

— Chapter 1 —

Introduction

This research work analyzes the participation and welfare effects of coffee certification on smallholders in northern Nicaragua. In addition, the role of the smallholders' cooperatives and their respective value chains are investigated in order to identify other factors which may contribute to the success or failure of coffee certification schemes.

1.1. The coffee sector in brief

Coffee is mainly produced in developing countries by approximately 25 million of farmers, the majority of whom are smallholders (Gresser and Tickel, 2002). In Central and South America 70% of coffee farmers operate less than five hectares of land. Also in Nicaragua, the production is dominated by smallholders and involves around 20% to 40% of the rural labor force (Lewin et al., 2004). Nicaragua's export earnings from coffee amounted to 26% in the year 2000, yet decreased to 14% in 2002. Since then, the share recovered and varied between 15% and 20%. Coffee is a product with a high price volatility; frequent crises are common (Cashin et al., 2002). Exported coffee experienced a continuous price decline in the past decades. From 1977 to 2001, real international prices for coffee fell by 5.1% yearly (Cashin et al., 2002). In 2000, the real coffee price was around 50% of the price of the mid-1960s and a mere 20% of the peak market values in 1977 (Fitter and Kaplinsky, 2001). The reason for the break-down in Nicaragua's coffee export earnings in 2002 was the most severe coffee crisis of the past 100 years which lasted from 1998-2003 (Lewin et al., 2004). In many regions coffee prices were temporarily falling below the production costs (Lewin et al., 2004; Raynolds et al., 2004). This coffee crisis reduced producers' income strongly; and especially smallholders were severely hit by the price decline (Raynolds et al., 2004). Raynolds et al. (2004) indicate that thousands of producers in Central America abandoned their coffee parcels since conventional prices did not even cover harvesting costs during the coffee crisis. Between 1998 and 2001, poverty rates of Nicaraguan smallholder coffee farmers increased by 2% while the poverty rate among rural households dropped by 6% due to economic growth in the rest of the country (Lewin et al., 2004). Working and living conditions deteriorated, education and health became unaffordable, child labor increased, farmers and laborers migrated to the cities or to other countries. As farmers cut costs, the reduced use of inputs allowed pests to flourish, which led to declining coffee yields (Varangis et al., 2003).

At the same time while coffee producers were struggling to survive, coffee was booming in the coffee consuming industrialized countries. This phenomenon came to be known



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as the ‘coffee paradox’ (Daviron and Ponte, 2005). In the last decade, coffee became a fashionable drink and coffee bar chains, like Starbucks, have expanded rapidly (ibid.). While sales in the conventional coffee sector have been stagnant, new consumption patterns have emerged and the so-called differentiated coffee segment has experienced strong growth (Lewin, Giovannucci, and Varangis, 2004). Differentiated coffees can be distinguished by those that emphasize quality aspects (such as gourmet and specialty coffees) and those that stand out for ‘sustainability’ aspects such as a specific production technology or trading system (e.g., organic, shade-grown or fair trade coffees). They account for around 9%-12% of the traded volume and a larger percentage of the profits in industrialized countries (ibid.). During the past few years, the sustainable coffee segment has grown around 20%-25% annually (Giovannucci et al., 2010). This calls the interest of the coffee industry, as differentiated coffee allows competitive positioning in high-value markets (Henson and Reardon, 2005). In these market segments consumers pay price premiums which lie considerably above prices paid for conventional coffee (Giovannucci et al., 2010).

Among consumers, three types of buying patterns for differentiated coffee can be identified. The first type buys gourmet quality coffee. The second type buys ‘good’ coffee yet is not focusing on and paying for the material quality but mostly for symbolic quality and in-person service¹ in coffee bar chains which sell an ambience and a certain social positioning (Ponte, 2002). The third buying pattern is shown by consumers to whom food safety, environmental and social attributes of food products and production processes have become increasingly important (Asfaw et al., 2010; Basu et al., 2003; Codron et al., 2006; Ponte and Gibbon, 2005; Raynolds, 2000; Rigby and Cáceres, 2001; Swinnen and Maertens, 2007). This interest was triggered by food safety crises and workers’ rights scandals from the mid-1990s onwards which brought environmental and ethical issues to the attention of a broad range of consumers (Codron et al., 2006). While consumption of organic and fair trade certified products in industrialized countries started in the 1970s, these products were only offered locally and represented a small market niche. Since 2000, food products which are produced and processed according to environmental standards, like organic farming practices, have moved from niche market existence to mass markets. With the introduction of fair trade labeled products in large supermarket chains and discounters, a similar move to mass markets is likely to occur for these ethical and fair trade products (Codron et al., 2006).

¹Coffee quality can be distinguished between material quality, which refers to the material attributes of a product which are objective and measurable, symbolic quality and in-person service quality. Symbolic quality refers to attributes that cannot be easily measured by human senses or technological devices. Symbolic quality attributes are based on reputation and can refer to certifications such as organic or Fairtrade certification. In-person-service quality refers to attributes in regard of interpersonal relations, i.e. the relation between the person delivering the service and the consumer and/or the relations between the consumers. In person-service takes place at the point of consumption which can be cafés or coffee chains such as ‘Starbucks’ (Daviron and Ponte, 2005).

In an attempt to identify ways out of the recent coffee crisis which had struck the coffee farmers, differentiated coffee market niches are considered by farmers, cooperatives, policy-makers, NGOs, and donors as a promising alternative to conventional coffee channels (Kilian et al., 2006; Lewin et al., 2004; Linton, 2008; Willer and Yussefi, 2007). Roasters and retailers are also interested in differentiated coffee markets as they are motivated by profits, market shares and social responsibility.

Therefore, smallholder coffee producers and their producer organizations are supported to obtain sustainable coffee certifications like the organic, Fairtrade², ‘Shade-grown’ or ‘Bird-friendly’, ‘Rainforest Alliance’ or ‘UTZ Certified’ certification. There are two private company standards that also became important: ‘Starbucks C.A.F.E. Practices’ and ‘Nespresso’ which is a brand belonging to ‘Nestlé’. Furthermore, there is the Common Code for the Coffee Community (4C-Codex) which is verification-based but not certified by an independent assessment. The organic and the Fairtrade certification are two of the oldest and best-known certifications³. The other certifications are less common among smallholders; yet the coffee volumes traded of other certification schemes have strongly increased in recent years (Giovannucci et al., 2010). Together, all the sustainability initiatives made up more than 8% of all green coffee exports in 2009 (ibid.). Environmental and social aspects are important in organic production and in the Fairtrade system. However, the focus of the two systems is different. While organic production lays its emphasis on environmental aspects, Fairtrade emphasizes social standards, trading and marketing relationships. Guided by similar principles, Fairtrade also aims at increasing the share of organic production under their label. The double certification Organic-Fairtrade becomes very popular among coffee buyers and consumers. Both, Fairtrade and organic certification claim to contribute to poverty reduction and food security in developing countries (IFOAM, 2006a,b; Wills, 2006). Certified coffee markets have experienced strong growth in Europe (Murray and Reynolds, 2006) and continue to grow in the USA where growth rates of 56% for organic and 33% for Fairtrade coffee are reported (Giovannucci and Villalobos, 2007). Fairtrade coffee consumption world wide has been growing annually between 11% and 20% in the past five years (FLO, 2007; Giovannucci et al., 2010).

In this context, the importance of marketing cooperatives has often been highlighted as a link between consumers and producers that allows farmers to participate in new market developments and high-value chains (Bacon, 2005; Varangis et al., 2003; Wollni et al.,

²The term ‘fair trade’ is written in lower case and two words where we refer to the movement of trading goods fairly. When the term ‘Fairtrade’ is capitalized we refer to one specific fair trade standard and label, the ‘Fairtrade certification’ of the ‘Fairtrade Labeling Organizations International’ (FLO). Apart from the Fairtrade standard of FLO, there exist other fair trade standards developed by other certification agencies like the ‘Fair for life’ standard of the international ‘Institute for Marketecology’ (IMO). Yet, during the time of research, these other fair trade standards were not very common in smallholder coffee production.

³They are described in detail in the following chapter.

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2010). The coffee value chain is split into two parts: the coffee producing countries, mostly developing countries with millions of smallholders involved, and consuming countries, mainly industrialized countries with comparatively rich consumers (Ponte, 2002). In coffee producing countries, the producers' value captured for conventional coffee production and primary processing over the past 30 years has varied between 10% and 20% of the final retail value (Daviron and Ponte, 2005; Fitter and Kaplinsky, 2001; Talbot, 1997). In the 1970s and 1980s, the total value captured in consuming countries was between 40% and 50%; by the end of the 1980s this share had risen to over 70% (Daviron and Ponte, 2005; Talbot, 1997).

The direct trading relationships in Fairtrade chains should lead to a higher share of the retail price being returned to the producer than in the conventional chain (Arnould et al., 2009). According to Slob (2006, p 134) the *"percentage of the final retail value that is retained by the producers is much higher in the Fair Trade system than in the mainstream market"*. Certified coffees are marketed at a higher retail price than conventional coffees. This price premium is generally assumed to compensate for higher production costs and/or lower yields inherent to organic farming and to give a 'fair' price covering production and living costs in the Fairtrade sector (Wills, 2006). Therefore, Fairtrade is seen as a *"feasible alternative to the unfair distribution of value that characterizes today's mainstream coffee market"* Slob (2006, p 139). Organic movements also claim benefits to producers and rural development through the enhancement of economic, social and environmental sustainability (IFOAM, 2006a,b). Yet as Fitter and Kaplinsky (2001) indicate, it is not necessarily given that the returns to differentiation are captured by producers even when they can meet the requirements of the differentiated specialty markets.

1.2. Problem statement

While the coffee prices have recovered in recent years and begin to lead to a new peak since winter 2010, several questions remain: Whether the higher coffee prices at retail level are actually passed on to farmers, how much benefit farmers derive from the added value of certification schemes in comparison to other chain actors, how certification affects their income and their poverty level, and which role the cooperatives as marketing institutions are playing for the success of certification schemes (Giovannucci et al., 2010). Due to regulation, cooperatively organized farmers are the only producers of Fairtrade coffee. Also organic certified coffee is often produced by cooperatives or associations since certification is too costly for individual smallholders (Rice, 2001).

The effects of organic and Fairtrade certification on coffee prices have been more frequently investigated than those on income and poverty. Bacon (2005) found out that during the coffee crisis participation in organic and Fairtrade networks lead to higher coffee prices, reduced farmers' livelihood vulnerability and the risk to loose land titles. Fairtrade certified cooperatives in Mexico and Central America paid their members prices

that were two to three times higher than those of local middle-men (Raynolds et al., 2004). A study in Costa Rica also shows that participation in specialty coffee marketing channels as well as in cooperatives serves to increase farm-gate prices (Wollni and Zeller, 2007). Other researchers observe that the higher prices from certification lead for example to better nutrition, increased education, health, improved household sanitation systems, water supplies or cooking stoves (Becchetti and Costantino, 2008; Raynolds et al., 2004; Utting-Chamorro, 2005; Arnould et al., 2009; Bacon et al., 2008). Fairtrade and organic coffee certification also increase social organization and contribute to capacity building of farmers and their organizations (Bray et al., 2002; Raynolds et al., 2004; Taylor et al., 2005).

Yet, research results on certified coffee prices are not always that clear-cut positive. Analysing data from several countries in Central America, Kilian et al. (2006) show small to large price differentials for organic and Fairtrade coffee for the 2002/03 harvest. In some occasions, Fairtrade farm-gate prices were much lower than conventional prices, for example when existing cooperative debts needed to be paid (Bacon, 2005; Utting-Chamorro, 2005). Despite participating in certified markets, farmers still reported a decline in their quality of life during the coffee crisis as income from coffee sales to alternative markets was not enough to offset additional difficulties farmers faced (Bacon, 2005). According to Arnould et al. (2009) and Valkila (2009), the positive farm-gate price differences of organic and Fairtrade coffee continue after the crisis in Guatemala, Nicaragua, and Peru while Philpott et al. (2007) do not locate premiums in Mexico.

Most studies emphasize the higher prices paid in certified market channels and deduce that higher prices lead to higher farm income which then reduces poverty. As net coffee income is not only determined by the price but also by yield levels and production costs, this conclusion is premature. Certified coffees have distinct production and marketing systems, thus associated costs differ from those of the conventional system. In addition, the rising quality standards for organic and Fairtrade coffee (Murray and Raynolds, 2006; Raynolds, 2009) increase production costs as more labor is needed. There is not much information about production costs of organic certification schemes (Kilian et al., 2006). Kilian et al. (2006) and Van der Vossen (2005) find that organic farmers have higher production costs than conventional farmers who are not compensated adequately by price premiums for organic or Fairtrade coffee. Other studies mention lower production costs (Nigh, 1997; Valkila, 2009). Mutersbaugh (2002) indicates that in Mexico organic coffee production is only successful when farmers have high yields and that premiums, at best, just cover production costs (Mutersbaugh, 2005). In contrary, Bray et al. (2002) show for Mexico that higher prices for organic coffee offset higher production costs and that farmers benefit from participation.

Qualitative research on the past ten years of coffee certification schemes as well as research combining qualitative with some quantitative data, yet without random sampling and statistic analysis, is now abundant – for example Bacon et al. (2008); González

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and Nigh (2005); Kilian et al. (2006); Murray and Raynolds (2006); Mutersbaugh (2002, 2005); Raynolds et al. (2004); Utting-Chamorro (2005); Valkila (2009). There are very few quantitative studies evaluating organic or Fairtrade certification schemes (Arnould et al., 2009; Bacon, 2005; Becchetti and Costantino, 2008; Bolwig et al., 2009) based on a random sample with a treatment and control group. Similar findings are stated by Becchetti and Costantino (2008) for evaluations of the Fairtrade certification in general.

Additionally, there are not many scientific studies that verify the claims of organic production and fair trade certification systems regarding poverty alleviation (Murray and Raynolds, 2006). The analysis of certified coffee value chains as compared to conventional value chains has been addressed by only two studies both using data from the coffee crisis (Daviron and Ponte, 2005; Mendoza and Bastiaensen, 2003). Mendoza and Bastiaensen (2003) indicated not much higher producer shares of final retail prices for certified coffees than for conventional ones, while Daviron and Ponte (2005) found higher shares for Fairtrade but not for organic certified coffee farmers.

Not only prices and shares of the final retail price the coffee producers receive should be questioned, but also how power is distributed and what information is communicated in the value chain. Both are determining factors for the successful integration of smallholder producers into the value chain (Gereffi et al., 2005; Talbot, 2002). Power and information issues have been overlooked in research on certified coffee value chains (Tallontire, 2009). The above mentioned studies only marginally touch the business model of farmer organizations and their upgrading strategies apart from certification. The fit of upgrading strategies to the business model of a farmer organization as well as the determinants for the success of upgrading through certification has so far been neglected by research. This may also be one explanation for the contradictory findings in respect to the economic benefits in the above cited studies.

Summarizing, no study so far has systematically investigated production costs, profitability, household income or the poverty status of organic and Fairtrade certified coffee producing households based on a quantitative analysis with randomly selected producers and triangulated that with qualitative data. In addition, most of the cited studies on certification effects have neither randomly sampled cooperatives/farmer organizations nor analyzed several cooperatives or certification standards simultaneously.

At present, only weak empirical evidence is available to international donors and governments as a basis for their support to coffee certification schemes as tools which link farmers to high-value markets, increase producers' incomes and shares of final retail price, which change the power and information relations between buyers and sellers, and which contribute to poverty reduction. However, for national governments and international donors to make effective policies for poverty reduction, quantitative data about the profitability and poverty reduction potentials of certified coffee production as well as about the factors leading to the success of certification schemes are of great importance.

1.3. Research objectives and questions

This paper contributes to filling the identified knowledge gaps through an analytical comparison of conventional, organic and Organic-Fairtrade certified small-scale coffee farmers, cooperatives, and value chains. The analysis of participation and socio-economic effects in certified coffee supply chains on small-scale farmers requires approaches from different viewpoints for a holistic presentation and understanding of the functioning and linkages between the different production systems, market channels, and chain actors, since the coffee value chain is very complex. This research is based on two analytical levels: (i) the household level of the smallholder coffee producers and (ii) the organizational and institutional level regarding the cooperatives and value chain. The study first aims to identify the socio-economic costs and benefits of participation in organic and Organic-Fairtrade certified coffee chains with respect to level of coffee and household incomes as well as household poverty. Second, the role of the producer groups, their business models and upgrading strategies for the success of certification schemes is explored. Third, the integration of coffee farmers and their cooperatives into the coffee value chain, the structure and functioning of the value chains and the value adding effect of certification is examined. Quantitative data are triangulated with qualitative data.

The following research questions are analyzed:

1. Regarding the small-scale coffee farming household level
 - a) Which types of smallholders participate in organic and Organic-Fairtrade certified coffee marketing channels in comparison to conventional marketing channels?
 - b) What are the smallholders' costs and benefits of participation in organic and Organic-Fairtrade certified coffee chains with respect to level of household income and poverty?
 - c) How do organic and Organic-Fairtrade coffee certifications relate to the production, food security and financial situation of smallholders in Nicaragua?
2. Regarding the organizational and institutional level of conventional and certified⁴ cooperatives
 - a) What are the business models and upgrading strategies of conventional, organic and Organic-Fairtrade certified cooperatives and how well do they work?
 - b) How are the coffee gross margins linked to the organic and Organic-Fairtrade certification strategy, to the cooperative's business model and its other upgrading strategies?
3. Regarding the organizational and institutional level of the conventional and certified coffee value chains

⁴For simplification, the term 'certified' is used when speaking about both the organic and Organic-Fairtrade certification.

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- a) What are the structures of the Fairtrade and Organic-Fairtrade certified chains compared to a conventional coffee value chain in terms of actors, governance, and information flows?
- b) What is the effect of adding value to coffee through Fairtrade and Organic-Fairtrade certification on farm-gate prices and the producers' share of the final retail price?

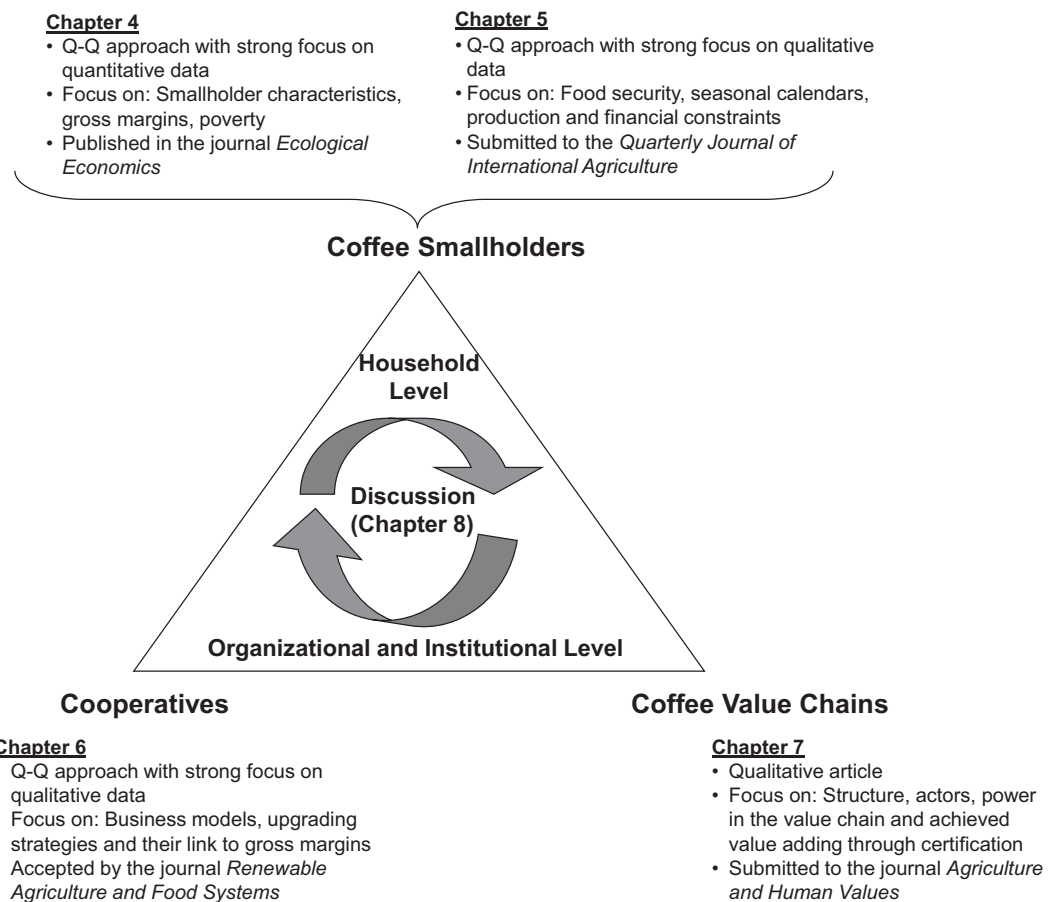
1.4. Outline of the dissertation

The dissertation is presented as a cumulative thesis. The first part comprises Chapter 2, which provides a short overview of the organic and Fairtrade certification standards and the conceptual framework, and Chapter 3 which describes the research area and the sampling design applied in this research. The second part addresses the research questions in form of articles submitted to peer-reviewed journals. Figure 1.1 provides an overview of the linkages between the chapters. Chapter 4 and 5 address the household level of coffee farmers. Chapter 4 contains the first paper published in *Ecological Economics* and describes the conventional and certified coffee smallholders, their coffee gross margins and profits, household income and their relative as well as absolute poverty level. Chapter 5 provides a predominately qualitative analysis of the food security status as well as of production and financial constraints of conventional and certified farmers. With the help of seasonal calendars, it analyzes work load, food, income and expenditure patterns and discovers a vicious cycle of indebtedness. It was submitted in February 2011 to the *Quarterly Journal of International Agriculture*.

Chapter 6 and 7 address the organizational and institutional level. Chapter 6 embraces a paper accepted by the journal *Renewable Agriculture and Food Systems*. It discusses the role of cooperatives, their business models and upgrading strategies as well as the strengths, weaknesses, opportunities, and threats of cooperatives and links these to the farmers' coffee gross margins. Chapter 7 contains a paper submitted in January 2011 to the journal *Agriculture and Human Values*. It compares the conventional with organic and Organic-Fairtrade certified value chains and analyzes the value adding effects of certification schemes, especially regarding farmers' shares of retail prices.

Chapter 8 provides a concluding discussion and synthesis of the obtained results and gives an outlook on desirable follow up research as well as policy implications. This is followed by the references as far as they did not appear at the end of each article and the appendices.

Figure 1.1.: The structure of the dissertation



Source: Own illustration.