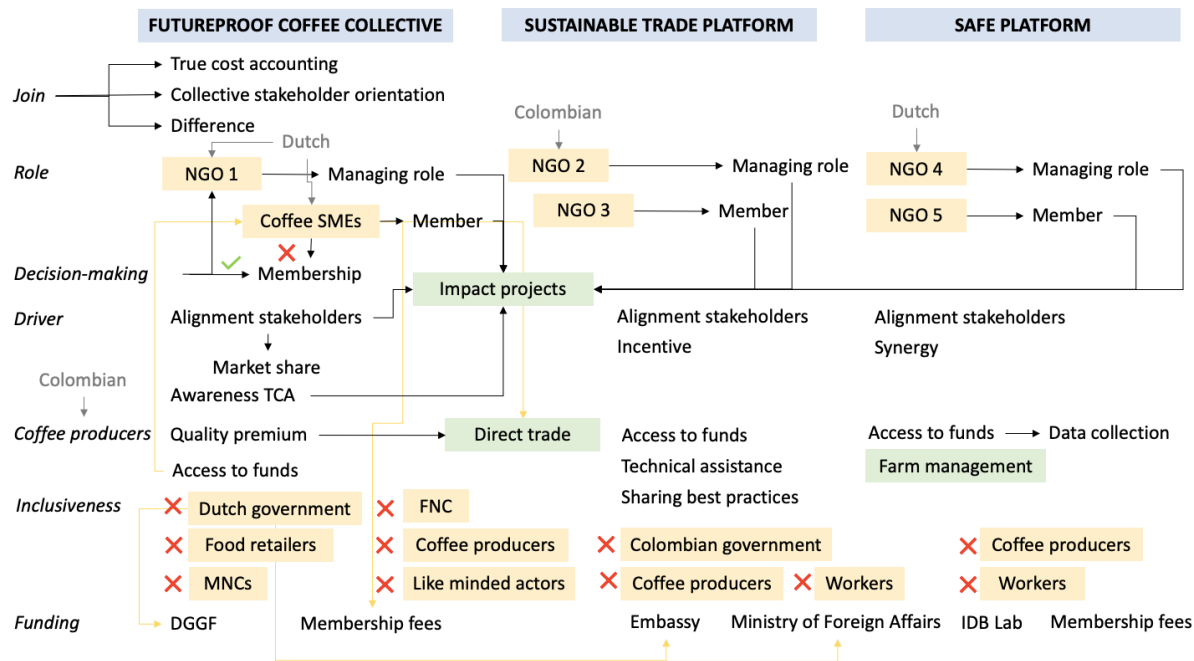


Figure 7 – Summary of FCC, STP and SAFE Platform



### 5.2.1 Futureproof Coffee Collective

#### *Decision to join*

Four respondents mentioned **TCA** as a reason to join; to support the development of TCA applications in the coffee supply chain (Appendix A – FCC Colombian NGO 1a) and because they were interested in the concept of TCA (Appendix A – FCC Dutch Coffee Company 7; FCC Dutch Coffee Company 8). The costs of production must be mapped, because it starts with a better payment and reward for coffee producers and on the consumer side, more transparency about the real price of coffee (Appendix A – FCC Dutch Coffee Company 3). Here the TCA tool of the MSI is presented as a reporting framework which indicates the compliance of results of participants in the MSI (Arenas, Albareda & Goodman, 2018; Mena & Palazzo, 2012; Rasche, 2012).

**A collaborative mission to improve the entire coffee industry** (Appendix A – FCC Dutch Coffee Company 1) was also a reason for current FCC partners to join the FCC. This has to do with the same vision of sustainability, traceability and transparency in the chain (Appendix A – Colombian Coffee Producer 1), which is aligned with the mission and vision of sustainability issues of the FCC partners (Appendix A – FCC Colombian NGO 1b & Appendix A – FCC Dutch Coffee Company 2). Collaboration also plays a big role in this (Appendix A – FCC Dutch Coffee Company 9; FCC Dutch Coffee Company 10). This resonates with the need and the presence of a collective stakeholder orientation (Soundararajan, Brown & Wicks, 2019).

This collective stance is needed to make a **difference** (Appendix A – FCC Dutch Coffee Company 5), as the coffee sector is threatened, current certification schemes are not enough to help smallholders to build a living (Appendix A – FCC Dutch Coffee Company 10). The worry about the supply chain and what happens in the countries of origin was also mentioned (Appendix A – FCC Dutch Coffee Company 2). Through the FCC, they want to show the industry things can be done different (Appendix A – FCC Dutch Coffee Company 9). This resonates with the idea that MSIs tend to serve as a watchdog (Searcy, 2017).

#### *Role*

The **NGOs** in the network take a **managing role**. The Dutch NGO is responsible for initiating the FCC, facilitating and managing the FCC partners and TCA tool, whilst also looking for new partners (Appendix A – FCC Dutch NGO 1a). Next to this, the Dutch NGO manages the impact projects (Appendix A – FCC Dutch NGO 1b). Colombian NGO of the is responsible for



supporting the development of tools, trainings, local implementation and leading the process of information in the field (Appendix A – FCC Colombian NGO 1a; FCC Colombian NGO 1b).

The role of the Dutch coffee SMEs differs from highly involved in the development and testing in the field of the true price tool through an impact project (Appendix A – FCC Dutch Coffee Company 10) to very noble (Appendix A – FCC Dutch Coffee Company 10) though this FCC partner also has an impact project. One coffee company mentioned that they would like to be more active in the FCC but experience difficulties in getting this done (Appendix A – FCC Dutch Coffee Company 5). It is important to consider that advantages of MSIs like the FCC are subject to the level of stakeholder engagement and rigidity and lack of stringency can lead to a lower legitimacy of the MSI (Rasche, 2012).

### *Decision making*

Currently, the selection of new FCC partners is made by the Dutch NGO (Appendix A – FCC Dutch NGO 1a). FCC partners are not up to date on who are the current FCC members are and involved on deciding who joins the FCC (Appendix A – FCC Dutch Coffee Company 1). Consequently, they do not feel involved enough in the decision-making process of the FCC (Appendix A – FCC Dutch Coffee Company 9). The selection could be made more critical and that selected actors should be reduced to those who have high ethical, social and sustainable standards which are measurable (Appendix A – FCC Dutch Coffee Company 4). The FCC partners should be more actively involved in the decision-making process, as this is affecting them and their potential to improve social and environmental standards (Moog, Spicer & Böhm, 2015).

### *Driver for sustainable coffee production*

The value of the FCC is created by **the linking of the farmer, roaster and consumers** through direct communication and transparent trade (Appendix A – FCC Colombian Coffee Producer 1; FCC Dutch Coffee Company 10). This creates awareness about sustainable coffee production for businesses and consumers whilst also providing more information to coffee producers (Appendix A – FCC Dutch GO). This alignment of different stakeholders, such as business and consumers, towards a sustainable coffee production and create awareness around the topic of TCA (Appendix A – Appendix A – FCC Colombian NGO 1b, FCC Dutch Coffee Company 6 FCC Dutch Coffee Company 8; FCC Dutch Coffee Company 9). The MSI should use



its power to help “good” coffee companies to get connected to big end customers and use the political influence more strongly to get social enterprises enter the mainstream market (Appendix A – FCC Dutch Coffee Company 4).

The organisation of coffee SMEs creates more leverage to make a change through the power of communication and having more market share (Appendix A – FCC Dutch NGO 2b). Dutch coffee SMEs are encouraged to close the gap between true price and current coffee prices (Appendix A – FCC Colombian NGO 1a) by internalising environmental issues and social issues (Appendix A – FCC Colombian NGO 1; FCC Dutch Coffee Company 5). This is done through showing examples of changes (Appendix A – FCC Dutch Coffee Company 10) by running impact projects with the TCA tool in Colombia (Appendix A – FCC Dutch Coffee Company 1).

### *Benefits for coffee producers*

Joint forces achieve more than single parties, as small-scale producers can benefit from this support by being able to produce better quality coffee, getting a price premium and differentiation from “bulk” coffee and getting access to funds for impact projects (Appendix A – FCC Dutch Coffee Company 8; FCC Dutch Coffee Company 9; FCC Dutch Coffee Company 10). The more coffee producers can sell to responsible consumers, the better; through sourcing, financing and make use of each other teams (Appendix A – FCC Dutch Coffee Company 4). In order to have sustainable chain that is liveable, everyone in the should chain earn money, which would benefit the entire sector (Appendix A – FCC Dutch Coffee Company 2), therefore, getting the complete supply chain involved is 100% needed for change (Appendix A – FCC Dutch Coffee Company 6).

### *Inclusiveness*

Three respondents declare that all relevant are included (Appendix A – FCC Dutch Coffee Company 8), that there is a great base (Appendix A – FCC Colombian NGO 1a) and the MSI has been working hard to make it the TCA tool inclusive (Appendix A – FCC Dutch Coffee Company 7). However, for systematic change, institutional support from **the Dutch government** is needed as well as public sourcing commitments (Appendix A – FCC Colombian NGO 1a). Whilst the reason for MSIs often to start is to fill the regulator gaps that governments unable to fulfil through regulation (Mena & Pelazzo, 2012; Zeyen, Beckmann &



Wolters, 2016), here their support is encouraged. **Food retailers** are missing where the most consumers buy their coffee (Appendix A – FCC Dutch Coffee Company 5; FCC Dutch Coffee Company 10). Many stakeholders interested in the Colombian coffee sector are not involved yet, an important stakeholder missing is the **FNC** (Appendix A – FCC Dutch GO). This resonates that there is lack of inclusiveness of MSIs on the local level (Rasche, 2012). Also, like minded actors are mentioned are not involved yet in the FCC (Appendix A – FCC Dutch Coffee Company 9).

One respondent argued that the FCC should be open to anyone who wants to make a change (Appendix A – FCC Dutch Coffee Company 3). There is a need for involvement of **commercial volume traders** (Appendix A – Dutch FCC Coffee Company 2; Appendix A – FCC Dutch Coffee Company 6) in order to show what is going well and what is not going well (Appendix A – FCC Dutch Coffee Company 3). Others are critical of the role of big market players, as the current selection of coffee companies is in the action rather than talking mode (Appendix A – FCC Dutch NGO 2b). They are wary, as there are more greenwashing and purpose washing companies in the FCC network which do not have the right stories and intentions (Appendix A – FCC Dutch Coffee Company 4). This resonates with the argument that business can use participation in MSIs to be less accountable for their actions (Arenas, Albareda & Goodman, 2018).

Lastly, coffee producers are also not as included for decision making as for Dutch funding a Dutch party is needed for impact project admission (Appendix A – FCC Dutch Coffee Company 1). A coffee producer notes that on the one side, coffee producers do not speak English, and very few Dutch roasters speak Spanish, whereas communication is very important for how relationships are made between both, without a lot of intermediates (Appendix A – FCC Colombian Coffee Producer 1). This resonates with the fact that smallholders are often being left out in roundtable discussions (Schouten, Leroy & Glasber, 2012).

### *Funding*

The FCC is funded by the DGGF and membership fees. Two respondents also mentioned the future of the FCC after 2020, when the DGGF funding ends. They are keen to continue the collective in order bring fundamental change in the sector, however there is need to create more awareness amongst governments and consumers (Appendix A – FCC



Dutch Coffee Company 10). Another respondent mentioned that they would like to a closer collective in which cooperation is stimulated and they could be a frontrunner, as otherwise, with exception of the TCA tool, they do not see a great value for them to continue participating in the FCC (Appendix A – FCC Dutch Coffee Company 9).

### 5.2.2 Sustainable Trade Platform

Colombian NGO takes the **role as leader and facilitator** of the STP that was started by the Dutch Embassy in Colombia to start this initiative in 2013 to promote dialogue, implement strategies in the field and work together with the stakeholders whilst trying to complete the agenda (Appendix A – Colombian NGO 1b). This resonates with the first form of an MSI, providing principles of engagement and learning platforms (Arenas, Albareda & Goodman, 2018; Mena & Palazzo, 2012; Rasche, 2012). Another Colombian NGO is partner of the STP, and they take part as a participant in impact projects (Appendix A – Colombian NGO 2b).

STP can be a **driver for sustainable coffee production** as many stakeholders and actors not directly involved also become worried about the sustainability process in which the coffee is produced (Appendix A – Colombian NGO 2b). Thus, the STP serves as a watchdog (Searcy, 2017). The STP organizes non-competitive collaboration to design, implement and monitor joint strategy to sector transformation (Appendix A – FCC Colombian NGO 1a). This collaboration is needed, because there are a lot of organisation with a lot of power, a lot of money, but with little incentive to solve climate change and labour conditions because the issues are too big (Appendix A – FCC Colombian NGO 1b).

STP can **be beneficial to coffee producers**, because impact project, bring the initiatives to the field and support farmers in supporting their practices (Appendix A – Colombian NGO 2b). Moreover, this technical assistance allows coffee producers to share best practices and have more access to contracts or funding services (Appendix A – FCC Dutch GO). Through jointly designed products, sector studies and incentives mechanism, fragmentation in the industry regarding sustainability initiatives will be reduced (Appendix A – FCC Colombian NGO 1a). This resonates with the idea that MSIs on their own have a limited impact, but together they can reinforce each other and amplify results (Kabeer, Haq & Sulaiman, 2019). However, whether these initiatives help coffee producers is questioned, because unless there is a change in terms of the global dynamic coffee supply chain, these initiatives are only going to be lukewarm in their effectiveness (Appendix A – Colombian NGO





3). A disadvantage of this MSI that describes this argument is that through participation in the MSIs, businesses could enhance their power asymmetries against lower powerholders (Arenas, Albareda & Goodman, 2018).

In terms of **inclusiveness** of the STP, whilst coffee producers are the most important, they are not as involved other than VSS representatives and FNC working as a guild (Appendix A – Colombian NGO 2b). Whilst small scale producers are often organized in cooperatives, there is no mention of workers who pick the cherries of the coffee (Appendix A – Colombian NGO 3). Here, again the absence of lower power stakeholders in MSIs is mentioned (Rasche 2012; Schouten, Leroy & Glasbergen, 2012). Most MSIs like the STP consisting of companies and NGOs, however it is not always easy to have public entities onboard (Appendix A – Colombian NGO 1a), there is a need for more governments to be involved (Appendix A – FCC Colombian NGO 1b).

The STP as a multi-stakeholder platform wants to facilitate the experiences between different actors, between different sectors. The funding given was for the coordination side and it has supported them in achieving more sustainable volumes of production (Appendix A – FCC Dutch GO). The STP was **financed** from 2013 to 2015 by the Dutch Embassy (Appendix A – FCC Dutch GO), from 2020 onwards it has been funded by the Dutch Ministry of Foreign Affairs (Appendix A – FCC Colombian NGO 1a).

### 5.2.3 SAFE Platform

Whilst the SAFE Platform is funded by IDB Lab, a Dutch NGO takes the **managing role** through the design, management, and implementation of knowledge and communication strategies and the structuring of project proposals (Appendix A –Dutch NGO 1). Another NGO is a member, applied for impact project funding and is part of a steering community through which they help shape ideas and a vision for the coming years of the SAFE Platform (Appendix A – USUK NGO 1).

The SAFE Platform can be a **driver for sustainable coffee production** as it forces to rethink the current approach to sustainable food, to break silos, and to push for more effective collaboration through synergy of having the stakeholders of the full value chain in a pre-competitive place together (Appendix A – Dutch NGO 1; USUK NGO 1). The SAFE Platform consists of are frontrunners and opinion leaders in agri-food sustainability and is open to collaborate and communicate their community of practice with industry leaders, other



networks and MSIs (Appendix A – Dutch NGO 1). The SAFE Platform is here presented as an encouragement for creating dialogue for adaptiveness to local circumstances (Rasche, 2012) and these various backgrounds increases the notions of learning between them (Fransen, 2012). However, this depends on the effectiveness of the usefulness of those platforms which depends on the actions and conditions of each country, as Colombia is more organized coffee sector with FNC opposed to Central America where the sector is much less organised and then they support provision of external platforms or entities (Appendix A – Colombian NGO 1).

The SAFE Platform can **be beneficial to coffee producers** as through impact projects, producers are given access to resources through a buyer or an NGO by being part of the SAFE Platform (Appendix A – USUK NGO 1). The SAFE Platform also collects data and transforms it into evidence to influence investors to increase catalytic funding (Appendix A – Dutch NGO 1). Overall it gives producers more transparency, a better picture of where their business is, what consumers are asking for, to give them a broader perspective than their own land (Appendix A – Colombian NGO 1). This resonates with that coffee producers have little education and seldom idea of their farm management (Biswas-Tortajada & Biswas, 2015), an MSI can give them a better picture of their farm management.

In general, MSIs are **inclusive** of all actors, but producers are generally underrepresented (Appendix A – Dutch NGO 1 & USUK NGO 1), even though they are the centre of interventions (Appendix A – Dutch NGO 1). Next to producers, the biggest omission historically is workers, as workers opposed to producers have no unions or cooperatives that represent them (Appendix A – Colombian NGO 1). Again, lower power stakeholders on a local level are not involved in the decision-making process (Rasche 2012; Schouten, Leroy & Glasbergen, 2012).

The SAFE Platform is currently **funded** by IDB Lab and through membership fees, as projects are funded by project implementers or partners, and receive grant counter-funding from the IDB Lab (Appendix A – Dutch NGO 1 & USUK NGO 1). IDB has shown interest in funding the second phase and the members of the SAFE platform have an interest in continuing but would not be able to absorb the working costs without the funding of IDB Lab (Appendix A – USKUK NGO 1).

### 5.3 True Cost Accounting

This section aims to answer the sub question: *What does true cost accounting entail and how could true cost accounting combat challenges that Colombian coffee producers face?* The definition, indicators missing topics, strengths, implications and accessibility are first discussed and then how TCA could combat challenges Colombian coffee producers face. In Figure 8 below, the results are summarized of this section.

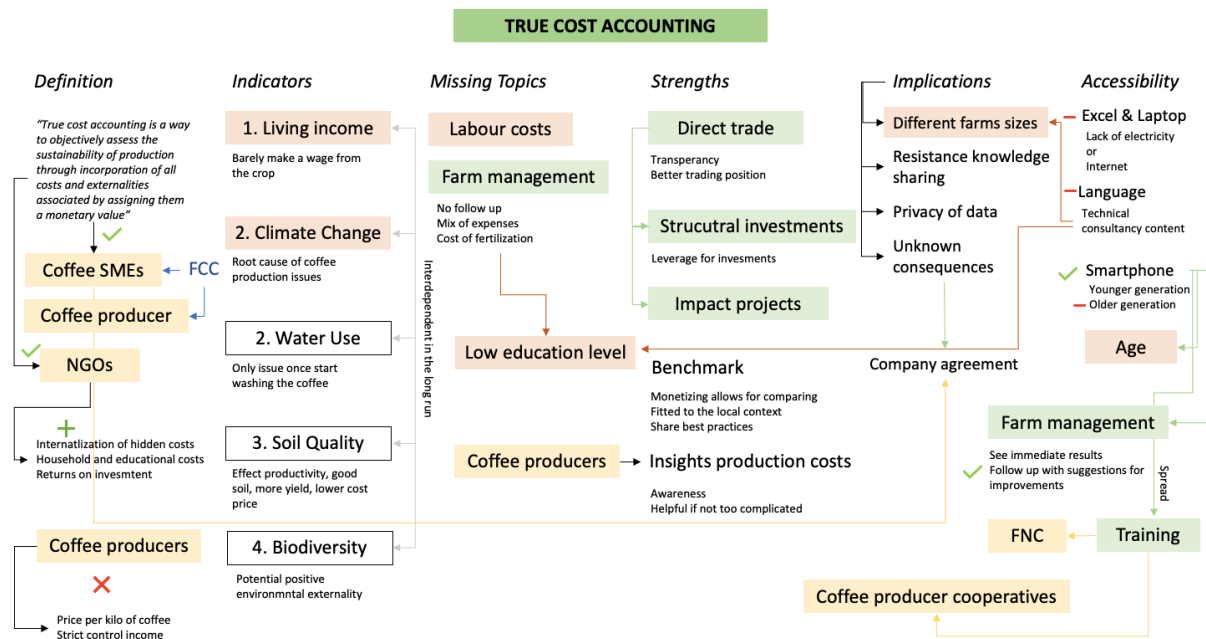


Figure 8 – Summary of True Cost Accounting

#### 5.3.1 Definition

From the literature review the following definition was created:

*“True cost accounting is a way to objectively assess the sustainability of production through incorporation of all costs and externalities associated by assigning them a monetary value.”*

FCC coffee companies who did use the TCA tool were one the same level on the definition of true cost accounting. They described TCA as the inclusion of all the cost of production, also the forgotten ecological and social costs, in order to create a fact-based price (Appendix A – FCC Dutch Coffee Company 1; FCC Dutch Coffee Company 4; FCC Dutch Coffee Company 10). This did not differ with FCC coffee companies who did work with the TCA tool,



as they described TCA as mapping the total costs of production, including hidden costs, such as the environmental and social (Appendix A – FCC Dutch Coffee Company 3; FCC Dutch Coffee Company 5; Appendix A – FCC Dutch Coffee Company 6; FCC Dutch Coffee Company 8). This resonates with the need and the presence of a collective stakeholder orientation towards the definition of TCA in the MSI (Soundararajan, Brown & Wicks, 2019).

NGOs who did use the TCA tool had similar definition of TCA but added to objective of the internalization of the hidden costs (Appendix A – FCC Colombian NGO 1b) and use this monetization production (Appendix A – FCC Dutch NGO 2b) as a management tool for coffee producers (Appendix A – FCC Dutch NGO 2a). A coffee producer who used the TCA tool described it as a way where farmers can exactly notice the farm as a company, by seeing their expenses and income and create strategies from this (Appendix A – FCC Colombian Coffee Producer 1).

Those outside the FCC came in touch with TCA through conferences where people presented research on TCA (Appendix A – Colombian NGO 1). NGOs outside of the FCC including think that TCA entails all those externalities (Appendix A – Colombian NGO 1), more transparency and how the profits are distributed amongst the value chain (Appendix A – Colombian NGO 3). TCA includes all the cost of production including living income but should also include household and educational costs (Appendix A – Colombian NGO 2a). TCA means the incorporation of social and environmental externalities in the cost structure and the returns on investment (Appendix A – Dutch NGO 1). A cost model where the producers includes direct and indirect costs in the calculations of final cost of his/her coffee, including costs related to current harvest and medium- and long-term investments (Appendix A – USUK NGO 1).

Both coffee producers outside the FCC who did not work with the TCA tool think that true cost accounting reflects the price per kilo for coffee (Appendix A – Colombian Coffee Farmer 1) or that it is a strict control of the expenses, costs and income that is kept over the cycle of the crop to calculate the cost of production (Appendix A – Colombian Coffee Farmer 2).

### 5.3.2 Indicators

The TCA tool consist out of five indicators: soil quality, climate change, biodiversity, living income and water use.



**Living income** was said to be most useful indicator for coffee producers to get insights into their production costs. Whilst three decades ago, coffee was a lucrative activity to make a stable income, now they barely make a living wage from the crop (Appendix A – Colombian NGO 3), thus making it an impact of poverty immediately (Appendix A – FCC Dutch Coffee Company 10). Addressing other issues requires investment and living income aids the continuation of sustainable coffee production, instead of switching to another crop (Appendix A – Dutch NGO 1). Living income is a consequence, it affects people directly (Appendix A – FCC Colombian NGO 1b; FCC Dutch Coffee Company 8). There is need for farmers to determine the price preferably beyond living income (Appendix A – FCC Dutch Coffee Company 1), because living income is an easier measure to quantify change (Appendix A – FCC Dutch Coffee Company 7). This resonates with the fact that wages and income were identified to be belong living income in rural Colombia (Brounen et al., 2019) and thus there is need to address before coffee producers can invest in other efforts.

Both climate change and water use come after this. Though **climate change** is important, it is a factor that is hard to control for a coffee producer (Appendix A – Colombian NGO 2a). Coffee producers do not know how climate change affects them and what additional costs it bears (Appendix A – USUK NGO 1). Though it was noted by a coffee producer that climate change needs to be put first as it affects everyone, as it is all related, changing from chemical fertilizers to agroforestry farming is going to affect their income, the quality of the soil and the water use (Appendix A – FCC Colombian Coffee Producer 1). Climate change is seen as the root cause of other issues as coffee producers are vulnerable to it (Appendix A – FCC Colombian NGO 1b). It is also seen as long-term problem, therefore not as prioritized (Appendix A – FCC Dutch Coffee Company 4).

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*If you do not tackle climate change, you cannot change anything in the long run, but if you don't pay now for better coffee, thus creating room to invest in climate change, coffee producers would not have money to invest in it, it is a paradox.*

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(Appendix A – FCC Dutch NGO 2a)



Coffee production generally requires a lot of water (Appendix A – Colombian NGO 2a) and it is easy to quantify (Appendix A – FCC Dutch Coffee Company 7). However, for coffee production itself, **water use** is not as much of an issue, unless the farmer has its own irrigation system, it becomes more important for coffee processing (Appendix A – USUK NGO 1).

**Soil quality** comes after this, as soil quality has an immediate effect on productivity but it is not a production cost (Appendix A – FCC Colombian NGO 1a), as good soil will bring more yield and yield will lower the cost price (Appendix A – Dutch Coffee Company 5). The farmer can influence the yield directly (Appendix A – USUK NGO 1). Many toxic products in the ground (Appendix A – FCC Dutch Coffee Company 4). Soil degradation is thus an example of an environmental costs related to agriculture (Barg & Swanson, 2004). Coffee producers do not have a huge influence on soil quality (Appendix A – FCC Dutch Coffee Company 8).

**Biodiversity** is seen as the least valuable indicator for coffee production, because it is of the least importance to coffee producers when trying to make a living income (Appendix A – Colombian NGO 3). The indicator would be useful to show the effects of transfer to organic coffee or agroforestry (Appendix A – FCC Dutch Coffee Company 4; FCC Dutch Coffee Company 7) and thus would serve as a positive environmental externality arise could arise from agriculture (Barg & Swanson, 2004). Unless it is organic coffee where minimum requires must be met influencing production, it is less of importance to production costs (Appendix A – USUK NGO 1). Though two coffee cooperatives asked specifically for adding more questions on biodiversity in the TCA tool (Appendix B – Colombian Coffee Cooperative 1; Colombian Coffee Cooperative 2).

Overall respondents mentioned the interconnectedness of the five indicators as one is the impact of another (Appendix A – FCC Dutch NGO 2b). Thus, saying that one is more important is hard as they are interdependent in the long run (Appendix A – FCC Dutch NGO 2a).

### 5.3.3 Missing Topics

Three respondents indicated that were not any topics missing, all three did not use the TCA tool in practice yet (Appendix A – FCC Dutch Coffee Company 2; FCC Dutch Coffee Company 3; FCC Dutch Coffee Company 9).

**Labour costs** was one of topics included that was said to be missing, which makes up almost 40% of the total costs of production of coffee producers (Appendix A – FCC Colombian



NGO 1a). The cost of labour is hidden and artificially low, which makes the coffee production seem to be more financially feasible than it might be (Appendix A – USUK NGO1). As the coffee industry is characterized by informality (Brounen et al., 2019; Hawkins, 2018), it could be essential to include it. Though, child labour and forced labour are hard to include by explicitly naming them when going to a coffee producer and would rather be a spin off conclusion (Appendix A – FCC Dutch NGO 2a).

The TCA tool is currently just data, there is **no follow up** with suggestions based on the results (Appendix A – FCC Dutch Coffee Company 7). Next to this, more integration of the tool as financial management tool for **farm management** would make coffee producers see the farm more as a company, as they often mix expenses of the farm with other expenses (Appendix A – FCC Colombian Coffee Producer 1; USUK NGO 1). Competitiveness and costs of imports of inputs, are also not included, whilst these are getting more expensive (Appendix A – FCC Dutch GO). **The cost of fertilization** plays a role here as these are generally being imported and the price is depending on the exchange rate (Appendix A – Colombian NGO 2a). Farmers are still missing the notion of how much it would exactly cost and what for instance the expected benefit could be of certification (Appendix A – Colombian NGO 3). This resonates with the fact that coffee producers have lower education level and less of a knowledge on farm management (Biswas-Tortajada & Biswas, 2015), therefore this would be a valuable addition.

Whilst insights of the TCA tool help, the weakness is the time and efforts it takes to insert the data (Appendix A – FCC Dutch Coffee Company 5) and making up the balance of the data (Appendix A – FCC Dutch Coffee Company 6). Calculating a much higher true coffee price is not the solution if it cannot be sold, the problem is that the coffee price and cost price are not in balance (Appendix A – FCC Dutch Coffee Company 5).

Other topics mentioned which were not included is: gender, as women play a key role on the farm but do not have that type of reward (Appendix A – FCC Colombian NGO 1b), water pollution (Appendix A – FCC Dutch NGO 2b) and health and safety (Appendix A – FCC Dutch NGO 2a)



#### 5.3.4 Strengths

The strength of TCA that it brings **transparency** (Appendix A – Colombian NGO 3 & FCC Dutch Coffee Company 7) by making visible the hidden costs, which are underpaying for in human and natural resources (Appendix A – Colombian NGO 1). Through this, the coffee can be valued beyond the cost or sale of the coffee beans and pay better prices to coffee producers (Appendix A – Dutch NGO 1). This is an example of direct trade, where the middlemen are decreased (Bramucci & Mulholland, 2011). Through creating awareness (Appendix A – FCC Dutch Coffee Company 8), more insights and better trading position can be gained (Appendix A – FCC Dutch Coffee Company 9), because by having more information available, it is easier to see where the problems are (Appendix A – FCC Dutch GO).

Another strength is that TCA can be used for **leverage for investments**. As monetizes the aspect of production, that could help to understand why certain investments are beneficial to farmers and directly to them as well in the future (Appendix A – FCC Dutch NGO 2a). It could help create awareness for funding for improvement projects (Appendix A – FCC Dutch Coffee Company 10) by connecting different parties (Appendix A – FCC Dutch Coffee Company 8).

When measuring with TCA, you can compare, **establish a benchmark**, compare how programs are doing and learn from others (Appendix A – FCC Colombian NGO 1b). Comparing the situation on a national level could give more local context and back up projects to lower true costs (Appendix A – FCC Dutch Coffee Company 6). It would also allow coffee producers to share best practices (Appendix A – FCC Dutch Coffee Company 10).

For coffee producers, TCA tool can help them get more **insights in their production** costs which helps creating awareness on what they are doing and where they can improve (Appendix A – FCC Colombian Coffee Producer 1; FCC Dutch NGO 2a; FCC Dutch NGO 2b), as any training a coffee producers gets that is not too complicated can be helpful (Appendix A – FCC Dutch Coffee Company 2). TCA can give coffee producers insights on what they earn, what coffee production cost and what potential impact is if they make certain changes (Appendix A – FCC Dutch Coffee Company 1; FCC Dutch Coffee Company 3).

However, one respondent mentioned that it was too early to draw conclusions on how TCA could help (Appendix A – FCC Colombian NGO 1a). Another respondent noted that TCA only works when market players within the existing coffee value chain accept and start working with these impact scores (Appendix A – FCC Dutch NGO 2b).





### 5.3.5 Implications

It should be questioned whether a minimum income that all coffee growers would earn should exist because a coffee grower is in a different situation than its neighbour, the threshold would be different for every coffee grower (Appendix A – Colombian NGO 2a; FCC Dutch Coffee Company 3). A weakness therefore is the TCA tool cannot cover everything (Appendix A – FCC Dutch Coffee Company 8).

Coffee producers are not used to share information or knowledge between them, there could be resistance between them (Appendix A – FCC Colombian Coffee Producer 1). For coffee producers, the benchmark what you pay for a kilo of coffee in a Dutch supermarket does not make sense for a coffee producer, TCA requires a lot of explanation before it probably does something, coffee producers only know the stories of the FNC (Appendix A – FCC Dutch Coffee Company 1). TCA tool is currently applied to a niche market with specialty coffee varieties, when expanding to mainstream producers, there may be some difference that institutions like the FNC would not be able to see with good eyes (Appendix A – FCC Dutch GO).

Therefore, information needs to be handed carefully and not made publicly available (Appendix A – FCC Dutch GO). When the farmer has a specific outcome on the subject such as a high cost, that they scare away potential customers and want to get their coffee elsewhere (Appendix A – FCC Dutch NGO 2a). Moreover, when the TCA tool would be applied to different countries, it should not be used in a way to move away from a country where the true cost of a living income gap is relatively high, that coffee companies move to a country where the living income gap and costs of production is lower (Appendix A – FCC Dutch NGO 2a), leaving coffee producers in a vulnerable position when sharing information (Appendix A – FCC Dutch NGO 2b). If the TCA tool would indicate an existing living income gap, the question is if coffee companies are going to be motivated enough to work on it or search for another provider (Appendix A – FCC Dutch NGO 2b).

A company agreement was made between all the companies that work with TCA tool to agree that data can directly lead to the farmer should be anonymized and that they are responsible for signing specific agreements with farmers for data exchange (Appendix A – FCC Dutch NGO 2b).



### 5.3.6 Accessibility

Currently, the TCA tool is an Excel based tool which requires a laptop, which makes it hard to use (Appendix A – FCC Dutch Coffee Company 7) as it is very **technical consultancy content** (Appendix A – FCC Dutch Coffee Company 1). Coffee producers live in remote areas with hardly electricity and not every coffee producer owns a computer or is connected to the internet (Appendix A – Colombian NGO 2a; Appendix B – Colombian Coffee Cooperative 1). Therefore, it is questioned whether a digital version is the way to go (Appendix A – Colombian NGO 2a), as having to find someone in the village with a laptop and walking around with it is not the ideal scenario (Appendix A - FCC Dutch Coffee Company 1). Moreover, the access to internet has been increasing the last couple of ten years. However, it is not only a matter of having access, but also being able to use the application (Appendix A - Colombian NGO 3).

The reason that a large part of the coffee producers might not be able to use a digital application is, because a large part of the coffee growers is not educated (Appendix A - Colombian NGO 2a; Biswas-Tortajada & Biswas, 2015). Coffee producers often only had **primary education, making the language in the TCA tool not easy to understand** (Appendix B - Colombian Coffee Cooperative 4). Even though some coffee producers have good level of education, similar applications that were available for the cell phone for farm management were not user friendly and were difficult to understand. This is because in Colombia, there are huge differences in coffee farm type, and it is difficult to adapt to it (Appendix A – FCC Colombian Coffee Producer 1). Moreover, the younger generation of coffee producers, the 30 to 40-year olds, does know how the technology works (Appendix A - Colombian NGO 2a & FCC Colombian Coffee Producer 1). For the older generation a paper version would be better (Appendix A - Colombian NGO 2a).

**A smartphone application** where coffee producers would be able to see the results immediately as well suggestions of improvements (Appendix A - FCC Dutch Coffee Company 1; Appendix B – Colombian Coffee Cooperative 2). The Dutch NGO is currently investigating this possibility with a Colombian NGO to link the TCA tool to an existing Extension Solution smartphone application (Appendix A – FCC Dutch NGO 1a). Torres (2016) proposed the need for new technologies on smartphones in the coffee sector to build sustainable agricultural practices. The spread and training via coffee producers' cooperatives and the FNC would be very important in terms of publicizing (Appendix A - Colombian NGO 3). They both have an infrastructure and agronomist that would be able to go around the country to do visits with



registered members of the FNC (Appendix A – Colombian NGO 3). Regardless of the existence of an application, it would be best to still visit coffee producers and to fill in the tool together (Appendix B - Colombian Coffee Cooperative 1).

The TCA tool is a lot simpler when a coffee company engages in direct trade, as they have no intermediaries in between, no different parties for logistics, trade and transport, it becomes a bit more difficult without direct trade and when they each have their own political agenda (Appendix A – FCC Dutch Coffee Company 2).



## 6. Discussion

### 6.1 Interpretation of Results

#### *Colombian Coffee Production Challenges and Strategies*

The challenges identified were price, living income gap, labour scarcity, age, farm size, education level, climate change and water pollution. The strategy to combat these price challenges is a price premium, tackling the living income gap, through participation in direct trade. Direct trade would minimize the dependence on the price determined by the NYSE and ensures a long-term relationship contracts between the coffee producers and roasters. Technical assistance is needed for coffee producers as they must acquire their own export license and not get it from the FNC. If coffee producers want this at a larger scale, commercial volumes are needed and the question is then if direct trade can be sustained and there would not problems incur that coffee MNCs face, because they are said to be too big to have control injustices in their supply chain.

When looking at the actors involved already helping coffee producers, the need for MSIs is even more emphasized. Whilst each actor might have another function for strategies e.g. FNC providing extensionist services and MNCs funding million dollars centralized washing stations, collaboration is essential for tackling the challenges coffee producers face with production. There is a need for alignment of stakeholders, as a coffee producer attended three workshops by three organisations on the same topic in one week.

#### *Multi-stakeholder Initiatives*

Out of the four classification of MSIs, three were identified in the results. Firstly, coffee MSIs tend to provide principles of engagement and learning platforms, as sharing of best practices and the creation of synergies through impact projects. These MSIs were all led by NGOs. Secondly, coffee MSIs developed behavioural standards and standardized management processes through the alignment of actors and membership. Thirdly, the FCC developed reporting frameworks through auditing and compliance of results, through the creation of TCA tool. Lastly, none of the MSIs investigated issued criteria for labels or certifications.

The added value for coffee producers is the quality premium through encouragement of direct trade, technical assistance, sharing of best practices and access to funds. This would in return help them to have better farm management. Whilst MSIs are meant for coffee



producers and all three coffee MSIs mentioned the absence of coffee producers, they are still underrepresented in MSIs. They can gain access to MSIs through the coffee companies they supply coffee to or NGOs for resources such as knowledge and funding for impact projects. However, they are not active decision-makers in the process and thus do not have lot of agency on the matter. Whilst being part of the working groups and impact projects also allows coffee producers to share best practices and improve their coffee production, it remains odd that they do not have a seat on the table when MSIs aim to include all stakeholders in the coffee sector. Another underrepresented group is workers.

In terms of inclusiveness, it is important to consider which actors can be part of it and under which terms. It is important to consider how this decision is made. For instance, in the FCC, the Dutch NGO decides on new members, which lead to other members feeling less involved in the decision-making process. The participation is more meaningful when there overlapping stakeholder orientation, as members feel closer and want to collaboration with other like-minded actors. Whilst decision-making on members can slow down the process of the MSI, it ensures that there is greenwashing of being part of an MSI and encourages active participation. More actors which were absent missing were identified by the FCC, as the most diverse range and biggest number of respondents came from the FCC, for the STP and SAFE Platform only a few NGOs were interviewed. Moreover, the literature mentioned the absence of consumers in MSIs, whereas the FCC, STP and SAFE Platform only mentioned consumers a group were awareness should be raised to.

Lastly, it is important to consider that currently many of the working costs of running the MSIs are absorbed by either the Dutch government funding or the IDB Lab. A smaller part of the MSIs is financed through membership fees, and the SAFE Platform indicated that would not be enough to cover the working costs. Especially for the continuous of support of these initiatives for coffee producers it should be considered what the exit strategy is after the funding ends to continue the work that the MSI has started.

### *True Cost Accounting*

The TCA tool has several strengths. Through monetarization, there is more transparency on where the issues are in the coffee supply chain. This allows for a better trading position as leverage for structural investments for impact projects, as exactly can be shown on which problems to work on. However, the usability of the TCA tool is questioned.



As FCC Dutch Coffee Company 10 mentioned that it the TCA tool is easier to use when engaging in direct trade, and for bigger roasters, more intermediates in between it is harder to control, as each intermediary has their own political agenda.

There is need for the TCA tool to transform from an Excel tool in a smartphone application, as a new form of technology for sustainable agricultural practices. More coffee producers have a smartphone than a laptop, increasing the accessibility. The potential strength of a smartphone TCA tool would for coffee producers if it would also serve as a farm management tool. Currently it shows where the problems are, but not directly and it does not give any advice on where coffee producers could work on once the problems are identified. Therefore, once the smartphone TCA tool would be extra valuable once linked to a current Extension Solution application. Moreover, coffee farming needs to be made attractive again by offering a price that combats a living income in order to combat the migration of the younger rural population to the cities. This younger generation does use smartphones, and thus would more easily understand than the older generation how the technology works.

Before transforming the TCA Excel too into a smartphone application for coffee producers, it should be considered that the language of the current TCA tool is too consultancy like. Regional differences need to be considered as well, as Colombia has great variety coffee farm sizes. Also, coffee producers are wary in sharing information, when they do not know what would happen to that information. There is a need for agreements about the privacy of the data and that coffee companies would not move their business elsewhere once they see disappointing results.

None of the respondents mentioned that the current TCA tool is only available to FCC members, because of intellectual property rights. Thus, the TCA tool could only be used by coffee producer cooperatives when the Dutch coffee SMEs pays a membership fee to be part of the FCC. Whilst the FNC is mentioned in facilitating the roll out the tool, it should be considered whether the tool then would also available for the 500.00 coffee producers they represent, as the FNC is currently not part of the FCC. This brings into question who the TCA tool is for and who can use it and what terms.



## 6.2 Relation of the Results to Similar Studies

### *Colombian coffee production*

The creation of a niche market such as operating in the specialty market through direct trade came forward as the most important strategy to combat the living income gap of coffee producers. Hernandez-Aguilera et al. (2018) studied the relationship coffee model (RCM), where the role of coffee-quality premiums of the specialty market was highlighted as potential to improve farm management and promote agro-ecological practices amongst smallholders. Long-term partnerships between coffee buyers and smallholder coffee producers were central in this RCM model. The study found that the RCM model supported coffee producers in adapting sustainable production practices and provided them with knowledge on their farm management for informed decision-making.

### *Multi-stakeholder initiatives*

Soundararajan, Brown & Wicks (2019) investigated whether MSIs could improve global supply chains by focussing on the orientations of stakeholders towards each other and the reasons for stakeholders to participate and to continue participation over time. This study highlights that each stakeholder, thus also the lower power stakeholders, should be treated as a deserving seat at the table to be heard for meaningful dialogue and active participation. What makes being part of an MSI tempting is the shared value orientation amongst stakeholders and the symbolic significance of participation which is aligned with stakeholders their mission. This resonates with reasons to join for current FCC members.

### *True cost accounting*

Beeks & Lambert (2018) express the need for accounting for externality factors. When accounting for externalities, it can serve as an incentivising measure to separate the 'good' practices from the 'bad' practices. Thus, in relation to TCA, it allows for comparison between coffee producers, as well as coffee companies to show how best practices are done. This in return creases awareness amongst consumers in terms of behaviour and the study also calls for the role of the government in the creation of this awareness.



### 6.3 Alternative explanations for the results

It is important to consider that apart from the two coffee producers outside of the FCC, all respondents were part of MSIs and thus their opinion on MSIs would be likely more positive. The reason for participation is often because it is in line with the mission, there is a willingness to participate thus, it is less likely that stakeholders would be critical of MSIs. It would be interesting to see what reasons there would be for other stakeholders in the coffee sector to not be part of an MSI, what their opinion is on MSIs and reasoning for not joining. Next to this, also to see if their views on true cost accounting as well challenges in the Colombian coffee production for coffee producers.

Additionally, it should be considered that the coffee producers which were contacted and interviewed and filled in the survey had an email address and thus have Internet or would be able to speak English. Moreover, the fact that they, apart from two coffee producers who filled in the survey, coffee producer either have worked with an MSI or a direct relationship as coffee producers means that they are in a privileged position as a Colombian coffee producer. A great deal of the coffee producers is not receiving any support from actors such as the FNC, coffee companies or an MSI. Thus, the needs of a coffee producers as well as the challenges they face could be different per region, as well as considering how well off they are as a coffee producer.

### 6.4 Limitations of the research

Firstly, it should be considered that this research was explorative in nature, exploring the concepts of the challenges in the Colombian coffee production for coffee producers and the role of MSIs and TCA in this. There are more challenges in Colombia coffee production that this research has identified. Moreover, whether TCA and MSI contribute to the challenges in coffee production is something that needs to be investigated over time, this research is only focussed on how MSIs and TCA could potentially tackle challenges in coffee production.

It should be noted that the combination of researching the role of MSIs and the application of TCA in the coffee sector has not been researched before. As a result, the comparison of the results to similar studies was limited. This could limit the wider reliability of this research as no conclusions could be drawn from similar work in terms of the applications of the concepts as well as the execution of the research.





### *Sample size*

One of the limitations of the sample size of the research is the unequal representation of lower power stakeholders. The sample size was not balanced in terms Colombian stakeholders and Dutch stakeholders, as there were more Dutch respondents (14) and less Colombian respondents (9), especially less coffee producers than expected, limiting the generalizability. The idea was to compare the perspectives on coffee production, MSIs and TCA of Colombian coffee producers to various stakeholders, though with only having interviewed one Colombian coffee producer and two Colombian coffee producers taken the survey, they are underrepresented for an overall interpretation. There were difficulties in reaching farmers due to COVID19 and the harvest season.

Moreover, there were more FCC partners interviewed than from other MSIs, though this could be because of the willingness to cooperate with the research as through the internship was part of the FCC. Moreover, the sample of coffee companies in the research solely consisted of Dutch coffee SMEs part of the FCC and often involved in direct trade or specialty coffee, thus operating in a niche market and having stronger relations with their respective coffee producer cooperatives. If larger coffee companies contacted from other MSIs were interviewed, there would have been a more representative.

In terms of the GOs interviewed, only one from the Dutch government was interviewed and there was no respondent from the Colombian government. On the other hand, two respondents from a Dutch NGO were interviewed, opposed to four Colombian NGO respondents. Though other Dutch NGOs active in the Colombian coffee sector were contacted but unable to be participate in the interview.

### *Methodology*

When looking at the methodology of this research, it should be kept in mind that the interviews were conducted digitally due to COVID19 and interviews were conducted from the Netherlands. Researching a topic that is not in the country that is being researched poses several challenges such as time differences but also reaching actors for interviews. Those that were available for an interview had access to the internet. Also, the language barrier should be considered, as the researcher is not able to speak Spanish, it would only be possible to do an interview with a translator. Therefore, the value of doing field work should be considered



when conducting interviews. This would have also been a way to talk to more coffee producers.

The focus of this research was on qualitative data collection giving various stakeholders in the coffee sector a voice. This data relies on anecdotes rather than statistically significant research. The survey was used as qualitative data input instead of quantitative as the sample of the coffee producers (2) filling in the survey was too small to draw conclusions. Therefore, the choice of using a survey as method to acquire data could have been questioned. Moreover, filling in a survey would require a coffee producer to be able to read and write and as the interviews showed that often coffee producers do not have a high level of education, this made the research less inclusive for those receiving little support.

## 6.5 Suggestions for further research and recommendations

### *Further research*

In order to investigate the challenges coffee producers, face in Colombia it would be recommended to do field work in Colombia visiting various coffee growing regions, including different farm sizes, as well as those who are participating in MSIs or certification and those who are not receiving any support. This would also allow a voice who do not have Internet or are not able to read or write to give their opinion. As these MSIs and TCA are aimed at sustainable coffee production for coffee producers, there is a great value in given them voice in order to strengthen the potential lasting impact of these kind of initiatives also in terms of practical application.

When staying in the field of researching the role of MSIs in the coffee sector, it would be interesting to interview those coffee producers who worked with impact projects of the STP and SAFE Platform. Here it could be researched how MSIs can help coffee producers and how it adjusts to their needs. In terms of wider application of the role of MSIs for commodities, it can be researched also by comparing different MSIs such as cocoa or palm oil and how the work. Through this a comparison can be made of best practices. Next to this, the focus should also be on past MSIs where the funding ended and how they continue to exist in their organization structure but also the impact they bring to farmers in the long run. There can also be a focus on if they fulfilled the goals that it intended do and how the MSI can be improved for the future.



Currently, there is even less academic research on the application of TCA than MSIs. It is a relatively new concept that is increasingly applied in the agrifood sector. The experiences with the TCA tool that coffee producers, as well as those in other commodity sectors would face would be especially useful. Over the years, certain impact projects can be followed, which are funded for instance through MSIs, investigating in the field how an application like the TCA tool could lead to development for coffee producers. The form of a TCA tool as an application for a telephone or through texting would be able to provide continuous feedback to the developers of TCA as well as a sharing for best practices.

### *Recommendations*

A policy recommendation would be that since the MSIs are funded for instance by the Dutch government, a requirement for MSI funding would be to have a minimum number of lower power stakeholders, such as coffee producer cooperatives, as part of the MSIs as stakeholders in the country where the MSI is intended for. Additionally, when applying funding for an MSI impact project, a requirement could be that at least one producer cooperative is a stakeholder. This would ensure lower power stakeholders to have a seat at the table and would also result that the MSIs are more likely tackling their identified challenges.

For the wider use of true cost accounting for the agrifood sector, a policy recommendation would be that stakeholders using true cost accounting sign a memorandum of understanding (MOU). This MOU would protect the data of the producers by making it anonymous and include assurance that stakeholders would not leave their producers if results are disappointing and instead continue to work on improvements. Lastly, whilst the synergy through sharing of best practices MSIs is acknowledged, TCA could potentially as a smartphone tool provide the function of interaction between producers as well as be part of the continues development of such a digital sustainable agricultural practice by proving a feedback option within the application.



## 7. Conclusion

This chapter concludes all the findings of this research to answer the research question, *“To what extent can multi-stakeholder initiatives and true cost accounting contribute to sustainable coffee production?”*.

Firstly, the main challenges that Colombian coffee producers face include price, living income gap, labour scarcity, age, farm size, education level, climate change and water pollution. The biggest challenge that Colombian coffee producers face is decreasing price and fluctuations. Strategies to combat these challenges include the creation of a niche market for Colombian coffee which is based quality and creating long term relationship contracts between coffee producers and coffee buyers through direct trade, tackling the living income gap with the price premium. For this, technical assistance is need as well as education for coffee producers to understand their rights and farm management. This can be used to make coffee farming more attractive for the younger generations. The second biggest challenge is climate change, as coffee production takes place in tropical areas particularly vulnerable to extreme weather conditions influencing the development of the coffee bean. More research and development is needed for adaptation to climate change, on agronomy and diversification to tourism is suggested as a strategy. The actors for these strategies include the FNC with the extensionist service and the devising new plague resistant varieties, though it should be considered they are acting as a market player, whilst representing 500.000 coffee producers. Other actors mentioned included NGOs, the coffee SMES for providing an infrastructure, cash payments and extensive agronomist advice. The Colombian government is also mentioned as potentially playing a bigger role in this. Coffee producer cooperatives are also starting to invest in youth programs and exporting their coffee themselves. Also, MNCs can provide support by providing costly centralized washing stations. In the end, there is a need to align the interest of these actors and create more impact through collaboration.

Secondly, MSIs tend to fill regulatory gaps on social and environmental issues which national governments are unable to fulfil and the creation of these MSIs are on the rise in the coffee sector. All three MSIs in the coffee sector were led by NGOs and have members including other NGOs and coffee companies. Whilst MSIs initially, like the IDH, were focussed on VSS, these MSIs provide principles of engagement and learning platforms, develop behavioural standards and standardized management processes and only the FCC developed



reporting frameworks through auditing and compliance of results. The added value for coffee producers of these MSIs is a quality premium through encouragement of direct trade, technical assistance, sharing of best practices and access to funds. This would in return help them to have better farm management. Whilst MSIs are created for coffee producers, they are still underrepresented and not active decision-makers. Also, workers are a notably underrepresented group. Participation is considered more meaningful in MSIs when there is an overlapping stakeholder orientation, as members feel closer and want to collaborate with other like-minded actors. There is a need for a criterion on who can be a member and what it entails to be part of it. The working costs of running the MSIs are absorbed by governmental funding or the IDB Lab, whilst a smaller part of MSIs is financed by membership, which would not be able to cover these costs of MSIs, leaving their sustainability in the long term of these kind of initiatives in question.

Thirdly, true cost accounting entails according to most of the stakeholders, “a way to objectively assess the sustainability of production through incorporation of all costs and externalities associated by assigning them a monetary value”. Of the TCA tool, the living income indicator was found the most useful, as it affects coffee producers directly. Climate change, seen as the root cause of other issues due to producer vulnerability, came second with water use, as production of coffee takes a lot of water. Third was soil quality, which is an immediate effect on productivity but is not a production cost. Biodiversity came last, as it is not actual importance for coffee producers for making a living, unless having to meet organic requirements, though it has potential as an environmental externality. The benefits of TCA for coffee producers include that through monetarization, there is more transparency, which allows for a better trading position as leverage for structural investments for impact projects. However, the usability of the TCA tool is questioned, as it is easier to use for those included in direct trade and currently it is only available for coffee producer cooperatives part of the FCC. There is need for the TCA tool to transform from an Excel tool in a smartphone application, but the language of the tool should be adjusted, and regional differences should be considered. The smartphone application would serve as farm management tool and should include suggestions for improvements, whilst also considering the privacy of the data. Only then it would make it more attractive for the younger rural population to engage in coffee farming by using sustainable agricultural practices through technology.



Ultimately, the results indicate that the main challenges for coffee producers have to do with price and climate change. MSIs create of learning platforms, develop behavioural standards and standardized management processes. MSIs align stakeholders, which creates synergies as well as funding for impact projects for coffee producers. Though for effectively addressing the needs of coffee producers, coffee producers need to be more involved in the decision-making process, as the MSIs are created for their challenges. The results show that the TCA tool can serve as a reporting framework in an MSI through which auditing and compliance of results are ensured. Coffee producers can use the TCA tool as a smartphone farm management tool to leverage their position through transparency. Though when using the TCA tool, privacy should be considered when handling the data.



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## 9. Appendix

### Appendix A – Interviews and Survey

<b>Name</b>	<b>Date</b>	<b>Type</b>
Colombian Coffee Producer 1	02/07/2020	Survey
Colombian Coffee Producer 2	07/07/2020	Survey
Colombian NGO 1 – Director	30/06/2020	Interview
Colombian NGO 2a – Specialty Coffee Crafter	15/07/2020	Interview
Colombian NGO 2b – Sustainable Trade Specialist Commercial Management	22/07/2020	Interview
Colombian NGO 3 – Director	03/07/2020	Interview
Dutch NGO 1 – Director	04/07/2020	Interview
FCC Colombian Coffee Producer 1 – General Manager	08/07/2020	Interview
FCC Colombian NGO 1a – Director	30/06/2020	Interview
FCC Colombian NGO 1b – Coffee Program Manager	02/07/2020	Interview
FCC Dutch Coffee Company 1 – Owner	02/07/2020	Interview
FCC Dutch Coffee Company 2 – Director	06/07/2020	Interview
FCC Dutch Coffee Company 3 – Founder	08/07/2020	Interview
FCC Dutch Coffee Company 4 – Founder & Owner	01/07/2020	Survey
FCC Dutch Coffee Company 5 – Founder & Director	01/07/2020	Survey
FCC Dutch Coffee Company 6 – Operations & Quality Controller	02/07/2020	Survey
FCC Dutch Coffee Company 7 – Wholesale Educator	02/07/2020	Survey
FCC Dutch Coffee Company 8 – Marketeer	03/07/2020	Survey
FCC Dutch Coffee Company 9 – Roaster	06/07/2020	Survey
FCC Dutch Coffee Company 10 – General Manager	08/07/2020	Survey
FCC Dutch GO 1 – Agricultural Advisor	07/07/2020	Interview
FCC Dutch NGO 1a – Business Developer	29/06/2020	Interview
FCC Dutch NOG 2b – Project Officer International CSR	01/07/2020	Interview
US/UK NGO 1- Director Supply & Impact	16/07/2020	Interview

Figure 9 – Interviews and Survey Overview



## Appendix B – Feedback Cooperatives

*This feedback was collected by Stefan Roolvink during field visits in December 2019. This is an internal document of MVO Nederland.*

Point	Point of improvement (EN)
Colombian NGO	
3	The methodology proposes to analyze a set of variables that have two characteristics: a. Variables impossible to estimate by the coffee grower (Example: kilograms of green coffee produced per year / farm, soil erodability, water retention capacity for the soil, length of the slope, inclination factor, irrigation and irrigation efficiency, estimation of soil cover, etc.). In these aspects the methodology would return to the contingent valuation. b. Variables that are not part of the structure of Colombian coffee growing (Example: production systems such as rustic, traditional polyculture, commercial polyculture, shade monoculture). In Colombia, 60% of the cultivated area is open to sun exposure because the conditions of water balance and luminosity allow it. The production systems proposed in the tool do not represent Colombian coffee growing.
8	As for the coffee varieties grown for the methodology, all coffee varieties currently grown in Colombia are unknown.
9	In the scope it is mentioned that it has been designed for Colombian coffee, however in the energy consumption section reference is made to tillage equipment (plows, chisels, subsoilers); cotton, beet. Situation not consistent with Colombian coffee growing.
12	The tool uses terms that do not apply to processing methods in Colombia such as: refrigerators, pressure washers and grinders.
Colombian Coffee Cooperative 1	
1	For example, the nearest weather station in Sierra Nevada is the Hacienda la Victoria, and is not visible in the drop-down list.
2	Another issue is that it does not allow to insert more species of trees while there is a great diversity in the Sierra Nevada. It would be desirable to have a much broader base of species. Suggestion: a link to a list where these species are even illustrated.
3	With respect to transport, animal transport is not considered, while in Sierra Nevada this is a determining factor for coffee production.
4	As far as changes in land use are concerned, and specifically for the step from forest to grassland, primary or virgin forests must also be distinguished from secondary forests such as stubble.
5	Family work. Sometimes farmers hire external persons, or family works. It should be included. Sometimes the family in itself is enough to do all the labour. We will find out in what way this can be included.
6	Many farmers don't have access to internet and various of them don't have a smartphone. To what extent is an app useful? Regardless an app, Red Ecolsierra always suggests to visit the farmers to fill out the tool together.
7	The tool does not provide for the option of transformation of forest land to arable land, but WITHOUT major cutting of trees. Sometimes farmers barely cut primary/secondary forests, but rather start cultivating between the original species. How can this be reflected in the tool?
8	Extend the biodiversity-indicator with question related to: 1. More different systems of agroforestry. 2. The number and variety of native species 3. Existence of apiculture 4. Variety of species between the coffee plants 5. Number and variety of birds 6. Number of different water sources on the farm.
9	Add questions about: 1. Amount of water used for producing energy 2. Generated amount of energy through solar panels (some farmers have these)



10	Sometimes, it is impossible to fill out numbers in the 'soil quality'-fields, automatically percentages are generated instead of plain numbers.
Workshop Bogotá and network meeting of 26-11	
5(workshop)	Some categories, especially in Cool Farm Tool, do not cover in the menu the practices more common in coffee production. Users had to use the "Benchmark" option. So, it could be useful to check the options to increase the number of adaptation varieties in order to better reflect the coffee context
26-11 (FCC 1)	Er ontstaat soms een error met invullen, lastig terug te vinden waardoor.
26-11 (FCC2)	Het is erg belangrijk dat het op juiste manier invult, punt/komma bijvoorbeeld. Een fout leidt tot verkeerde uitkomsten.
26-11 (FCC2)	Is het mogelijk boeren na invullen direct een print-out o.i.d. te geven, zodat ze direct resultaat hebben van hun werk?
Colombian Coffee Cooperative 2	
2	Suggested extra indicators: water pollution and more in-depth questions regarding biodiversity (Andrés); Soil recuperation and pollution (Tatiana)
4	An application would be an added value.
5	Provide more detailed questions to get better insight in costs of production (Tatiana)
6	Would be an asset to have a dashboard to compare results (Tatiana)
7	Add specific question for names of co-workers on farm (family, female workers etc)
8	<p>Add question about the number of hectares and/or trees 'en renovación (regrow). Farmers always have trees that are not productive and that are regenerating. This determines a significant share of the cost of production, and might have an impact on carbon capture as well.</p> <p>There are various ways to regenerate, this has to do with the way of cutting the tree. 4 major methods: 'renovación' (herplanten), soca (tot 20cm korten), poda calabera (zijtakken sterk korten), poda pulmón (zijtakken gedeeltelijk korten).</p>
9	Suggested question: existing water reserves on the farm (and how many, which forms).
10	<p>Suggestion for questions for biodiversity:</p> <ol style="list-style-type: none"> <li>1. number of ha dedicated to forest/reservations on the finca, but apart from the coffee plots. With differentiation between primary and secondary forests.</li> <li>2. Variety of birds on the finca</li> <li>3. Variety of insects on the finca</li> </ol>
11	Suggestion: add fields to fill out the energy consumption per month + graphic. Reason: often, the energy invoices do not specify between household and industrial consumption. Since most of industrial consumption takes place during/after harvest, this will be visible in the graphic. in terms of costs of living and production, for farmers it would be useful to fill out their own costs.
12	More questions regarding the value of female work. In general, a gender-specific approach would be beneficial (Tatiana).
Colombian Coffee Cooperative 3	
1	Current tool does not provide the possibility to fill out several treatment methods at the same time (although often, farmers use several techniques on the same farm). Can this be added?
2	Some farmers only use mules or horses to transport their cargo. Can this be added? For example, this might lead to certain production costs (e.g. hiring animals)
3	<p>Energy consumption: especially electricity is hard to estimate, since invoices do not distinguish between machine use and domestic use.</p> <p>In order to get a better insight into energy consumption: is it possible to include a list of</p>



	machines are used at the farms + question about the amount of hours that machines are in use on average?
4	Would for large farms different questions be relevant compared to small farms?
5	Is it possible to add specific questions for the use of waste streams, e.g. cisco, pulpa and wastewater? This can have effect on true cost-score, but also captures an important element for lower production costs. E.g. cicso is burned in drying machines and pulpa and wastewater are used for fertilizer.
6	On the results tab, the carbonfootprint and soil erosion scores are difficult to interpret, what do they mean? Is it possible to add an explanation and/or comparison with benchmark scores?
7	It is not completely clear which option in the list of possible fertilizers relates to organic fertilizer. Can this be indicated more explicitly?
Colombian Coffee Cooperative 4	
1	Educational level of regular farmer is not very high. Common farmer has primary school education. Only few have high school level and almost nobody has university level. Therefore, the language in the tool is not easy to understand for most of the farmers.
2	Names for species, techniques and tools might be different in different regions. For instance: names of trees differs per region.
3	It is difficult to distinguish between work-related consumption and domestic consumption of water/energy/gas etc. Juan Pablo is able to, but most of the farmers within cooperative can't.
4	Production costs also include the costs of farmer's own labour; how much time do they need for the drying process, washing etc? Farmer's labour cost is mostly about time. E.g. more work would need a higher price.

Figure 10 – Feedback provided by the coffee producer cooperatives



### Appendix C – Interview Guide

General	
<b>Introduction</b>	My name is Ying Visser. I am a student at Utrecht University, located in the Netherlands. I study Sustainable Development with the International Development track and Sustainable Entrepreneurship and Innovation annotation. I am conducting research for master thesis.
<b>Purpose</b>	My master thesis is about challenges in the Colombian coffee production and the role of multi-stakeholder initiatives and true cost accounting in this.
<b>Anonymity and credibility</b>	The interview will be anonymous and the results will only be used for the master thesis.
<b>Stopping early</b>	If you wish to stop at any point, you can let me know and we can stop.
<b>Recordings</b>	The interview will be recorded, do I have your permission to record this interview?

Figure 11 – General questions for interviews

Futureproof Coffee Collective	
Topic	Sample questions
General	<ul style="list-style-type: none"> <li>• Could you shortly describe what your organization does in relation to the coffee sector?</li> <li>• What is our role in the organisation?</li> </ul>
Futureproof Coffee Collective	<ul style="list-style-type: none"> <li>• Why did you decide to join the FCC?</li> <li>• What is your role in the Futureproof Coffee Collective and what do you think of the FCC as a whole?</li> <li>• How can MSIs like the FCC be a driver for sustainable coffee production?</li> <li>• How do MSIs, like the FCC, benefit coffee producers?</li> <li>• Is FCC inclusive of actors, if not, which actors are missing and why?</li> <li>• How is the funding arranged, how would you like to see it continue once funding ends?</li> </ul>
Coffee production in Colombia	<ul style="list-style-type: none"> <li>• What are the main challenges in coffee production for Colombia farmers?</li> <li>• Have these problems in coffee production changed over time?</li> <li>• What strategies are implemented to overcome these coffee farming problems?</li> <li>• Do Colombian farmers get any help, if so from which actors and how are they helping in handling these problems?</li> </ul>
True Cost Accounting	<ul style="list-style-type: none"> <li>• What is your definition of true cost accounting?</li> <li>• Did you work with the TCA tool?</li> <li>• Could you indicate (1 is the most, 5 the least) which of the following topics would be most important for coffee producers to get an insight on their production costs? Please explain why one is more important than the last one.               <ul style="list-style-type: none"> <li>○ Soil quality</li> <li>○ Climate change</li> <li>○ Biodiversity</li> <li>○ Living income</li> <li>○ Water use</li> </ul> </li> <li>• Is there any other topic that is not included that would be essential for coffee producers to get more insights into their production costs?</li> <li>• What are potential implications of true cost accounting for coffee producers?</li> </ul>

Figure 12 – Questions for Futureproof Coffee Collective





<b>Sustainable Trade Platform</b>	
<b>Topic</b>	<b>Sample questions</b>
General	<ul style="list-style-type: none"> <li>• Could you shortly describe what your organization does in relation to the coffee?</li> <li>• What is our role in the organisation?</li> </ul>
Sustainable Trade Platform?	<ul style="list-style-type: none"> <li>• What is your role in the STP?</li> <li>• How can MSIs like the STP be a driver for sustainable coffee production?</li> <li>• How do MSIs, like the STP, benefit coffee producers?</li> <li>• Is the STP inclusive of actors, if not, which actors are missing and why?</li> <li>• How is the funding arranged, how would you like to see it continue once funding ends?</li> </ul>
Coffee production in Colombia	<ul style="list-style-type: none"> <li>• What are the main challenges in coffee production for Colombia farmers?</li> <li>• Have these problems in coffee production changed over time?</li> <li>• What strategies are implemented to overcome these coffee farming problems?</li> <li>• Do Colombian farmers get any help, if so from which actors and how are they helping in handling these problems?</li> </ul>
True Cost Accounting	<ul style="list-style-type: none"> <li>• Have you heard of true cost accounting for coffee? If so, where?</li> <li>• What is your definition of true cost accounting?</li> <li>• Did you work with the TCA tool?</li> <li>• Could you indicate (1 is the most, 5 the least) which of the following topics would be most important for coffee producers to get an insight on their production costs? Please explain why one is more important than the last one.               <ul style="list-style-type: none"> <li>○ Soil quality</li> <li>○ Climate change</li> <li>○ Biodiversity</li> <li>○ Living income</li> <li>○ Water use</li> </ul> </li> <li>• Is there any other topic that is not included that would be essential for coffee producers to get more insights into their production costs?</li> <li>• What are potential implications of true cost accounting for coffee producers?</li> </ul>

Figure 13 – Questions for Sustainable Trade Platform members

<b>SAFE Platform</b>	
<b>Topic</b>	<b>Sample questions</b>
General	<ul style="list-style-type: none"> <li>• Could you shortly describe what your organization does in relation to the coffee?</li> <li>• What is our role in the organisation?</li> </ul>
Sustainable Trade Platform	<ul style="list-style-type: none"> <li>• What is your role in the SAFE Platform?</li> <li>• How can MSIs like the SAFE Platform be a driver for sustainable coffee production?</li> <li>• How do MSIs, like the SAFE Platform, benefit coffee producers?</li> <li>• Is the SAFE Platform, inclusive of actors, if not, which actors are missing and why?</li> </ul>
Coffee production in Colombia	<ul style="list-style-type: none"> <li>• What are the main challenges in coffee production for Colombia farmers?</li> <li>• Have these problems in coffee production changed over time?</li> <li>• What strategies are implemented to overcome these coffee farming problems?</li> <li>• Do Colombian farmers get any help, if so from which actors and how are they helping in handling these problems?</li> <li>• How is the funding arranged, how would you like to see it continue once funding ends?</li> </ul>
True Cost Accounting	<ul style="list-style-type: none"> <li>• Have you heard of true cost accounting for coffee? If so, where?</li> <li>• What is your definition of true cost accounting?</li> <li>• Did you work with the TCA tool?</li> <li>• Could you indicate (1 is the most, 5 the least) which of the following topics would be most important for coffee producers to get an insight on their production costs? Please explain why one is more important than the last one.               <ul style="list-style-type: none"> <li>○ Soil quality</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>○ Climate change</li> <li>○ Biodiversity</li> <li>○ Living income</li> <li>○ Water use</li> <li>● Is there any other topic that is not included that would be essential for coffee producers to get more insights into their production costs?</li> <li>● What are potential implications of true cost accounting for coffee producers?</li> </ul>
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Figure 14 – Questions for SAFE Platform members

<b>Survey for Spanish Coffee Producers</b>	
<b>Topic</b>	<b>Sample questions</b>
Preguntas Generales	<ul style="list-style-type: none"> <li>● ¿Cómo te llamas?</li> <li>● ¿Podría dar usted una pequeña descripción de su finca cafetalera? ¿Que rol tiene usted y qué tipo de trabajo realiza en la finca cafetera?</li> <li>● ¿Está certificado, de ser así, con qué certificación? Si es así, ¿qué requisitos tiene esta certificación? y ¿cómo le ayuda esta certificación con sus prácticas agrícolas?</li> <li>● ¿Es usted parte de una cooperativa u otra forma de colaboración entre productores de café? Si es así, ¿cómo funciona? ¿Cuántos miembros y cuál es su rol?</li> <li>● ¿Cómo describiría su relación con su compañía de café holandesa o con la compañía a la que usted está suministrando el café?</li> </ul>
La producción de café en Colombia	<ul style="list-style-type: none"> <li>● ¿Cuáles son sus principales desafíos en la producción de café? ¿Podrían usted priorizar los desafíos desde los más importantes hasta los menos?</li> <li>● ¿Han cambiado los problemas que a enfrentado en la producción de café con el tiempo?</li> <li>● ¿Qué estrategias está usted implementando para superar estos problemas del cultivo de café?</li> <li>● ¿Recibe ayuda y si esto es así, de quién y cómo están ayudándolo a manejar estos problemas? Que hasta ahora ha enfrentado durante la producción de café?</li> <li>● ¿Qué opina usted de las iniciativas de múltiples interesados en el sector cafetero para la producción del café sostenible? ¿Cómo puede ser esto una ventaja / desventaja para usted como productor de café? (por ejemplo, Plataforma Comercio Sostenible)</li> </ul>
Contabilidad de costos reales	<ul style="list-style-type: none"> <li>● ¿Como defina usted la verdadera contabilidad de costos? (por ejemplo, precio real del café)</li> <li>● ¿Podría indicar cuál de los siguientes temas es el más importante para su granja? (Ordenar del 1 al 5, 1 el más importante, 5 el menos importante) <ul style="list-style-type: none"> <li>○ Calidad del suelo</li> <li>○ Cambio climático</li> <li>○ Biodiversidad</li> <li>○ Ingresos mínimos</li> <li>○ Consumo de agua</li> </ul> </li> <li>● ¿Podría explicar el porqué de este orden? P.ej. ¿Porqué es un aspecto más importante que el otro?</li> <li>● ¿Hay algún otro tema que lo ayude a obtener más información sobre sus costos de producción?</li> <li>● ¿Trabaja con Herramienta de contabilidad de costos reales o de futureproof coffee?</li> <li>● ¿Podría la Herramienta de contabilidad de costos reales de future proof coffee contribuir a los desafíos que mencionó anteriormente en la producción? De ser así, cómo o cómo no?</li> </ul>

Figure 15 – Questions for coffee producers



### Appendix D – Nvivo Nodes

Name	Description	Files	References
Colombian Coffee Production		0	0
Challenges		23	24
Access		6	6
Age		6	7
Cash crops		3	3
Climate change		6	6
Droughts		1	1
Landslides		1	1
Pests		2	2
Weather		1	1
Conflict		2	2
Education		2	2
Farm size		1	1
FNC		2	2
Competitiveness		3	3
Labour		7	8
Mechanization		1	1
Price		14	15
Living income		3	3
Quality		1	1
Water		2	2
Strategies		19	19
Actors		0	0
Coffee SMEs		3	3
Colombian government		1	1
Cooperative		3	3
FNC		5	6
MNC		2	2
NGOs		4	4
Adaptiveness		2	2
Collaboration		1	1
Competitiveness		1	1
Diversification		1	1
Quality		5	7
Resilience		2	2



Name	Description	Files	References
Training		4	4
Transparency		1	1
Varieties		1	1
Washing stations		1	1
Time		22	22
Multi-stakeholder Initiatives		2	2
Futureproof Coffee Collective		0	0
Coffee producer		15	23
Decision to join		12	12
Decision-making		2	3
Funding		2	2
Inclusiveness		14	16
Role		8	8
SAFE Platform		0	0
Coffee producers		3	3
Driver		3	3
Funding		2	2
Inclusiveness		3	3
Role		2	2
Sustainable Trade Platform		0	0
Coffee producer		4	4
Driver		3	3
Funding		2	2
Inclusiveness		5	5
Role		4	4
True cost accounting		2	2
Access		5	6
Challenges		12	15
Definition		19	19
Indicators		22	25
Missing		17	19
Strength		20	24

Figure 16 – NVivo coding guides and nodes