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***A Colombian Coffee Cooperative's role for Rural
Development. A Case Study.***

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The MFS Scholarship Programme gives Swedish university students the opportunity to carry out fieldwork in low- and middle income countries, or more specifically in the countries included on the *DAC List of ODA Recipients*, in relation to their Bachelor's or Master's thesis.

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The Department of Human Geography at Lund University is one of the departments that administer MFS Programme funds.

Abstract

This thesis looks at the effects a coffee cooperative in the municipality of Salgar has on its member farmers, and its implication for rural development in the region. Coffee cooperatives have become important strategic institutions within the coffee sector in the country, instigated by the National Coffee Growers Federation. It is the only agricultural sector in the country where farmers can be guaranteed to sell their produce, no matter what. Using Actor-Network Theory, a web of actors connected to the cooperative and farmers are translated to understand their interrelations and purpose, and how they may ultimately affect the coffee growers. Findings suggest the cooperative is an essential institution to maintain the status quo in the region. Should it disappear, it would be detrimental to rural development and cause economic disarray in Salgar. The reason is mainly so because the regional economy is dominated by coffee up to 80%, and without the presence of a regulatory institution which can guarantee price floor (which fluctuates depending on international prices) other buyers would be able to exploit farmers' prices further. Additionally, while none of the approaches by the cooperative are silver bullets per se to get rid of poverty, nor any one of the particular value-adding processes, nor collaborative projects to increase farmers' asset bases and productivity levels. But it is a start, a stepping stone upon which farmers will be able to retain a higher share from the value chain than previously through more traditional channels and processes. This study is based on fieldwork carried out in Salgar, in the southwestern region of the department of Antioquia, in Colombia.

Keywords: Colombia, Salgar, Coffee, Cooperative, Farmers, Rural Development, Actor-network theory

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1. Introduction

1.1 Context, Originality and Relevance of the Study

Approximately one third of Colombia's population live in rural areas, encompassing more than 14 million inhabitants (Rodríguez, Juan 2011). According to the latest poverty headcount ratio on the rural poverty line conducted in Colombia in 2010, 50% of the rural population lived in poverty, compared to 37% of the urban poor (Trading Economics). It is clear that both rural and urban areas are heavily stricken by a high incidence of poverty. In the past 50 years these problems have been further exacerbated by prolonged armed conflict, which in itself originated due to land inequalities (Rodríguez, Juan 2011; The Economist). Land distribution in Colombia has ranged between 0.6-0.85 on the Gini coefficient¹, depending on measurements, which is very high in international standards, compared to e.g. Japan with more egalitarian land distribution with a Gini of 0.38 (Deininger and Lavadenz, 2004).

The idea of researching the case of a coffee cooperative in relation to rural development is based on the aforementioned information regarding that half of the Colombian rural population in 2010 lived in poverty, as well as the fact that 18%, almost one fifth of Colombia's rural households rely directly on coffee as a primary source of income (World Bank, 2003). Linking this to the fact that there are over 560 000 coffee growing households in the country, out of which more than 95% are smallholder farmers makes this an important rural activity to take into consideration due to its local and national economic and social implications (Sanz et al, 2012). Consequently, over 2.5 million people are directly dependent on incomes from the coffee sector, taking into consideration the national average on household composition is at 3.9 persons (Perea, n.d; Sanz et al, 2012). However, this does not account for the subsequent sectors along the value chain, which also must employ a substantial amount of people both within industry and service sector, although I have no figures for this. The relevance of the study is that while the results cannot be generalized, they could be expected to be found in similar contextual situations on a local level, which is plausible in Colombia and other countries with heavily dependent coffee growing regions.

Recent literature has focused either on the managerial features of successful cooperative organizations, or looking at the endogenous and exogenous factors that are essential for a productive and functional cooperative, such as land, capital (human, social and physical), and market access all of which facilitate collective action (Rodríguez, 2011). Other areas of emphasis in cooperative literature has been on issues and themes such as; social capital (Sporleder & Hong, 2013) national policies (Rodríguez, 2011), the issues of free-riders (Flygare, 2006), determinants of participation (Awokuse et al, 2012), processing for price enhancement (Wills, 1985) and economies of scale (Berdegue 2001).

There have been many previous studies on cooperatives, particularly through the use of case studies. While not unique, the focus of this research is set on some variables that have not been explored adequately in previous research I would

¹ The Gini coefficient is an index used to calculate equality, for example land or income equality. It ranges from 0 to 1, where 0 represents complete equality, and 1 complete inequality. Thus the higher the Gini coefficient, the higher the inequality.

argue. A sometimes neglected (albeit not wholesomely) part of the value chain of an agricultural producer, processing and marketing cooperative is the networks which it is built around. By using Actor-Network Theory (ANT), the aim is to present a new lens through which to view the cooperative phenomenon, as its success is not contingent solely upon its own capacities, but also dependent on a number of exogenous variables that intertwine invariably through many different actors, public and private. Hopefully this approach might contribute much-needed consideration to the complex network relationships between all stakeholders involved. This in turn, will be combined with a more common theme in the agricultural cooperative research, which looks at the impact the cooperative may have on rural development and the livelihoods of member farmers, and how it occurs. The theme surrounding the importance of networks struck me in the field during the data collection process. Consideration is given to both national and international actors, not only with those that are part of the production and supply chains, but beyond that, as there are other international actors cooperating with the cooperative in local development projects.

1.2 Aim, Scope and Limitations

1.2.1 Purpose of research

The purpose of this research is to investigate, by means of a case study, the impact that the Salgar Coffee Cooperative has had on rural development by looking at the cooperative's effect on the livelihoods of coffee farmer members in the municipality of Salgar.

1.2.2 Scope and limitation of research

Focus lies predominantly on the livelihoods of farmer members of the cooperative living within the municipality of Salgar to provide a more in-depth and focused study and analysis than would have been possible if it would have been expanded further. Primary interest is in the smallholder farmers, who comprise 95% of all coffee growers in the coffee sector in the country (World Bank, 2003). Therefore it is a relevant and interesting case to look at coffee growers and a specific coffee cooperative, because of the implications the research might have to similar regions that fulfil similar contextual criteria (though this research is not to be taken as representative in any way). Even so, interviews with medium and large farm-holder farmers have also been conducted to include other perspectives.

1.2.3 Research question

To what extent and by what means does the coffee cooperative in Salgar impact on rural development² in the municipality of Salgar?

By asking "to what extent" the cooperative impacts on rural development, the aim is to look at how and through what processes the cooperative may improve the livelihoods and quality of life of farmers. It is done by looking at factors on means of improving market access, modes of production, facilitating access to social services, and more. Investigating the type of aforementioned factors in the analysis it should be possible to discern a certain degree of impact on rural development.

² The working definition of "rural development" in this thesis can be seen in section 3.3

However, I also recognize limitations in assessing degrees of impact where statistically significant quantitative data is unavailable.

By asking “by what means” does the cooperative impact on rural development, the objective is to look at approaches taken by the cooperative to achieve the tangible and intangible benefits under analysis. In doing so, investigating if and how effects of synergy are achieved through the cooperative's actor-network with various institutions and organizations integral to the coffee sector within the context of the case study.

1.2.4 Units of observation and Analysis

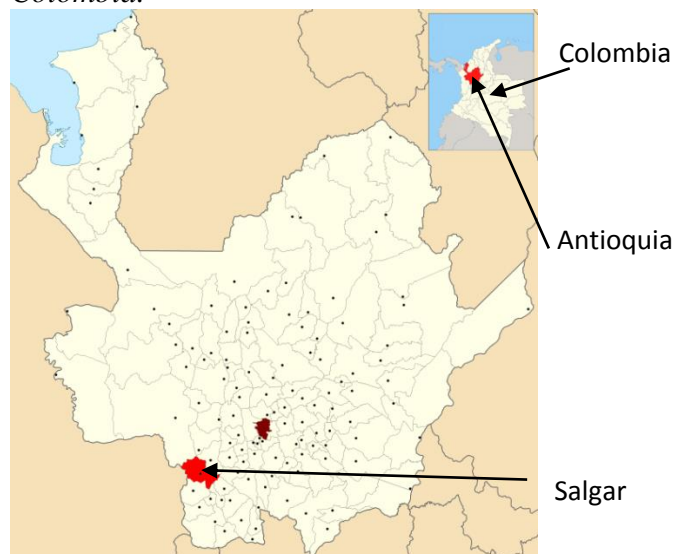
- The units of observation are the cooperative member farmers, and:
- The units of analysis are the cooperative and members on an aggregated level.

By looking at the units of analysis I hope to recognize and analyze the socioeconomic impact the cooperative and other actors have on coop-farmers.

1.3 Salgar & Cooperative Contextual Background

1.3.1 Geography & Topography

Map 1. Location of the Municipality of Salgar, Department of Antioquia, in Colombia.



Source: Wikimedia

- Area: 418 Km² (Salgar Municipality, 2012)
- It is a highly mountainous region located in the inter-Andean region. As a result, these topographical attributes with steep cultivation land restrict the type of crops that are appropriately grown, as well as inhibit adoption of certain forms of technologies, such as coffee harvesting machines (Salgar Municipality, 2012).
- Coffee is grown at altitudes between 1250 – 2000 meters above sea level (Interview A1.a).

- These altitudes, in relation to precipitation levels 2170 mm/year and temperature levels between 14, 5 – 24, 7 °C, are ideal conditions to grow high-quality coffee (Interview B1)

1.3.2 Demography

As can be seen below on table 1, the population in the municipality of Salgar is close to 18 000 people and predominantly rural: two-thirds living in rural areas, and one third in the urban area. There is an even gender balance in the municipality, with only 200 more men than women.

Table 1

Total population of Salgar, by gender and zone 2011		Gender		TOTAL
		Male	Female	
ZONE	Urban	3.032	3.416	6.448
	Rural	6.038	5.386	11.424
TOTAL		9.070	8.802	17.872

Source: Salgar Municipality, 2012

1.3.3 Economy

The economy in Salgar is dominated by agriculture. People in the region live with a culture heavily entrenched in agriculture, particular coffee cultivation which is the main economic engine in the region (Interview B1). There are around 10 000 hectares used for cattle, but it is not fundamental for the local economy. The reason for this is explained by a state official stating that it is largely owned by large landholders who sell their produce elsewhere, meaning the local economy barely gets any economic benefit from the cattle, only tax. It also contributes very little to local economy in terms of labor as 100 hectares would only require one or two laborers (Interview B1). At the time of visiting there have been initiatives at promoting farm diversification by the local government in crops such as: avocados, oranges, mandarin and lulo³. However, it is still too early to see it taking strength in the economy (Interview B1)

The same key informant says between 7 000 – 8 000 people live in the rural areas that are agricultural producers, directly deriving their income mainly or solely from agricultural income. Some smallholder farmers also tend to acquire wage-labor on the medium and large farms to complement their incomes if necessary. The informant also argues that everybody in Salgar are dependent on agriculture for their livelihoods, directly or indirectly. For example, when coffee prices are low, then everybody suffers: it impacts the transporters, the marketer, even local stores that have no part in the value chain of coffee (Interview B1). Though the informant does not have an exact figure, he/she estimates that around 80% of the economic activity is attributed by the coffee sector. Finally, the region has a very low ratio of

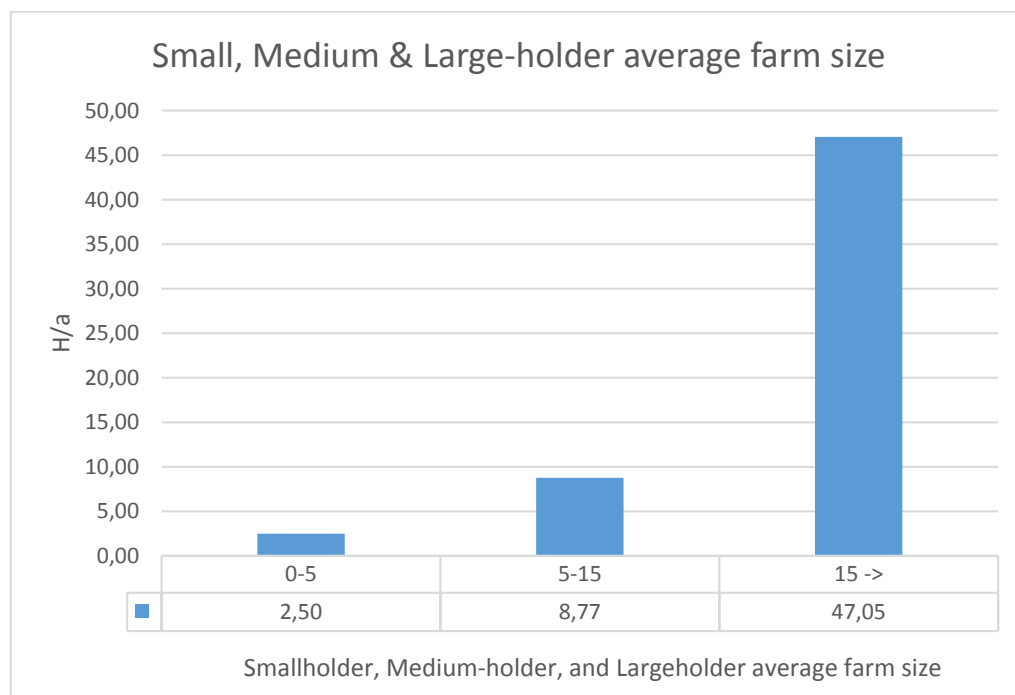
³ There is no English name for this fruit. The Latin name is: *Solanum quitoense*

businesses, between 1-1.3 per 1 000 inhabitants. Averaging a number of around 19 enterprises in Salgar.

1.3.4 Land Distribution

Graph 1 presents the small, medium & large-holder average farm size of coffee growers in Salgar that are members of the cooperative. It presents stark differences across each category: Graph 3 Shows the proportion of members in each category that belong in the cooperative, and their total proportional access to land. 15% of largeholder cooperative members own almost 65% of all land within the target group of 682 members and their aggregated land area. On the other side of the spectrum are the smallholders, who constitute 57,7% of total cooperative members but only have access to 13,2% of the land. The average farm size of smallholder co-op members is 2,5, hectares whereas for medium and largeholders the average is 8,77 and 47,05 respectively.

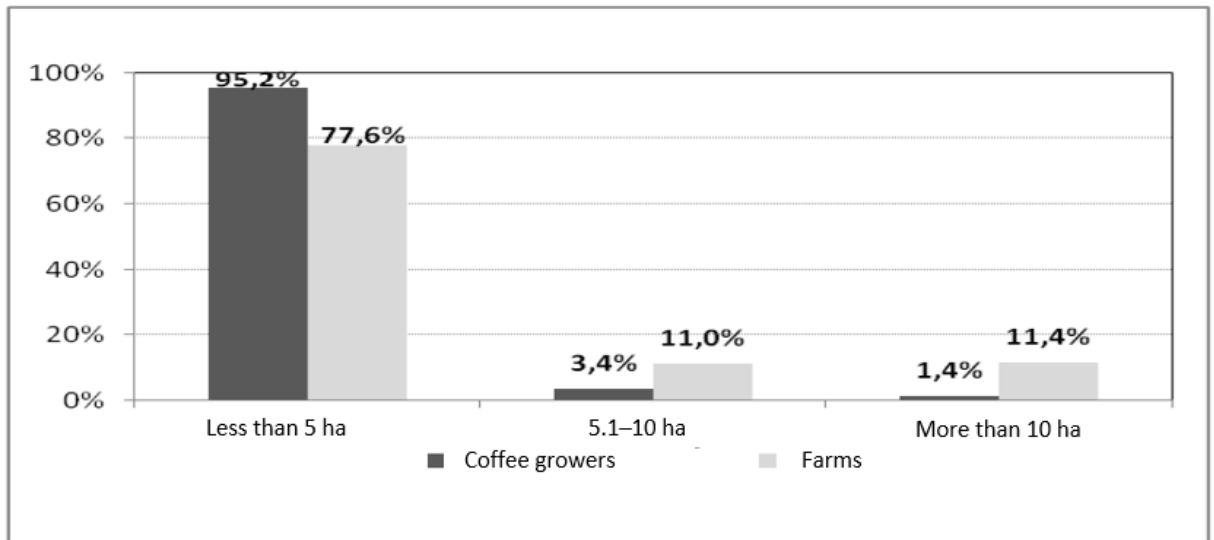
Graph 1 ⁴



Source: Elaborated by the author with data from the cooperative.

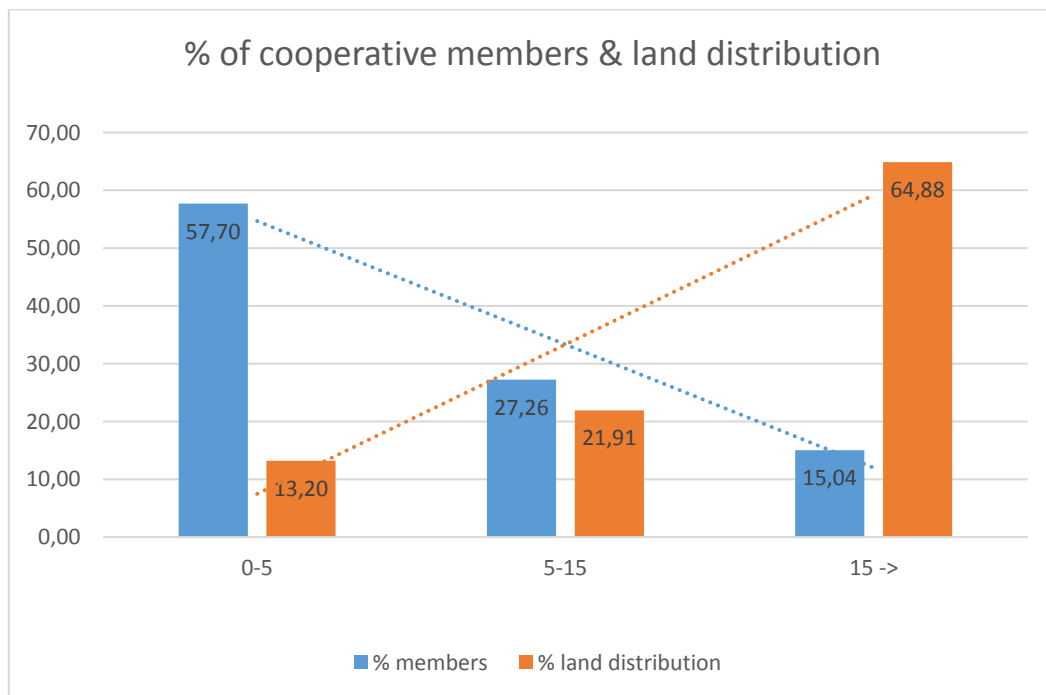
⁴ This graph shows the average farm size in each category only with data on cooperative members.

Graph 2⁵. % of Colombian coffee growers average farm size, 2009



Source: (Sanz et al, 2012: 28)

Graph 3



Source: Elaborated by the author with data from the cooperative.

The land access is a clear deviation from the national averages on coffee growing households and land distribution as seen on graph 2, which are more equitable than within the context of the Salgar coffee cooperative. It implicates an overall, highly inequal land distribution in Salgar.

⁵ This graph deviates from the working definition of medium and large farms in this thesis which are at 5-15 hectares and 15+, respectively.

1.3.5 The Salgar Coffee Cooperative

The Salgar Coffee Cooperative is a producer and marketing cooperative. The cooperative was founded 1965 by local Salgar coffee farmers as a small cooperative with the aim to commercialise their coffee and to integrate themselves more fully with the coffee institution, the FNC. Since then it has grown and expanded in size and functions, and now remains as one of the four coffee cooperatives in the department of Antioquia. One cooperative key informer says the cooperative is a not-for-profit enterprise. This is meant in the sense that the surplus earning from the cooperative after covering all operation costs is “redistributed” to all farmers by means of accumulating it in social service funds. The cooperative has two funds: an education fund, and a solidarity fund, they will be discussed more fully in the analysis (Interview A1.a)

The cooperative has 2754 members, out of which 2292 are active members. The Salgar Coffee Cooperative covers the southwestern region of the Antioquia department, responsible for seven other municipalities. This is the cooperative’s catchment area. However, the focus of this study is solely on the members living in the municipality of Salgar for the sake of the study’s feasibility. In Salgar there are a total of 682 members, out of which 598 are active as of 2013 (Management Report, 2013).

Finally, the cooperative has a democratic structure where the highest deciding organ is the general assembly of delegates. The delegates are chosen democratically as representatives in each municipality, one active member⁶, one vote. The cooperative has a total of 40 delegates, they are divided proportionally according to the number of active members between the municipalities that the cooperative covers. They are the ones who ultimately represent the remaining 2700 coffee growers, and decide what the cooperative should be doing (Interview A1.a).

2. Literature Review

This section includes brief reviews on main topics within the thesis, such as: past cooperativism experiences with success and failures and their involving factors, farm and non-farm diversification in relation to rural development, and Colombian coffee history. The latter is in order to understand the case study in a more holistic way, since it focuses on the Colombian coffee sector. A fairly extensive background is necessary to put issues into context as there are more things than just reciting numbers and figures, particularly with development aims in mind, looking at the past and present.

2.1. Past Cooperativism Experiences

Cooperative history is full of successful and failed cases around world. In a literature review on the success and failures of cooperativism in Africa, Holmén and Jirström (1999) discuss the circumstances surrounding mainly the failures of many cooperatives in various African countries. In many African countries

⁶ An active member is a member who is up to date in paying their member quota for each year. It is the value of 20kg of coffee set by the New York Stock Exchange the 31st of December of the preceding year.

cooperatives were used as an instrument to facilitate control and taxation of agriculture in the most favorable and easily accessible areas (Holmén and Jirström, 1999:119). Also, many of these cooperatives have been established and supervised from above, often with help from donors. Moreover, the majority of cooperative societies have been established in rural areas, and most of them handle input supply and agricultural marketing.

Holmén and Jirström (1999:123) argue - taking from the cooperative literature in Africa - that difficulties often associated with cooperative groups include the following:

- Undercapitalization
- Low credit-worthiness
- Lack of management skills
- Lack of contacts
- Relative unfamiliarity with doing business on a competitive market

Continuing, Holmén and Jirström argue for caution, the case is not being made by authors in the cooperative literature that all external support to cooperatives and other similar member organizations should end, but rather that it should be done with greater care taken into consideration in how it will impact the recipient, giving external aid without doing any harm or creating dependency relations, but it should rather be liberating and creating more opportunities (Holmén and Jirström, 1999:125).

Berdegue's (2001:7-8) findings in his thesis on cooperatives in Chile include that participation in cooperatives is largely dependent on the market and policy incentives in place, rather than the assets at their disposal as the decisive factor. It also appears that the poorer strata of peasant households tend not to participate in cooperatives. When looking at how market incentives are linked to farmers' participation it tends to be because the cooperative extends market access to farmers. According to Berdegue (2001:8), participation in agricultural cooperatives appear to be higher among farmers where there are markets that have high transaction costs, therefore participation tends to be more likely among producers of non-perishable goods.

2.2 Rural Development and Diversification

There is an increasing amount of literature tying into rural development that emphasizes the necessity to diversify in rural livelihoods. This type of diversification tends to come in two forms: 1) farm diversification, and 2) rural non-farm economy activities (RNFE). The argument for rural income diversification includes risk-management strategies by not depending on solely one source of income, e.g. monoculture in a cash crop with unstable world market prices. It is also argued that to create a more dynamic rural economy you need to increase the amount of economic activities available. Examples of such activities are transport, processing and value-adding activities, which in some cases may cut away the middle man, meaning farmers and other rural workers can get a higher rate of return (Haggblade, 2007:126).

Diversification into rural nonfarm employment is much more common than commonly believed. In Africa rural nonfarm income represents about 35 % of the rural household income. (Haggblade, 2007:117). In Kenya it has been shown that 90% of households are involved in both farming and rural nonfarm activities. (Haggblade, 2007:118).

In case of RNFE and income diversification in Colombia, Deininger and Olinto (2001) have found that off-farm employment contributes with a significant share to rural household incomes, averaging at 45%. However, in the case of Salgar it appears to be occurring a low degree of diversification due to the monoculture of coffee, as indicated by observation and interviews.

2.3 Colombia Coffee History

Historically, coffee has been the single most important crop for the country to develop to the stage it is in today. In 1910 coffee accounted for half of Colombia's export revenue (World Bank, 2003). For decades coffee was the source for foreign income which aided the growth of other productive and industrial sectors. In the late 1920s coffee comprised 80% of Colombia's total export value. It was also a valuable source of foreign income, as well as providing an abundance of jobs as it is labor intensive, thus having an important role in both the economic and social arena (World Bank, 2003). While it does no longer maintain the same importance in the national economy in terms of exports, it still remains one of the most important cultivated cash crops in the country, primarily because of the social implication it has by creating work opportunities on farms for the rural populations (World Bank, 2003).

While the case study is focused on the coffee cooperative, it is impossible to discuss only the cooperative and no other institution. There is a deeply embedded relationship between the coffee cooperatives in the country and the national coffee institution, known as the Coffee Growers National Federation (hereafter FNC).

2.3.1 The Colombian Coffee Growers Federation

The FNC (Federacion Nacional de Cafeteros)⁷ is a strongly consolidated coffee institution created in 1927 as an NGO to represent the interest of Colombia's coffee growers. Much has changed since 1927. The FNC was a force behind the wave of creation and promotion of coffee cooperatives as a strategic choice due to lacking resources in the 1950s and 1960s, thus reducing their operating cost by delegating certain roles they had previously held onto the cooperatives (Interview C1).

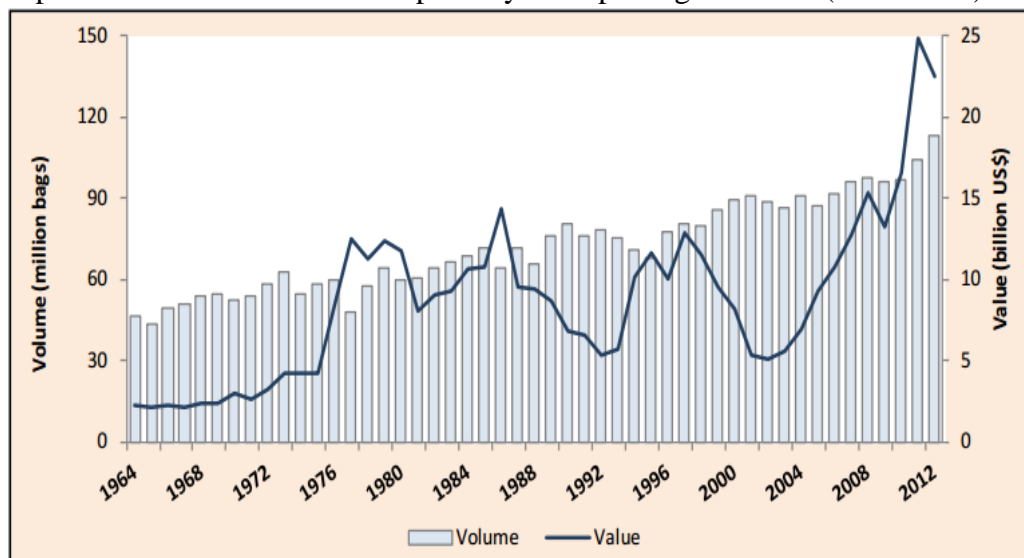
The promotion for coffee cooperatives and their initial economic assistance by the FNC was a strategic approach to delegate and reduce operation costs of the FNC (Interview C1). The coffee cooperatives started out as an "extension" to the FNC, primarily because the FNC wanted the cooperative to take over the role of the "coffee purchase points" where farmers can always be guaranteed to sell their coffee (World Bank, 2003). However, today most of the coffee cooperatives are autonomous and have grown away from the influence of the FNC, and have instead developed a close alliance with them. In Colombia there are around 40 coffee cooperatives, whom collectively own 500 purchasing points dispersed throughout the departments and municipalities (World Bank, 2003).

⁷ National Coffee Growers Federation

2.3.2 Dissolution of the International Coffee Agreement 1989

Prior to the termination of the International Coffee Agreement in 1989, Colombian coffee growers were fairly well off compared to today as they enjoyed the safety of the coffee pact made between the world's largest coffee producer and consumer countries. Good coffee prices were generally offered to Colombian coffee farmers by the FNC coffee institution (Colombian Federation of Coffee Growers). Prices in the years between 1977 and 1988 were particularly good in the world market, something which Colombian as well as other nations' coffee growers benefitted from, as seen below on graph 4. It also shows the steepest price fluctuations happen after 1989. In 1989, coffee accounted for 20% of Colombia's total exports. In 2003, the coffee industry accounted for 2% of the country's GDP and 22% of agricultural GDP, generating more than 500.000 farm jobs which corresponds to 36% of agricultural employment, plus additional jobs in the coffee industry through the value chain. In addition, coffee accounted for 8 % of the total value of exports from the country. (Fonseca, 2003). As such, the coffee sector plays a significant role in the development of regions that depend largely on the production of coffee, particularly in the inter-Andean regions (Fonseca, 2003). However, the break of the International Coffee Agreement in 1989 lead to a coffee crisis in Colombia, as the world price for the Arabica mild coffee (of which Colombia is the largest producer) dropped from \$2.50/lb to just \$0.50/lb, between the years 1989 to 1993, respectively (Fonseca, 2003).

Graph 4: Volume and value of exports by all exporting countries (1964-2012)



Source: International Coffee Organization, 2014

As a result, from such a radical drop in coffee incomes for Colombian coffee growers, the FNC reacted by cutting coffee taxes, and used its accumulated reserves to subsidize farmers for their losses. Seeing as this is clearly not fiscally responsible by the FNC, this led to the imminent depletion of all the reserves the FNC had accumulated. To continue the subsidization to farmers, the FNC sold off their interests from the Coffee Bank, and took loans from the central bank, eventually incurring a debt of over \$433 million by 2001. Consequently this led to the demise of the last internal price stabilizer. Thus by 2001, Colombian coffee growers were

completely vulnerable to the volatile coffee market since the liberalization in 1989, with only marginal subsidies from FNC via government. In particular, since 2001 the income from international coffee prices have fluctuated below and above the income levels of sustentation (basic necessities) of Colombian smallholders (Bair and Hough, 2012; World Bank, 2003).

Following the undermining of the price stabilization mechanism previously instituted by the FNC, its ability to maintain the guaranteed purchase policies was undermined. This gave way to increased competition from transnational businesses, whose share of Colombian national coffee purchases rocketed from 8% in 1989 to over 50% by early 2000s. According to Bair and Hough (2012), the FNCs revenues dropped by 80% in the 1990s. Subsequently, primarily due to increasing oil prices, with raising transportation costs, productions costs increased for farmers at the same time as coffee prices declines. Hitting farmers hard both upstream and downstream the value chain. As a result of heavy revenue losses, the FNC had to liquidate their Coffee Bank assets. Thus coffee growers had to resort to other financial institutions with high rates of interest, which ended up exacerbating the debts of farmers in the long-run (Bair and Hough, 2012).

2.3.3 Internal Conflict and Violence - Ties to the Coffee Sector

The Coffee sector and its crises can also be linked to being caught up in the national conflict of violence between leftist guerrillas, drug mafias, and right-wing paramilitary groups (Bair and Hough (2012)). There have been regions where smallholder farmers either moved away to start growing coca, or started replacing coffee trees with coca plantation, as they had been forced to find a new livelihood due to the difficulty of sustaining a livelihood strategy through coffee cultivation. Like moths are drawn to light, so have the aforementioned violent groups been to areas of coca plantation as it has been well coveted for its economic benefits. Bair and Hough (2012) have looked at how the decline of smallholder coffee production in Viejo Caldas, a region in Colombia, have led to undermining social stability, as well as triggering political violence and organized crime.

However, while the aforementioned violence and malicious presence has occurred in many rural regions in the country, Salgar appears to have been rather unscathed in the recent decade according to a number of informal discussions with farmers and key interviewees. Although it does have its fair share of historical violence going farther back in time. For that reason, the guerrilla and internal Colombian conflicts will not be covered further in this thesis.

2.4 Government stance on cooperatives

The Colombian governments have had different stances on cooperativism in the country. In the 1960s and 1970s cooperativism was heavily promoted with a top-down approach with state-interventions on farmer enterprises. In the 1990s and 2000s the “hands-off” approach was an indifferent stance from the governments’ side. The promotion and intervention attempts in the 1960s and 1970s has the opposite of the desired effect: due to aid-dependent farmer associations and cooperatives, as soon as aid was detached from government or other external agents, many failed to remain autonomous/sustainable in the market (Rodriguez, 2011). In terms of government legislation, the cooperative Law 79 from 1988 include policies following the International Cooperative Alliance principles stated

in chapter 3, fulfilling requirements for enabling conducive and sustainable environments for cooperatives (Rodriguez and Uribe 2006; Interview B1).

3. Conceptual and Theoretical Framework

In this following section conceptual and theoretical frameworks used in the study will be discussed. A discussion will be given to explain the rationale for the choice of the main conceptual approaches, relating them to the relevance of the research objective. Relevance, limitations, understanding and criticisms of the approach will be discussed. In addition, definitions will be set regarding the concepts of rural development and farm-sizes.

Primarily Actor-Network Theory (hereafter ANT) and Cooperative Theory will be used to guide the analysis of the empirical findings. Furthermore, concepts pertaining to other theoretical frameworks considered relevant will be applied for a more complete analysis of the study in areas where the aforementioned concepts are lacking. A fraction of components will be taken from Bebbington's (1999) "capitals and capabilities" framework which is used to analyze rural livelihoods and poverty. The latter conceptual framework, while limited in its use in this thesis, will be used only as a tool to look at the impact that is had on rural development by means of resource access, improvement in modes of production, and factors for social services offered (Bebbington, 1999).

3.1 Actor-Network Theory

First of all, ANT is a conceptual framework which is "notoriously difficult to summarize, define or explain" according to Cressman (2009), who argues the reason for this relates to how ANT attacks concepts and categories that have been a part of Western thinking for centuries. Through relationality it tries to erase dualisms and make them undone. Examples of such dualisms dealt with are truth and falsehood, materiality and sociality, agency and structure, human and non-human (Cressman, 2009; Law, 2008). Thus, ANT is a very complicated conceptual approach to explain in layman's terms. It is difficult discussing it without its particular vocabulary that may be difficult to understand for readers not familiar with this conceptual framework. However, an attempt will be made to simplify it, though it will not be possible by excluding key concepts within the theory/approach.

ANT has its origins in the sociology of science and technology, and has since its beginnings spread into a conceptual approach used in academic areas like economics, anthropology, philosophy and geography. The approach in the latter is of particular focus in this thesis. ANT is associated predominantly with three particular writers: Michel Callon, John Law and Bruno Latour (Cressman, 2009).

It is important to recognize that the actor-network approach is not an actual theory. A typical theory tries to explain why something happens. ANT, rather than being foundational in explanatory terms, is descriptive. It is used to discuss the "how" in

the way that relations form themselves, and how they work together. ANT analysis is therefore both of a descriptive and narrative nature (Law, 2008).

ANT is grounded in empirical case studies. In order to understand this approach it is necessary to have case studies to understand how the theory works in practice (Law, 2008). Why is this? Because theories are embedded and get extended in empirical practice, and practice itself requires the theoretical. I find there to be a symbiotic relationship between the theory and the empirical. You need the empirical to observe and to analyze it. But to analyze it within the relational context of the research purpose you need to form some theory to guide the way you understand the empirical case. Considering again the research objective of the study, and the fact that I employed a case study methodology, this conceptual approach feels appropriate to use with the object goals in mind. In terms of originality, in the literature review I have not encountered any studies made on cooperatives using the analytical framework of ANT.

What follows is a discussion on key concepts within ANT, which must be discussed if the ANT approach is to be used. They are: material semiotics, actor heterogeneity, and translation.

3.1.1 Material semiotics

Material semiotics is an inherent part of the ANT approach, and can be better understood as a tool in describing and analyzing the relations under investigation. It is used to make sense of the messy practices involving materiality and relationality of the world (Law, 2008).

Semiotic relationality is a network with elements that shape and define each other (Law, 2008). A key aspect in ANT is the process and precariousness of how the involved elements have to play their role continuously, or else the web becomes unstuck.

ANT is heavily influenced by material semiotics (Law, 2008). Conversely, if one holds on to the ANT approach which considers the world to be relational, then by extension so too are texts. To provide an example: This text comes from somewhere, not everywhere nor nowhere. This implies the relationality that exists between the read literature, the empirical case and personal experiences, which all converge and conform to describe this thesis. Consequently, following the same logic, the relationality from the position of the examiners to the finished product (thesis) by this student may present stark relational contrasts in the perception of the text. This follows the post-structuralist idea that the author's intended meaning is secondary to the meaning that the reader perceives. Examiners will analyze and grade this paper based on their relation to grading criteria as well as in relation to their own class, racial and sexual identity, and personal academic experience from which they derive their analytical capacity.

3.1.2 Actor Heterogeneity & the General Principle of Symmetry

Heterogeneity in ANT context refers to the different kinds of actors involved, human and non-human. Distinguishing from other sociotechnical approaches, ANT asks use to consider both human and non-human actors, or elements, as equal actors within a network. This implies that the same descriptive and analytical framework

should be employed whether it deals with a text, machine, human or anything else (Cressman, 2009).

ANT employs the general principle of symmetry. This principle states that researchers should avoid having any pre-attained notion or presupposition about the actors involved. The categories (different actors) ought to be treated as symmetrical effects of relational practice (Johannesson & Bærenholdt, 2009). By shifting away focus from a priori categories ANT makes it possible to bypass the dualism between nature and society, by instead looking at emergent associations between the two. The possibility to bypass the dichotomy of science and nature is one of the causes for the import of ANT to human geography (Johannesson & Bærenholdt, 2009).

3.1.3 Translation

What is the process of translation in actor network theory? Writers of ANT describe what translation is and its process differently, which makes it an elusive concept to understand. I have opted to go with the explanations given by Law (2008), and Johannesson & Bærenholdt, (2009) as it presents the best clarity in the concept. Translation is a concept that highlights how actors must continuously work in relations for the assemblage of an order to live by. In this sense, translation is the process of making connections and establishing communication between actants (human and non-human actors) (Johannesson & Bærenholdt, 2009). Translation rearranges relations in a web that reshapes components in the web that in some way is a part of the case study (Law, 2008). In short, translation means making the connection between human and non-human actors involved in the case study, then to describe them in their respective and relational roles to each other.

3.1.4 Human and Non-Human Actors & ANT in Geography

What is the human and non-human in ANT? The non-human actors tend to be the material practices which enable the social: roads, cars, information communication technology. They might also be institutions, thus non-human actors need not be purely material. This is an emphasis given in ANT which is not considered important by many sociologists and other scholars who move directly to the non-material version of the social (Law, 2008). Fortunately human geography is more sensible to the material practices that generate the social. I argue this because human geography considers the social in relation to the spatial and temporal, and their interaction which include the - from ANT approach perspective - non-human actors seen in ANT as pivotal components in individuals' engagement in the social.

ANT also deals with rigid and fluid technologies as unmalleable and malleable, respectively. Fluid technology is malleable, it means a flexibility in which the local recipient actors may replace a part if an original part of the machine fails. The successful use is therefore not contingent upon the actors having to travel sometimes long distances in order to obtain a particular spare part. This follows ANT consideration to processes and their precariousness in the sense that if not all elements play their part, the network falls apart. Rigid technology on the other hand may be less potent to keep alive networks in the long-term, particularly so if it deals with technology given to farmers in rural areas, far away from big cities that can provide the necessary parts or know-how to repair the rigid technology (such as electronics) (Law, 2008).

Moreover, one of the scholars arguing for the uses of ANT within human geography, Murdoch (1998), sees ANT as linking the relational view of space to a relational view of time. Murdoch (1998) attempts to create a bridge between ANT and mainstream geographical thinking, partly as a way of recognizing both disciplines as relationalist, but also by emphasizing ANT and its uses in spatial analysis, particularly in relation to networks and actors.

3.1.5 ANT Criticisms

Criticisms of ANT are plentiful. On the ANT insistence that non-humans have the capacity to be actors or participants in networks, Langdon Winner (1993) argues that to be able to an active participant in a network or system it requires intentionality. Of course, material non-living things will not be having intentionality. However, this critique might not be justified considering that in none of the ANT literature I have encountered have they ever attributed intentionality to non-human actors. Essentially this is a scholar making a criticism towards something that the proponents are not claiming, making it a non-issue. Other types of critique include charges of ANT being amoral, not taking moral and political positions, or that it is a wholly descriptive perspective from which no explanations can be extracted. On this there have been various debates (Amsterdamska, 1990; Shapiro, 1997).

3.1.6 How ANT will be used

Cressman (2009) contends that ANT can be a useful tool in revealing and describing the complexities of our sociotechnical world. This approach helps seeing how different actors interact, how feedbacks occur. Finally also how they in conjunction, as separate components in one large web or system, finally impact on the livelihoods and quality of life of coffee growers in the municipality of Salgar

Furthermore, ANT treats scale as problematic, in which it does not recognize the micro-macro, or local and global. Instead the perspective is that there are only networks, varying in lengths, but still only networks that emerge through practices (Johannesson & Bærenholdt, 2009). What ANT does – and what I will do - is that it highlights the processes underlying proximate or far-reaching networks comprising economic and other activities. For me it offers a perspective to study the local and global actors involved, to get an insight on what might render the actor-network under investigation sustainable over time and long distances. It makes it possible to relate any actant at any scale back to the local, which in this case study is the Coffee Cooperative of Salgar. As such it is a useful analytical guiding tool to analyze and translate the relational roles of all actors involved whether it is public or private, material or immaterial, inside or outside the value chain.

3.2 Cooperative Theory, Definition & Principles

It would be difficult to not employ aspects of cooperative theory in a research with a case study centered on an agricultural cooperative. Cooperatives come in various shapes and forms, and to more easily understand and distinguish cooperatives between each other both in research papers and in reality, defining the type of cooperative under scrutiny is imperative. Cooperatives have at their core seven fundamental cooperative principles that distinguishes them from other types of

traditional investor owned firms (IOFs). The seven cooperative principles developed by The International Cooperative Alliance (Mills and Davies, 2013) are as follows:

1. Voluntary and open membership
2. Democratic member control
3. Member economic participation
4. Autonomy and independence
5. Provision of education, training and education
6. Cooperation among cooperatives
7. Concern for the community.

Moreover, cooperatives are defined by ICA (Mills and Davies, 2013) as the following: “A co-operative is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise.”

Recurring themes in cooperative theory include cooperatives’ abilities to limit opportunism (e.g. free rider issue), raising capital, economies of scale, and facilitating flow of information, etc. (Harris et al, 1996).

Cooperatives also have different challenges when setting goals, compared to traditional IOFs. The theoretical work on this involves that a cooperative cannot only focus on increasing net margins, but also has a responsibility to offer members attractive prices, thus it requires a balancing of its goals. Looking at the maximization of the members' welfare cooperative theory assumes an equilibrium between various approaches, such as between maximizing net margin and providing the most favorable prices (Staatz, 1989). A multi-pronged approach seems to have the best possible outcomes. This can be related to factors of synergy, whether it comes from only internal processes in the cooperative, or through external processes with other actors relating to either synergy of embeddedness or complementarity (Evans, 1996).

3.3 Rural Development Definition

In a critical discussion on rural development it is necessary to acknowledge the fact that there is no comprehensive definition of rural development, with a set consensus due to the lack of empirically grounded theory on rural development (van der Ploeg, et al, 2000; Ashley & Maxwell, 2001). It is highly contingent and relative to the scholar or institution that uses the concept, and the way in which they want to use it most appropriately to their meet their goal. Development paradigms change continuously, evolving, removing and adding parts of other previous paradigms and relevant schools of science. There is literature that clearly covers the changing development paradigms throughout the decades in our post-WW II world, such as Stokke (2009). Although this does not by any means entail they are the only exclusive ways of thinking/approaching issues of development. Van der Ploeg et al (2000) argue that rural development is a notion which has emerged through "socio-political struggle and debate". Moreover, recent studies amongst different main players in significant areas to the rural development theme has presented a polarization in expectations amongst them. One camp believes rural development will be a process which will "end with the final expropriation of farmers." While the other expect to see it as a "force" which will revitalize agriculture (Van der Ploeg et al, 2000).

With this in mind, following the lack of consensus and difficulties in achieving a single definition of development, the definition of rural development employed in this thesis entails following: “improvement in the overall community conditions, including economic and other quality of life considerations such as environmental, health, infrastructure and housing” as stated by Adisa (2012).

3.4 Farm-Size Definition

The working definition of small, medium and large farm-holders is taken into account relative to how it has been categorized in other literature for the sake of consistency (Sanz et al, 2012). Definition follows as:

- Smallholder 0-5 hectares
- Medium-holder 5.1-15
- Large-holder 15.1 ->

Finally, before proceeding to the subsequent chapters on methodology and methods, a short final note on theories, models and approaches. Any concept or theory of behavior are simply abstractions and simplifications of reality. The aim with which I am using the aforementioned theories is to simplify the complexity of the real world, strip it down to identifying key elements that may explain how things work and to understand the interrelationship between those elements from those perspectives.

4. Methodology & Methods

4.1 Original Objective of the Study, Challenges, and Adaptation

The original objective of the study, as set out in the research proposal stage, was to investigate the impact that agricultural cooperatives have on the livelihood of farmers. This was to be done through a cross-sectional design, targeting two agricultural cooperatives specialized in one particular crop (at the time leaning towards coffee, but undecided) in two different regions, as well as to contrast cooperative member farmers and non-member farmers producing the same crop.

Once arriving in the field, the original objective was still in mind. This changed rapidly in the first week as I realized several severe limitations that I had not given full consideration before entering the field. These were logistical issues as well as networking issues. As for the networking issues, I realized the difficulty in accessing the non-member farmers in rural areas. Secondly, logistical problems pertaining to accommodation and transport are what really forced me to reassess my original objective. To increase the feasibility of conducting my study there was a need to narrow my scope. It would not be feasible to live in an urban area and have to spend 4-6 hours on daily transport to rural areas for data collection, with consideration to the time limitation of the field study.

With this in mind, it was a challenge to move into a new direction. After much consideration, for the sake of feasibility, my methodology needed an overhaul. This resulted in a change of direction from cross-sectional design comparing two different cooperatives and their members as well as local non-members into instead only focusing on a single cooperative and their members. The rationale for this was increased feasibility due to improved accessibility to the units of observation, and a narrower scope to work with. I found the case study approach to be appropriate as it aligns with the theoretical and conceptual approaches, and presents the possibility to use mixed methods (Punch, 2005, pp.142-148 & 234-240), combining qualitative and quantitative data to better understand the phenomenon under investigation, giving emphasis to its local, global and relational contexts.

4.1.2 Data Collection

Primary data collected include qualitative interviews and questionnaires, as well as raw datasets (quantitative) received from the cooperative, municipality and FNC⁸. Secondary data include documents and report from the municipality and cooperative.

While questionnaire interviews were conducted and were supposed to be used for the thesis, unexpected problems were encountered during the writing of this thesis. The webpage used for questionnaire data handling, known as Formhub, can no

⁸ The raw datasets used to create tables, diagrams and graphs were acquired in the field, and thus cannot be linked in references. For information about the datasets, please contact the author

longer be accessed, nor can I extract the data that was uploaded there. There were attempts to salvage data from similar sites, but to no avail.

4.1.3 Rationale for Chosen Interviews

Actors included in the process of data collection comprised: active member smallholder farmers. Cooperative employees. FNC employees, and municipality officials. Amongst the different actors both women and men were interviewed. All interviewees were adults, no one under the age of 20 was interviewed.

The overall aim was to tie together the perspectives of the local, key stakeholders involved in the processes relating to the unit of analysis, creating a collective perspective from all involved actors. The key stakeholders comprise four actors: 1) Cooperative. 2) FNC. 3) Municipality. 4) Member Farmers.

1). Cooperative - firstly, the interviews with cooperative employees was to get a holistic understanding of the functions of the cooperative, its organizational structure, and what their different departments do. 2). FNC – employees were interviewed to understand its relation to the cooperative and to investigate the role it has played through the decades in relation to coffee growers' livelihoods and rural development. 3). Municipality - to understand the general socio-economic and cultural background of the region: its economic structure, demographics on rural and urban population, 4). Member Farmers - to better understand their socio-economic situation in relation to today's open coffee world market. To understand from their perspective what role the FNC, local government and cooperative have played in improving their modes of productions and access to services.

4.2 Sampling method

Sampling for data has been through attaining illustrative sample, by recruiting informants I felt were important or key figures for attaining the information I wanted to get. In this sense this is not at all any kind of random sampling, but rather through motivated choices for interviewing many of my informants, though this applies mostly to my respondents within the cooperative, the national coffee growers' federation and the local government (Flowerdew & Martin, 2005:110-112). Relating again to the limitations with interviewing farmers, the majority of the interviews conducted with farmers was through randomly picking and asking farmers who had come to the cooperatives purchase point to ask them if they were willing to participate in an interview, after explaining who I was and my purpose with my research. Only five interviews were conducted in their households.

The definition and limitation of the sample population is restricted to only target farmers living in Salgar and who are active co-op members. As such, the sample population was 598 farmers. Non-probability sampling was employed by using quota sampling. In its use, quota sampling has a non-probability sampling approach because the interviewer may select the interviewees based on a number of biases. Such biases could be that the interviewer selects interviewees that seem more open and likely to accept an interview, thus it results in biased selection as not all have a chance of getting selected (Flowerdew & Martin, 2005:94-95; Dodge, 2006).

4.3 Ethical Considerations and other Limitations

With regards to my arrival in the field where the study was conducted, I was treated very well by all people involved. My entry into the community was through my “gatekeeper” informant, the manager of the cooperative, who set me in touch with people in regards to accommodation, state officials, as well as giving me the freedom to freely choose whomever I wanted to interview at the cooperative. This presented a good opportunity to avoid being selectively directed towards whom I should talk, based on the manager’s bias.

It is important to shortly mention issues of belatedness in coming out to the field which relate to uncontrollable factors. Predominant in this case were illnesses. One week after arrival I fell ill, it was a drawn-out illness keeping me incapacitated for nearly three weeks. This is a major reason for why I lost out on valuable time for my field study, rendering the last three weeks to be very intensive in data collection.

All data gathered was done so with explicit consent from all participants involved, regarding both primary and secondary data. However, severe limitations to data collection presented themselves to me in the field. The limitations presented themselves in two ways: 1) Issue with transport to get out to the rural areas remained even here. There was a form of transport along the necessary routes, but I chose not to take them due to safety reasons. 2) Second and more importantly, farmers in this region labour all day from Monday to Friday, and are usually too busy to partake in interviews. Thus my interviews with farmers were limited to two days per week; Saturdays and Sundays. This limitation is the reason for why I could not attain a sufficiently large sample size to gather a representative portion of the group of interest. Instead, in counsel with my supervisor, I opted to keep the questionnaires used for the quantitative data, and employ it in my study as qualitative data instead.

With regards to ethical consideration I was concerned bringing a tablet with me to the field to conduct questionnaires, as I felt that might be considered a potentially offensive to the people interviewed. Sultana (2007) suggests one should not bring expensive items along while interviewing people who have different social and economic opportunities as oneself, however in my case it could not be helped, as I was conducting electronic questionnaires. I was worried this might create suspicion and that negative aspects would outweigh the benefits of using electronic questionnaires. Fortunately, in reality there was no problem, some were even well acquainted with tablets.

4.4 Data analysis

Much of the analysis took place while still in the field. Whenever I experienced a moment of insight or revelation I wrote “memos” throughout the process which helped to find the common and occurring themes. Seeing them fresh from different perspectives, condensing certain key information at once. Coming back from the field, the issue of what theoretical framework could be employed in the data analysis had to be faced. I arrived to the field with an open mind, without being locked into a specific theoretical framework. During the process of observation and data collection, ideas started to merge into what was to be the theoretical and conceptual approach which was suitable and aligned with findings in the field and the methods applied. In addition to memos written in the field, interview material was re-read several times for the analysis and selection of relevant data. Finally,

literature and primary data relevant to themes in the analysis serve as a complement to the interviews.

5. Analysis

It is an important reminder that due to lack of access to relevant quantitative data for analysis on the cooperative's impact on member farmers' net profit margins, no statistically significant evaluation can be made to conclude any such findings. Instead, qualitative data derived from key interviews will explain different approaches by the cooperative that *may* impact member farmers' livelihoods. Additional literature will be used as a complement to themes such as value-added processes, to provide critical scrutiny from other empirical cases. Once again, analysis using ANT theoretical framework is largely descriptive with a narrative nature. It is a pertinent point of the ANT approach. Thus analysis is embedded in the narrative, as well as rounded up chapter 6.

In section 5.1 a description of actors making up the actor-network of the case study are presented, to give an insight and understanding to the reader as to what role they play and how they may impact the unit of analysis. Section 5.2 focuses on activities and services the cooperative provides on its own to farmers - members and non-members - that may impact their livelihoods. An assessment here is made not looking (strictly) at the degree of impact, but the many different ways services may improve their livelihood and looking at the relevance of services offered. Section 5.3 looks at three on-going collaborative projects going on between the cooperative in conjunction with other actors. Chapter 6 follows to discuss the analysis and conclude.

5.1 Building the Network

The very first issue to be dealt with in the analysis is to construct the actor-network web by putting actors into context and in relation primarily to the cooperative, and to each other, in order to better understand section 5.3 focusing on collaborative projects, and for the discussion and conclusion. The primary three key institutions have already been covered in previous chapters: the Cooperative, FNC and Salgar Municipality. In addition to these actors, more will be translated into the web, some to a larger and some to a lesser extent. Following the contextualization of the actor-network (based on observation and acquired data) comes description and analysis of on-going cooperation between actors involved, and *how* they come to impact on co-op members' livelihoods.

Figure 1



Source: Elaborated by the author with observations and data from interviews

Figure 1 is a simplified visualization of the coffee sector network in relation to the Salgar Coffee Cooperative, for the sake of not losing focus of the analysis by tangling up how other actors interrelate. As previously mentioned in chapter 2, the FNC was largely responsible for the creation and promotion of coffee cooperatives as a strategic choice to delegate certain services previously offered by the FNC, primarily the management of the “Coffee Purchase Points” of which there are now over 500 across the country. Conversely, it appears that relationships between the coffee cooperatives and FNC at an institutional level and at employee level appear to be very close (interview C2).

The Municipal government, as also one of the key actors in the role of rural development, has a well-developed relationship with the cooperative. A state official states:

"We in the local government have a very positive relationship, I would say. We recognize the institution the cooperative represents, and the National Coffee Growers Federation, both of whom have a presence in the municipality, and are strategic allies in seeking a comprehensive development of the region" (interview B1).

Though no information was gathered on the historical relationship between the two institutions, the present Mayor and cooperative manager have a well-established inter-institutional working relationship. At the present time this may partly be due to the collaborative project underway which was initiated by the municipal government in association with the cooperative and FNC. A “Coffee-Drying Canopies” project, to be distributed to 300 coffee growing households in Salgar. More on this in the project section.

Moreover, considering the national government as an actor in this network is two-fold. On the one hand, it is the institution which has instigated the cooperative law “Law 79”, and other policies for the enabling of conducive environments in which cooperatives can thrive (Rodriguez and Uribe 2006; interview B1). On the other hand, the national government also works very closely with the FNC, at the second highest organizational level, rather than the most decentralized level, as in the case with the cooperative. Therefore, dialogue and agreements between national ministers (who are included in the FNC structure) and managers of the FNC may have a decisive impact nation-wide in the coffee sector.

The Grameen Foundation is an instrumental organization in the on-going project “connected coffee growers” which sees a collaborative participation from the cooperative, Grameen Foundation, Expocafe and Starbucks. The Grameen Foundation helps with projects around the world targeted at helping the world’s poorest. For agriculture, the foundation has developed an approach which employs the use of mobile phone applications, connecting them to human networks, improving their access to agricultural information exchanges with peers and extension workers (<http://www.grameenfoundation.org/what-we-do>).⁹

Farmer Brothers (a coffee importer, exporter & coffee roaster), is a North American coffee business that visited Salgar for the first time in 2013. Interested by the regions coffee quality the company has been interested in creating a sustainable coffee program with the cooperative and farmers in the region. Farmers involved in the project receive liquidations biannually.¹⁰

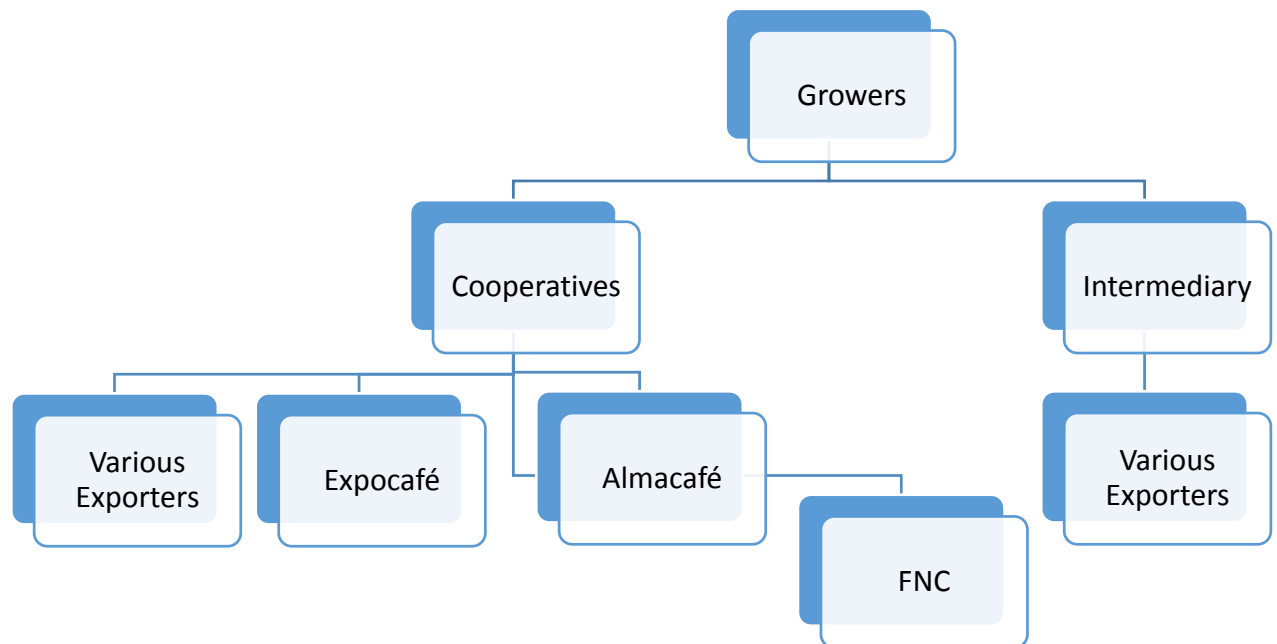
The New York Stock Exchange (NYSE) role within this network can concisely be explained as the dominant exogenous factor impacting the world market coffee prices, over which no other country or organization have much control. Despite the considerable spatial distance between New York and Salgar, since the break of the Coffee Agreement 1989 any decision made by the NYSE regarding the coffee price will impact Salgar, just like any other place around the world.

The International Coffee Organization (ICO) is the main intergovernmental organization for coffee, serving as a platform for cooperation between exporting and importing countries. It is the organization that regulates international coffee policies through the International Coffee Agreements. It has a wealth of data on coffee statistics, international and national, although for national data they tend to rely on some national institution, such as the FNC in the case of Colombia.

⁹ More in the project sections

¹⁰ More in the project sections

Figure 2. Coffee Flows from Growers to Exporters



Source: (notes from personal communication with interviewees C1 and A1).

A large number of coffee growers sell to the cooperatives, this predominantly holds true to smallholders and medium holders. There is not a large number of growers who may export directly since the license for exporting (granted by FNC) is not easily acquired. It is more common for medium and large-holders to have this license, as they have more capital, better networking possibilities, and the capacity to produce more (interview C1).

In turn, the cooperative sells 25% of their coffee to the FNC, as a way of showing loyalty and in order to receive loans to buy coffee from farmers if their own resources are not enough, and 27% through Expocafé. Finally, 48% goes to other, “particular” buyers.¹¹ The fact that almost half of the coffee sold by the cooperative goes to exporting clients indicates that price negotiations above the world market price are more probable, indicating better economic opportunities and liquidations to farmers whose coffee is sold to those buyers (interview A1.a; Management Report, 2013).

5.2 The Cooperative’s Services

This section looks specifically at services rendered by the cooperative for members and non-members, looking at how important they are to the livelihoods of farmers, from both farmers and key informant perspectives. Economic and non-economic benefits are considered.

¹¹ Data is taken from the Cooperative’s management report prepared for the General Assembly, March 2014, looking at data specifically from 2013.

5.2.1 Three Most Recognized Cooperative Functions

Consistently through all interviews conducted with farmers, there are three services which are of utmost importance to them: 1) Guaranteed coffee purchase, 2) access to credit, 3) and agricultural-input store. In addition to these, they recognize many other benefits by the cooperative, however, the top three above, are the ones they consider the most important (Interviews D1-D12). Additional to those services, the cooperative has the education fund and solidarity fund which entail a range of tangible benefits discussed in next section. Finally the cooperative uses information communication technology, mainly mobile phones, to diffuse information to farmers on a daily basis, informing them the market price for coffee the following day of receiving the message, keeping them constantly up to date with market information (Interview A1.a).

1. The Cooperative's mission is to "*... Transfer the highest possible price [to farmers]. How do we do it? By defending the minimum price a coffee grower can get for their coffee*" (interview A1.a).

The cooperative does this by updating the international coffee price on a daily basis on their marketing board, which can be seen at each of the cooperative's purchase points. The reason for diffusing new market information on a daily basis is to make farmers aware of the minimum price for which they can sell their coffee at the cooperative, which serves as advice to farmers that they should not be selling their coffee below the daily price seen at the cooperative's market boards (interview A1.a).

This approach enhances farmers bargaining power in case they want to sell to another buyer, which makes them less vulnerable to exploitation by being offered less money, this is more likely to happen in areas where there is not a proper and up-to-date diffusion of market information. This particular aspect of the cooperative, which is also the most basic of its operations (it has existed since its inception), is considered in unison by all farmers interviewed to be one of its most important services (interviews D1-D12). They argue that without the institutional presence of the cooperative, prices would be less "regulated" in the region, in the sense that other buyers can exploit and pressure farmers into selling their coffee at lower prices, since they do not have the institution which strengthens their bargaining power. On being asked if the non-existence of the cooperative would have impacted the coffee growers in the region, here are two quotes to present an image from the farmers' perspectives:

"Man I think that a lot, because it is clear that in any case, while there is such a large organization as the cooperative which is very well organized, I think that the coffee industry would have an additional problem, leaving us with a bigger crisis, right? Because, if the cooperative sets a price floor, then the buyers in the streets are going to stick at least to that floor price" (interview D7).

"I'm telling you, it would be a disaster. Because, despite that we do not see that many benefits with the cooperative, I am not in favor of it to disappear, even though we are sometimes disappointed with it... Because, I have noticed, Diego. That in other villages where their [coffee] cooperative has disappeared the market has turned chaotic, because the street buyers are now "abusing" the prices, and do whatever they want with the price of the coffee. That's why I think the cooperative is the most important thing we can have here" (interview D12).

This bargaining power is present due to two particular factors: 1) the cooperative always guarantees the purchase of coffee, at least at the minimum of the market price, never going below. This renders coffee to be the only guaranteed and “safe” market in the region. 2) The cooperative disseminates market information to farmers on a daily basis, making farmers aware to not go below a certain asking price.

Regarding rules when it comes to a members’ sale of coffee. The cooperative allows coffee growers to sell 25% of their coffee to whomever they want, however according to the cooperative’s legal statutes, it is expected that the remaining 75% are sold to the cooperative. The rationale behind this is the recognition that there may be other buyers offering better prices for farmers. Therefore if there would be a full restriction imposed it would be counterproductive in the sense that members cannot get the best price available in the local market offered, as well as an expected reduction of members as a result. In addition, the cooperative wishes for the farmer to get the best price possible, as many farmers’ economic situations are very urgent/dire. This flexibility allows farmers to not feel confined in their commercial options, as well as maintains a good degree of loyalty among farmers. If the cooperative discovers that farmers are selling less than 75% of their coffee to the cooperative, sanctions may be imposed. Depending on the severity on breaking cooperative rules, sanctions can include restrictions to certain services, or in the worst case scenario, be kicked out of the cooperative (interview A1.a).

While outside the scope of the research question, an observation worth noting is that it appears the coffee growers’ most pertinent safety mechanism in terms of market and economic access, could also be a black hole which perpetuates the monoculture of coffee in the region, preventing (indirectly) farmers from diversifying to other economic activities. This puts them in a Dutch-disease mode, rendering the entire regional economy vulnerable to the fluctuations of a single commodity that is very volatile.

2. Credit

According to Sanz et al (2012), 67% of coffee growers in Colombia do not have access to credit, out of which only 6% say that they are not in need of it. This leaves over 60% of coffee growers who are in need of it, but cannot access it. In addition, other studies have shown that farmers with access to credit are 50% more productive than their counterparts without access to credit. This presents a vastly contrasting case between farmers and their economic opportunities (Sanz et al, 2012). While this needs not necessarily be representative of the context in Salgar, it does present a clear general picture. The Salgar Coffee Cooperative offers a credit to farmers, but up to a certain limit, which is 2.5 times the contribution that members have given to the cooperative by paying their annual member quota. If farmers want larger credits than that, then they can turn to the Agrarian Bank, or any other private bank as well (Interview A1.a). However, credits from these other banks are more difficult to access. Farmers interviewed in Salgar reinforce the picture painted by Sanz et al (2012) which shows that a clear majority are in need of credit (for inputs) to increase their productivity levels, e.g.:

“My sister has some tremendous debt in fertilizers, she owes credit to the cooperative, and living in the situation that we have been in for year, we say: if we do not fertilize, we do not pick coffee” (interview D12)

The cooperative offers two lines of credit, both for the purpose of fertilizer purchase. The cooperative recognizes farmers need for fertilizers for a bountiful production, which in turn also affects the cooperative's operations (interview A4). This can be reflected within Bebbington's (1999) framework for farmers capitals and capabilities; enhancing farmers capabilities through an expansion of their asset bases by engaging with other actors through the construction of relationships following the logics of markets and civil society. In this case it means that the farmer (actor) engages with another actor (the cooperative) which expands their asset base and capabilities for increasing their production levels. Any member can access at least the short-term cyclical fertilizer credit, and depending on their credit rating may have access to another one. The amount of credit accessible to farmers depends on their "social capital" contribution within the cooperative. The cooperative defines "social capital" as the annual membership fee in addition to the 1% tax made on each farmers coffee sale.

However, the cooperative must also operate in a fiscally responsible manner, which puts them and many farmers in a dangerous predicament: coffee prices are low, input prices increase, past loans cannot be repaid by farmers. Nor can the cooperative keep lending out money without getting any back, which puts farmers at a vicious cycle, as seen below:

"If the coffee price is good, then we can pay the credit we owe on time. And if they aren't... see at this moment we need money, but they won't lend us any more until we pay them back our last loan"(interview D4).

3. Agro-Input Store & Economies of Scale

"We buy and distribute. We utilize economies of scale. We are an enterprise that handles 260 000 sacks of fertilizers each year, so it gives us stronger negotiating capacity by handling such large volumes" (interview 4A).

In tandem with the credit theme comes the matter of production costs and operations. In order for Colombian coffee producers to get a return on their investment, coffee prices must be above 322\$USD, which is the average production cost of 125kg of coffee. In Colombia, production costs per 125kg range between 297\$USD and 346\$USD¹², depending on farmer efficiency (interviews A2; D12; D4; C2). This can be contrasted to other countries such as Brazil and Vietnam with lower production costs; 312.5\$USD and 47-62\$USD respectively (varies between sources) (Globalpost, 2013; Giovanucci et al, 2004; Marsh 2007). The discrepancy between the two sources and the average of production costs in Vietnam are attributed to regional geographic differences and farm efficiency. It becomes clear Brazilian and Vietnamese producers can still make a profit with lower world market prices, rendering them more competitive. This shows that Colombian producers are more vulnerable to fluctuations in world market prices than e.g. Brazilian and Vietnamese producers (though all are certainly negatively impacted). The main factors affecting high production costs in Colombia are high transaction costs attributed to transport and labor costs. Wholesale fertilizer prices in Colombia are 25-35% percent above international prices (interview A4; Gilbert, 2013).

¹² Exchange rate between Colombian pesos and US dollar in this thesis consistently follows the average monthly rate in March, 2014. 1USD = 2017.7COP Source: www.X-rate.com

Table 2 Monthly average of internal coffee price, years 2011 & 2013

Month	Internal Price COP	Internal Price USD
jan-11	944 417	468
feb-11	1 022 440	506
mar-11	1 078 522	534
apr-11	1 071 154	530
may-11	1 023 827	507
jun-11	963 205	477
jul-11	931 881	461
aug-11	962 550	477
sep-11	976 091	483
oct-11	907 560	449
nov-11	923 289	457
dec-11	899 176	445
jan-13	526 810	261
feb-13	503 831	249
mar-13	512 054	253
apr-13	514 813	254
may-13	510 315	252
jun-13	477 288	236
jul-13	468 717	232
aug-13	452 051	224
sep-13	435 839	216
oct-13	406 451	201
nov-13	384 411	190
dec-13	400 869	198

Source: Elaborated by the author with data from the FNC

Table 2 illustrates the vast price differentials that occurs in the internal market as a result of international prices. In the first quarter of 2011 coffee was sold at almost twice the production cost, while in 2013 not a single month reached up to selling price of 322USD in order to get a return on their investment. Prices were far below levels of sustentation. The internal prices are directly impacted by the NYSE coffee prices set in New York.

Considering the difficult circumstances surrounding the high price of inputs which raise production costs, one way of ameliorating such an obstacle is through economies of scale. The Salgar Coffee Cooperative is able to utilize economies of scale due to its operational size, which includes six agricultural input stores it owns in the southwestern region of Antioquia. It is able to provide cheaper inputs than a normal agro-input store would since it operates on a large scale, thus being able to buy larger volumes, bargaining for lower prices per unit. In addition the cooperative's agricultural stores are not only be visited by member coffee farmers, but also from non-members, involved in coffee and any other agricultural activity

as well (Interview A4). As a result, with data acquired from interviews and observations, it is clear that the production cost of 125kg in Salgar is in the lower rung of the national average, around 297\$USD thanks to the cooperative's bulk purchase by engaging in economies of scale.

In addition to the lower than average basic store prize of fertilizers, the cooperative agro-input stores offer discounts between 1-3% depending on how much they buy. While the numbers are not that big, it can make a big difference for farmers. However, it must be taken into consideration the fact that small farmers usually do not enjoy the 3% discount as they do not have the capital to buy in bulk. Instead they buy it sporadically, and in smaller volumes (interview A4).

5.2.2 Coffee Thresher Plant

Traditionally, coffee cooperatives in Colombia have not had any involvement in processes of value adding, the FNC has largely been responsible for that part, and still is. Since the deregulation with the break of the coffee agreement many businesses have sprawled up along the value chain. As a response, to retain more of the value-added by conducting their own processing, the cooperative established their coffee thresher plant in 2008. Not only does this cut-down on transportation and other operational costs, but it gives the cooperative possibility to guarantee the origin of the coffee, which is an important aspect for many international clients that want 100% pure Colombian Origin coffee, for which they pay a higher price. With the coffee thresher plants the cooperative has the possibility to go through all the processes and can produce a final product that can be sold directly to retailers around the world (interview A1.b). By cutting of other intermediaries in the coffee value chain it is possible for the cooperative to retain a larger share of the value.

By entering into agro-industrialization the cooperative answered to the needs they were seeing in the world market. Interest in the world market for dry parchment coffee – several processes away from the finished product – has decreased, instead buyers are increasingly more interested in buying processed and ready-to-use coffee, as well as sustainable and environmentally friendly coffee. In concentrating all processing operations in one place, costs are reduced, and traceability is possible to ensure the coffee what buyers want. Such factors elevate the price of coffee offered by national and international clients. The cooperative processes close to 50% of the dry parchment coffee that is bought from farmers (interview A1.b)

“There has been a big benefit Diego, because the cooperative has entered into other markets, and in those markets they have gotten to know the quality of our coffee. So there are clients at this moment that come here and are willing to pay 5 000 – 15 000 COP [2.5 – 7.5 USD] above the basic international price for each coffee load” (interview A1.b)

These two quotes give an insight into various types of strategic importance the cooperative plays. It is becoming more efficient with operational costs, it grants access to new markets so called “coffee niche markets”, and it grants autonomy in coffee processing which is beneficial for both the cooperative and farmers. They benefit in the sense of lowering costs, but also by becoming independent on any external enterprise which might incur higher service costs to the detriment of the cooperative, and subsequently to farmers. In addition it allows for the cooperative

to build up a team of coffee experts as the coffee thresher also contains a “coffee laboratory”, which is covered in the following paragraphs.

“It has helped a lot in generating value for the company. We have five certified coffee tasters. And it has helped a lot in strengthening the theme on quality coffee” (interview A4).

Having certified coffee tasters who are very knowledgeable in the theme of coffee quality grants the cooperative a comparative advantage. The fact that they can identify the best coffees from farmers makes it possible for them to offer such coffees to international clients who are willing to pay premium prices, or by taking them to coffee competitions to grab the interest of foreign clients. This is one of various coffee differentiation and value-added processes the cooperative offers. The following section will look at coffee differentiation more thoroughly.

5.2.3 Coffee Differentiation and Marketing

“A “special coffee” is that which the client recognizes as something distinct. And for which he/she pays a differential... We at the cooperative qualify these special coffees and put them on a menu for our clients, and we do this through our quality team at the coffee thresher” (interview A4).

“Special coffees” are differentiated coffees with different profiles and attributes made to fit the demand of the market. A team responsible for the profiling and testing of the coffee quality work in a laboratory set up at the coffee thresher. Various approaches are taken by the cooperative as a means to transfer the major possible price to the producers. These approaches include; coffee differentiation; agro-processing; and marketing. Focus here is on marketing and coffee differentiation which can occur in different ways, the most common are the specialty coffees, origin coffees and certified coffees.

By differentiating coffees, the cooperative gains access to niche coffee markets that are growing in demand from more social and environmentally conscientious consumers in main importing regions such as Europe and North America, who are willing to pay a premium (Arnot et al, 2006; Pay, 2009). In the case of certified and origin coffees, the premium added on top of the regular market price, ranges between 5 000- 25 000 COP or 2.5 – 12.5 USD per coffee load (125kg). The benefit of selling differentiated coffees is that it may to some extent insulate producer from the volatile market prices, which in the case of Colombian farmers is much needed, as their production costs are higher than the average of other Latin American countries, making it more difficult for them to compete. In some cases the cooperative can act as the market intermediary directly between a specific customer and a specific producer, though usually there is another actor in-between. Most commonly this tends to occur when farmers win coffee competitions, where international buyers bid on the coffee or when partnerships for a program are formed between the cooperative and outside actors such as Farmers Brothers or Starbucks. On such occasions the market price tends to be circumvented by the use of forward contracts, which means that both parties agree on a price beforehand for buying the product at a specified future time.

“In the last competition, not only was the coffee of the winner auctioned, but the coffee of many other participants were also bid on” (interview A4).

This quotes shows us that not only the first place winners in coffee competitions get good prices. Most producers attending get good offers from international buyers. In addition, if representatives or winners from a particular cooperative or region gain attention it is a likely chance buyers will venture there to buy their coffee, which is exactly what has happened in the recent years that the cooperative has won departmental coffee competitions in Antioquia.

It can be very difficult for many farmers to singlehandedly market their coffee with certifications due to the high costs incurred in acquiring them. It includes application costs, as well as auditing costs. For example, the overall cost for a Fair Trade certification costs in the hundreds, and thousands of Euros, including application fee, and continuous auditing fees (Flocert, 2014). It would be impossible for the majority of farmers to cover such costs, and would not be economically feasible, seeing as a large amount of farmers live daily on a credit basis (interview D12). In this sense, following ANT analysis, the cooperative serves as an intermediary actor. It is through the cooperative that certifications are accessible to farmers. Being a large enterprise with resources to pursue the certifications it does so for the benefit of the members, who otherwise would be unable to acquire them.

However, there are also problems with certifications. In many cases members that have previously participated, or chosen not to, have complained about the necessary requirements. Coffee certifications can be considered to be exclusive to members who may afford it. Many small farmers cannot economically afford to meet the requirements to be able to participate in certifications. Such requirements may include that there has to be separate storage facilities for chemical inputs, coffee (filled) sacks, respectively as is the case for 4C certification, as well as deliberate efforts to remove children from work and into education (interview D2; 4C, 2011). Likewise one of many Fair Trade requirements is that no children below the age of 15 OR 18 in the household should work on the farm (Fairtrade.net). It is a good requirement as a disincentive to child labor, but it might not always be contextually appropriate. By this I argue that context must be taken into consideration: if a smallholder household is unable to satisfy their basic necessities with one or two parents laboring the farm, and the Fair Trade certification does not offer a big enough price differential to the farmers income. Then the immediate urgency of income to that household exceeds the need for a Fair Trade certification, though the latter could allow for a potential large long-term economic benefit. Note, the author is not strictly speaking condoning child labor, but argues that context must always be taken into consideration. However, the exclusivity entailed with these certifications leads to questions of accessibility for the one who are most vulnerable and unable to participate.

In addition, there are general criticisms in both news and academic articles on the alleged benefit for farmers in selling certified coffee. One issue identified on Fair Trade impact on coffee growers in Costa Rica is the Fair Trade market does not “reward farmers financially according to coffee quality the way the conventional market does” (Sick, 2008). Another issue recognized is that Fair Trade prices are not always significantly higher than in conventional markets, which makes it all the more difficult for farmers to justify getting certified (Sick, 2008; Mutersbaugh 2002). Another study on fair trade certification impact (Dragusanu and Nunn, 2013) has found that Fair Trade certification has increased income for certain individual

farmers, who are skilled and efficient coffee growers. Yet another problem in the region, and Colombia in general is the high inefficiency levels of farmers according to FNC extension workers (interviews C1; C2). The pros and cons from outside literature should not be considered as generally applicable everywhere, but it paints a more holistic picture with regards to the impacts of certifications. A good complement, seeing as data acquired in this study was not possible to use for such an impact evaluation.

Table 3. Cooperative's Purchase of Each Coffee Type

Type of coffee	Kilograms
Rainforest	202.418
UTZ	150.473
4C	1.286.229
Select Coffee	1.495.855
Regional	2.362.115
Standard	18.552.257
TOTAL	24.049.347

Source: (management report, 2013)

Table 3 shows the amount and type of coffee bought by the cooperative in 2013. It clearly shows the majority of coffee bought to be standard non-certified coffee. Only 23% of coffee purchases were of some sort of certified or differentiated coffee, which reflects a smaller number of participation amongst local farmers, but also the relatively small market certified coffees still play in the world market.

5.2.4 Cooperative Solidarity Fund

The cooperative's solidarity fund consists of two parts: 1) Social fund, and 2) Educational fund. The social fund mainly covers healthcare and other services, while the educational fund focuses on increasing human capital through skill-building workshops and scholarships to children for secondary and higher education.

1. Social Fund

Table 4. Healthcare Services & Technical Assistance

Services	Maximum limit in COP	Maximum limit in USD	Number of services per year
Medical consultation	3.000	1.5	12
Specialist consultation	15.000	7	3
Laboratory examination	5.000	2.5	7
Specialized examination	30.000	15	3
Hospitalization	50.000	25	2
Surgery	50.000	25	2
Odontology	50.000	10	2
Ophthalmology & glasses	50.000	10	1

Technical Assistance	33.000	16	2
Total value of services	532.000	264	

Source: (management report, 2013; interview A3)

Table 4 shows the types of non-economic benefits household members of a cooperative member can enjoy. The majority of the services covered are health-related, which makes it easier to ensure healthier members that can maintain productivity on their farms. By focusing on health services, the cooperative alleviates the economic hardships of households making it possible to divert and focus resources on increasing farm productivity (investing in fertilizers).

In addition to healthcare services, the cooperative provides life insurance to the cooperative members, his/her spouse, and children below the age of 21. Members above the age of 80 also receive life insurance passed on to their beneficiaries

2. Education Fund

“...We have training sessions in good agricultural practices, in food handling, in coffee processing, soil management, all that has to do with coffee, we manage it here. The training sessions are for members and non-members alike. We usually conduct these training sessions in the villages, as many people have a difficulty traveling into town, some live very far away.”

What does this quote tell us? With the education fund, various types of skill-building sessions are offered as a means to increase human capital. Some are directed towards increasing productivity, such as soil management and coffee processing. A different focus on health-oriented factors, such as the proper and hygienic handling of food, which indirectly impacts on productivity as well, considering how it might impact the health of the household laborers. In terms of access, the majority of training sessions are located in the different villages around the municipality, as it facilitates opportunity to participate. From observation and farmer interviews, they tend to only venture into the urban area on weekends to sell their coffee (interview A3). Weekdays are spent laboring on the farm, and while training sessions are likely to have a long-term positive impact, some would be reluctant – as made clear in a farmer interview - to participate if it includes traveling, as it entails time away from the farm, leading to reduced income which many cannot afford. This again leads to the theme of exclusivity and access based on farmers’ resources and capabilities.

The education fund includes limited resources to cover parts of tuition fees for some members’ children heading into higher education, which is very costly in the country. Depending on the socioeconomic class of the members (ranging from 1-6, one being the poorest), the cooperative contributes with the equivalent of two or three minimum salaries, twice a year. Minimum salary is at 616 000 COP, equivalent of 305 USD (Baker & McKenzie, 2014). This service totaled an investment of 16 293 926 COP, or 8075 USD (management report, 2013).

One contribution of the cooperative that has complete inclusiveness is the distribution of the school kits, whether one has children or not, one still receive it. This is also to provide them with tools to effectively manage their farms, to register and administer their farm activities. The necessity for this is large, as many farmers are very inefficient with resources in their farms, either due to lack of knowledge, or due to a lack of will to change how to do things. Various sources on the theme of small-farm inefficiencies (interviews C1; C2).

The emphasis on coffee quality has been ongoing for five years, and is not going anywhere. Through the education fund, workshops are given on how farmers can achieve higher quality production. As coffee growers engage in producing better quality coffee, they manage to insulate or partly protect themselves from the market prices, whether it is done by participating in coffee competitions or having cooperative coffee tasters grade the quality of the coffee, which the cooperative offers to particular international buyers, mediating for a better price for the farmer. However only a few farmers are able to enjoy this type of insulation from market prices, the majority do not.

5.3 Collaborative Projects

5.2.1 Coffee-Drying Canopies Project

The coffee-drying canopies project has the goal to support and strengthen coffee growers in the region by improving the process of coffee quality. According to FNC and state official informers, a good deal of impact is had on the coffee quality during the drying process, before it is sold by the farmer (Interview B1; Interview C1). For this reason, the Mayor in Salgar initiated a project to distribute more than 300 coffee canopies to coffee growing households in the region. Resources are channeled by three institutions for this project: the FNC, the Cooperative and the local government, the latter of which contributes the most economically (management report, 2013). In order to cut production cost and ensure that the majority of the resources goes to producing as many “coffee canopies” as possible, the FNC with background in various forms of infrastructure construction are responsible for building them. Whereas the cooperative is responsible for storing the materials, achieving cheaper per unit costs, by buying production material in bulk.

This project shows clear evidence on effects of complementary and embedded forms of synergy in the sense that each actor has a type of specialization they can make use of to reduce overall costs and ensure good quality: Cooperative provides logistics and economies of scale, FNC contributes with construction work expertise, and the government contributes with most of the funds (interview A4; management report, 2013).

Then what do the coffee-drying canopies do? More than just ensuring a superior quality compared to patio-drying (which reduces quality), it allows for larger volumes of coffee to be dried at the same time, as well as a faster drying speed. Thus, it is a project that both improves quality and productivity levels of coffee production and processing. However, the project is not limited only to cooperative members, but to any small and medium-farmer in Salgar. Priority is given to farmers with the most urgent needs (interview B1). How does this impact the farmers? Farmers are more likely to get premium prices on their coffee sales because of the quality, contrary to selling it at sub-optimal prices due to previously

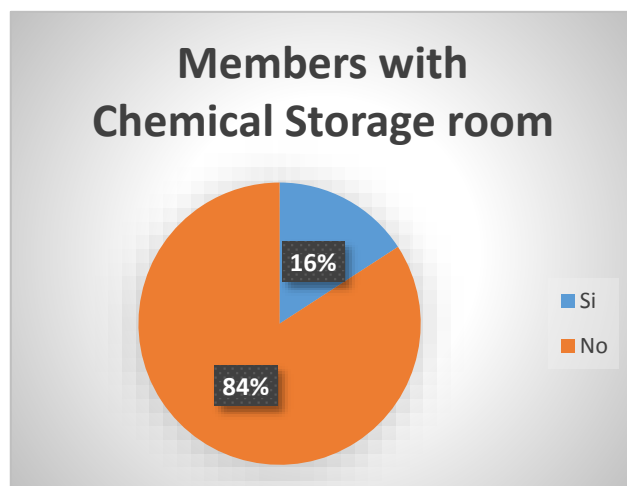
low quality. Additionally, a farmer recipient recognizes other benefits not considered by any key informants: that the coffee drying canopy requires less time allocated by farmers, who otherwise have to tend the coffee to ensure animals do not trample it (interview D2).

In consideration to ANTs approach to rigid and fluid technologies. Another advantage of the coffee-drying canopy is that it is a fluid, malleable technology. As such, it is a technology that if broken, can be fixed without using any original part, it might need some innovation, but it is likely to be sustainable in a long-term perspective.

5.2.2 Two Projects in One - Connected Coffee Growers & Starbucks C.A.F.E Practices

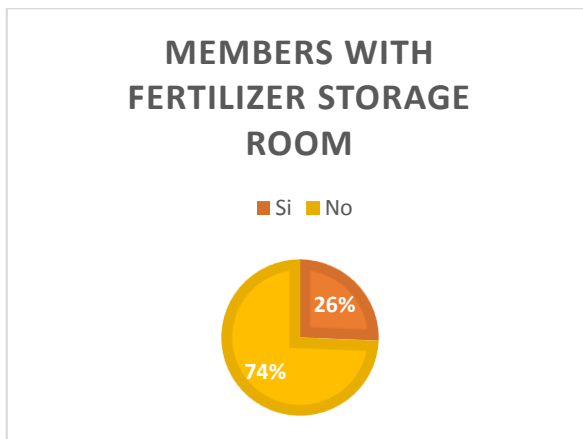
This dual project is done in conjunction with the Cooperative, the Grameen Foundation, Expocafe, and Starbuck’s “C.A.F.E. Practices” certificate. The project serves several purposes depending on the stakeholder, it involves 1 300 smallholder farmers spread around the cooperative’s catchment area, not only Salgar. The project has 3 phases. 1) The first phase includes obtaining information of each participating producer to find out each producers’ capacities, strengths and weaknesses in their production capacity and farm infrastructure. 2) Conduct training for farmers depending on their needs in relation to their production capacity. 3) Implementing plans for farm management to each participant (management report 2013; Interview A3). For example in phase 1, one looks at infrastructural capacities these smallholder farmers have, such as in the following diagrams 1 - 3

Diagram 1



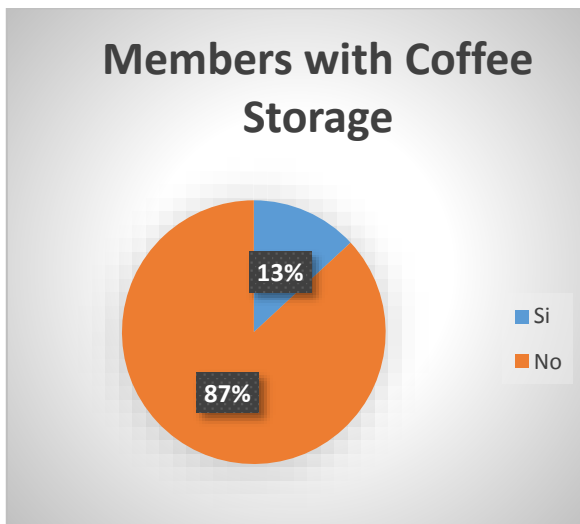
Source: Elaborated by the author with data from the cooperative.

Diagram 2



Source: Elaborated by the author with data from the cooperative.

Diagram 3



Source: Elaborated by the author with data from the cooperative.

The data from the graphs present that more than $\frac{3}{4}$ of the member farmers in Salgar lack any kind of storage room for fertilizers, chemicals or coffee. This implies a lack of farm infrastructure which implicates a lack of capital. This information reveals the health hazards farmers subject themselves to by agglomerating all of the above products in one room, as well as the impact it may have on reducing coffee quality. Working with this type of information the cooperative and other stakeholders recognize the farmers' needs and can more easily meet them by providing the proper type of training and potential provision of farm infrastructure if funds allow for it.

In order to acquire information on 1 300 farmers, new Information Communication Technology (ICT) is used, 33 tablets are donated by the Grameen Foundation in order to fulfil the project. It is possible to make phone calls, take pictures and use the internet (Interview A3). This enables a much faster rate of communication many farmers have been excluded from, and which many still are. It offers a great potential, not only as a way to outsource questionnaire surveys to 33 chosen farmers

who interview village neighbors on basic question for a remuneration. But in the long-run it cuts down the costs of gathering data for the institutions, while at the same time serving several practical purposes. For example, if a farmer suspects something is wrong with their coffee plants, they can take a picture with the tablet, send it directly to the FNCs extension service workers who are in their office and can immediately respond what needs to be done to treat it correctly. This saves on the latency of information dissemination. The time efficiency of the approach makes it possible for FNC workers to be available to more farmers as they do not have to travel far distances in rural areas to investigate as many problems anymore. Through the approach of mobilizing modern technology for information diffusion, efficiencies are gained on both sides, for farmers and the institutional workers (Co-op and FNC). This is an example of bringing closer the communication between the stakeholders, and bridging a physical divide by means of building a digital bridge, which shows how space can be considered relational to the context and the way it is used or circumvented in its traditional Euclidean notions.

What stakeholders does this project serve, and in what way does it do so? The cooperative and participating farmers benefit from this project in various ways: They acquire technology for improved farm and communication efficiency, as well as have a buyer (Starbucks) directly lined up who has invested resources to buy a specifically profiled coffee, with full traceability due to the technological innovations included. Expocafe is the coffee cooperatives' exporter, and Grameen Foundation is the resource-providing stakeholder who wishes to see improvement in the area in terms of poverty reduction and rural development. The most important stakeholders, the farmers, benefit from the web of networks created surrounding them, which finds its base at the cooperative, since they are the market intermediaries. With more actors involved that contribute resources, farmers gain access to a broadened use of resources that improves their efficiency in production, communication, and marketing.

However, the tablets in the project act as a contrast to the coffee canopies, tablets are rigid technology, largely unmalleable (within the local context). This leads us back to the precariousness of the actor-network, in which the tablet is a necessary tool – as a non-human actor mediator - to maintain the network established, alive. Due the tablets complicated composition, and lack of present material or know-how in rural areas to repair such “non-human actors”, it adds to the frailty of the network in a long-term perspective if the material object malfunctions.

5.2.3 Farmer Brothers Program

The North-American business organization has been interested in establishing a collaboration with the Salgar Coffee Cooperative to create a program for sustainable coffees, with goal to reap economic and social benefits directly to all farmers participating in the project, of which there are almost 400. While still very recent, it is not at this time possible to assess the socioeconomic impacts it may have. Except to say that by establishing a collaborative partnership with the cooperative, a business-relationship is established. This ensures coffee growers participating in the project to become insulated from the international coffee prices to a certain extent, by means of negotiating price between the two involved actors.

The farmers' participating in the Farmer Brothers project, get extra help with maintaining the quality and sustainability of the farm, as they receive both help from the FNC extension services and the company's own agronomists, in order to

meet the requirement of the company (interview A4). Stakeholders in this partnership are both the farmers and the company. On the farmers' end it is beneficial for them as they enter into exclusive negotiations with the company, setting the price beforehand, insulating farmers from the insecurity and volatility of market price, thus engaging in a *forward contract*.

6. Discussion and Conclusion

To answer the question of the cooperative's impact on rural development in the most basic sense; it has been imperative for rural development considering the context. In a region in which more than 80% of its economic activity constitutes coffee, the presence of a coffee producing and marketing cooperative has been decisive in setting the conditions (for the better) around which farmers are able to sell their coffee, members and non-members alike. They are less exploited than in regions where there is no nearby cooperative or point of purchase, leaving farmers to the mercy of street buyers who tend to exploit their vulnerabilities and lesser bargaining power. However, it should be acknowledged that what has been imperative in consolidating the coffee economy in Salgar - the cooperative -, may also be the downfall for the lack of economic diversification in the region, agriculturally and non-agriculturally.

Looking more specifically onto effects the cooperative has had on member-farmers livelihoods through their own services and collaborations with other actors, we can see the cooperative plays an important role for its members. The three most important and recognized services they render are the 1) guaranteed purchase of coffee, 2) credits for inputs, 3) and agro-input store. Number one has guaranteed the constant market access to the farmer, no matter what price, there is a security in that, despite the price insecurity of the coffee itself. Secondly, credits from the cooperative is critical for farmers in order to invest in fertilizers for increased productivity levels. Thirdly, the production costs of coffee (and other agricultural goods) are higher than that of other competing countries such as Brazil and Vietnam, which makes more difficult for Colombia to compete. As the cooperative engages in the provision of agricultural inputs, and does so in a non-lucrative manner – the only profit goes to covering operational costs – for the sake of its members, and it engages in economies of scale, they are able to reduce the production cost of coffee in the region slightly below the national average, which goes a long way for small-farmers.

In addition, while not equally emphasized by farmers, the solidarity fund plays an important role for member farmers' livelihoods. Most importantly so by offering to cover various health-related costs and subsidizing human-capital building activities. The indirect economic benefit farmers receive from this is the released economic pressure, meaning their small asset bases can instead be redirected towards investment for increased farm productivity.

While coffee differentiation through certifications and other processes can generate a premium price for farmers, it is clear as indicated by other literature on the matter, that prices depend accordingly to the world market, meaning very little insulation from the world market is possible. Accessibility and exclusivity is another matter, in which participants are the ones who can afford it, whereas the poorer do not benefit as they cannot participate.

In terms of collaborations between actors, firstly it is difficult to give a fair assessment due to the fact that they are still on-going projects, and are thus more difficult to evaluate. However, if we look at the purpose and intent of each collaboration a fair assessment can be made. Out of the three projects investigated, the coffee-drying canopies is the one most pressingly targeted at vulnerable farmers with the highest necessities, however the beneficiaries are not only co-op members, but also other coffee growers. Nonetheless, it assuredly increases the productivity levels of many farmers. The second project, is interesting in its future potential for means of communication and the build-up of a very particular local actor-network by the means of modern information communication technology. On its most basic level it can easily be extrapolated that the tablets lend themselves to increasing certain types of efficiencies, such as receiving direct help from agronomists at a faster rate. However, it is difficult to know what goes beyond that. Additionally, with Starbucks as the commercial stakeholder, the connection from farmer to retailer is established, and here we see farmers being able to participate in other than the traditional coffee market. Finally, and similar to the second project, Farmer Brothers are exterior clients interested in the quality of coffee they have found in Salgar, prompting them to partner up with nearly 400 farmers. Once again, the fortunate farmers participating have more positive economic outlook than their fellow coffee growers not partaking in such a program, seeing as they enjoy somewhat of an insulation from the international price and the benefit of forward contracting.

A theme of particular importance, as assessment of impact is not possible, is access. It is clear the cooperative renders some universal access to both members and non-members and some exclusive only to members. The cooperative serves as the intermediary actor through which “external” actors such as Starbucks, Farmer Brothers, and Grameen Foundation get in touch with the farmers. Yet, no program is all-inclusive, they have their limit either to budget or other reasons. This comes down to an important future consideration of *who* of the farmers gets the access to participate in aforementioned projects that are likely to bring about better economic prosperity for their households.

As to the answering the research question “*To what extent and by what means does the coffee cooperative in Salgar impact on rural development in the municipality of Salgar?*” the means by which the cooperative impacts rural development is manifold as seen above. It is important to state the mediating nature and good organization of the cooperative as a representative for many farmers in the region which manages to attract external actors for the benefit of the farmers. The extent to which the coffee cooperative impacts rural development in Salgar is difficult to assess in any quantitative terms, yet this goes back to the beginning of the conclusion: no other institution or organization has impacted rural development in Salgar as much as the cooperative has in the past 49 years of its existence due to the prevalence of monoculture in the region, in which they are the strongest institutional presence. It is clear the cooperative has a significant impact on rural development in the region, however it is predominantly by its own functions and services, rather than the ones attained through partnerships and collaborations, although they bring additional benefits. The precariousness and stability of the network the farmers make a part of is predominantly dependent on the continued existence of the cooperative. The cooperative is the intermediary actor which connects farmers to international actors such as Farmers Brothers, Grameen Foundation and Starbucks,

amongst others. Without the presence of the cooperative, farmers would most likely not get in contact with aforementioned actors, and thus not benefit from it. In addition, the potential detrimental effect it might have on the regional economy should the cooperative not be there to set a price floor, could have serious implications for development unless another nearby cooperative gets involved.

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Appendix – List of Interview Respondents

Key Informant Interviews

Position	Gender	Date	Code	Institution
Chief Operating Officer	Male	2014-03-05 and 2014-03-23	A1a and A1b	Cooperative
Administrative and Financial Officer	Male	2014-03-06	A2	Cooperative
Development and Social Promotion Coordinator	Female	2014-03-06	A3	Cooperative
Agricultural Supply Coordinator	Male	2014-03-18	A4	Cooperative
Secretary of Agricultural Development and Environmental Management	Male	2014-03-06	B1	Salgar Municipality
Regional Extensive Service Supervisor	Male	2014-03-18	C1	FNC
Extension Service Worker	Male	2014-03-06	C2	FNC

Note: The author acknowledges the gender bias clearly posited amongst key informant interviews, which mainly owes to the fact that higher-up positions in each institution were generally male dominated. As a researcher more importance is given to acquire the information necessary from the people with the proper expertise, thus it may be difficult to find a gender equilibrium of interviews in certain contexts, such as in this case. The same thing goes for coffee grower households which are also more commonly male-dominated, though more luck was achieved in reaching out to female participants.

Farmer Interviews

Alias	Gender	Date	Code
Fabian Restrepo	Male	2014-03-08	D1
Marlene Villa	Female	2014-03-21	D2
Arturo Londoño	Male	2014-03-21	D3
Maria Sanchez	Female	2014-03-21	D4
Jose Cardona	Male	2014-03-22	D5
Nelson Salazar	Male	2014-03-22	D6
Eduardo Correa	Male	2014-03-22	D7
Luis Montoya	Male	2014-03-23	D8
Alberto Guerra	Male	2014-03-23	D9
Gildardo Restrepo	Male	2014-03-23	D10
Camilo Peralta	Male	2014-03-23	D11
Adriana Escalante	Female	2014-03-23	D12