The Impact of Coffee Certification on Smallholder Farmers in Kenya, Uganda and Ethiopia

Report prepared by

Centre for International Development Issues Nijmegen (CIDIN),

Radboud University Nijmegen, The Netherlands

For Solidaridad

The team responsible for preparing this report:

Prof. Dr. Paul Hoebink, CIDIN, Radboud University Nijmegen
Prof. Dr. Ruerd Ruben, CIDIN, Radboud University Nijmegen
Dr. Willem Elbers, CIDIN, Radboud University Nijmegen
Bart van Rijsbergen, MScRes, CIDIN, Radboud University Nijmegen

February 2014

Table of Contents

Executive Summary: Background, conclusions and recommendations

Background

0.1 On this report and impact studies

1. In the last fifteen years we have seen a growing number of impact evaluations on certification. Most of these evaluations are on coffee, a substantial number of these are on tea, cocoa and bananas, but there are also a small number of evaluations on other Fairtrade products like crafts, herbs and spices.
2. Most of the studies, and in particular the early ones, are qualitative, consisting mainly of data derived from interviews with leaders of cooperatives and to a lesser extent also of members of cooperatives. In the last few years we have seen more quantitative research in which farmers are interviewed who produce under certified schemes and also farmers of control groups who produce conventionial products.
3. The outcomes of these impact studies vary widely. Some claim high prices, concluding that Fairtrade certified farmers receive three times as much for their coffee as conventional farmers. Other studies see more limited effects or find it difficult to measure the effects of Fairtrade, because of the influence of national policies and global markets. They suggest that Fairtrade and organic networks may secure farmers' income and offer better prices, but may not be able to offset the general decline in farmers' livelihoods.
4. This report is the result of a series of studies, done in collaboration with Solidaridad, between 2008 and 2013. At the heart of it are two rounds of surveys in Kenya and Uganda in 2009 and 2012/13. This data is complemented with several in-depth field studies in Kenya and Ethiopia focussing on particular aspects of the performance of cooperative members: (a) changes in risk attitudes arising from certification (Schoonhoven, 2012), (b) changes in gender relationships at the cooperative and household level (Dijkdrenth, 2011), (c) gender bargaining power and trust relationships (Groot Kormelinck, 2010) and (d) impact of trust on farmers' willingness to invest (Plaisier, 2010). Summaries of these studies are included in this report. Survey research on coffee certification in Ethiopia is also included (chapter 4). It should be underlined that this is not an evaluation of Solidaridad's programme in East Africa, but on the impact of certification.
5. It is important to note that the goal of this research was to show the different impacts of Fairtrade and Utz certification and it was *not* meant to be an evaluation of the impact of the Fairtrade neither to make an assessment of Solidaridad's work in East-Africa.

0.2 The rationale for coffee certification

6. Certification was originally perceived as a strategy for strengthening the position of coffee smallholders in the value chain. A basic idea behind certification is to encourage supply chain partners to engage in direct sales transactions under long-term contractual arrangements based on trust regarding product quality and delivery reliability. It was expected that shortening the supply chain through direct interactions with exporters and processors would reduce the transaction costs and market risks and enhance knowledge of good agricultural practices, thus providing suitable incentives for quality upgrading (selling at better prices on premium market segments) and for maintaining scheduled deliveries (to avoid fluctuations occasioned by side sales). Various labels have different strategies for enhancing

farmers' welfare, mainly through output price certainty (Fairtrade) or input/knowledge upgrading (Utz).[1]

7. A key dimension of certification is the improved certainty for smallholders regarding access to output markets, expected prices and on-time payments. In fact, the original proposition of Fairtrade included provisions on pre-finance by processing companies that would enable farmers to escape from advanced pre-harvest sales at low prices to traditional intermediaries.

8. Finally, the institutional dimension of strengthening cooperative performance represents an important element in the certification strategy. Cooperatives or farmers' associations are considered key for increasing the scale of production, to maintain the quality standards, and to guarantee the reliability of smallholders as preferred suppliers in the value chain.

0.3 Solidaridad's activities in East Africa

9. In July 2008 Solidaridad started the implementation of the 5-year programme called "Building Trade Capacity and Sustainable Livelihoods through Fairtrade and Ethical Trade" in Ethiopia, Tanzania, Kenya and Uganda. This programme is funded by Irish Aid via Solidaridad's partner Irish Fair Trade Network. The overall objective of this coffee support programme is to improve the income position of small-scale coffee producers in East Africa through Utz and Fairtrade certification and strengthen the producer organizations.

10. The main component of the Solidaridad support programme is to assist small-scale farmers in achieving Utz and Fairtrade certification. Training programmes in good agricultural practices have been implemented to improve the coffee production and outcomes for farmers. Since producer organizations play an important role for farmers in East Africa, Solidaridad works (e.g. in Kenya) directly with cooperatives to reach the farmers and strengthen the organizations in the areas of management and record keeping. Additional support activities are implemented with local partners in improved market linkage, diversification (e.g. beekeeping in Ethiopia) and addressing social issues like gender integration and youth involvement in coffee.

0.4 Key impact areas

11. International standards for impact assessment require a comparison of performance on selected outcome indicators, with measurements over time (before-after) and compared with a counterfactual (with-without). Therefore, a representative random sample of smallholders (members of certified and non-certified cooperatives or individual farmers) is taken to allow matched comparison. Impact is mainly assessed at coffee-system and farm-household level, but also intra-household distributional effect (equity) and group/village-level externalities remain relevant. Due attention is given to initial selection criteria for engaging farmers in certification (e.g. are targeted farmers poor people and are they located in less-favoured areas?).

12. The welfare impact of certification can be measured with a wide range of indicators. Most studies focus on coffee yields, prices and (net) revenues, but - given the diversity of on/off-farm activities - net household income provides an indicator that better enables us to consider possible substitution effects and appreciate tendencies in the dependency of

[1] See: Ruben and Verkaart (2011); for an earlier overview see Muradian and Pelupessy [YEAR].

household income on coffee revenues. Other important welfare aspects refer to changes in wealth (assets; access to credit, savings) and adjustments in household expenditures patterns.

13. Another element for impact analysis focuses on behavioural implications. Risk attitudes and willingness to invest are considered in the literature as key indicators for pathways out of chronic poverty. In addition, intra-household distribution of tasks, responsibilities and decision-making are important when considering changes in gender bargaining power that strongly influence prospects for in-depth investments in health, housing and education and thus life-time intergenerational wealth. Similarly, in-depth investments in coffee plant renovation and soil conservation are key for improving land productivity and coffee quality over time. Otherwise, investments in education or cattle husbandry are indicative of tendencies towards future income diversification.

14. Finally, institutional effects of certification usually consider the internal functions provided by the cooperative framework (e.g. technical assistance, finance) and the external functions in the marketing setting (e.g. traders selection, price bargaining). Satisfaction with the cooperative is likely to be influenced by perceptions regarding democratic accountability and the degree of internal cohesion. Moreover, local/regional externalities and village-wide effects could occur if non-certified farmers are able to reap the benefits of overall price increases, knowledge spillovers or premium investment in common goods (e.g. community drinking water, schools, road improvement, etc.).

0.4 Earlier insights on the impact of Fairtrade

15. Although in recent years many papers and journal articles have been published based on anecdotal evidence regarding the perceived benefits of coffee labelling for smallholders, empirical evidence based on representative field level surveys remains surprisingly scarce.

16. The effects of Fairtrade (FT) and other types of certification on coffee producers and organizations have been analysed in several earlier studies. Detailed case studies from coffee cooperatives in Costa Rica, Nicaragua and Mexico found that FT initially strengthened producer organizations and conclude that - during the coffee crisis of the early 1990s - FT accomplished its goal of improving the returns to smallholder producers and positively affecting their quality of life and the strength of the organizations.[2] Other research stressed that FT initiatives improved the well-being of small-scale coffee farmers and their families, particularly due to better access to credit facilities and external funds, as well as through training and improved capabilities to enhance the quality of the product.

17. The European Fair Trade Association (EFTA) provides an overview of FT impact studies since 2000, but none of these studies includes significant field work or a rigorous counterfactual comparison. Most attention is given to positive effects on producers' organizations – focusing on the process of capitalization from the FT premium payments – while little attention is given to the individual and household-level implications.[3] Other studies refer to the effects on prices and productivity and the role of FT in improving competitiveness. Major constraints that are identified relate to the difficulties of involving farmers in marketing decisions.[4]

---

[2] For (more) references to the studies quoted here and below, see chapter 1.

[3] Taylor, 2005; Raynolds et al., 2004.

[4] Becchetti & Constantino, 2006

18. Recent studies that focus on organic FT certified farmers in northern Nicaragua are more critical.[5] FT organic coffee gives lower yields and requires higher labour efforts, and therefore the increase in farmer incomes from this low-intensity coffee production is very modest, because little coffee is produced by marginalized farmers. Farmers thus remain in poverty despite being connected to Fairtrade organic markets. Evidence suggests that participation in alternative trade networks reduces exposure and vulnerability to variable commodity prices. However, three quarters of all farmers surveyed reported a decline in their quality of life during the last few years.

19. Comparative studies from Peru and Costa Rica[6] indicate that FT standards lead to fairly modest changes in farm production methods and household income, but that greater certainty regarding prices and market outlets has important positive effects on access to finance and investment attitudes. Using a difference analysis with propensity score matching approach, Ruben et al. (2009) show that FT certified farmers consistently invest more in education and house upgrading, and also appear to be significantly less risk-averse. Otherwise, standards for Responsible and Sustainable Trade focus attention on better farm management practices and quality upgrading as major strategies for strengthening farm-household welfare. This implies that knowledge dimensions that guarantee compliance with technical standards and behavioural incentives that favour loyalty to the producer organization are more significant.

20. Other cross-country studies that apply a rigorous appraisal of certification impacts reach similar conclusions: direct economic and income effects are at best rather modest, whereas observed changes in livelihoods and related education and health outcomes are stronger in relation to cooperative membership than to market exchange arrangements.[7]

21. The recent evidence regarding the impact of certification points to the critical importance of the 'embeddedness' of coffee standards in improved global production networks.[8]

22. An mportant conclusion derived from this eterature overview might be that this asks for a more detailed assessment of the broader market and supply chain structures and the institutional networks surrounding the coffee sector. In addition to the value chain perspective, due attention should be given to the horizontal dimensions of agency relationships, in particular the prospects for improved smallholder cooperation and the space provided by (inter)national economic and political regimes.

Conclusions

0.5 Main outcomes of the field studies

23. The current research provides new evidence about the impact of coffee certification based on unique field surveys. To the best of our knowledge, this is the first rigorous impact study that relies on balanced panel data with a four year time interval (for Kenya and Uganda).[9] Moreover, for coffee producers in Ethiopia special attention is given to the effects

[5] Valkila (2009) and Valkila & Nygren (2009).

[6] Ruben (2008).

[7] Arnould et al. (2009) and Mendez et al. (2010).

[8] Coe et al. (2008). Coe et al. distinguish between territorial, societal and network embeddedness as a way to describe the integration into Global Production Networks.

[9] Another study by Nic Francesconi (IFPRI) and Ruerd Ruben (CIDIN) based on longitudinal data from certified

of multi-certification. Field research was conducted between 2008 and 2013 amongst cooperative coffee farmers with different types of certification in two different districts in Kenya and Uganda. In Ethiopia during 2011 comparing cooperatives with single and multi-certification (see Table 1).

Table 0.1: Sample size and composition

	Kenya	Uganda	Ethiopia
Utz farmers	77	302	
FT farmers	74		280
FT organic			280
FT + Utz	62		140
Control (non certified)	280	271	
TOTAL	493	573	700

24. It should be kept in mind that there are quite significant differences between the three case study countries and regions. First, countries differ in their national coffee markets and regulations, price regimes and legal aspects (strong regulation in Ethiopia, auctions in Kenya and free markets in Uganda),. Second, regions differ in the quality of their soils, infrastructure and access to markets. Third, cooperatives differ in the way they are organised, their strength and the trust farmers have in them. And fourth, farmers differ in the way they organise their coffee production and in their level of dependence on coffee income. What also is important is that price at the international coffee markets in the period of research showed a serious decline.

25. Following the major areas of potential impact outlined in section 0.4, we can derive the following general tendencies:

(1) *Production effects*

In general, involvement in Utz-certification enhances knowledge of good agricultural practices and initially increases production and yield levels. FT certification basically leads to expansion of coffee areas and farmers become overly dependent on coffee. Within the same region, non-certified farmers also adjust their input use and thus the volume-effect of certification is largely socialized over time. Prices paid to Utz producers remain positive compared to FT certification in Kenya, and are usually better than prices for non-certified producers, even if the coffee is not sold under certification. In Uganda, fewer effects on coffee systems are registered, due to stronger free market price equalization tendencies.

(2) *Welfare effects*

he effect of the price payments associated with FT and Utz certification on the total (gross) income of farmers is modest and fairly limited. On average, coffee makes up roughly only one third to a quarter of farmers' total income in Kenya. When less than one third of the FT and Utz certified coffee in Kenya is sold as certified, this means that only one ninth or one twelfth of farmers' income comes from coffee which is sold at a certified price. While most certified

and non-certified coffee producers in Tanzania is currently under review and reaches similar conclusions.

farmers maintain a stronger specialization in coffee, other farmers also invest in other crops, livestock and non-farm employment. Particularly in Kenya, this leads to wealth accumulation and income diversification amongst farmers.

(3) *Graduation effects*

Farmers selected for FT certification are usually found in sub-optimal production areas. Consequently, initial gains from certification are usually high, but these tend to spread once non-certified farmers catch up in the process. Utz farmers maintain their relative advantage in expenditure levels compared to FT farmers, but differences with non-certified farmers become considerably smaller (in Kenya) or eventually disappears (in Uganda). Most initial gains from trade are thus spread through spatial externalities. Most important certification effects occur at the beginning of the coffee life cycle and gradually even-out over time.

(4) *Behavioural change*

Many farmers are scarcely informed about certification and its different aspects. This influences their attitudes towards investments and risk, both at cooperative and intra-household level. Such behavioural changes only occur if cooperative trust and loyalty are sufficiently guaranteed. Certification hardly reduced the incidence of external shocks, but farmers do become less risk-averse if the cooperative framework offers sufficient guarantees. This becomes particularly important when (FT) farmers' income is more dependent on coffee and thus less alternative livelihood options are available.

(5) *Gender relations*

Certification influences decision-making procedures in the cooperative domain, but women's bargaining position in the private domain remains largely unaffected, unless women are accepted as full members of the cooperative and are included in the board. Women are a very small minority in the cooperatives and among coffee farmers and play a limited role in the governance structures. Case studies in Ethiopia and Kenya show that independent female cooperative membership, female land/tree-ownership and more female education can increase their bargaining position.

(6) *Cooperative governance*

Membership of coffee cooperatives proved to be a key mediating variable for reinforcing the use of good agricultural practices. Certified farms are generally fairly satisfied with the technical assistance provided by their cooperatives. Certification leads to reduced membership of other organizations, thus limiting the networks in which smallholders are usually involved. The certified market only absorbs between a quarter and a half of total coffee production. Cooperatives are therefore forced to sell a substantial share of certified coffee on conventional markets. As shown in the Ethiopia study, multi-certification then provides an attractive alternative. Moreover, many members are frequently involved in side sales ('hawking') to receive earlier payments. These side sales range from at least 25% in Kenya and Uganda up to 50% in Ethiopia.

(7) *Chain effects*

All certification programmes exercise a decisive influence on the improvement of coffee production systems, but change hardly anything in the structure of the value chain. Reliance on production knowledge alone has a positive impact on yields and quality but turns out to be insufficient for guaranteeing long-term welfare gains. In general, Utz certification proved of little help for generalizing improved marketing and bargaining skills amongst cooperative members. The share of primary producers in the final consumer price of (certified) coffee still remains low (approx. 6-8%) and has not structurally been changed. This is partly due to over-certification and is otherwise influenced by the increasing quality segmentation in the coffee market. Pre-finance is scarcely available and late payments drive farmers to sell outside the cooperative.

26. The registered differences and effects are strongly dependent on specific local circumstances and influenced by particular events in the life-cycle of projects, cooperatives and farm-households. It is therefore worthwhile to outline four general factors that influence outcomes:

a) Cross-country differences

The coffee marketing regimes in Ethiopia (state exchange) and Kenya (exchange) are far more centralized compared to Uganda, with corresponding effects on price transmission. Coffee prices in Kenya responded better to world prices compared to Uganda and Ethiopia. Moreover, cooperative legislation leads to stronger state interference in Ethiopian cooperatives and a tendency towards individualization in the Uganda case. Even while cross country comparison is tricky, it is likely that individual behaviour and trust attitudes are aligned to these tendencies.

b) Cross-regional differences

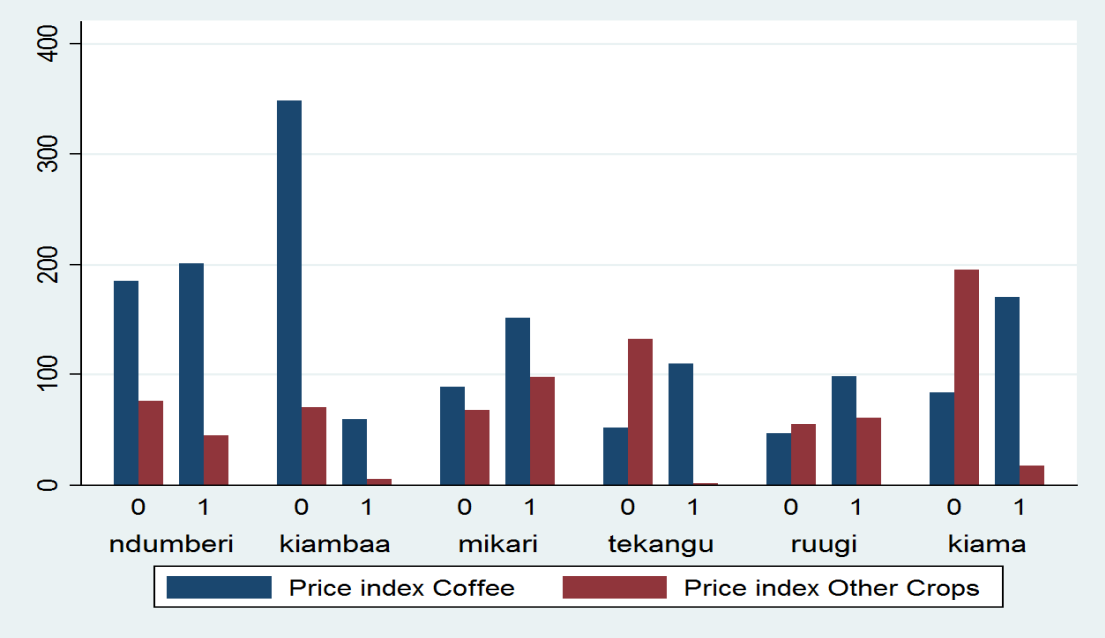
Marked differences in regional conditions strongly influence prices and market opportunities. Where certification sometimes focuses on relatively poor farmers living in marginal regions, initial effects are likely to be considerable, but these effects tend to disappear (as other farmers catch up) or are dispersed once regional market integration has been strengthened and all farmers equally benefit. As shown in the Kenya report, returns from certification are highest in remote areas characterized by high dependence on coffee farming where less alternative livelihood options are available. Figure 1 shows large differences in the attractiveness of coffee marketing margins compared to output/input price ratio of other crops between regions and cooperatives in Kenya. In the poorer Kiambu region the coffee marketing margins for Utz certified farms remains stable but for FT certified farms the margin is strongly reduced over time; NC farmers benefit most from changes in the prices of other crops. In Nyeri district these changes are less profound, while differences in net margins favour certified and non-certified coffee equally.

c) Cooperative differences

Considerable differences are observed between cooperatives in terms of internal organization, trust and quality of service provision. It is likely that some self-selection took place when the initial selection of cooperatives for certification was made. In some cases (Kulika, Uganda), this was based on accumulated experience from earlier projects. Side sales are strongly related to cooperative trust. Whereas the provision of technical assistance is

generally appreciated by their members, scores for the cooperative bargaining power (force index) and for social coherence (identification index) are generally substantially lower.

Figure 1: Price ratio differences between coffee and other crops, Kenya (index at t_0 = 100)



d) Household differences

Since the final diff-in-diff estimates are presented as matched comparisons, differences between individual farm-household characteristics are outweighed. Nevertheless, farmers differ in intrinsic (non-observable) characteristics that are not fully included in the estimates. In particular, differences in risk attitudes are likely to be related to options for household income diversification and/or trust in cooperative insurance. Given the relatively limited changes in the latter two indicators, long-term behavioural effects of certification remain below potential.

0.6 Outlook: Current Challenges for Coffee Certification

Based on the finding from the comparative field study and the in-depth case studies we can identify the following main challenges for coffee certification programs:

1) *Support programmes*

From our group interviews it can be concluded that farmers were very positive about the trainings in good agricultural practices. It means that if certification is accompanied by training and capacity building, the effects are likely to be more significant. The coffee support programme in East Africa, implemented by Solidaridad over the past 5 years, focussed indeed on training and capacity building linked to Utz and FT certification and diversification. Diversification is an important element to increase other sources of income for farmers.

Furthermore, multi-certification has proven to be a successful strategy for coffee cooperatives to increase benefits from certification.

(2) *Selection of partners*

Certification programmes tend to select potential partners in areas where farmers' organisation is effective. It is difficult to disentangle the effects of cooperative reinforcement from the outcomes of certified market exchange. Reinforcing cooperatives organization precedes the generation of individual welfare effects. The initial selection of marginal coffee producers as FT target groups guarantees pay-offs in the early stage of certification, but this advantage can only be sustained if further development of dynamic competitive advantages takes place. Utz certification (or other private labels) then provides an adequate continuation to FT. Instead of competing, the labels should reinforce each other in a sequential manner.

(3) *Cooperatives loyalty and trust*

Considerable differences are observed between cooperatives in terms of internal organization, trust and quality of service provision. FT is more pro-poor oriented, while for Utz certification some self-selection takes place. In some cases (Uganda), this was based on accumulated experience from earlier projects. Side sales are strongly related to lack of cooperative trust and absence of pre-finance. Whereas the provision of technical assistance is generally appreciated by members, more attention should be devoted to the strengthening of cooperative bargaining power and reinforcing internal social coherence.

(4) *Regional targeting of certification*

Differences in regional conditions strongly influence prices and market opportunities. Where FT certification focuses more on relatively poor farmers living in marginal regions, initial effects are likely to be considerable, but these effects are dispersed once regional market integration has been strengthened and non-certified farmers equally benefit. Returns from certification are highest in remote areas characterized by high dependence on coffee farming where less alternative livelihood options are available. In more commercialized regions, other alternatives outcompete coffee, especially if coffee prices decline. Coffee marketing margins for Utz certified farms are more stable while for FT certified farms the price margin reduces over time.

(5) *Structural changes of certification*

Structural change of bargaining relations throughout the coffee chain hardly occurred. Resources for pre-finance are scarce and certification does not provide farmers sufficient incentives for in-depth investments. Farmers are scarcely informed about certification and only observe short-term effects. Certification has not resulted in a widespread perception that coffee farming is a profitable business venture. Many coffee farmers expressed worries about their children taking over their farms. In the Kenya survey the average age of farmers was 64 years (in Uganda: 47 years). Young farmers seem to be opting-out of coffee farming. Scarce disclosure of premium payments makes the system vulnerable for corruption.

Preface

This report is based on seven studies in Ethiopia, Uganda and Kenya. At the heart of these studies were two waves of surveys among coffee farmers in Uganda and Kenya. The other studies comprised four MA field work studies in Kenya and Ethiopia and (part of) a PhD study in Ethiopia. Hundreds of farmers were interviewed for these studies together with dozens of cooperative leaders. Many miles were travelled and many paths walked. We think that this offered us a rich source of data on fair trade coffee as it's plucked and washed and marketed in these three countries.

Along these roads we received great support from Fred Bagamba of Makerere University, Kampala, Uganda and from Mercy Kamau of Egerton College in Nairobi in the first wave of surveys; and from Mzeeh Hamisi Ngutu, Urbanus N. Mutwiwa and Samuel Njuguna of Noble Consultants in the second wave of surveys in Kenya. Ricardo Fort assisted in the first surveys and reporting in Uganda and Kenya. Eveline Dijkdrenth and Mirjam Schoonhoven-Speijer contributed by their MA research in Kenya, Annemarie Groot-Kormelinck and Christine Plaisier in Ethiopia. Amsaya Anteneh Woubie and Roldan Muradian contributed to this report with their study in Ethiopia.

This research could not have been done without the support of Irish Aid through the Irish Fair Trade Network and Solidaridad. Not only did they arrange funding for this research from Irish Aid, but we received great support from Solidaridad staff from the central office in Utrecht, the regional office in Nairobi and the local staff in Kampala. We really appreciated the openness with which Solidaridad's staff shared their ideas and opinions with us. It should be underlined that this is a collaborative research project in which both Solidaridad and CIDIN invested a lot of time and money.

Of course we also needed the support received from staff and farmers of all the organizations involved in these surveys, like Kulika Uganda, Kaaro Agric Producers Ltd. and Ankole Coffee Processors Ltd. in Uganda. Also the support of agricultural officers, business people and all other respondents is acknowledged and greatly appreciated.

It has been stated several times that the results and impact of fair trade and certification should be (better) assessed. On the 25th anniversary of the creation of the Max Havelaar label for coffee, the first ever fair trade label, we hope that this is a useful contribution.

Nijmegen, February 2014

Paul Hoebink
Ruerd Ruben
Willem Elbers
Bart van Rijsbergen

Chapter 1:
General introduction

Since the demise of the International Coffee Agreement in 1989 the international coffee market has been one of the most volatile agricultural markets. The deregulation of the international market, the entrance in the market of new producers, in particular Vietnam, technological innovations which made international roasting companies more flexible, all had their negative influence on world market prices.[10] Prices went up during the 1990s for a short period due to production problems, particularly in Brazil, but then went to an all-time low in 2004-2005. In the meantime coffee markets became more differentiated, due not only to a growing demand for speciality coffees but also as a result of certification. This study is about the effects of Fairtrade and Utz certification in East Africa.

1.1 On the impact of fair trade: the context of this impact evaluation

Forty five years ago cane sugar was launched as an alternative for beet sugar, which was highly subsidised under the Common Agricultural Policy of the European Union. In 1969 the first 'worldshop' was opened; soon dozens of them would offer products on sale from the so-called Third World as acts of solidarity and an alternative to conventional trade. Exactly 25 years ago fair trade coffee was launched under the label of Max Havelaar,[11] named after the protagonist in the famous novel of the same name, a 'resident', a colonial civil servant in Indonesia who resisted the exploitation of the Javanese population in coffee production.[12]

In the last fifteen years the impact of fair trade on farmers' lives, income and welfare has come more and more under scrutiny. Nearly all fair trade products have had their own impact studies, but coffee has been by far the most popular. We counted some 40 studies on coffee alone, while bananas or tea might have around five studies, crafts, nuts, spices and herbs one to two. There are also some studies which look at the impact of multiple schemes.[13]

The first studies consisted mainly of interviews with cooperative leaders, sometimes also with members of cooperatives. Later more quantitative methodology was used with surveys of farmers, and in several cases also with control groups of farmers who did not produce under fair trade schemes.[14] Only a few are based on substantial field data, and longitudinal studies

[10] There is an abundance of literature on the international coffee market. See e.g. Daviron & Ponte (2005), Bacon a.o. (2008).

[11] See Roozen & Van der Hoff (2011) for the birth of the Max Havelaar concept. See also Fridell (2004) for a historical description of fair trade efforts in the broader sense than only alternative trade. Max Havelaar was a label and not an NGO, as Murray c.s. (2006) suggest

[12] A novel on Dutch colonialism by Multatuli (a pseudonym of Douwes Dekker).

[13] Le Mare (2008) presented a first concise overview of evaluations and tried to summarise the outcomes. Nelson (2009) followed a year later with what she called a 'comprehensive overview'. A recent list of impact studies comes from EFTA.

[14] Arnould c.s. (2006 and 2009) claimed that their study was (at the time) the only one that conducted comparative quantitative analyses of impacts of participation in fair trade chains. Mendez c.s. (2010) are

are scarce. The emphasis in most of these studies is on the prices that farmers received for their produce and additionally on welfare effects on farmers' families.

Most studies face the problem that there is an absence of base-line data. Some studies try to correct this by also surveying control groups. Ruben c.s. (2009) presents some other problems with several of these studies. They seldom correct for differences between households in terms of their endowments, land size or location. This means that there is no correction for more active, better-off farmers who are likely to be among the first to participate in certification schemes.

Table 1.1: Examples of Impact Evaluations of Fair Trade Schemes: Methodology

Type of Study	Examples	Methodologies used
Qualitative	Utting (2005)	- fieldwork in northern Nicaragua; no account of methodology
	Murray c.s. (2006)	- Based on interviews with seven cooperatives in Mexico, Guatemala, El Salvador
	Jaffee (2007)	- Ethnographic study of the coffee chain from coffee shops in the States to small coffee farmers in Oaxaca, Mexico
	Valkila (2009)	- interviews with 120 farmers, cooperative leaders, experts, coffee companies, labelling organisations in Nicaragua
Mixed Methods	Bastin & Matteucci (2007)	- survey among 120 coffee farmers and focus group and expert interviews
	Bacon (2007, 2008)	- 228 farmers of seven cooperatives surveyed, group interviews, interviews with coop leaders
	COSA (2013)	- survey of a sample of 351 farms and control group in Daklak province, Vietnam plus stakeholder workshop and focus group interviews
Quantitative	Arnould c.s. (2006, 2009)	- survey among 1,200 coffee farmers in three countries (Nicaragua, Guatemala, Peru) with control group
	Ruben c.s. (2009)	- survey with 700 coffee and banana farmers in Peru and Costa Rica
	Mendez a.o. (2010)	- survey among 469 households in four countries (Guatemala, El Salvador, Nicaragua, Mexico)

The outcomes of these studies are rather mixed. Some studies conclude that there are impressive effects on prices that farmers receive. Romero Gonzalez (2010) found that coffee farmers in Uganda received a price for their coffee that was three times that of conventional farmers and that Fairtrade farmers certified received 12 per cent of the price paid for a packet of coffee in Spanish supermarkets, while conventional farmers received only 5 per cent of that price. Most studies confirm that the advantages of selling certified coffee are the price, and also the training and the connection with stable markets.

The effects of Fairtrade (FT) certification on coffee producers and organizations have been analyzed in several earlier studies. Detailed case studies from coffee cooperatives in Costa

convinced that theirs and Arnould's are the only quantitative studies of Fairtrade coffee certification.

Rica (Ronchi, 2002), Nicaragua (Bacon, 2005; Bacon et al., 2008) and Mexico (Jaffee, 2007; Calo & Wise, 2005; Milford, 2004) found that Fairtrade initially strengthened producer organizations and concluded that - during the coffee crisis of the early 1990s - Fairtrade accomplished its goal of improving the returns to smallholder producers and positively affecting their quality of life and the strength of the organizations. Other research stressed that Fairtrade initiatives improved the well-being of small-scale coffee farmers and their families, particularly due to better access to credit facilities and external funds as well as through training and improved capabilities to enhance the quality of the product (Taylor, 2005; Murray et al., 2003). Fairtrade certified farmers were also successful in improving their production, experienced satisfaction with prices obtained, and showed improvements in food consumption and living conditions (Becchetti and Costantino, 2006).

The European Fair Trade Association (EFTA) provides an overview of Fair Trade impact studies that were realized since 2000, but none of these studies is based on sufficient field work or a rigorous counterfactual comparison. Most attention is given to positive effects on producers' organizations – focusing on the process of capitalization from the Fair Trade premium payments – while little attention is given to the individual and household-level implications (Taylor, 2005; Raynolds et al., 2004). Other studies refer to the effects on prices and productivity and the role of Fair Trade in improving competitiveness (Becchetti & Constantino, 2006). Major constraints that are identified relate to the difficulties of involving farmers in marketing decisions.

Recent studies by Valkila (2009) and Valkila & Nygren (2009 that focus on organic Fairtrade farmers in northern Nicaragua are more critical. FT organic coffee production has lower yields and requires higher labour efforts, and therefore the increase in farmer incomes from this low-intensity coffee production is very modest, because little coffee is produced by marginalized farmers. Farmers thus remain in poverty despite being connected to Fair Trade organic markets (see also: Bacon et al., 2008). Evidence suggests that participation in alternative trade networks reduces exposure and vulnerability to variable commodity prices. In a similar vein, Raynolds (2002) also points to the price premium as a critical element to offset other adverse conditions that affect the quality of life. Farmers linked to coffee cooperatives selling to alternative markets received higher average prices and felt more secure regarding their land tenure. However, three quarters of all surveyed farmers reported a decline in their quality of life during the last few years. Responses to the questions about perceived changes in the quality of life showed no significant difference between farmers participating in conventional and alternative trade networks. These findings and the results of the focus groups suggest that income from coffee sales to alternative markets is not enough to offset the many other conditions (e.g. higher input costs, steadily increasing consumer prices, gasoline and communication costs) that provoked the perceived decline in the quality of living conditions.

Comparative studies from Peru and Costa Rica indicate that compliance with FT standards leads to only fairly modest changes in farm production methods and household income, but that greater certainty regarding prices and market outlets has important positive effects on access to finance and investment attitudes (Ruben, 2008). Using a difference analysis with propensity score matching approach, Ruben et al. (2009) show that FT farmers consistently invest more in education and house upgrading, and also appear to be significantly less risk-

averse. Otherwise, standards for Responsible and Sustainable Trade focus attention on better farm management practices and quality upgrading as major strategies for strengthening farm-household welfare. This implies that knowledge dimensions that guarantee compliance with technical standards and behavioural incentives that favour loyalty to the producer organization become more relevant.

Other cross-country studies by Arnould et al. (2009) and Mendez et al. (2010) that apply a rigorous appraisal of certification impacts reach similar conclusions: direct economic and income effects are at best rather modest, whereas observed changes in livelihoods and related education and health outcomes are more strongly related to cooperative membership than to market exchange arrangements. Mendez et al. (2010) confirm that certified farmers receive higher prices and coffee revenues, but that sales to certified markets were too limited to reach sustainable livelihood effects. This is empirically demonstrated by de Janvry et al. (2012) who show that in Central America - due to over-certification - less than a quarter of the certified coffee can be sold under premium conditions. Whereas farmers incur substantial costs for obtaining the FT certification (with initial payments of €1,500-3,000 followed by yearly tariffs of € 700-1,200) it becomes increasingly important to guarantee access to premium outlets.

The recent evidence regarding the impact of certification points to the critical importance of the embeddedness of coffee standards in improved global production networks (Coe et al., 2008). This asks for a more detailed assessment of the broader market and supply chain structures and the institutional networks surrounding the coffee sector. In addition to the value chain perspective, due attention should be given to the horizontal dimensions of agency relationships, in particular the prospects for improved smallholder cooperation and the space provided by (inter)national economic and political regimes.

Recent surveys come to the conclusion that price and welfare effects are limited, for a number of reasons. In particular poor and small farmers sell only limited amounts of coffee and not of it under certified schemes (Arnould c.s. 2006, 2009; Valkila 2009; Ruben c.s. 2009; Mendez c.s. 2010). Thus, very often coffee sales are only a part of their income. As a result welfare effects turn out to be limited but measurable. In particular when investments to produce certified coffee are higher and prices insecure the income effects may be negligible. This is also because one of the problems coffee farmers mostly face is the limited access to credit (e.g. Bastin & Mateucci 2007). Strengthening the organisation of coffee farmers is found to be an important benefit of certification (Ruben c.s. 2009).

Table 1.2: Outcomes of some of the coffee impact studies

Outcome	Examples	Conclusions/reasons
Very positive	Utting (2005) Murray c.s. (2006) Romero Gonzalez (2010)	- All small producers interviewed acknowledged major changes, greater stability and security - Considerable income effects, access to training, improvements in quality, higher production, but lack of a clear understanding of Fair Trade certification - Coffee farmers under certification in Uganda received three times the price that conventional farmers receive
Positive	Jaffee (2007) COSA (2013)	- Producers receive clear and substantial benefits, economic, social and environmental, but fair trade prices have lost value and is not sufficient - Already high producing farms in Vietnam have reduced use of agrochemicals and synthetic fertilizers, which means significantly lower cash costs for inputs
Limited effects	Arnould c.s. (2006, 2009) Bacon (2004, 2008) Valkila (2009) Ruben c.s. (2009) Mendez c.s. (2010)	- Limited but measurable effects on social welfare - Fair Trade farmers are less vulnerable and receive higher prices, but only 40% is sold via alternative markets and 74% of farmers reported a decline in their quality of life - Positive effects but limited due to low production; effects of organic production unclear, heavier workload - Direct effects on net incomes modest but benefits in strengthening farmers organisations and capitalising farmers - Higher prices, but because of low production and low sales under certification limited effects
Mixed results	Pirotte a.o. (2006)	- Nicaraguan cooperatives have gained strength, but Fair Trade failed to reach the poorest sector; Fair Trade pushed up auction prices, but lacks visibility

This study differs from those presented above in three ways. First, this study combines the results of seven different studies, which tried to assess different impacts of certification. Second, at the heart of this study are the case studies in Kenya and Uganda which, for the first time ever, involved two rounds of survey and make it possible to assess differences over time. Third, because we used a mixed-method approach in the second round, doing also e.g. group interviews, we are better able to address the reasons for certain changes or observations made in our surveys. It should however be kept in mind that, as we indicated in the Executive Summary, the three cases are different in several ways, in national markets and regulations, in regional differences, in differences in strength of and trust in cooperatives and in the way farmers organise their production.

1.2. Solidaridad's activities in coffee in East Africa

Under the programme 'Building Trade Capacity and Sustainable Livelihoods through Fairtrade and Ethical Trade,' Solidaridad has implemented since July 2008 a series of coffee projects in East Africa - in Ethiopia, Uganda, Kenya and Tanzania.

The main objectives of these projects are:

- To increase the income of poor smallholder agricultural producers through the production and sale of certified sustainable coffee
- To support an increasing number of smallscale coffee producers to meet Fairtrade and Utz Certified sustainable standards
- To strengthen producer organizations and cooperatives through capacity building at management level.

Three types of activities are implemented to reach these activities:

- A support programme for small-scale producers seeking FLO and/or Utz certification (implemented by Solidaridad in both cases)
- Strategic development of FLO International (in a consortium with other donors)
- Strategic development of Utz Certified (jointly with other donors)

In table 1.3 below, an impression is given of the scope and different support activities implemented by Solidaridad in East Africa. More than 100,000 small-scale producers received support from Solidaridad up to the end of 2011. The majority of the support activities are geared towards developing training programmes in more sustainable coffee production practices and certification support in Fairtrade/Utz standards for coffee producers. Solidaridad implemented these projects in collaboration with key coffee stakeholders in East Africa (traders, coffee cooperatives, research institutes, coffee boards and service providers). Via these local partnerships and existing extension services, the coffee producers can benefit from the project activities.

Besides most of the key activities indicated in the table, additional support work by Solidaridad has been done in the areas of tool development (GAP guides/manuals in sustainable coffee production), market access for farmers (bringing producers to trade fairs) and organizing regional workshops (bringing TA's from different countries together to talk about Utz and certification challenges). Furthermore, a pilot project has been developed addressing environmental challenges for farmers in mitigating the risks of climate change and climate adaptation. The tool, called the "Cool Farm Tool," was implemented in Kenya to measure carbon footprints in coffee production and processing, thereby enabling Solidaridad to inform coffee farmers about their main 'hotspots' in coffee production and offering solutions how to mitigate them. In 2012 the scope of Solidaridad's programme further increased to more than 40 projects in East Africa, up from 21 in 2011.

Table 1.3: Solidaridad programme activities 2011

Country	Projects	Coops/Groups	Farmers	Project activities with PO's and farmers
Ethiopia	4	11	12,927	a) training in good agricultural practices b) diversification (beekeeping) c) training extension services local staff in Utz/FLO standard requirements d) saving and credits schemes women
Kenya	4	10	32,590	a) gender training and integration b) Youth involvement projects c) Cool Farm Tool implementation d) Utz/FLO certification support and trainings e) MIS (Management Information System)
Tanzania	3	8	5,477	a) Sector development b) Utz and FLO certification and trainings
Uganda	8	12	22,711	a) Utz and FLO certification and trainings b) gender trainings and gender surveys c) Coffee shows
Coffee total	**19**	**41**	**73,707**	
Kenya vegetables and tea	2	6	33,450	a) Utz support activities in tea and gender value chain analysis, Kenya b) access to credits for FLO/vegetables
TOTAL	**21**	**47**	**107,157**	

1.3. On coffee certification

Certification was originally perceived as a strategy for strengthening the position of coffee smallholders in the value chain. The basic idea behind certification is to encourage supply chain partners to engage in direct sales transactions under long-term contractual arrangements based on trust regarding product quality and delivery reliability.

It was expected that shortening the supply chain through direct interactions with exporters and processors would reduce transaction costs and market risks and enhance knowledge of good agricultural practices, thus providing suitable incentives for quality upgrading (selling at better prices on premium market segments) and for maintaining scheduled deliveries (to avoid fluctuations occasioned by side sales). Various labels have different strategies for enhancing farmers' welfare – through output price certainty (Fairtrade) or input/knowledge upgrading (Utz).[15]

A key dimension of certification relates to the improved certainty for smallholders regarding access to output markets, expected prices and on-time payments. The original Fairtrade proposition (not of Utz) also included provisions on pre-finance by processing companies that would enable farmers to escape from advance pre-harvest sales at low prices to traditional intermediaries, but this does not seem to operate in practice..

[15] See: Ruben & Verkaart (2011). *'Comparing fair and responsible coffee standards in East Africa'*. In: Helmsing & Vellema (eds), Value Chains, Social Inclusion and Economic Development. London: Routledge, pp. 61-81

Finally, the institutional dimension of strengthening cooperative performance represents an important element in the certification strategy. Cooperatives or farmers' associations are considered key to increasing the scale of production, to maintaining the quality standards, and to guaranteeing the reliability of smallholders as preferred suppliers in the value chain.
There are three types of coffee certification: voluntary, sector-wide, company based. The most important components of these certifications are represented in table 1.4.

Type	Year of introduction	Main Ingredients
Voluntary		
Fair Trade	1988	Its objective is to improve the livelihood of farmers by offering a fair and stable price to cooperatives or associations that are certified; promotes sustainable practices
Organic	1990 (US)	Prohibits to use agrochemicals and enhance soil fertility by recycling and sustainable crop rotation
Rainforest Alliance	1993	Organic production under shade trees, certified by the Rainforest Alliance, but also with respect to workers and decent wages
Utz	2002	Empower farmers with Good Agricultural Practices. Minimize pesticides, water and reduce soil erosion. Traceability of coffee.
Bird-Friendly	1998	Not only organic but also with shade trees and certified by the Smithonian Migratory Bird Centre.
Sector wide		
4-C	2008	Tries to eliminate unacceptable practices and to unify certification.
Company based		
Starbucks	1994, 2000	Accountability: price paid to the farmer; social responsibility: humane working conditions; environmental stewardship: reduce water use and agrochemicals, preserve biodiversity. Emphasis on high quality beans.
Nespresso	2003, 2009	Together with the Rainforest Alliance the AAA Sustainable Quality Programme with conservation of resources, being good neighbours and improving quality of beans. In 2009 taregt to bring 80% of farmers under certification.

1.4. Methodology and outline of this report

This report is the result of a series of studies, done in collaboration with Solidaridad, between 2008 and 2013. At the heart of it are two rounds of surveys in Kenya and Uganda in 2009 and 2012/13. We surveyed several hundred farmers in these countries. A more detailed account of these surveys and the selection of farmers there, is presented in chapters 2 and 3. In the second wave of the surveys we also introduced group interviews to get a better understanding of the 'whys' of progress made or a reduction in production or quality of production.

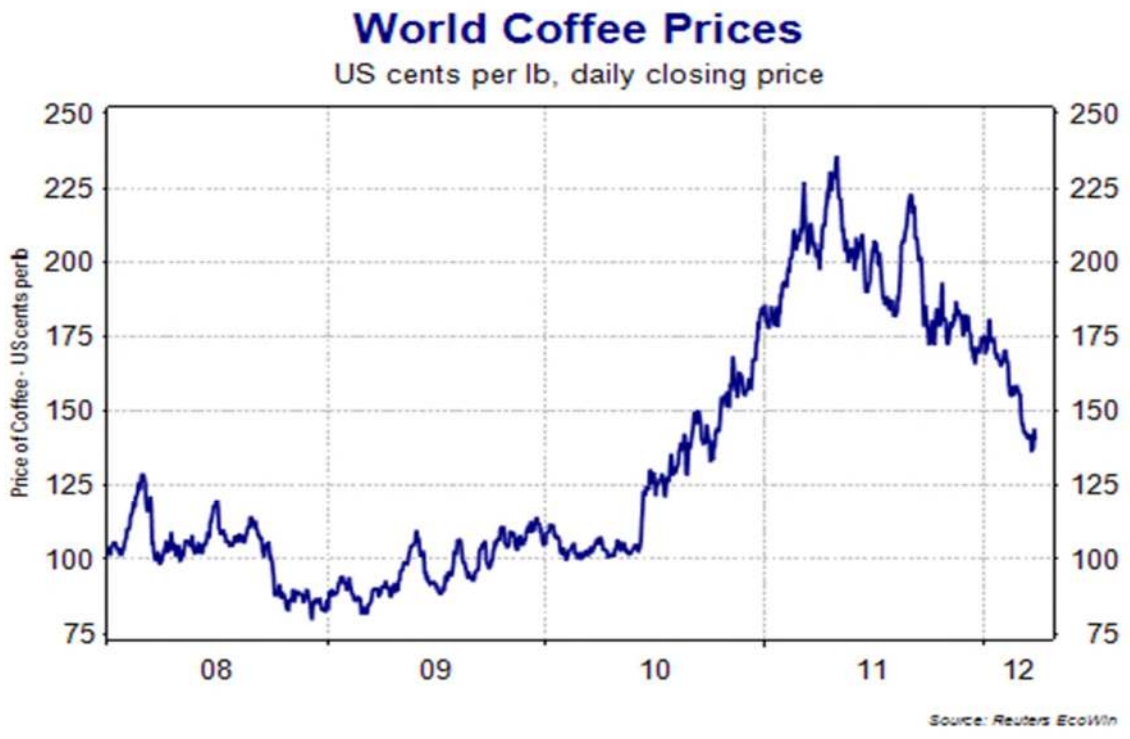
These data were complemented by several in-depth field studies in Kenya and Ethiopia focussing on particular aspects of the performance of cooperative members: (a) changes in risk attitudes forthcoming from certification (Schoonhoven, 2012), (b) changes in gender relationships at the cooperative and household level (Dijkdrenth, 2011), (c) gender bargaining power and trust relationships (Groot Kormelinck, 2010) and (d) impact of trust on farmers' willingness to invest (Plaisier, 2010). Summaries of the results of these studies are included in this report. Lastly a study on coffee cooperatives and certification is included.

In the following chapters we present first the reports of the Uganda and Kenya impact studies. In chapter four the Ethiopia study is summarized. In chapters five through eight we present summaries of the four MA theses.

The International Coffee Market

The International Coffe Organisation reported in its August 2013 that coffee prices were at its lowest level in four years. It reached with $ 1.1645/lb its lowest level since September 2009, but 2010 and 2011 showed a steep rice. In particular the three Arabica groups (Colombian milds, other milds and Brazilian natural) showed now big decreases.

This is symptomatic for the international coffee markets which shows its up and downs, related to frost in Brazil and new consumer demands and to high (quality) production of new producers entering the international markets which leads to oversupply. For this report it is important to note that coffee prices went up and then decreased in the period of research.



References

Arnould, E., Plastina, A., Ball, D.2009, Market Disintermediation and Producer Value Capture: The Case of Fair Trade Coffee in Nicaragua, Peru and Guatemala. *Journal of Public Policy and Marketing ,* Vol. 28, no. 2, pp. 186-201.

Bacon, C., 2005. Confronting the coffee crisis: can Fair Trade, organic, and specialty coffees reduce small-scale farmer vulnerability in Northern Nicaragua? *World Development ,* Vol. 33, no. 3, pp 497–511.

Bacon, M.C., Méndez, V., Flores Gómez, M.E., Stuart, D. and Díaz Flores, S.R., 2008. Are sustainable coffee certifications enough to secure farmer livelihoods? The millennium development goals and Nicaragua's Fair Trade cooperatives. *Globalizations,* Vol. 5, no. 2, pp. 259–274.

Bacon, C. and Flores, M.E., 2007. Estudio de Impacto del Sistema de Café de Comercio Justo en America Latina y el Caribe. Nicaragua: Coordinadora de Pequeños Productores de Commercio Justo de Café en Latina America y el Caribe.

Bacon, C.M., Méndez, E., Gliessman, S.R., Goodman, D. and Fox, J. (eds.), 2008. *Confronting the Coffee Crisis. Fair Trade, Sustainable Livelihoods and Ecosystems in Mexico and Central America.* Cambridge (Mass.): MIT Press, pp. 155-178.

Bacon, C., 2008. Confronting the Coffee Crisis; Can Fair Trade, Organic and Specialty Coffees Reduce the Vulnerability of Small-Scale Farmers in Northern Nicaragua. In: Bacon, C. a.o. (eds.

Bastin, A., and Matteucci, N., 2007. Financing Coffee Farmers in Ethiopia: Challenges and Opportunities. International Conference on Rural Finance Research: Moving Results into Policies and Practice.

Becchetti, L. and Constantino, M., 2006. Fair trade on marginalized producers: an impact analysis on Kenyan farmers. University of Rome. Working paper CEIS 220 / ECINEQ2006, Rome.

Bechetti, L. and Constantino, M., 2008. The Effects of Fair Trade on Affiliated Producers: An Impact Analysis on Kenyan Farmers. *World Development,* Vol. 36, no. 5, pp. 823-842.

Calo, M. and Wise, T.A., 2005. Revaluing peasant coffee production: organic and fair trade markets in Mexico. Global Development and Environment Institute, Tufts University, Medford MA.

Coe, N.M., Dicken, P. and Hess, H., 2008. Global production networks: realizing the potential. *Journal of Economic Geography* , Vol. 8, pp. 271–295

COSA, 2013. Vietnam Coffee: A COSA Survey of Utz Certified farms. Philadelphia: Committee on Sustainability Assessment.

Daviron, B., and Ponte, S., 2005. *The Coffee Paradox: Global Markets, Commodity Trade and the Elusive Promise for Development*. London and New York: Zed Books.

Fridell, G., 2004. The Fair Trade Network in Historical Perspective. *Canadian Journal of Development Studies,* Vol. XXV, no. 3, pp. 411-428.

Guadarrama-Sugasti, C., 2008. A Grower Typology Approach to Assessing the Environmental Impact of Coffee Farming in Veracruz, Mexico. In: Bacon, C. a.o. (eds.)

Jaffee, D., 2006. *Brewing Justice. Fair Trade Coffee, Sustainability and Survival.* Berkeley: University of California Press.

Jena, P., Stellmacher, T., and Grote, U., 2012.The Impact of Coffee Certification on Small-Scale Producers' Livelihoods: Evidence from Ethiopia, A *Paper presented at the International Association of Agricultural Economists (IAAE) Triennial Conference, Foz do Iguaçu, Brazil, 18-24* August, 2012.

Kilian, B., Jones, C., Pratt, L. and Villalobos, A., 2006. Is sustainable agriculture a viable strategy to improve farm income in Central America? A case study on coffee, *Journal of Business Research,* Vol. 59, no. 3, pp. 322–330.

Klier, S. and S. Possinger., 2012. Assessing the Impact of Fairtrade on Poverty Reduction through Rural Development. Saarbrücken: Centre for Evaluation, University of Saarbrücken.

Lazaro, E., Makindara, J. and Kilima, F.T.M. , 2008. Sustainability standards and coffee exports from Tanzania. Copenhagen: DIIS Working paper.

Lyon, S., and Moberg, M., 2010, *Fair Trade and Social Justice. Global Ethnographies.* New York: New York University Press.

Méndez, V., Bacon, C., Olson, M., Petchers, S., Herrador, D., Carranza, C.,Trujillo, L., Guadarrama-Zugasti, C., Cordon, A., and Mendoza, A., 2010. Effects of Fair Trade and organic certifications on small-scale coffee farmer households in Central America and Mexico. *Renewable Agriculture and Food Systems*, 25(3): 236- 251

Milford, A., 2004. Coffee, Co-operatives and Competition: The Impact of Fair Trade. Bergen: Chr. Michelsen Institute.

Muradian, R. and Pelupessy, W., 2005. Governing the Coffee Chain: The Role of Voluntary Regulatory Systems. *World Development*, Vol. 33, no. 12, pp. 2029-2037.

Murray, D.L., Raynolds, L.T., and Taylor, P.L., 2006. The future of Fair Trade coffee: dilemmas facing Latin America's small-scale producers. *Development in Practice.* Vol. 16, no. 2, pp. 179-191.

Pirotte, G., Pleyers, G., and Poncelet, M., 2006. Fair-trade coffee in Nicaragua and Tanzania: a comparison. *Development in Practice.* Vol. 16, no. 5, pp. 441-451.

Roozen, N. & Van der Hoff, F., 2001. *Fair trade. Het verhaal achter Max Havelaar-koffie, Oké-bananen en Kuyichi jeans.* Amsterdam: Van Gennep.

Raynolds, L. T., Murray, D. and Taylor, P.L., 2004. Fair Trade Coffee: Building Producer Capacity via Global Networks. *Journal of International Development,* Vol. 16, no. 8, pp. 1109-21.

Raynolds, L., 2002. Consumer/Producer Links in Fair Trade Coffee Networks. *Sociologia Ruralis,* Vol. 42, no. 4, pp. 404-424.

Renard, M.C. 2003. Fair trade: quality, market and conventions. *Journal of Rural Studies*, Vol. 19, no. 1, pp. 87–96.

Ruben, R. (ed.), 2008. *The impact of Fair Trade.* Wageningen: Wageningen Academic Publishers.

Ruben, R., Fort, R. and Zúñiga-Aras, G., 2009. Measuring the Impact of fair trade on development. *Development in Practice,* Vol. 19, no. 6, pp. 777-788.

Ruben, R., Fort, R. and Zúñiga-Aras, G., 2010. How Standards Compete: Comparative impact of coffee certification in Northern Nicaragua. *Supply Chain Management: An International Journal*, Vol. 16, no. 2, 98-109.

Ruben, R., and Fort, R., 2011. 'The Impact of Fair Trade Certification for Coffee Farmers in Peru'. *World Development,* 40(3): 570–582.

Ruben, R., and Fort, R., 2011. The Impact of Fair Trade Certification for Coffee Farmers in Northern Peru. Contributed Paper prepared for presentation at the International Association of Agricultural Economists Conference, Beijing, China, August 16-22, 2009.

Ruben, R. and Verkaart, S., 2011. Comparing fair and responsible coffee standards in East Africa. In: Helmsing, B. and Vellema, M. (eds), *Value Chains, Social Inclusion and Economic Development*. London: Routledge, pp. 61-81

Ruben, R., and Heras, J., 2012. Social Capital, Governances and Performance of Ethiopian Coffee cooperatives. *Annals of Public and Cooperative Economics,* 83 (4): 463-484.

Stellmacher, G., 2011. Forest Coffee Certification in Ethiopia: Economic Boon or Ecological Bane? Working Paper Series 76, Zentrum für Entwicklungsforschung, University of Bonn.

Taylor, P. L., 2005. In the Market but Not of It: Fair Trade Coffee and Forest Stewardship Council Certification as Market-Based Social Change. *World Development* , Vol. 33, no. 1, pp. 129-47

Utting, C., 2005. Does fair trade make a difference? The case of small coffee producers in Nicaragua. *Development in Practice,* Vol. 15, Nos. 3 & 4, pp. 584-598.

Vagneron, I. and Roquigny, S., 2011. Value distribution in conventional, organic and fair trade banana chains in the Dominican Republic. *Canadian Journal of Development Studies,* Vol. 32, no. 3, pp. 324-338.

Valkila, J., 2009. Fair Trade organic coffee production in Nicaragua—Sustainable development or a poverty trap? *Ecological Economics*, 68(12): 3018–3025.

Valkila, J., and Nygren, A., 2009. Impacts of fair trade certification on coffee farmers, cooperatives, and laborers in Nicaragua. *Agriculture and Human Values*, 27(3): 321–333.

Volkmann, J., 2008. Assessment of Certification Options for Wild Forest Coffee in Ethiopia: CoCE Project Report Sub-project 5.4.

Wollni, M. and M. Zeller (2007). Do farmers benefit from participating in specialty markets and cooperatives? The case of coffee marketing in Costa Rica. *Agricultural Economics* 37(2): 243-248.

Chapter 2

The Impact of UTZ Certification on Smallholder Farmers in Uganda

The team responsible for preparing this report:

Prof. Dr. Paul Hoebink, CIDIN, Radboud University Nijmegen
Dr. Fred Bagamba, School of Agricultural Science, Makerere University
Dr. Willem Elbers, CIDIN, Radboud University Nijmegen
Dr. Luuk van Kempen, CIDIN, Radboud University Nijmegen
Bart van Rijsbergen, MScRes, CIDIN, Radboud University Nijmegen

2.1 Introduction

Sustainability standards like Fairtrade (FT) or Utz are widely regarded as a promising way of improving smallholder coffee farmer welfare. As yet, the impact of certification remains poorly understood. The current chapter presents the findings of the study commissioned by Solidaridad regarding the impact of Utz certification in Uganda. The study was carried in cooperation between the Centre for International Development Issues Nijmegen (CIDIN) and Dr. Bagamba, School of Agricultural Science, Makerere University. The study is based on two waves of data collection carried out in 2009 and 2012 with farmers belonging to two organizations that were receiving support from Solidaridad: Kulika (Kamuli district) and Ankole Coffee Processors Ltd. (Ibanda district). This study aims to provide a broader comparison between farmers and their organizations selling Utz Certified or conventional coffee. In line with this objective, the guiding research question is:

What is the impact of Utz involvement at producer and producer organization level?

The central issue in impact evaluations is the ability to answer the following question: What would have happened if the target group had not participated? This hypothetical situation is known as the counterfactual, and the way it is constructed is a key feature for correctly analyzing the impact of a programme or policy. To measure the impact, the study combines two types of quantitative analysis: The research: (1) “with and without” assessment of Solidaridad support and (2) “before and after” analysis of Solidaridad support. Primary data was collected through single farm visit interviews using structured questionnaires administered to respondents (mainly the household head). A farm household was defined as a social entity that collectively makes productive and consumptive decisions and often eats from the same pot. Tables 2.1 and 2.2 below provide more information about the different groups in Ibanda and Kamuli districts that were part of the survey.

Table 2. 1: Number of farmers included in the study

Group		2009	2012
Ibanda district			
Old Ankole	Treatment	98	97
New Ankole	Treatment	95	90
Conventional	Control	124	115
Kamuli district			
Kulika 1	Treatment	65	60
Kulika 2	Treatment	63	55
Mbulamuti	Control	85	82
Nawanyaru	Control	82	74
Total		612	573

Table 2.2: Certification and training of groups in the study[16]

Counties	Cooperatives	2009	2010	2011	2012
Ibanda	Old Ankole	UTZ	UTZ	UTZ	UTZ
	New Ankole	none	UTZ	UTZ	UTZ
	Conventional	none	none	none	none
Kamuli	Kulika 1	APEP + UTZ	APEP + UTZ	APEP + UTZ	APEP + UTZ
	Kulika 2	UTZ	UTZ	UTZ	UTZ
	Mbulamuti	APEP	APEP	APEP	APEP
	Nawanyaru	none	none	none	none

To contextualize and explain the survey findings, qualitative research was also carried out in June 2012. This included Focus Group Discussions (FGDs) with Utz certified farmers and non-certified farmers as well as semi-structured interviews with representatives of relevant stakeholders. The qualitative research focused on three key topics: production, quality and income. These topics were discussed in relation to a number of other issues including farming practices, competition and prices, market awareness, sales options and considerations, farmer satisfaction and perceived benefits of certification. These topics and the questions asked during the FGDs and interviews were based on a review of the academic literature on (the impact of) Utz certified coffee (see appendices for the interview guides). The open-ended nature of the group discussions/ interviews also allowed for issues not covered by the interview guide to be explored. A total of 16 FGDs were carried out, 8 in Kamuli district and 8 in Ibanda. In each focus group discussion 15 to 25 farmers participated. In total 8 semi-structured interviews were conducted. All (focus group) interviews were recorded and transcribed for analysis. To further contextualise the findings and identify possible challenges, the available project documentation (e.g. original proposal, progress reports, and evaluations) was also reviewed.

The remainder of this chapter is structured as follows. Section 2 offers a characterization of the Ugandan coffee sector. Section 3 discusses the findings in Ibanda district while section 4 presents the findings in Kamuli district. Both sections discuss direct welfare effects, indirect effects and institutional implications. Section 5 revisits the main research question and outlines the conclusions of the study.

Note that the research findings are discussed separately for Ibanda and Kamuli districts. This was done because merging the findings would have resulted in a distorted image of the impact of Utz certification. The Utz intervention in Kamuli district was part of an EU project that ultimately did not prove to be sustainable. As explained in more detail in section 4, the project to some extent collapsed between the two waves of data-collection in 2009 and 2012. As such, in the case of Kamuli district, it is impossible to disentangle the effects of Utz certification from the effects of the project-failure.

[16] Many Utz certified farmers that were part of the Kulika project were previously part of a similar project (Agricultural Production Enhancement Program; APEP). Section 4 explains how this is taken up in the survey design of Kamuli district.

2.2 Uganda Coffee Sector

Coffee, together with tea and cotton, constitute Uganda's traditional exports. Coffee has been historically Uganda's largest source of export revenues since it overtook cotton in the mid-1950s. Over half a million households distributed over two thirds of the country depend on coffee as a source of income (Compete, 2002). The sector provides income for an even larger number of people, along the value chain, as hired farm labour and in businesses such as processing, input supply, trading and transport. For many of these households, coffee is the only source of income.

There are two main types of coffee, both of which are grown in Uganda – Arabica, which has a milder taste and tends to be more expensive, and higher yielding Robusta, which is widely used in instant coffee and in stronger roasts. Whereas the arabica coffee (Coffea arabica) varieties originated in Ethiopia, the robusta species (Coffea canephora) are indigenous to Africa's equatorial forests, where coffee cherries were eaten as fruit or added to foods (Sayer, 2002). Uganda is considered to be the second home for coffee. Robusta coffee has long been known to the Baganda who used it in the ritual of 'blood-brotherhood'. Coffee chewing still retains some ritual significance. Wild varieties are still found in the foothills of the Rwenzori Mountains in Western Uganda, where they are harvested as specialty 'eco' coffee and marketed as 'Kibaale wild'.

The Robusta type dominates coffee production in Uganda and is demanded by roasters, as a component in certain blends due to its special taste qualities (You and Bolwig, 2003), which is a result of being grown at higher altitudes than most Robusta coffees in the world (Ponte, 2001; CFC, 2001). It is mainly grown in the central region at altitude ranging from 1000 – 1500m where temperatures are favorable (240c – 300c). It is especially demanded by European roasters and commands a considerable premium over the world Robusta reference price. Ideal temperatures for Arabica are 150c – 250c, which in Uganda are found in highland areas especially around the slopes of Mt. Elgon and the Rwenzori Mountains.

Commercial coffee marketing in Uganda started in 1912 when the crop was bought from farmers by private traders, processed and exported. The crop was originally grown by European and Asian farmers but was abandoned to smallholders as prices fell in the 1920s. In 1929, the British Government restructured the sector by setting up a coffee board (which later became the coffee Industry Board in 1943) to handle export and quality control. The coffee board was modified in 1953 to become Coffee Marketing Board (CMB) whose roles were expanded to encompass regulatory and marketing functions, in addition to advising government on reorganization of the whole sector.

During colonial times, farmers established village-based cooperatives as a means of avoiding exploitation by middlemen and private coffee traders. From the 1940s, they developed strategic control over the supply and export of coffee. Up to the 1960s, some private traders (e.g. Bugisu Union) were still able to export coffee. In 1969, the Coffee Marketing Board Act was passed that made the CMB the sole exporter of all Uganda coffee, but cooperatives were allowed to buy coffee from farmers, process the coffee and sell to the CMB. In 1977, private

traders were allowed, by the coffee amendment decree, to internally purchase and process coffee, thereby breaking the monopoly that had been given to the CMB and cooperatives by the 1969 Act.

There were advantages in CMB's monopoly. Coffee was a major earner of foreign exchange and source of government revenue, and thus it was in the interest of government to manage and control the collection of proceeds from coffee export. Even when the contribution of other export crops (e.g. cotton, tobacco and tea) significantly declined, the relative contribution of coffee increased tremendously, from about 40% of the export earnings in the early 1970s to 95% in 1989 (Buchanayandi, 1996). Uganda's coffee improved in quality and it was a premium reference for other world Robusta coffees.

The monopoly of the CMB, however, came with a number of disadvantages that resulted in the poor performance of the sector:

(1) Farmers were paid low prices through producer fixed margins, about 20% of the world price during that period
(2) Farmers had problems marketing their coffee in time, which led to massive stockpiling of coffee
(3) Shortage in crop finance that led to non-cash payment to farmers. In some cases, farmers were not paid at all
(4) Limited funding of research and extension institutions that led to further decline in coffee production and productivity

To avert the decline in coffee production and reverse the trend towards a production peak of 213,000 metric tonnes in 1972/73, government implemented the Coffee Rehabilitation Programme, with funding from the EU. The assumption was that farmers would automatically increase production provided that they were provided with relevant inputs and extension advice. However, the share of the world price received by farmers remained low and the marketing system remained inefficient. There were modest gains in productivity but welfare gains were below expectations (Buchanayandi, 1996). Specifically, the efforts failed to improve the smallholder farmer incomes as prices remained low or even declined. As the economy was beginning to pick up, the collapse of the International Coffee Agreement prompted world prices to crash by more than half the previous level (Sayer, 2002).

There were other factors at play that contributed to the decline in coffee production and productivity. Political instability in the 1970s led to a collapse in coffee marketing and consequent weakening of the cooperative structures. During the 1970s and 1980s, Uganda's economy faced both domestic and international constraints that negatively affected coffee production and export. The situation worsened with the liberalization of coffee export marketing, which led to the collapse of most of the cooperative unions. The cooperatives lacked the business structures and market knowledge to survive in the new competitive environment. As a result, both the quality and price of Uganda coffee had been driven down in the pursuit of quantity.

General economic mismanagement and poor incentives to farmers led to widespread neglect of coffee gardens, aggravating the problem of the already declining yields and quality due to

the old age of the existing trees (Otim and Ngategize, 1993). In addition, Uganda had faced stiff competition over the years from producers like India, Philippines, Thailand and Indonesia, among others, which had increased their production levels and had their share of the internal market increased resulting to downward pressure on prices on the world market. Moreover, demand did not increase in the consuming countries at the rate at which production had been increasing. The combined effect was a slump in coffee prices, especially for Robusta. The Uganda government adopted policy measures that would improve competitiveness, profitability and viability of coffee production and export.

In addition to macroeconomic management, the government implemented sector specific coffee policies that targeted increasing production at household level, including encouraging farmers to replant old trees with new improved high-yielding clonal coffee, liberalization of producer prices and marketing operations, and abolition of export taxes on agricultural produce. The government also restructured the Coffee Marketing Board (CMB) into a limited company (CMBL) and instead created another body, the Uganda Coffee Development Authority (UCDA), to take over the regulatory functions within the coffee sector.

Despite the above efforts, Uganda continued to suffer unfavourable terms of trade. Prices for export crops continued to plummet in the world market. The lowest level ever recorded for coffee prices was in the 2001 – 2002 period. This was attributed to structural changes in the global market, including production innovations in Brazil and booming supply from Vietnam, and partly due to changes in corporate strategies among the largest roasters, including the way coffee is blended (Lazaro and Makindara, 2008).

In the early 1990s, the government adopted reforms that saw the abolition of the monopoly previously enjoyed by CMB. Parastatal marketing had been corrupt and inefficient. Farmers had to wait until export sales had been made before they would get paid and most times received poor and occasionally no returns. A newly-created Uganda Coffee Development Authority (UCDA) took over the regulatory functions and CMB remained with only the marketing/trading functions. CMB continued to export coffee but as a limited company until it was finally dissolved.

The UCDA was entrusted with five functions: (1) research and development, (2) quality control, (3) promotion, (4) policy formulation, and (5) statistics and monitoring. Price controls were removed to allow farm gate prices and margins to be determined by market forces. The percent share of the world price paid to the farmer increased and coffee export proceeds were left entirely to the exporters. The restriction on rail transport was lifted and the process of licensing coffee sector participants was simplified. Quality control and certification were delegated to sector participants. It was envisaged that as the industry grew, it would become self-regulating. Instead of setting minimum export prices UCDA provided indicative prices, calculated on the basis of market information and published daily, to guide farmers and exporters. These were in no way binding.

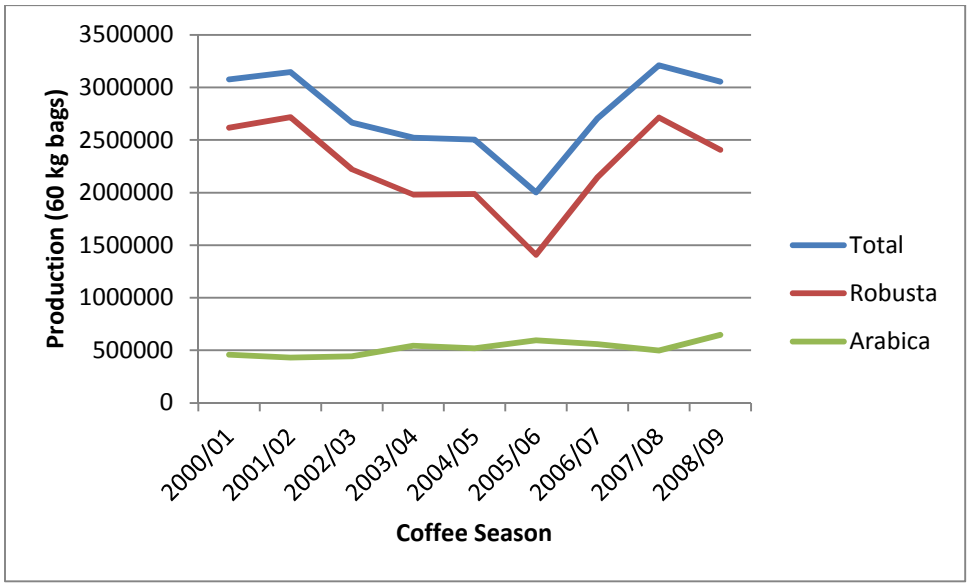
However, new problems arose, which negatively affected the coffee sector. The government was under pressure to liberalize the coffee sector, with those putting pressure on the government arguing that it would benefit the farmers through increased earnings. However,

export was later to be dominated by multinational companies or agents of overseas financiers whose profit-oriented decisions were not necessarily in the interest of the country. Moreover, the cooperative unions and societies of the parastatal era had fulfilled a function which is still missed today, that of providing processing facilities and credit for inputs, organizing blanket spraying, fixing a buying price and providing easy access to the market (Sayor, 2002).

With privatization, farmers, buyers, processors and exporters were free to operate and contract as they pleased. Inexperienced local traders were interested in making short-term profits without concern for quality, tarnishing the reputation of Ugandan coffees. Uganda's coffee had always been paid a premium by international importers because of its neutral taste, which allowed it to be blended with other more expensive coffees, thus reducing costs without compromising the cup quality (European Commission, 2001). The large exporters that dominated the sector focused more on volume rather than quality.[17] The result of this situation was to decrease the overall quality of coffee exported from Uganda, as most growers did not see better prices paid for better quality coffee. Uganda risked losing out if buyers began to see a trend of declining production and/or falling quality.

Despite the inevitable upheavals brought by the liberalization process, exports reached their highest ever levels of 4 million bags (240,000 tons) during the years 1995-1997 as the consequence of a combination of higher international prices and a much greater farm gate share of the export prices (Bussolo et al., 2007). Since then, volumes have fallen, primarily because of the occurrence of coffee wilt disease (CWD) and the 2000-2005 coffee crisis when international coffee prices reached all-time lows. During the past decade, Uganda's annual coffee exports averaged just below 2.8 million bags, with a high of 3.2 million bags and a low of 2 million bags (see Figure 2.1).

Figure 2.1: Coffee export production trends (2000-2009), Uganda



[17] In that sense, the macro-economy does not favor Utz with its emphasis on improving quality.

Source: UCDA Data Bank

By 2001, it had been realized that, to exploit the market opportunities, Uganda needed to focus resources on developing farmer associations that could act as conduits for delivering capital and/or services to producers. Specifically, the sector needed to create a better link between price and quality. There is a need to refocus resources on production of high quality/high value Arabica, whose market is far from saturation, and on value addition for the Robusta coffee. Specifically, resources could be focused on organizing farmer associations to engage in semi-washed or fully washed Robustas, which can be sold at a premium although the markets are small. The key is to provide training to the associations so that they can be sustainable and run their business under the competitive environment.

One of the possible avenues for increasing the value of agricultural exports is through sales to emerging, niche and value added markets such as specialty Fairtrade, organic, Rainforest Alliance, and Utz certified coffee. Certification enables farmers to develop a relationship with exporting companies, thus improving their market access. It also enables farmers to access services such as extension, training and provision of inputs. However, Utz certification has had unclear impacts on the income and welfare of farmers due to the fact that most schemes are new and little research has been carried out on them (Lazaro and Makindara, 2008). This study was carried out to assess the impact of Utz certification on smallholder farmers in two districts of Uganda, i.e. Kamuli and Ibanda.

2.2 Findings in Ibanda district

2.2.1 Introduction

In Ibanda district, Western Uganda, the cultivation of coffee is an important source of income available to rural families. The benefits from coffee production have been far from optimal, however, among other reasons due to poor coffee farming practices, coffee wilt disease and the lack of reliable buyers. In 2005 Solidaridad started working with Ankole Coffee Processors Ltd., a registered private coffee export company, to address this situation.

In the years 2005-2010, Solidaridad supported Ankole to organize farmers operating in the area and assisted the farmers in attaining Utz certification through the adoption of good agricultural practices. A selection of farmers was trained in sustainable coffee husbandry practices, proper harvesting and dry processing procedures. In addition they were provided with equipment, seedlings, technical information and education to approach coffee farming as a business. Furthermore, farmers were organized into Producer Organizations (POs) and zones. Every 20-30 farmers were organized in a PO, and every 5-8 POs made a zone, depending on the distance from one farmer to another. The producer organization leaders and zone leaders played a key role in the project as they conducted meetings with farmers, mobilized them, and kept records. During the project a total of 2000 farmers were certified under the UTZ arrangement. In 2010, Solidaridad provided (one-off) pre-finance to Ankole to enable faster payments to farmers and to sideline middlemen. (This loan was subsequently repaid.)

2.2.2 Survey design

Three groups of farmers were studied in Ibanda, as shown in Figure 2.2. 'Old Ankole' members are farmers that are member of Ankole since 2006, while 'New Ankole' members are farmers that are members since 2009. 'Conventional' farmers were selected from within the same communities. Comparing 'Old Ankole' with 'New Ankole' and 'Conventional' in a single year (2009 or 2012) provides us with an indication of the effect of farmers working together under the Utz code of conduct. A comparison of the difference in 'Old' and 'New Ankole' over the period 2009-2011 is likely to give us an assessment of the price difference effect for organized farmers trained under the Utz code of conduct. In turn, the comparison of the difference in 'New Ankole' for the period 2009-2012 with the difference in 'Conventional' over the same period, should give us the total effect of being Utz certified. An important underlying assumption for this research design is that Ankole would start selling the coffee of their certified farmers as Utz starting in the 2009-2010 season. Unfortunately this did not happen. As such, estimation of the counterfactual and attribution to the intervention in impeded. Figures for the three different groups of farmers in Ibanda are shown in Table 2.3, 2.4 and 2.5. We again present the data after logarithmic transformation for convenience.

Figure 2.2: Impact evaluation strategy in Ibanda district

	OLD ANKOLE	NEW ANKOLE	CONVENTIONAL
2009	UTZ	NONE	NONE
2012	UTZ	UTZ	NONE

2.2.3 Comparison 1: Old Ankole vs. New Ankole

Old Ankole farmers have significantly more coffee trees than New Ankole farmers in 2009 and also in 2012. No significant differences are observed for production per acre or per tree for both years. Old Ankole farmers produced significantly more coffee in 2009, but this difference disappeared in 2012. Old Ankole farmers also earn more money from coffee in 2009 and also in 2012. No significant differences in differences were observed in terms of income or production.

No differences were observed in terms of wealth. Looking at investments we see that New Ankole farmers started to invest more in house improvements over time, compared to Old Ankole farmers. Although the difference in difference is not significant, we observe a significant difference in 2012 in investment in new coffee, while this difference was not observed in 2009.

The most significant difference in difference estimates are observed in the domain of perceptions and participation. While Old Ankole farmers were more satisfied with technical and trade assistance from Ankole, identified themselves more with the organization and scored higher on the force index, differences between the two groups got smaller in 2012 (satisfaction) or even disappeared (identification and force index). Another significant difference is the difference in willingness to rent an acre, where Old Ankole farmers became much more willing to rent an acre compared to New Ankole farmers.

2.2.4 Comparison 2: Old Ankole vs. Conventional

Comparing Old Ankole farmers with conventional farmers we do not observe differences in production over time. Income from dry and cherry coffee is higher for Old Ankole farmers in 2012, while income from cherry coffee was higher for conventional farmers in 2009. This change over time is significant.

No significant differences were observed in terms of wealth, while conventional farmers made more investments in house improvement over time compared to Old Ankole farmers. This corresponds with the trends observed in perceptions and participation variables. Both groups of farmers became more optimistic about their economic situation now and in the future, but the difference over time for the conventional farmers is significantly more compared to the difference for Old Ankole farmers. Conventional farmers also got more satisfied with technical and trade assistance, identified themselves more with the organization and scored higher on the force index, while the Old Ankole farmers scored less on these subjects over time.

Table 2.3: Impact of UTZ (Old Ankole versus New Ankole)

Outcome variable	2009							2012									
	New Ankole		Old Ankole		Difference			New Ankole		Old Ankole		Difference			DIFF-IN-DIFF		
	B	SE	B	SE	B	t-stat	Sig	B	SE	B	SE	B	t-stat	Sig	B	t-stat	Sig
Income																	
Coffee income (x1000)	561.6	65.5	893.7	148.2	332.1	2.05	**	1042.0	140.3	1485.8	169.5	443.8	2.02	**	111.7	0.41	
Dry coffee income (x1000)	534.9	66.9	860.4	147.9	325.5	2.01	**	869.9	130.1	1411.1	175.2	541.2	2.48	**	215.7	0.79	
Cherry coffee income (x1000)	22.6	8.4	7.8	4.1	-14.8	-1.58		42.0	12.6	40.1	12.5	-1.8	-0.10		12.9	0.64	
Income fruits (x1000)	238.4	57.3	511.9	205.8	273.4	1.28		162.0	66.4	470.5	279.0	308.5	1.08		35.1	0.10	
Salary income (x1000)	260.8	76.5	666.7	234.6	405.9	1.65	*	24.0	14.3	93.7	63.6	69.7	1.07		336.2	1.32	
Non-farm income (x1000)	244.1	76.4	403.1	137.0	159.0	1.01		512.7	203.2	313.1	175.0	-199.6	-0.74		358.6	1.15	
Total income (x 1000)	1305	180.9	2475	515.9	1170.5	2.14	**	1740.6	231.2	2363.1	384.0	622.5	1.39		548.0	0.78	
Production																	
Coffee area (acres)	1.17	0.0871	1.46	0.126	0.285	1.86	*	2.15	0.503	4.53	1.95	2.37	1.18		2.09	1.03	
Number of coffee trees	297	24.5	533	75.5	237	2.98	**	448	62.3	669	85.2	221	2.08	**	-15.9	-0.12	
Coffee trees per acre	333	27.2	391	29.9	57.5	1.42		322	31.8	383	44.2	61.2	1.12		3.8	0.06	
Coffee yield (kg/acre)	657	108	698	100	40.9	0.28		797	89.5	916	182	119	0.59		78	0.31	
Coffee yield (kg/tree)	2.09	0.239	2.18	0.3	0.0943	0.25		3.29	0.336	3.23	0.447	-0.0555	-0.10		-0.15	-0.22	
Coffee cherry harvested (kg)	532	65.7	823	121	291	2.12	**	922	105	1107	131	185	1.11		-106	-0.49	
Coffee sold in cherry form (kg)	56.2	18.1	23.5	14.9	-32.7	-1.40		219	59	139	44.6	-80.6	-1.09		-47.9	-0.62	
Dry coffee sold (kg)	328	44.9	466	77.6	139	1.55		259	37.3	417	45.2	158	2.70	***	19.7	0.18	
Cherry coffee price (U.Shs/kg)	68.8	23.2	38.5	19.1	-30.4	-1.01		167	35.3	130	30.7	-36.8	-0.79		-6.41	-0.12	
Dry coffee price (U.Shs/kg)	1210	116	1222	119	11.8	0.07		221	78.1	317	86.7	95.2	0.81		83.4	0.41	
Wealth																	
Have piped water	0.69	0.05	0.78	0.05	0.09	1.30		0.63	0.06	0.71	0.05	0.08	1.04		-0.01	-0.12	
Have improved latrine	0.14	0.04	0.06	0.03	-0.08	-1.55		0.12	0.04	0.10	0.03	-0.02	-0.4		0.06	0.79	
Animals in stock	12.5	2.04	14.2	2.41	1.7	0.54		16.2	1.82	18.7	2.6	2.54	0.80		0.839	0.19	
Investments																	
Land attached investments (x1000)	0.6	0.5	1.3	1.3	0.7	0.51		14.7	8.1	1.5	1.3	-13.3	-1.62		-14.0	-1.68	
Made house improvements	0.22	0.0484	0.282	0.0513	0.0618	0.88		1.74	0.0582	1.53	0.081	-0.21	-2.10	**	-0.272	-2.23	**
Investment in new coffee (x 1000)	15.9	5.4	25.1	13.1	9.2	0.65		12.7	5.3	45.4	16.3	32.8	1.91	*	23.6	1.06	
Perceptions and participation																	
Economic situation versus 5 years ago	1.58	0.104	1.33	0.07	-0.249	-1.95	*	1.95	0.10	1.6	0.104	-0.348	-2.42	**	-0.10	-0.52	
Economic situation versus 5 years later	1.28	0.08	1.18	0.057	-0.10	-1.03		1.46	0.0921	1.31	0.0822	-0.151	-1.23		-0.05	-0.34	
Number of organizations	2.33	0.114	2.46	0.126	0.134	0.79		1.19	0.122	1.31	0.0988	0.113	0.72		-0.02	-0.09	
Satisfaction technical assistance	4.78	0.449	7.96	0.228	3.18	6.32	**	2.74	0.418	4.4	0.433	1.66	2.76	***	-1.52	-1.94	*
Satisfaction trade assistance	4.26	0.413	7.51	0.243	3.26	6.81	**	3.01	0.435	4.26	0.439	1.25	2.02	**	-2.01	-2.57	**
Identification index	2.59	0.239	4.17	0.09	1.58	6.20	**	1.81	0.232	2.35	0.227	0.533	1.64		-1.05	-2.54	**
Force index	2.64	0.24	4.19	0.09	1.55	6.08	**	1.82	0.231	2.34	0.225	0.525	1.63		-1.02	-2.48	**
Willingness to pay for acre (x 1000)	6969	458.4	6138.0	371.6	-830.7	-1.41		15378	2784	12792	1572	-2586	-0.81		-1755	-0.54	
Willingness to rent acre (x 1000)	526.9	96.0	528.7	59.7	1.8	0.02		281.8	34.7	885.6	282.5	603.8	2.12	**	602.0	1.97	*
Risk																	
Risk index	1.99	0.0301	2.02	0.0283	0.0361	0.87		2.18	0.0452	2.12	0.056	-0.0614	-0.85		-0.0975	-1.17	

* p < 0.1 **, p < 0.05, *** p < 0.01

Table 2.4: Impact of UTZ (Old Ankole versus Conventional)

Outcome variable	2009							2012									
	Conventional		Old Ankole		Difference			Conventional		Old Ankole		Difference			DIFF-IN-DIFF		
	B	SE	B	SE	B	t-stat	Sig	B	SE	B	SE	B	t-stat	Sig	B	t-stat	Sig
Income																	
Coffee income (x1000)	541.8	77.0	872.8	149.8	331.0	1.97	*	1154.7	114.8	1447.8	170.0	293.1	1.43		-37.9	-0.14	
Dry coffee income (x1000)	507.5	78.9	837.7	149.4	330.2	1.95	*	1018.5	112.6	1369.0	176.2	350.5	1.68	*	20.3	0.08	
Cherry coffee income (x1000)	33.8	10.3	8.2	4.4	-25.5	-2.28	**	15.6	6.3	42.3	13.2	26.7	1.83	*	52.3	2.84	***
Income fruits (x1000)	206.4	76.3	520.1	216.4	313.7	1.37		165.6	71.1	496.1	293.7	330.4	1.09		16.7	0.04	
Salary income (x1000)	515.4	127.1	670.3	245.5	154.9	0.56		66.6	29.5	98.8	67.0	32.2	0.44		-122.7	-0.43	
Non-farm income (x1000)	400.8	114.3	392.5	141.4	-8.3	-0.05		468.3	137.4	330.0	184.1	-138.3	-0.60		-130.0	-0.44	
Total income (x 1000)	1664.4	271.4	2455.6	541.6	791.3	1.31		1855.3	193.5	2372.6	401.4	517.4	1.16		-273.9	-0.36	
Production																	
Coffee area (acres)	1.37	0.133	1.4	0.12	0.0317	0.18		1.84	0.188	4.64	2.05	2.8	1.36		2.77	1.34	
Number of coffee trees	382	75.6	478	59.2	96.2	1.00		484	49.3	625	75	140	1.56		44.2	0.34	
Coffee trees per acre	321	30.9	381	30.3	60.5	1.40		390	41.4	384	45.8	-6.57	-0.11		-67	-0.89	
Coffee yield (kg/acre)	513	84.8	709	104	196	1.45		1241	220	929	189	-312	-1.07		-509	-1.59	
Coffee yield (kg/tree)	2.4	0.457	2.25	0.312	-0.145	-0.26		5.13	1.54	3.18	0.46	-1.95	-1.21		-1.81	-1.06	
Coffee cherry harvested (kg)	596	94.6	828	126	232	1.47		1128	138	1066	129	-61.8	-0.33		-294	-1.20	
Coffee sold in cherry form (kg)	90.2	27.8	24.8	15.7	-65.4	-2.05	**	157	57.8	146	46.8	-11.1	-0.15		54.3	0.67	
Dry coffee sold (kg)	251	33.8	467	80.2	216	2.48	**	327	38.5	398	43.4	71.2	1.23		-145	-1.38	
Cherry coffee price (U.Shs/kg)	62.6	16.8	40.5	20.1	-22	-0.84		94.7	25.4	137	32.1	42.4	1.04		64.5	1.33	
Dry coffee price (U.Shs/kg)	1383	130	1240	119	-142	-0.81		356	89.1	334	90.9	-21.9	-0.17		120	0.55	
Wealth																	
Have piped water	0.801	0.043	0.784	0.048	-0.017	-0.26		0.650	0.052	0.703	0.054	0.052	0.70		0.069	0.70	
Have improved latrine	0.062	0.025	0.054	0.026	-0.008	-0.21		0.052	0.021	0.095	0.034	0.043	1.06		0.051	0.93	
Animals in stock	10.8	1.82	13.6	2.41	2.74	0.91		14.6	2.04	17.5	2.54	2.88	0.88		0.144	0.03	
Investments																	
Land attached investments (x1000)	1.1	0.8	1.4	1.4	0.3	0.22		37.6	27.3	1.6	1.4	-36.1	-1.32		-36.4	-1.33	
Made house improvements	0.271	0.048	0.284	0.053	0.013	0.18		1.8	0.051	1.530	0.084	-0.27	-2.76	***	-0.29	-2.34	**
Investment in new coffee (x1000)	11.5	3.9	15.8	6.3	4.3	0.58		20.0	8.0	37.5	15.3	17.5	1.01		13.2	0.70	
Perceptions and participation																	
Economic situation versus 5 years ago	1.38	0.0788	1.34	0.0776	-0.0445	-0.40		1.98	0.1	1.59	0.107	-0.386	-2.63	***	-0.341	-1.85	*
Economic situation versus 5 years later	1.11	0.0438	1.16	0.0545	0.0522	0.75		1.64	0.0935	1.26	0.0794	-0.378	-3.07	***	-0.431	-3.06	***
Number of organizations	1.85	0.111	2.39	0.13	0.544	3.18	***	1.07	0.086	1.28	0.104	0.214	1.59		-0.33	-1.51	
Satisfaction technical assistance	1.05	0.271	7.97	0.228	6.92	19.55	***	3.22	0.423	4.14	0.449	0.919	1.49		-6	-8.44	***
Satisfaction trade assistance	0.966	0.255	7.49	0.25	6.52	18.26	***	3.07	0.411	3.96	0.448	0.894	1.47		-5.63	-7.99	***
Identification index	0.645	0.154	4.15	0.0926	3.5	19.44	***	1.71	0.214	2.26	0.235	0.543	1.71	*	-2.96	-8.11	***
Force index	0.656	0.158	4.16	0.0885	3.51	19.39	***	1.66	0.211	2.26	0.233	0.604	1.92	*	-2.9	-7.99	***
Willingness to pay for acre (x 1000)	5565	402	6102	387	536	0.96		15769	3531	12600	1579	-3169	-0.82		-3705	-0.95	
Willingness to rent acre (x 1000)	475.4	69.9	514.1	60.6	38.7	0.42		1045.1	410.3	917.5	297.0	-127.6	-0.25		-166.3	-0.32	
Risk																	
Risk index	1.97	0.0354	2.03	0.029	0.0541	1.18		2.24	0.0231	2.11	0.06	-0.13	-2.02	**	-0.181	-2.32	***

* p < 0.1 **, p < 0.05, *** p < 0.01

Table 2.5: Impact of UTZ (New Ankole versus Conventional)

Outcome variable	2009							2012									
	Conventional		New Ankole		Difference			Conventional		New Ankole		Difference			DIFF-IN-DIFF		
	B	SE	B	SE	B	t-stat	Sig	B	SE	B	SE	B	t-stat	Sig	B	t-stat	Sig
Income																	
Coffee income (x1000)	506.7	67.7	538.2	62.6	31.5	0.34		1112.9	105.6	1079.9	131.0	-33.1	-0.20		-64.5	-0.34	
Dry coffee income (x1000)	472.1	69.4	512.6	63.8	40.5	0.43		962.2	103.8	913.2	124.7	-49.1	-0.30		-89.6	-0.48	
Cherry coffe income (x1000)	33.9	9.5	21.8	7.4	-12.0	-1.00		25.1	8.1	36.8	11.6	11.7	0.83		23.8	1.28	
Income fruits (x1000)	245.0	80.9	241.3	58.7	-3.7	-0.04		133.9	56.6	185.9	83.7	52.0	0.52		55.8	0.39	
Salary income (x1000)	457.0	100.4	252.9	79.4	-204	-1.59		74.4	27.5	23.2	13.7	-51.2	-1.66		153	1.16	
Non-farm income (x1000)	373.3	91.9	239.9	79.1	-133	-1.10		454.4	122.3	429.4	166.8	-25.0	-0.12		108	0.45	
Total income (x 1000)	1582	220.4	1272	191.2	-310	-1.06		1775.6	168.2	1718.4	208.1	-57.2	-0.21		52.6	0.13	
Production																	
Coffee area (acres)	1.34	0.132	1.24	0.0937	-0.103	-0.64		1.78	0.17	2.45	0.662	0.663	0.97		0.77	1.09	
Number of coffee trees	350	46.5	291	22.2	-59	-1.15		457	37.2	415	58.5	-42.6	-0.61		16.4	0.19	
Coffee trees per acre	309	23.6	317	24.6	8.01	0.23		389	35.8	289	28.9	-99.8	-2.17	**	-108	-1.88	*
Coffee yield (kg/acre)	539	68.3	617	93.9	78	0.67		1241	275	785	88.9	-456	-1.58		-534	-1.71	*
Coffee yield (kg/tree)	2.46	0.402	2.07	0.224	-0.386	-0.84		5.66	2.16	3.6	0.379	-2.06	-0.94		-1.67	-0.75	
Coffee cherry harvested (kg)	608	96.1	526	61.2	-81.5	-0.71		1113	134	937	106	-176	-1.03		-95	-0.46	
Coffee sold in cherry form (kg)	90.9	25.2	57.9	17.6	-33	-1.07		182	60.2	228	67.3	46.6	0.52		79.6	0.83	
Dry coffee sold (kg)	243	32.1	315	42	72.1	1.37		317	38.2	266	37.1	-51.3	-0.96		-123	-1.64	
Cherry coffee price (U.Shs/kg)	68.7	16.8	67.5	21.9	-1.2	-0.04		126	28	151	32.5	25.6	0.60		26.8	0.53	
Dry coffee price (U.Shs/kg)	1341	122	1193	114	-147	-0.88		363	81.5	261	83.5	-101	-0.86		45.9	0.23	
Wealth																	
Have piped water	0.77	0.04	0.68	0.05	-0.09	-1.39		0.68	0.05	0.60	0.06	-0.08	-1.07		0.02	0.17	
Have improved latrine	0.05	0.02	0.11	0.04	0.06	1.57		0.07	0.03	0.14	0.04	0.07	1.54		0.01	0.12	
Animals in stock	11.6	1.76	11.2	1.7	-0.411	-0.17		15.2	2.11	17	2.24	1.79	0.58		2.2	0.56	
Investments																	
Land attached investments (x1000)	1.2	1.2	0.6	0.5	-0.6	-0.45		41.3	35.4	8.1	4.9	-33.3	-0.93		-32.6	-0.91	
Made house improvements	0.29	0.05	0.23	0.05	-0.06	-0.91		1.77	0.05	1.74	0.06	-0.03	-0.40		0.03	0.29	
Investment in new coffee (x1000)	9.9	3.8	15.4	5.0	5.5	0.87		19.1	5.9	13.8	6.0	-5.3	-0.64		-10.8	-1.03	
Perceptions and participation																	
Economic situation versus 5 years ago	1.36	0.07	1.54	0.10	0.17	1.45		1.94	0.10	1.96	0.10	0.03	0.20		-0.15	-0.79	
Economic situation versus 5 years later	1.13	0.047	1.26	0.07	0.14	1.62		1.59	0.09	1.43	0.09	-0.16	-1.26		-0.30	-1.95	*
Number of organizations	1.77	0.121	2.26	0.12	0.49	2.91	***	1.12	0.09	1.19	0.11	0.069	0.48		-0.42	-1.90	*
Satisfaction technical assistance	1.18	0.284	4.56	0.44	3.38	6.45	***	3.22	0.4	2.94	0.414	-0.279	-0.48		-3.66	-4.70	***
Satisfaction trade assistance	1.01	0.244	4.06	0.399	3.05	6.52	***	3.03	0.39	3.31	0.433	0.278	0.48		-2.78	-3.72	***
Identification index	0.68	0.154	2.45	0.231	1.77	6.37	***	1.69	0.204	1.89	0.228	0.204	0.67		-1.57	-3.79	***
Force index	0.673	0.152	2.51	0.235	1.84	6.59	***	1.68	0.203	1.88	0.227	0.198	0.65		-1.64	-3.97	***
Willingness to pay for acre (x 1000)	5424	362.1	6767	440.0	1342	2.36	*	15117	3262	16061	3429	944.9	0.20		398	0.08	
Willingness to rent acre (x 1000)	419.8	37.5	514.2	84.5	94.4	1.02		1081.4	395.2	296.5	36.3	-785	-1.98	**	879	2.16	**
Risk																	
Risk index	2	0.032	2	0.03	-0.0002	-0.01		2.22	0.033	2.17	0.047	-0.05	-0.93		-0.05	-0.73	

* p < 0.1 **, p < 0.05, *** p < 0.01

2.2.5 Comparison 3: New Ankole vs. Conventional

Comparing New Ankole with conventional farmers doesn't show significant differences in 2009 or in 2012. Comparing over time shows difference in difference for coffee yield per acre and coffee trees per acre, where conventional farmers increased both compared to New Ankole farmers. All other variables do not show significant differences between these groups, except for perceptions and participation. New Ankole farmers scored higher than conventional farmers in 2009 on many variables. Over time all significant differences from 2009 disappeared, mostly because conventional farmers scored higher on, for instance, topics such as satisfaction, identification and the force index, while New Ankole farmers scored lower on these topics.

2.2.6 Production and quality

As shown by the survey results, the coffee production of the 'New Ankole' farmers has grown significantly between 2009 and 2012. Not only have these farmers brought more of their land under coffee production, the adoption of improved farming practices has also contributed to higher yields. A farmer explains:

> *"I have been planting more coffee and increased the land size under coffee production. [...] Because of the pruning, mulching, pest control and harvesting mature coffee, I get better yields"* (FGD).

Interestingly, one of the side-effects of the increased coffee production in the area is that several new coffee factories have been established in recent years.

Problems such as low yields, the lack of reliable buyers and the prevalence of diseases like coffee wilt had undermined the attractiveness of coffee farming in the area. During the FGDs, it became clear that Ankole has played a major role in making coffee farming more attractive to farmers. A farmer expressed that:

> "*I have got motivation to grow coffee again after I had lost all that I had in the beginning" (FGD).*

Several farmers pointed out that they previously were not into coffee but decided to go into coffee farming because of the opportunities it offers. The following factors emerged as the most decisive in enhancing the attractiveness of coffee farming:

- *Decent coffee prices.* Ankole has been reported as consistently offering higher coffee prices than other buyers in the area. Before Ankole was active, farmers had no alternative besides selling their coffee to middlemen who offered poor prices. At the time of fieldwork (June 2012), Ankole offered UGX 4700 for high quality [processed Robusta] coffee, while other buyers offered UGX 4300.

- *Reliability.* Ankole buys high quality coffee throughout the season. As a result, farmers have the certainty that the investments they put into producing high quality coffee will

result in a payoff. Furthermore, farmers have trust in Ankole's weighing system which, unlike that of the middlemen, provides accurate readings.

- *Free seedlings*. Since 2005, Ankole has been offering free seedlings to both certified and non-certified farmers. According to the staff of Ankole, the production of seedlings has quadrupled since the project started.

- *Transport cost-sharing*. Ankole offers a transport cost-sharing arrangement to the farmers from whom its buys coffee. It pays UGX 1000 for each bag of 60 kilos of coffee. Ankole is the only buyer in Ibanda district which offers this arrangement.[18]

- *Cheap milling charges*. Unlike other factories in the area which charge UGX 200 per kilogramme for the milling of coffee, Ankole offers the service at UGX 50.

- *Husks are returned*. Ankole is the only factory which gives coffee husks back to farmers after the milling. To farmers this is attractive as they can use the husks as manure for the production of matoke.

Both staff of Ankole and the farmers themselves point out that good farming practices (e.g. pruning, mulching, hygiene when drying) have been widely adopted in the project area. As a consequence, they claim that the size and weight of berries has increased. When asked why they adopted good farming practices, farmers gave the following reasons:

- *Trainings and follow-up field visits*. With the support of Solidaridad, Ankole has carried out numerous trainings on good farming practices. Besides enhancing the capacity of farmers, farmers have seen for themselves that good farming practices result in higher yields. Furthermore, the follow-up field visits that have been carried out to monitor farmers' compliance with good farming practices were also mentioned as having an encouraging effect (the trainings and field visits stopped in 2010).

- *Quality as a condition*. Ankole only buys high quality coffee. As such, maintaining good farming practices is a prerequisite in order to sell to Ankole.

- *Promise of a premium price*. When Ankole started training farmers in good farming practices, farmers were promised that certification would result in higher prices. While this was initially an incentive to farmers to adopt good farming practices, the premium price unfortunately has never been realized. As such, the promise of receiving a premium price and the value of certification has lost its former attractiveness to farmers.[19]

[18] There are two ways in which coffee is transported to the factory (Ankole). First, Ankole has divided its working area in zones and has fixed buying days when its vehicles collect coffee from the different zones. Second, farmers also organize the transport themselves and pool resources to hire trucks.

[19] It remained a bit unclear during the fieldwork why Ankole has not yet sold coffee under the certified arrangement. During an interview, the management of Ankole attributed this to the fact that certified coffee is delayed a lot in terms of payment while offering little in terms of margin.

2.2.7 Middlemen

Besides motivating farmers to produce high quality coffee, the presence of Ankole as a reliable buyer offering decent prices throughout the season has the major advantage that farmers are (largely) able to bypass middlemen. Selling to middlemen is associated with two kinds of problems. First they offer considerably lower prices than Ankole; at the time of field work this was up to UGX 400 per kilogramme. Second, many of them reportedly use weighing scales that have been tampered with. Consequently, farmers selling to middlemen get paid less for their coffee and lose income.[20]

Middlemen, which are referred to locally as 'shake shake people', have not been completely sidelined however. The main reason for this is that middlemen pay immediately with cash, while there is always a waiting period with Ankole. After selling their coffee, farmers mostly get paid within one or two days, although this can take up to eight days. A farmer explains that:

> "*When you have immediate cash needs, selling to Ankole is not always an option so you are left with no alternative but to sell at the prevailing prices [offered by middlemen]" (FGD).*

Another reason why farmers sell to middlemen is that for farmers living further away from Ankole, the costs of transporting coffee are high. A farmer points out that:

> *"Sometimes the produce is not big enough to justify someone's efforts of travelling long distances to the factory. So then you are more inclined to sell to the shake shake people"* (FGD).

2.2.8 Income and impact

Due to farmers' increased production, and the presence of a reliable buyer offering decent prices (Ankole), the income of farmers has increased considerably. During the FDGs, farmers indicated they have used their increased income for expenses in such areas as school fees, medical bills, housing, farm investments and savings. The FGDs also revealed a change in the farmers' economic mind-set and strategy. A farmer explains that:

> "*There has been a change in the traditional beliefs. The people in this area used to be involved with cattle only. Now people start to mix with coffee" (FGD).*

Farmers point out that there has been a shift from subsistence farming to commercial farming. In addition, they explain that in general people have started to operate in a more entrepreneurial way. For example, farmers have used their increase in income to invest in other enterprises such as animal rearing or starting a small retail shop. According to the farmers, such economic diversification has not only given them added income but also

[20] Selling to middlemen has the advantage that they are less concerned with quality. Hence, farmers tend to send their low quality coffee to middlemen as Ankole would not accept such coffee.

reduced risk. Another consequence is that there has been a growing demand for credit in the area, as farmers seek to invest in business opportunities.

2.2.9 Conclusions

The research suggests that coffee has become an (even more) important source of income for farmers in the project area. The survey data shows that total coffee income increased for all farmers over the last three years. The provision of free seedlings, transport-cost sharing, and cheap milling charges have all contributed to the attractiveness of coffee farming and maintaining good farming practices. The changes in the 'New Ankole' group show the positive effect of Utz certification. The fact that many of the services offered by Ankole were not restricted to certified farmers only is beneficial to the farmers involved, but impeded the measurement of impact. Furthermore, the effects of Utz certification have been indirect. Farmers have not benefited from a premium price, but mainly from the trainings that resulted in higher quality and production (and subsequently income). Most important for the positive changes observed has been the reliability of Ankole as a coffee buyer. Farmers have the certainty that they can sell their coffee throughout the coffee season at a decent price. Because Ankole only buys high quality coffee, farmers can be sure that investing in their farms and maintaining good farming practices results in a payoff.

Even when a reliable buyer is present, timely payment is crucial for the ability of farmers to bypass middlemen. While farmers sell most of their produce to Ankole, there are still farmers in the project area who sell to middlemen. This is because farmers that sell to Ankole have to wait several days before getting paid. When they have urgent cash needs, however, this is something they cannot always afford.

Ankole Coffee Processors Ltd is a business venture and therefore looks at farmers as suppliers of coffee and concentrates on out-competing other coffee buyers. Maintaining the interest of the farmers' organisations was very challenging after the period in which they received support from Solidaridad had ended.

2.3 Findings in Kamuli district

2.3.1 Introduction

Coffee has traditionally been a cash crop in Kamuli district, Eastern Uganda. Due to poor farming practices, the quality of coffee and yields had gone down. Due to a lack of access to the export market, coffee was sold at low prices to middlemen operating in the area. In the 2006-2010 period, the project *"Establishing an export market for certified responsible coffee with smallholder producer in Uganda"* was implemented at Kisozi sub-county in Kamuli district.[21] This project was implemented by the NGO Kulika Uganda with support from the EU and Solidaridad. It had the following main goals:

- Improving productivity and quality;
- Obtaining certification from Utz Certified, a certification programme for responsible coffee production;
- Organizing farmers so that they become empowered to sell coffee without the interventions of middlemen and directly access the international market for responsible coffee.

The beneficiaries of the project were subsistence smallholder coffee farmers and their families. Initially, Ibero Uganda Ltd, a major international coffee export company, was the certificate holder and provided the market component of the project, thereby enabling the coffee producers' access to the export market. When the project ended in 2010, Ibero discontinued its involvement. With the support of Solidaridad, Kulika continued supporting the farmers by buying and marketing the coffee and becoming the Utz certificate holder.

Since the start of the project, 3,512 coffee farmers were trained in coffee management practices and sustainable agriculture. During the trainings, the focus was on quality coffee production in conformity with Utz Certified standards and providing farmers with fair coffee prices by giving them direct access to the export market. Grouping the farmers was an important part of the project. At the village level, farmers were organized into Producer Organizations (POs). A total of 141 POs were created, each comprising of about 15-30 members and headed by a democratically elected chairperson. These chairpersons, who act as key farmers in the project, used their newly acquired knowledge and skills to train the members of their respective POs in good farming practices. Each PO has its own demonstration garden, which functions as a field training school where group meetings and practical trainings are conducted. To centralize the buying of coffee and create economies of scale, 9 Depot Committees (DCs) were created, each of which represented between 10-20 POs. More recently, a farmers' company (BUTPCO) was established to ultimately take over the responsibilities of Kulika and become the certificate holder. At the time of fieldwork in June 2012, this company was expected to buy, process and sell the coffee for the 2012-2013 season with the support of Kulika.

[21] The project covered all nine parishes of Kisozi sub-county namely Kisozi, Namaganda, Kakunyu, Nankandulo, Lwanyama, Kakira, Kiyunga, Magogo, and Butembe.

2.3.2 Survey design

Four different groups of farmers were studied in the research, as shown in Figure 2.3. Many Utz certified farmers within the Kulika project were previously part of a similar project (Agricultural Production Enhancement Program: APEP) which may have already affected the same type of indicators to be measured in this study. We therefore selected a group of farmers that were also part of the APEP programme but do not participate now in the Kulika project (Mbulamuti) and a group of farmers that were also part of the APEP programme and participated in the Kulika project (Kulika 1). Even though most farmers from the Kulika project were part of the APEP programme, some of them did not participate. We also looked at these farmers (Kulika 2) and used farmers from a neighbouring sub-county (Nawanyaru) as a control group for these farmers. In the cross-sectional setting, the comparison of the Kulika 1 farmers with the Mbulamuti farmers allows us to estimate the marginal effect of Utz certification on farmers with previous training and organization by APEP. On the other hand, the comparison of the Kulika 2 farmers that did not have the APEP training with the similar and organized farmers from the Nawanyaru sub-county isolates the (pure) effect of Utz certification by the Kulika project. Note that the data does not allow us to isolate the effects of Utz throughout time (panel-effect). This is because no Utz intervention occurred at the control groups (Mbulamuti and Nawanyaru) between the two waves of data-collection. In reporting the results we use transformations of the actual numbers (log transformation) because comparison by order of magnitude using logs is much more effective statistically as well as easier to gauge. The actual numbers are available on request.

Figure 2.3: Impact evaluation strategy in Kamuli district

	KULIKA 1	KULIKA 2	MBULAMUTI	NAWANYARU
2009	APEP + UTZ	UTZ	APEP	NONE
2012	APEP + UTZ	UTZ	APEP	NONE

2.3.3 Comparison: Kulika 1 vs. Mbulamuti

If we compare the income and production data from the APEP groups, we observe some significant differences in 2009 (see Table 2.6). Mbulamuti farmers sell more coffee in cherry form, receive a higher price for cherry coffee and have a higher income from cherry coffee, compared to Kulika 1 farmers. Kulika 1 farmers received a better price for dry coffee in 2009. Most of these effects disappeared in 2012, except for the difference in price received for cherry coffee, which was still higher for the Mbulamuti farmers in 2012. Looking at the difference in difference estimates, only the amount of coffee sold in cherry form is statistically significant. Mbulamuti farmers sold less coffee in cherry form in 2012, compared to 2009, while Kulika 1 farmers increased selling of cherry coffee in these 3 years. These findings can be contextualised with findings from the qualitative study, where farmers reported positive effects on quality and production of coffee due to participation in Kulika but these gains were realised only during the project implementation. There were no statistically significant effects on coffee prices (both cherry and dry), implying that Kulika 1 farmers were not paid better prices by adopting Utz recommended practices. This result is consistent with observations from the qualitative study in which it was reported that middlemen used Kulika prices as a

base to offer slightly higher prices. Thus although Kulika involvement resulted in higher prices for farmers, this offered no advantage to the Kulika farmers since non-Kulika farmers also benefited, as this prompted the middlemen to offer similar or slightly higher prices. Besides, Ibero, the coffee exporting company, was the same company that participated in an earlier project (APEP) and benefited both the Kulika and Mbulamuti farmers.

We did not observe significant differences in wealth or investments between these two groups in 2012, nor did we observe change over time. In 2009 we observed a significant difference in investment in new coffee between the two groups. However this effect disappeared in 2012.

There were statistically significant positive effects on perception and participation variables, probably because Kulika maintained its presence and support in terms of training and farm inputs. While Mbulamuti farmers were more optimistic about the future economic situation in 2009 compared to Kulika farmers, this changed in 2012 with Kulika farmers being more optimistic compared to Mbulamuti farmers. Kulika farmers were more satisfied with technical and trade assistance in 2009 compared to Mbulamuti farmers, and this difference only got larger. Kulika farmers also identified themselves more with the organization and, according to the results of force index, Kulika is more efficient, reacted more efficiently in the face of events, and is more profitable, peaceful and trustworthy, compared to Mbulamuti.

2.3.4 Comparison: Kulika 2 vs. Nawanyaru

Looking at the production and the income variables, we observe similar trends for Kulika 2 versus Nawanyaru (conventional farmers) to those observed for Kulika 1 versus Mbulamuti. While Nawanyaru farmers sold more cherry coffee in 2009, this changed in 2012 and the difference in difference between the two groups is significant. While there were no significant differences in 2009 in terms of yields, in 2012 Kulika farmers significantly produce less coffee per tree compared to Nawanyaru farmers. While collecting data in the field with Kulika farmers, we observed many abandoned coffee plots with trees that were not pruned for a long time and weeding was not done anymore. Looking at income from dry coffee and total income from coffee we did not observe differences in 2009, while Kulika farmers significantly earn less money from coffee in 2012 compared to Nawanyaru farmers, although the difference-in-difference is not significant, these findings are in line with the trend. The phasing out of Kulika activities and the pulling out of Ibero could be partly responsible for the change in behaviour where Kulika farmers are reverting to sale of more of their coffee in cherry form, a practice they had abandoned. Without the existence of the market that demands quality, it may not make economic sense to follow practices that would demand more labour and other resources. Besides, most farmers are economically poor, which forces them to sell their coffee early, and to any buyer, to meet their immediate financial needs.

Considering results on perceptions and participation, we observe similar trends here. Kulika farmers were more satisfied in 2009 and remained more satisfied compared to Nawanyaru farmers. They also scored higher on the identification and force index. The only difference in difference estimate that is significant is the number of organisations one belongs to, which declines for both groups between 2009 and 2012, but the decline is significantly higher for the conventional farmers.

Table 2.6: Impact of UTZ (Kulika 1)

	2009							2012									
	Mbulamuti		Kulika 1		Difference			Mbulamuti		Kulika 1		Difference			DIFF-IN-DIFF		
Outcome variable	B	SE	B	SE	B	t-stat	Sig	B	SE	B	SE	B	t-stat	Sig	B	t-stat	Sig
Income																	
Coffee income (x1000)	200.3	30.2	168	33.4	-32.3	-0.72		221.1	43.3	247.5	38.9	26.4	0.45		58.7	0.8	
Dry coffee income (x1000)	128.8	29.5	118.6	23.7	-10.2	-0.27		156	38.5	203.8	38.8	47.8	0.87		58	0.87	
Cherry coffee income (x1000)	67.3	12.5	22.6	6.3	-44.7	-3.18	***	45.7	12.4	28.7	12.8	-17.1	-0.96		27.6	1.22	
Income fruits (x1000)	52.8	39.3	287	23.3	-24.1	-0.53		5.1	2.7	4.09	1.9	-1.02	-0.31		23.1	0.5	
Salary income (x1000)	32.5	18.5	200.1	185.9	167.7	0.9		83.5	66.8	2.3	2.3	-81.2	-1.21		-248.8	-1.25	
Non-farm income (x1000)	27.8	18.3	151.2	125.5	123.3	0.97		127.9	82.2	561.1	308.6	433.1	1.36		309.8	0.9	
Total income (x 1000)	313.4	58.2	548	316	234.6	0.73		437.7	146.1	815	306.3	377.4	1.11		142.8	0.31	
Production																	
Coffee area (acres)	1.05	0.132	0.92	0.094	-0.127	-0.78		3.8	2.88	1.04	0.14	-2.75	-0.96		-2.63	-0.91	
Number of coffee trees	383	47	389	37.5	5.98	0.1		355	53.3	402	61.9	47.3	0.58		41.4	0.41	
Coffee trees per acre	405	32	484	31.8	79.4	1.76		367	35.9	420	38.7	52.9	1		-26.5	-0.38	
Coffee yield (kg/acre)	612	116	442	122	-171	-1.02		370	75.4	370	65.2	0.504	0.01		171	0.87	
Coffee yield (kg/tree)	1.76	0.33	0.93	0.26	-0.829	-1.97		1.18	0.259	1.67	0.698	0.487	0.66		1.32	1.54	
Coffee cherry harvested (kg)	564	119	500	230	-64.5	-0.25		340	94	289	51.8	-51	-0.48		13.4	0.05	
Coffee sold in cherry form (kg)	175	33	61.3	18.1	-114	-3.03	***	118	25	97.4	34	-20.2	-0.48		94	1.66	*
Dry coffee sold (kg)	130	30	127	25.8	-3.52	-0.09		160	38.5	157	26.2	-3.19	-0.07		0.336	0.01	
Cherry coffee price (U.Shs/kg)	237	29.1	136	31.6	-102	-2.38	**	252	41.7	127	35.3	-124	-2.26	**	-22.9	-0.33	
Dry coffee price (U.Shs/kg)	439	62.3	595	70.7	157	1.67	*	521	91.2	733	101	212	1.56		56	0.34	
Wealth																	
Have piped water	0		0		0			0		0.023	0.023	0.023	1		0.023	1	
Have improved latrine	0.091	0.043	0.07	0.04	-0.02	-0.36		0.09	0.04	0.047	0.032	-0.04	-0.77		-0.02	-0.25	
Animals in stock	14.8	3.43	14.9	2.94	0.15	0.03		16.7	3.68	15.9	2.63	-0.801	-0.18		-0.951	-0.15	
Investments																	
Land attached investments (x1000)	36.4	14.4	44.4	22.3	7.98	0.3		6.18	5.9	23.3	23.2	17.1	0.71		9.1	0.25	
Made house improvements	0.376	0.068	0.372	0.0744	-0.004	-0.04		1.74	0.079	1.6	0.089	-0.136	-1.14		-0.132	-0.85	
Investment in new coffee	389	370	4605	1597	4216	2.57	**	496	493	15558	8069	15062	1.86		10846	1.32	
Perceptions and participation																	
Economic situation versus 5 years ago	1.63	0.123	1.33	0.098	-0.306	-1.94	*	1.81	0.116	1.77	0.124	-0.045	-0.26		0.262	1.13	
Economic situation versus 5 years later	1.49	0.114	1.23	0.0869	-0.254	-1.78	*	1.23	0.0738	1.53	0.13	0.302	2.01	**	0.556	2.69	***
Number of organizations	1.71	0.152	1.51	0.142	-0.199	-0.96		1.09	0.12	1.16	0.094	0.071	0.46		0.27	1.05	
Satisfaction technical assistance	6.34	0.434	7.65	0.329	1.31	2.4	**	0.231	0.144	6.4	0.352	6.16	16.2	***	4.86	7.32	***
Satisfaction trade assistance	5.76	0.455	7.07	0.382	1.31	2.21	**	0.198	0.124	5.86	0.369	5.66	14.6	***	4.36	6.14	***
Identification index	3.72	0.181	4.12	0.115	0.398	1.85	*	0.158	0.0992	3.71	0.173	3.55	17.8	***	3.15	10.8	***
Force index	3.64	0.197	4.07	0.125	0.421	1.81	*	0.115	0.0734	3.58	0.172	3.46	18.5	***	3.04	10.2	***
Willingness to pay for acre (x 1000)	2398.4	382.5	2289.7	311	-108.7	-0.22		2737.3	278.8	2849	303.1	111.7	0.27		220.4	0.34	
Willingness to rent acre (x 1000)	131	17.9	133.9	13.9	2.9	0.13		117.5	12.9	123	16.5	5.56	0.26		2.5	0.08	
Risk																	
Risk index	2.01	0.043	1.92	0.0614	-0.088	-1.17		2.19	0.0315	2.11	0.0442	-0.077	-1.42		0.0113	0.12	

* p < 0.1 **, p < 0.05, *** p < 0.01

Table 2.7: Impact of UTZ (Kulika 2)

	2009							2012									
	Nawanyaru		Kulika 2		Difference			Nawanyaru		Kulika 2		Difference			DIFF-IN-DIFF		
Outcome variable	B	SE	B	SE	B	t-stat	Sig	B	SE	B	SE	B	t-stat	Sig	B	t-stat	Sig
Income																	
Coffee income (x1000)	311.3	94.2	242.8	61.4	-68.5	-0.6		379.7	86.9	173.9	27.2	-206	-2.3	**	-137.3	-1.0	
Dry coffee income (x1000)	229.8	72.9	195.3	52.8	-34.5	0.38		324.0	88.0	129.3	26.7	-195	-2.1	**	-160.2	-1.3	
Cherry coffee income (x1000)	48.4	9.3	23.2	8.1	-25.2	-2.0	**	34.3	9.7	44.4	12.2	10.1	0.65		35.3	1.77	*
Income fruits (x1000)	14.0	7.9	18.1	12.1	4.1	0.29		12.4	12.3	3.0	2.1	-9.4	-0.8		-13.5	-0.7	
Salary income (x1000)	62.7	40.4	199.6	118.0	136.9	1.10		0.5	0.3	97.3	89.7	96.7	1.08		-40.2	-0.3	
Non-farm income (x1000)	42.2	38.2	195.0	118.1	152.8	1.23		175.6	166.0	196.5	150.6	20.9	0.09		-131.9	-0.5	
Total income (x 1000)	430.2	127.6	655.5	235.8	225.3	0.84		568.2	209.6	470.6	168.3	-97.6	-0.4		-322.9	-0.9	
Production																	
Coffee area (acres)	0.829	0.105	1.09	0.129	0.265	1.59		1.03	0.171	1.21	0.162	0.179	0.76		-0.09	-0.3	
Number of coffee trees	522	198	413	65.8	-109	-0.5		368	97.3	313	46.6	-54.4	-0.5		54.4	0.23	
Coffee trees per acre	484	64	383	56.2	-101	-1.2		330	46.6	285	27	-45.2	-0.8		55.7	0.55	
Coffee yield (kg/acre)	695	69.8	709	243	14.2	0.06		349	51.2	260	41.7	-88.8	-1.3		-103	-0.4	
Coffee yield (kg/tree)	2.09	0.262	1.76	0.258	-0.33	-0.9		1.63	0.246	1.12	0.179	-0.51	-1.7	*	-0.187	-0.4	
Coffee cherry harvested (kg)	650	186	562	100	-87.2	-0.4		354	91.9	210	34.6	-144	-1.5		-57.2	-0.3	
Coffee sold in cherry form (kg)	131	24.9	53.3	17.6	-77.3	-2.5	**	115	42.9	92.3	26.3	-22.7	-0.5		54.6	0.93	
Dry coffee sold (kg)	229	68.3	178	42.9	-50.3	-0.6		262	63.3	121	24	-141	-2.1	**	-90.6	-0.9	
Cherry coffee price (U.Shs/kg)	191	26	119	34	-72.2	-1.7	*	209	42.8	243	43.3	34.4	0.56		107	1.44	
Dry coffee price (U.Shs/kg)	627	74.5	715	83.9	88.9	0.79		807	107	751	106	-55.8	-0.4		-145	-0.8	
Wealth																	
Have piped water	0.000		0.05	0.035	0.05	1.44		0.020	0.020	0.000		-0.02	-1.0		-0.07	-1.7	*
Have improved latrine	0.099	0.040	0.025	0.025	-0.07	-1.6		0.10	0.040	0.125	0.05	0.029	0.43		0.103	1.27	
Animals in stock	7.93	1.34	11.6	2.61	3.7	1.26		10.7	3.16	14.9	2.49	4.11	1.02		0.409	0.08	
Investments																	
Land attached investments (x1000)	9.8	9.7	51.3	49.9	41.4	0.82		0.2	0.2	0.0		-0.2	-1.0		-41.6	-0.8	
Made house improvements	0.216	0.056	0.375	0.077	0.159	1.67	*	1.56	0.099	1.75	0.07	0.189	1.56		0.03	0.20	
Investment in new coffee	1838	1264	9075	4551	7237	1.53		575	517	7618	3590	7043	1.94	*	-194	-0.03	
Perceptions and participation																	
Economic situation versus 5 years ago	1.79	0.13	1.47	0.129	-0.317	-1.73	*	1.84	0.107	1.73	0.134	-0.117	-0.68		0.2	0.80	
Economic situation versus 5 years later	1.41	0.0956	1.32	0.103	-0.082	-0.58		1.39	0.09	1.28	0.09	-0.116	-0.88		-0.034	-0.18	
Number of organizations	1.5	0.11	1.5	0.16	0.001	0.00		0.792	0.101	1.42	0.112	0.633	4.19	**	0.632	2.57	**
Satisfaction technical assistance	2.8	0.493	7.92	0.347	5.13	8.51	***	1.04	0.312	6.07	0.481	5.04	8.80	**	-0.093	-0.11	
Satisfaction trade assistance	2.44	0.452	6.78	0.425	4.33	6.98	***	0.72	0.212	4.9	0.493	4.18	7.78	**	-0.155	-0.19	
Identification index	1.61	0.264	3.83	0.169	2.22	7.09	***	0.748	0.198	3.43	0.261	2.68	8.17	**	0.452	1.00	
Force index	1.62	0.27	3.83	0.166	2.21	6.97	***	0.649	0.192	3.29	0.25	2.65	8.39	**	0.432	0.97	
Willingness to pay for acre (x 1000)	2229.6	196.6	1986.8	223.3	-242.8	-0.82		2605.1	246.1	2745.7	582.0	140.7	0.22		383.5	0.55	
Willingness to rent acre (x 1000)	138.1	20.9	145.4	21.6	7.2	0.24		152.0	20.9	144.2	26.7	-7.9	-0.23		-15.1	-0.33	
Risk																	
Risk index	1.97	0.032	2.09	0.0515	0.119	1.96	*	2.11	0.0361	2.2	.	336	0.089	1.80		-0.0304	-0.39	

* p < 0.1 **, p < 0.05, *** p < 0.01

2.3.5 Institutional changes

There have been a number of organizational and financial changes throughout the project period. In the first few years (2006-2010) Ibero was the certificate holder responsible for buying, processing and selling the coffee of the registered farmers. After the project ended in March 2010, Kulika took over the role of Ibero, with the support of Solidaridad. In 2010, Kulika sold the coffee to Ugacof Ltd., who exported it as Utz certified coffee. In 2011, however, the coffee was sold as conventional coffee. Since the end of the project, the number of Kulika staff has been vastly reduced due to financial constraints. At the time of fieldwork in June 2012, for example, only three staff members of Kulika remained active. In more practical terms, this meant that since 2010 Kulika has become less and less active in terms of activities and contact with farmers. Because Kulika aims to phase out its involvement in the project area, it established a farmers' company (BUTPCO) in 2011, which is to take over the role of Kulika. This company will be responsible for a number of tasks, including carrying out farmer certification, promoting group production and the buying, processing and selling of coffee. Kulika staff explained that in terms of sustainability, much will depend on whether the newly established company will have the capacity to operate independently.

2.3.6 Quality and production

The qualitative research suggests that the project had positive effects on the quality and production of coffee in the period it was implemented (2006-2010). Before the project started, coffee was no longer an important cash crop for most farmers and some had given up on coffee farming altogether, partly because of the prevalence of coffee wilt disease. Many farmers sold their coffee 'green', meaning that the coffee was sold when the berries were not yet ripe. Also, it was common practice to dry coffee berries on the ground. When the project started, farmers learned about the importance of adopting good farming practices in areas such as sustainable coffee production, hygiene and sanitation, marketing, record-keeping and environmental conservation. Amongst other things, farmers were trained on how to selectively pick, dry and store the coffee properly.

> *"Before Kulika came, we used to harvest all the berries on the plant at the same time, not minding the ripe and raw ones. But now we only pick the ripe ones, making the harvesting period much longer." (FGD)*

According to Kulika staff and interviewed farmers, the project has led to a widespread adoption of good farming practices, and as a result, an improvement of the quality of coffee produced in the project area. Farmers also explained that their production increased during the project-period due to higher yields per tree, more land that was brought under coffee production and a higher coffee tree stand per acreage as a result of gap filling and replanting.[22]

---

[22] For reasons that will be explained further below, many of the benefits associated with improved quality and production, however, did not appear to be sustainable.

2.3.7 Competition from middle men

FGDs also revealed that the presence of Ibero/ Kulika as a buyer had a positive effect on the prices offered for coffee in the area. Once Ibero/Kulika start buying, middlemen are forced to match the price that is offered, resulting in income benefits for farmers. In 2011, for example, coffee sold to middlemen yielded UGX 600 per kilo. When Kulika started buying coffee at UGX 1.800, however, the middlemen matched immediately, even to the point that they offered higher prices than Kulika. A staff member of Kulika explains that;

> *"They [middlemen] are listening as to how much we are buying and give an added price. So when we start from 2000, they will come to 2100. When we go to 2100, they will go to 2300, so they go ahead of us (interview staff member Kulika)".*

While beneficial for the farmers, the matching behaviour of the middlemen has also made things more complicated for Kulika. Because middlemen are paying high prices, it has been difficult to realize high volumes and make accurate buying predictions.

2.3.8 Incentives

The project provided a number of incentives to make coffee-farming and adopting good farming practices attractive to farmers. During the FGDs, the following incentives emerged as the most decisive ones:

- *Higher yields.* The prospect of achieving higher yields formed a major incentive for farmers to adopt good farming practices. As a farmer explains:

  > *"We used to think that whenever you grow a coffee plant, it would cater for itself, that you just have to wait for earning money. When Kulika came we learned that a coffee plant ought to be cared for. We saw that plants which had been cared for yield more than the ones not cared for" (FGD).*

- *Higher prices*. Farmers were told that producing high quality coffee would result in higher prices. For example, in 2011 selling to middlemen yielded between 500-600 UGX per kilo, while Kulika offered 1,500-1,800 UGX per kilo of dried coffee beans. Farmers were also told that certified coffee would result in a premium price, but this never materialized.

- *Trainings and follow-up visits*. Farmers received training and their knowledge and skills on coffee farming were enhanced. Additional follow-up visits were carried out by Kulika staff to assess the performance of the farmers and provide feedback. The trainings and farm visits encouraged farmers to implement the skills and knowledge learned.

- *Provision of inputs*. To stimulate farmers to adopt good practices, demonstration plots and coffee and shade tree seedlings nurseries were established and competitions were

organized in which farm tools, equipment, planting materials and agro-chemicals were distributed to the best-performing farmers.

2.3.9 Delays in buying

Perhaps the biggest problem with the project that emerged during the FGDs is that the coffee has been consistently bought too late in the season. In Kamuli district, the harvesting season runs from July till December. Table 2.8 shows that, throughout the years, certified coffee is bought increasingly towards the end of the coffee farming season.

Table 2.8: Month of coffee buying

Year	Month	Buyer
2007	September	Ibero
2008	October	Ibero
2009	November	Ibero
2010	December	Kulika
2011	December	Kulika[23]

Source: interviews Kulika staff

The late buying of coffee – initially by Ibero and later by Kulika – has major consequences for the project. Due to high levels of poverty in the area and the need of farmers to meet their cash needs, most farmers simply cannot wait that long to sell their coffee. A farmer explains: "*When we have urgent problems like sickness or school fees, we have no choice but to sell to the middlemen because Kulika buys too late*" (FGD). The project manager of Kulika estimated that in 2011 project farmers sold 85 percent of their coffee to middlemen. What makes the selling of coffee to middlemen so problematic is that they offer very poor prices while farmers are not in a position to negotiate. Besides Kulika there are no other buyers in the project area offering decent prices for high quality.

Furthermore, there is an absence of competition between middlemen who, according to farmers, make price agreements. Transporting coffee to other areas was not considered a feasible option by farmers due to higher transport costs. In short, farmers have no choice but to sell their coffee at a low price. What makes the situation even worse is that the middlemen are known to work with tampered weighing scales. The late buying of coffee means that the positive effects of the presence of Ibero/Kulika as a buyer (see above) only apply for a limited amount of time each year.

[23] Kulika subsequently arranged the processing of coffee and the transport to Kampala where it was sold to Ugacof.

2.3.10 Loss of attractiveness

Farmers explained that it has become progressively less attractive for them to engage in coffee farming and maintain good farming practices. The main problem is that in their eyes Ibero and Kulika have not appeared to be reliable buyers. Since the project started, coffee has been bought late in the season and this has worsened over time. Due to the absence of alternative buyers offering decent prices, farmers have been forced to sell their produce to middlemen. The consistently late buying of coffee has undermined farmers' confidence in Kulika as a reliable buyer. During a focus group discussion, a farmer explained that;

> *"You lose your confidence that next year they [Kulika] will buy on time"* (FGD).

This confidence is further undermined by the declining support offered by Kulika (trainings, follow-up visits, provision inputs) since 2010 and the news that it is phasing out in the area.

Farmers also pointed out that when selling to middlemen, a better quality does not result in a better price. Coffee berries that are still green yield the same price as those that have been dried. Because farmers sell most of their produce to middlemen, their motivation to maintain good farming practices has been undermined. This was confirmed by Kulika staff who explained that it had been difficult to motivate farmers to maintain good farming practices. A farmer explains:

> *"Imagine drying your coffee for nine days and getting almost the same price like someone who just dried for three days. [...] This means quality is not paying [...] Therefore, doing all the work [maintaining good farming practices] is not worth the effort"* (FGD).

Overall, the qualitative research suggests that farmers are less inclined to maintain good farming practices. This is also reflected in the available statistics which show that farmers have been dropping out of Utz certification since the project ended (see Table 2.9). This was also apparent during the fieldwork in which numerous coffee plots were encountered that had not been maintained.

Table 2.9: Utz certifications 2007-2011

Year	Number of certifications
2007	3,044
2008	3,088
2009	3,234
2010	3,288
2011	2,731

2.3.11 Conclusions

The results of the research in Kamuli district have been mixed. On the one hand, the project successfully provided incentives to make coffee farming and the adoption of good practices attractive by means of trainings, follow-up visits, demonstration plots, coffee and shade tree seedlings nurseries and the provision of farming materials. Farmers saw for themselves that the adoption of good practices resulted in higher yields, according to the qualitative data. The qualitative analysis also showed that the attractiveness of coffee farming and maintaining good practices deteriorated when the project ended. The quantitative data captures the 2009 – 2012 period and the positive effects reported in the qualitative data refer to the 2006 – 2010 period.

The positive effects reported in the interviews could not be captured in the quantitative data, which showed declining yields and declining total production. This trend was observed for both treatment and control groups. The findings suggest that the positive effects reported in the qualitative data were mainly limited to the period of project implementation (2006-2010), and could therefore not be found in the quantitative data from the 2009-2012 period. In other words, the project benefits do not seem to have been sustainable.

Thus far, the project has not succeeded in creating sustainable incentives for farmers to engage in coffee farming and maintain good farming practices. The second problem has been the lack of a reliable buyer that purchases coffee throughout the farming season at a decent price. In the months Ibero/ Kulika buys coffee, the monopoly of middlemen in the area is successfully broken and farmers get substantially higher prices for their coffee. Most of the season, however, farmers have no alternative to selling to middlemen due to the delay in coffee buying. For the farmers it became less attractive over time to maintain good (but time-consuming) farming practices and engage in coffee production. The decreasing attractiveness of maintaining good farming practices has been further accelerated by the decline in the support offered by Kulika and the news that Kulika is phasing out its support.

2.4 General conclusions

This study investigates the impact of UTZ involvement at producer and producer organization level. Two partners of Solidaridad in Uganda were studied during a three year period - Kulika in Kamuli district and Ankole Coffee Processors Limited in Ibanda district. The outcomes of the research prove to be positive for Ibanda district and mixed for Kamuli district.

Ibanda district: Ankole

The Ankole case suggests that coffee has become an important source of income for farmers in the project area and shows the positive impact of Utz certification. The provision of free seedlings, transport-cost sharing, and cheap milling charges have all contributed to the attractiveness of coffee farming and maintaining good farming practices. The reliability of Ankole as a coffee buyer has been essential in bringing about the positive changes observed. Farmers have the certainty that they can sell their coffee throughout the coffee season at a decent price. Because Ankole only buys high quality coffee, farmers can be sure that investing in their farms and maintaining good farming practices pays off.

Even when a reliable buyer is present, minimum delay in payment is crucial for the ability of farmers to bypass middlemen. While farmers sell most of their produce to Ankole, there are still farmers in the project area who sell to middlemen. This is because farmers that sell to Ankole have to wait several days before getting paid. When they have urgent cash needs, however, this is something they can ill afford. Farmers' perceptions were negatively affected between the period 2009 and 2012, probably because they anticipated greater benefits which did not materialize after the withdrawal of Solidaridad support.

Another interesting finding is the observed change in attitude from subsistence farming to a more entrepreneurial approach towards farming, which seems directly related to the Utz certification. This also results in a large demand for credit facilities. Although credit is provided by Ankole, it is far too little to meet the demand.

Kamuli district: Kulika

Looking at Kulika, the project successfully provided incentives to make coffee farming and the adoption of good practices attractive by means of trainings, follow-up visits, demonstration plots, coffee and shade tree seedlings nurseries and the provision of farming materials. Farmers saw for themselves that the adoption of good practices resulted in higher yields, according to the qualitative data.

However, this is not reflected in the quantitative data that showed declining yields and declining total production. Kulika participated in an EU-funded project that ended in 2010. The coffee trader involved in that project (Ibero) pulled out at the end of the project. The findings suggest that the positive effects reported in the qualitative data were mainly limited to the period of

project implementation (2006-2010), and could therefore not be traced in the quantitative data that cover the 2009-2012 period. In other words, it seems that the project benefits have not been sustainable. However, farmers' perceptions about assistance provided and participation in organisations remained positive for Kulika farmers, largely because Kulika maintained a presence even after the withdrawal of Ibero. There were no serious coffee buyers offering better services than Kulika. Instead the middlemen buying coffee in the area are most interested in short term gains, do not offer competitive prices and are mindless of coffee quality.

The main problem - when Ibero withdrew - has been the lack of a reliable buyer that purchases coffee throughout the farming season at a decent price. Throughout the project period, coffee has been consistently bought too late in the season. For the farmers it became less attractive over time to maintain good farming practices and engage in coffee production. This has been reinforced by the decline of the support offered by Kulika and the news that Kulika is phasing out its support. Recently a farmers' company (BUTPCO) was established to ultimately take over the responsibilities of Kulika and become the certificate holder. Much will depend on the success of this newly established company.

References

Buchanayandi, T.N. 1996. The impact of coffee market liberalization: The Uganda experience." Improving Coffee Management System in Africa. Proceedings of IAC) workshop, Kampala, Uganda September 6, 1995. African Crop Science Society 7-12.

Bussolo, M., Godart, O., Lay, J. and Thiele, P. 2007. The impact of coffee price changes on rural households in Uganda. Agricultural Economics 37(2-3) 293-303, 309

Common Fund for Commodities (CFC). 2001. Characteristics of the demand for Robusta Coffee in Europe. Technical Report 4. CFC, Amsterdam, The Netherlands

COMPETE Project, 2002. The path forward in Uganda's coffee sector. Paper prepared for the COMPETE Presidential Conference on Export Competitiveness, Kampala, February 2001

Lazaro, E.A. and Makindara, J.A. 2008. Sustainable coffee exports from Tanzania. SAFE Policy Brief 3. www.diis.dk/SAFE

Otim, S. and Ngategize, P.K. 1993. Uganda coffee supply response and export demand: an econometric analysis. African Crop Science Journal 1(2): 175-182.

Ponte, S. 2001. Coffee markets in East Africa: local responses to global challenges or global responses to local challenges? CDR Working Paper 01.5. Centre for Development Research, Copenhagen, Denmark.

Sayer, G. 2002. The impact of falling world prices on livelihoods in Uganda. Coffee Futures, Uganda Coffee Report, Oxfam

You, L. and Boldwig, S. 2003. Alternative growth scenarios for Ugandan coffee to 2020. Environment and Production Technology Division (EPTD) 98. International Food Policy Research Institute (IFPRI), Washington D.C.

Annexes

Annex 1

List of interviews and Focus Group Discussions

- 14-6-12 interview Julius Ssemyalo (Solidaridad Uganda)
- 18-6-12 Interview with Kulika staff
- 18-6-12 Focus Group Discussions (2x) Kamuli
- 19-6-12 Focus Group Discussions (3x) Kamuli
- 20-6-12 Focus Group Discussions (3x) Kamuli
- 21-6-12 Interview with Kulika staff
- 21-6-12 Interview with Magdalene Amujal Ogwang (Kulika)
- 21-6-12 Interview with Julius Ssemyalo (Solidaridad Uganda)
- 23-6-12 Interview with Jessy Dawa (Kaaro)
- 23-6-12 Interview with Alfred Mwangi (Ankole Coffee Processors Ltd)
- 25-6-12 Focus Group Discussions (2x) Ibanda
- 26-6-12 Focus Group Discussions (2x) Ibanda
- 27-6-12 Focus Group Discussions (2x) Ibanda
- 27-6-12 Interview with Ankole staff
- 28-6-12 Focus Group Discussions (2x) Ibanda
- 29-6-12 Interview with Charles Angebault (EaseAgr, former employee at Ugacof Ltd.)
- 29-6-12 Interview with Julius Ssemyalo (Solidaridad Uganda)

Annex 2

Interview guide – Focus Group Discussion farmers

- Introduction
  - Introduction researcher
  - purpose study
  - procedure & expected time
  - sharing results
  - questions?
- Productivity and quality
  - Production
    - To what extent has the production of farmers changed in the past 3 years? Why (not)?
    - What are the biggest problems for farmers related to their production (soil quality, rainfall, fertility land, pests, diseases, access to inputs, technology/information)? (ranking)
    - To what extent has the support of Kulika/Ankole/Kaaro contributed to a change in production? How? (e.g. information/better practices, inputs, group formation)
  - Quality
    - To what extent has the quality of the coffee changed in the past three years?
    - What are the biggest problems for farmers related to the quality of their coffee? (ranking)
    - To what extent has the support of Kulika/Ankole/Kaaro contributed to a change in quality? How?
  - Farming practices
    - To what extent have the farming practices of farmers changed in the past 3 years? (e.g. protective clothing, first aid, irrigation, washing coffee, agrochemical use, reforestation and shade trees, waste water treatment, post-harvest)? How?
    - To what extent has the support of Kulika/Ankole/Kaaro contributed to a change in farming practices?
- Finance
  - Market awareness
    - To what extent are farmers aware of certification schemes (UTZ, Fair Trade, Rainforest Alliance)?
    - To what extent are farmers aware who buys the coffee from Kulika/Ankole/Kaaro?
  - Sales options
    - To which buyers can farmers sell their coffee? For which type of coffee?
    - To what extent do traders have a preference for UTZ /FT?
    - What are the criteria do farmers have when deciding to who sell their coffee (Kulika/Ankole/Kaaro vs traders)? Why? Differences between types of coffee?
    - What part of their coffee do farmers sell to the Kulika/Ankole/Kaaro? Why?
    - To whom is the high/low quality coffee sold? Why?
  - Prices
    - What prices do farmers get for their coffee from the Kulika/Ankole/Kaaro?
    - Does Kulika/Ankole/Kaaro offer same price to UTZ farmers and conventional farmers?
    - What prices do farmers get for coffee from other traders?
    - Which traders do farmers prefer? Why?
    - What determines the price that farmers get for their coffee? (e.g. quality, level of processing)
    - How is the Kulika/Ankole/Kaaro price of coffee determined? (if applicable)

        - What influence do farmers have on the price of coffee sold to the Kulika/Ankole/Kaaro?
    - Income
        - To what extent has the income of farmers changed in the past 3 years? Why (not)?
        - How has the support of Kulika/Ankole/Kaaro changed in income? How?
    - Costs
        - What are the main costs involved in the production and marketing of coffee? (e.g. labour, fertilizer, manure, pesticides, herbicides, tarpaulin, transport, stealing) (ranking)
        - How have the costs of production changed due to the support of Kulika/Ankole/Kaaro?
    - Credit
        - To what extent do farmers try to get credit/loans?
        - From whom do they get loans? To what extent is it difficult for farmers to get loans? Why?
        - Where do they use the money for? (ranking)
        - What interest rate (for the different sources) do farmers have to pay to get a loan?
    - Form of payment
        - What is the average waiting time from delivery to payment? (Kulika/Ankole/Kaaro vs traders)
        - Where are farmers paid for their coffee (on the spot, on a specific location)?
- Support and benefits
    - Membership motives
        - What reasons do farmers have to join Kulika/Ankole/Kaaro? (e.g. pre-finance, training)
        - What reasons do farmers have to decide NOT to join or EXIT from Kulika/Ankole/Kaaro?
        - Why do farmers remain loyal to the Kulika/Ankole/Kaaro?
    - Benefits of Kulika/Ankole/Kaaro
        - To what extent, how have farmers benefited from the support of Kulika/Ankole/Kaaro in the past three years?
    - Satisfaction
        - Are farmers satisfied with the support of the Kulika/Ankole/Kaaro? Why (not)?
        - To what extent do the farmers trust the Kulika/Ankole/Kaaro? Why (not)?
        - To what extent do farmers perceive the Kulika/Ankole/Kaaro to be transparent? Why (not)?
    - involvement in Kulika/Ankole/Kaaro
        - To what extent are farmers involved in the decision-making within the Kulika/Ankole/Kaaro? On what topics? (top-down vs bottom up)
        - To what extent are women and youth involved in the decision-making within Kulika/Ankole/Kaaro? On what topics?
        - How often are there meetings for Kulika/Ankole/Kaaro? What is discussed during these meetings?

Annex 3

Interview guide – organizations

- Introduction
  - Introduction researcher
  - purpose study
  - procedure & expected time
  - sharing results
  - questions?

1. Organization
- Organizational profile
  - What year was the organization established?
  - What year(s) was the organization certified by UTZ/FT/organic/Rainforest Alliance?
  - What year did the organization start exporting certified coffee?
  - How many staff does the organization have?
  - What are the organization's source(s) of funding? (other donors?)
  - What kind of support has Kulika/Ankole/Kaaro received from Solidaridad? How has this affected the organization?
  - What kind of support does Kulika/Ankole/Kaaro offer to its members?
- Sales & exports
  - What was the export level (in kgs/ shilling) over the past 5 years?
  - What part of the total export was certified?
  - What is the composition of the production and export (Arabica vs. Robusta)?
  - What percentage of the coffee does the Kulika/Ankole/Kaaro sell as UTZ/FT/organic/conventional?
  - What is the importance that Kulika/Ankole/Kaaro attaches to the quality of the coffee? Why?
  - To whom does the Kulika/Ankole/Kaaro sell its coffee? How many buyers does it have?
  - To what extent are Kulika/Ankole/Kaaro able to buy all certified coffee by farmers? Why (not)?
- Competition & Prices
  - To what extent is there competition between the traders/buyers in the district?
  - To what extent are there price agreements between traders?
  - What determines whether traders give a good price for the coffee?
- Membership & target group
  - What criteria are used to select new members/target group?
  - What is the current number of membership/target group?
  - How has the membership/target group changed over time? Why?
- Capacity
  - What are the main strengths of Kulika/Ankole/Kaaro (funding, capacity etc.)? Changes over time?
  - What are the main problems experienced by Kulika/Ankole/Kaaro (funding, capacity etc.)? Changes over time?

2. Farmers (largely for triangulation purposes focus group interviews)
- Productivity and quality
  - Production
    - To what extent has the production of farmers changed in the past 3 years? Why (not)?
    - What are the biggest problems for farmers related to their production (soil quality, rainfall, fertility land)?

        - To what extent has the support of Kulika/Ankole/Kaaro contributed to a change in production? How?
    - Quality
        - To what extent has the quality of the coffee changed in the past three years?
        - What are the biggest problems for farmers related to the quality of their coffee?
        - To what extent has the support of Kulika/Ankole/Kaaro contributed to a change in quality? How?
    - Farming practices
        - To what extent have the farming practices of farmers changed in the past 3 years? (e.g. protective clothing, first aid, water consumption, agrochemical use, reforestation and shade trees, waste water treatment)? How?
        - To what extent has the support of Kulika/Ankole/Kaaro contributed to a change in farming practices?
- Finance
    - Income
        - To what extent has the income of farmers changed in the past 3 years? Why (not)?
        - To what extent has the support of Kulika/Ankole/Kaaro contributed to a change in income? How?
    - Market awareness
        - To what extent are farmers aware of certification schemes (UTZ, Fair Trade, Rainforest Alliance)?
        - To what extent are farmers aware who buys the coffee from Kulika/Ankole/Kaaro?
    - Costs
        - What are the main costs involved in the production of coffee? (e.g. fertilizer, transport)
        - How have the costs of production changed due to the support of Kulika/Ankole/Kaaro?
    - Prices
        - What prices do farmers get for their coffee from the Kulika/Ankole/Kaaro?
        - What prices do farmers get for coffee from other traders?
        - What determines the price that farmers get for their coffee? (e.g. quality, level of processing)
        - How is the Kulika/Ankole/Kaaro price of coffee determined? (if applicable)
        - What influence do farmers have on the price of coffee sold to the Kulika/Ankole/Kaaro?
    - Credit
        - To what extent do farmers try to get credit/loans?
        - From whom do they get loans? To what extent is it difficult for farmers to get loans? Why?
        - Where do they use the money for?
        - What interest rate do farmers have to pay to get a loan?
    - Sales options
        - What options do farmers have to sell their coffee?
        - To what extent do traders have a preference for UTZ /FT/ organic?
        - What considerations do farmers have when deciding to who sell their coffee (Kulika/Ankole/Kaaro vs. traders)?
        - What percentage of their coffee do farmers sell to the Kulika/Ankole/Kaaro?
        - To whom is the high/low quality coffee sold? Why?
    - Form of payment
        - What is the average waiting time from delivery to payment? (Kulika/Ankole/Kaaro vs traders)
        - Where are farmers paid for their coffee (on the spot, on a specific location)?
- Support and benefits
    - Membership motives
        - What reasons do farmers have to join Kulika/Ankole/Kaaro? (e.g. pre-finance, training)

- What reasons do farmers have to decide NOT to join or EXIT from Kulika/Ankole/Kaaro?
- Why do farmers remain loyal to the Kulika/Ankole/Kaaro?

- Benefits of Kulika/Ankole/Karo
  - To what extent, how have farmers benefited from the support of Kulika/Ankole/Kaaro in the past three years?
- Satisfaction
  - Are farmers satisfied with the support of the Kulika/Ankole/Kaaro? Why (not)?
  - To what extent are farmers (actively) involved in Kulika/Ankole/Kaaro? On what topics?
  - To what extent do the farmers trust the Kulika/Ankole/Kaaro? Why (not)?
  - To what extent do farmers perceive the Kulika/Ankole/Kaaro to be transparent? Why (not)?
- involvement in Kulika/Ankole/Kaaro
  - To what extent are farmers involved in the decision-making within the Kulika/Ankole/Kaaro? On what topics?
  - To what extent are women and youth involved in the decision-making within Kulika/Ankole/Kaaro? On what topics?
  - How often are there meetings for Kulika/Ankole/Kaaro? What is discussed during these meetings

Chapter 3

The Impact of Coffee Certification on Smallholder Farmers in Kenya

The team responsible for preparing this chapter:

Prof.Dr.R.Ruben, CIDIN, Radboud University Nijmegen
Prof. Dr. Paul Hoebink, CIDIN, Radboud University Nijmegen
Mzeeh Hamisi Ngutu, Noble Consultants
Dr. Urbanus N. Mutwiwa, Noble Consultants
Samuel Njuguna, Noble Consultants
Dr. Willem Elbers, CIDIN, Radboud University Nijmegen
Dr. Luuk van Kempen, CIDIN, Radboud University Nijmegen
Bart van Rijsbergen, MScRes, CIDIN, Radboud University Nijmegen

Introduction

Sustainability standards like Fairtrade (FT) or Utz are widely regarded as a promising way of improving smallholder coffee farmer welfare. As yet, the impact of certification remains poorly understood. The current chapter presents the findings of the study commissioned by Solidaridad regarding the impact of FT and Utz in Kenya.[24] The study was carried out in Kiambu and Nyeri districts (see Figure 3.1 on the next page) in cooperation between the Centre for International Development Issues Nijmegen (CIDIN), Noble Consultants Limited and Solidaridad East and Central Africa (SECAEC). It is based on two waves of data collection carried out in 2009 and 2013 with farmers belonging to six cooperative societies: Ndumberi, Tekangu, Kiambaa, Mecari, Rugi and Kiama. This chapter aims to answer the following central research question: *What is the impact of FT/UTZ involvement at producer and producer organization level in Kenya?*

To answer this question, the study used both quantitative and qualitative methods. In doing so, it aimed to provide detailed descriptions of both processes and outcomes through a triangulation of methods and data sources. It is important to note that we don't analyse data on the six cooperatives but on the effects of certification, which means at the level of certification systems.

Primary data was collected from 600 farmers through single farm visit interviews in 2009, using structured questionnaires administered to respondents (mainly the household head). A total of 493 of the same farmers were revisited in the 2013 wave[25]. These numbers are depicted in Table 3. below, while detailed descriptives of the treatment and control groups are given in Table 3.9 and Table 3.10 in Annex 0.

Table 3.1. Number of farmers included in study

Cooperative		2009	2013
Kiambu district			
Ndumberi	Treatment	80	62
Kiambaa	Control	100	74
Mikari	Control	120	93

[24] This study was carried out within the framework of the Irish Aid programme 'Building Trade Capacity and Sustainable Livelihoods through Fair Trade and Ethical Trade' in East Africa".

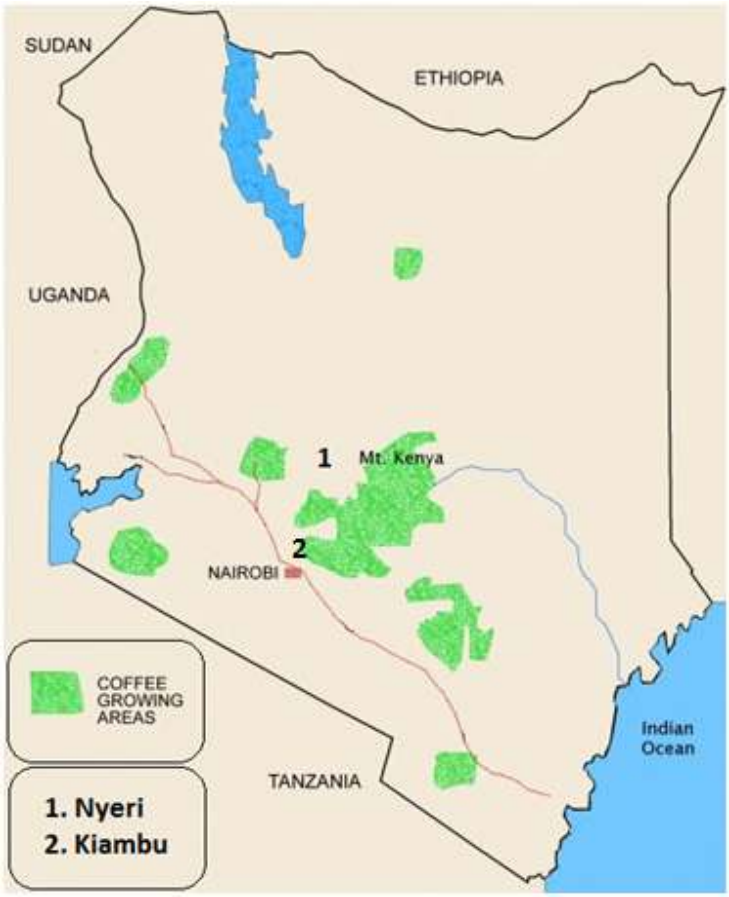
[25] Analysis of attrition will be part of future analysis.

Nyeri district

Tekangu	Treatment	80	77
Rugi	Control	100	85
Kiama	Control	120	102
Total		600	493

With regard to the quantitative component, the study combines: (1) "with and without" assessment of certification by comparing FT, Utz and non-certified cooperatives, and (2) "before and after" analysis of certification by comparing baseline with ex-post survey. We do this by employing a difference in difference estimator, while at the same time correcting for selection bias by using propensity score matching. In the 2009 report several cross-section estimations were done. In this report four different panel-data estimations are reported, taking the certification status of the cooperatives in 2013 into account (see Table 3.2):

Figure 3.1. Coffee production areas



- Two comparisons between the change over time for FT cooperatives with non-certified (NC) cooperatives (change at Kiambaa cooperative versus change at Mecari cooperative, and change at Rugi cooperative versus change at Kiama cooperative), in order to capture the effect of FT;[26]
- A comparison between the change over time for a Utz certified coop (Tekangu) and a non-certified cooperative (Kiama), in order to capture the effect of UTZ;
- A comparison between the change over time for an Utz certified cooperative (Tekangu) and a FT cooperative (Rugi), in order to capture the difference between Utz and FT benefits.

[26] Rugi was about to become FT certified when the 2013 survey was carried out. Rugi's board had received training in good management practices while its farmers had been trained in good agricultural practices. The cooperative, however, had not yet sold its coffee as FT certified. As such, the survey-data from the 2013 round provides useful information for assessing the effects of FT trainings but not for assessing the impact of FT prices. Furthermore we need to remark that the relative position of Rugi versus Kiama was more difficult at baseline, looking at baseline data (see baseline report).

To contextualize the survey findings and understand the processes underlying certification, qualitative research was carried out in January and February 2013. This included Focus Group Discussions (FGDs) with Fairtrade certified farmers, Utz certified farmers and non-certified farmers. A total of 13 FGDs were carried out. In each FGD 15 to 25 farmers participated. In addition, semi-structured interviews were conducted with representatives of relevant stakeholders, including board members of the cooperatives studied. The qualitative research focused on production, quality and income and the main problems experienced by farmers and cooperative Boards (see appendices for the interview guides). All FGDs and semi-structured interviews were recorded and transcribed for analysis.

Table 3.2. Fairtrade and Utz certification of the cooperatives in the study

Counties	Cooperatives	2009	*N*	2010	2011	2012	2013	*N*
Kiambu	Ndumberi	FT + UTZ	*80*	FT + UTZ	FT + UTZ	FT + UTZ	FT + UTZ	*62*
	Kiambaa	None	*100*	none	FT	FT	FT	*74*
	Mikari	None	*120*	none	none	none	None	*93*
Nyeri	Tekangu	UTZ	*80*	UTZ	UTZ	UTZ	UTZ	*77*
	Rugi	None	*100*	none	none	none	none / FT	*85*
	Kiama	None	*120*	none	none	none	none	*102*

Note: data for the impact analysis was collected in 2009 and 2013

The outline of the remaining sections is as follow. Section 2 offers a characterization of the Kenyan coffee sector. Section 3 presents the main findings of the fieldwork, and results of the data-analysis, focussing respectively on direct welfare effects, indirect effects and institutional implications. Section 4 revisits the main research question and outlines the conclusions of the study.

3.1 The Kenyan coffee sector

3.1.1 Introduction

This section seeks to contextualize the findings of the study by providing an overview of the Kenyan coffee sector. Sub-section 3.1.2 discusses the history and importance of coffee farming in Kenya and sub-section 3.1.3 continues with an overview of the various varieties that are grown. The processes of coffee cultivation and processing are discussed in sub-section 3.1.4 while the organization of the coffee sector and the volumes produced are discussed in sub-section 3.1.5. Finally, subsection 3.1.6 provides an overview of the marketing system and recent trends in terms of pricing.

3.1.2 History and importance

Kenya's economy is dependent on agriculture, with an annual direct and indirect contribution to gross domestic product of 24% and 27%, respectively. The ideal tropical and temperate climatic conditions makes it favourable for the production and development of a variety of crops and livestock. In Kenya, agriculture and forestry continue to be the main drivers of the economy, with its share increasing from 21.4% in 2010 to 24.0% in 2011 (National Economic Survey 2012). Coffee ranks fourth after tourism, tea and horticulture, in terms of the total export earnings, e.g. coffee accounted for 10% of the total export earnings in 2000 and 6% in 2001.

As one of the most important export crops, coffee plays a crucial role in the livelihoods of millions of rural households in Kenya. A large number of smallholder coffee farmers depend directly on coffee as their primary source of income. Coffee contributes significantly to foreign exchange earnings and plays a leading role in determining opportunities for employment and infrastructure development. There are a number of famous coffee-producing regions in the world, and Kenya is ranked the 17th largest coffee producer worldwide. Not only is it used in its 'pure' form, but Kenyan coffee is also popular to create blends for the market and the global demand for Kenyan coffee has meant that the industry plays a significant part in the country's economy.

Coffee originated in the Kaffa region of Ethiopia where it grows naturally (NCA USA, 2013). The Holy Ghost Fathers of the French Catholic Church, who planted it at Bura near Taita Hills in the early 1890s brought the Bourbon seeds to Kenya. At this time, the Protestant Scottish missionaries were experimenting with Mocha seedlings at their various stations in Kenya, including Kibwezi (1893) and Kikuyu. In the earlier years settlers only grew coffee, but this was liberalized shortly after independence.

Kenya produces some of the best coffee in the world, notably the "fully washed mild," more flavourful *Coffea Arabica*. This is attributed to the well-distributed rainfall, high altitude (1,500–2,000 metres above sea level) and therefore moderate temperatures (averaging 20^{0}C), with characteristically high equatorial ultraviolet sunlight diffusing through thick clouds, and deep red volcanic soils.

In Kenya, most coffee is grown in the triangular area between Mt. Kenya, the Aberdare Range and Machakos Town – essentially the Central and Eastern Provinces. This area accounts for over 70% of Kenya's coffee production.

Table 3. provides detailed information on the areas under coffee production in Kenya.

Table 3.3: Area under coffee production and production estimates for 2008-2012

Province	Area in hectares		Production in metric tonnes		Active cooperative societies	
	Cooperatives	Estates	Cooperatives	Estates	Cooperatives	Active grower members
Central	40,636	16,648	17,985	21,123	97	260,048
Coast	80	-	5	-	1	245
Eastern	26,269	3,197	9625	2,343	131	174,237
Nyanza	7,139	178	1280	32	40	80,118
Rift Valley	4,206	4,399	1,577	1,465	113	17,963
Western	6,717	183	1,266	34	39	38,213

Source: Kenya Coffee Traders' Association, 2012

3.1.3 Coffee Varieties Grown in Kenya

Globally, there are two primary types of coffee, Arabica and Robusta. Arabica accounts for 70% of world production while Robusta comprises only 30% of the total market. Arabica is considered to be the higher quality and more aromatic of the coffees. Kenya predominantly grows the Arabica variety, which is processed using the wet method. Over time various research activities (led by the Coffee Research Foundation and universities) geared towards selection and breeding processes have taken place. These have mainly focussed on addressing issues of coffee berry disease, drought resistance, flavour, leaf rust, mealy bug and other pests and diseases. These led to the development of two popular super strains/varieties developed before independence which account for over 90% of Kenya's coffee (see coffee research and Kenya coffee network websites) namely:

- Scot Laboratory (SL) 28 which is Mocha-dominated, not particularly high yielding, drought resistant and superior in taste
- SL 34 which is a high yielder across a variety of altitudes and climate

Other varieties as described at the Coffee Research Foundation website are:

- Blue Mountain, introduced in Western Kenya from Jamaica in 1913 due to its resistance to coffee berry disease (CBD)
- Bourbon grown in the Solai area of the Rift Valley
- Kent (K) variety K7, and K20 planted in Meru in 1934, the former being resistant to leaf rust but of poor flavour and the latter very susceptible to coffee berry disease
- Ruiru 11, released in 1985, which is resistant to coffee berry disease and leaf rust, but its Robusta genes have resulted in a taste that is inferior to the SL varieties
- Batian, released in 2010, which has features similar to SL28 but which is resistant to CBD and Leaf Rust. In addition it starts production in the 2nd year of planting (other traditional

varieties take three years) and its cherry ripening comes earlier than the traditional varieties. The cup is described as well balanced, sweet, and full bodied with a very pleasant aftertaste (Anmer Coffee 2010; Kimemia, 2011).

The production details of the main coffee varieties are as shown in Table 3.1 below.

Table 3.1. Yield of main coffee varieties grown in Kenya

Variety	Yield kg Cherry/ tree	Yield of clean coffee tons/ha	Outturn (12-20% in Arabica coffee	% Grade AA + AB	100 bean weight
SL28	8.52 kg	1.8 tons	18.24%	80%	20g
SL34	6.11 kg	1.35 tons	14.4%	62%	30g
K7	9.05 kg	2.01 tons	14.5%	68%	24g
Ruiru 11	8.39 kg	4.6 tons	17.79%	70%	25g

Source: website Coffee Research Foundation

3.1.4 Coffee cultivation and processing

There are two flowerings in each season and the blossom normally appears shortly after the beginning of the long rains in March and April. The main crop ripens from October until December in most coffee producing districts in Kenya. The second and smaller flowering comes with the short rains in October and November and is picked in the early part of the season, often starting in the following June. Farm-level operations include planting, weeding, fertilizing, pruning, spraying, and picking/harvesting of red cherry. A detailed overview of the main activities undertaken at each month is provided in the annex.

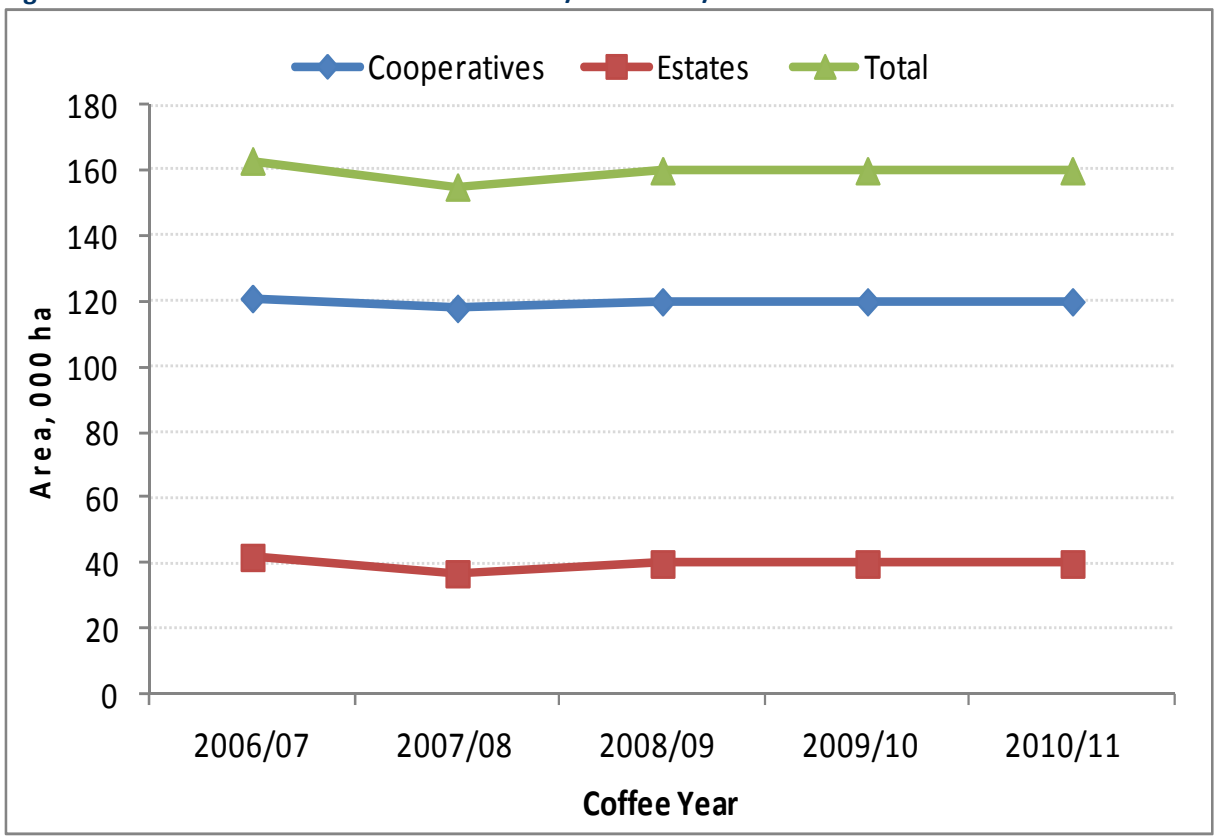
During the harvest, only ripe red cherries are picked and pulped to remove the outer skin without injuring the bean inside. The cherry is then transported to a wet mill. At the wet mill, the cherry is weighed and pulped to remove the outer skin. Afterwards the cherries are sorted through water density separation. In 2005, there were 4,021 licensed pulping stations, of which 1,021 belong to the cooperative societies, 2,229 to small estates, 391 to medium estates and 380 to large estates (Kinoti, 2005). After pulping, the beans are fermented for 12 to 72 hours, thoroughly rinsed, then soaked for 16 hours, followed by more rinsing and finally sun-drying down to 12-15% moisture on raised screen beds. The parchment is moved to conditioning bins before transport to the dry mill.

Milling plant operations involve pre-cleaning (removal of light material such as wool and papers), de-stoning (removal of heavy material that may be present in the coffee), hulling (removal of parchment/husks on the coffee) and polishing (removal of the silver skin/seed coat). Grading is also done, which involves arranging the bean sizes as per the grades AA, AB, C, TT, T, E, PB, which are the names of screen sizes (more about grading below). The coffee is then packed in 60kg sacks and transported to the warehouse. Major coffee millers include Thika Coffee Mills, Kenya Planters' Cooperative Union, Central Kenya Coffee Mills, Sasini Coffee Mills, Kofinaf, and Nyambene.

3.1.5 Organization and Production of the Sector

The Kenya coffee sector is characterised by two types of farms: plantations (estates) and cooperatives. The plantation sub-sector consists of about 454 farms, with large estates cultivating about 24,605 ha. The cooperative sub-sector is made up of 422 cooperative unions, representing about 570,824 smallholders cultivating about 85,106 ha, equivalent to about 0.2 hectares apiece (KCTA, 2012). Only large-scale farmers and estates irrigate their coffee and have 'stable' access to financial services. According to the Economic Survey (2012), the area under estates is about one third that occupied by the cooperatives, as shown in Figure 3.2 below.

Figure 3.2: Area under coffee bushes from 2006/07 to 2010/11



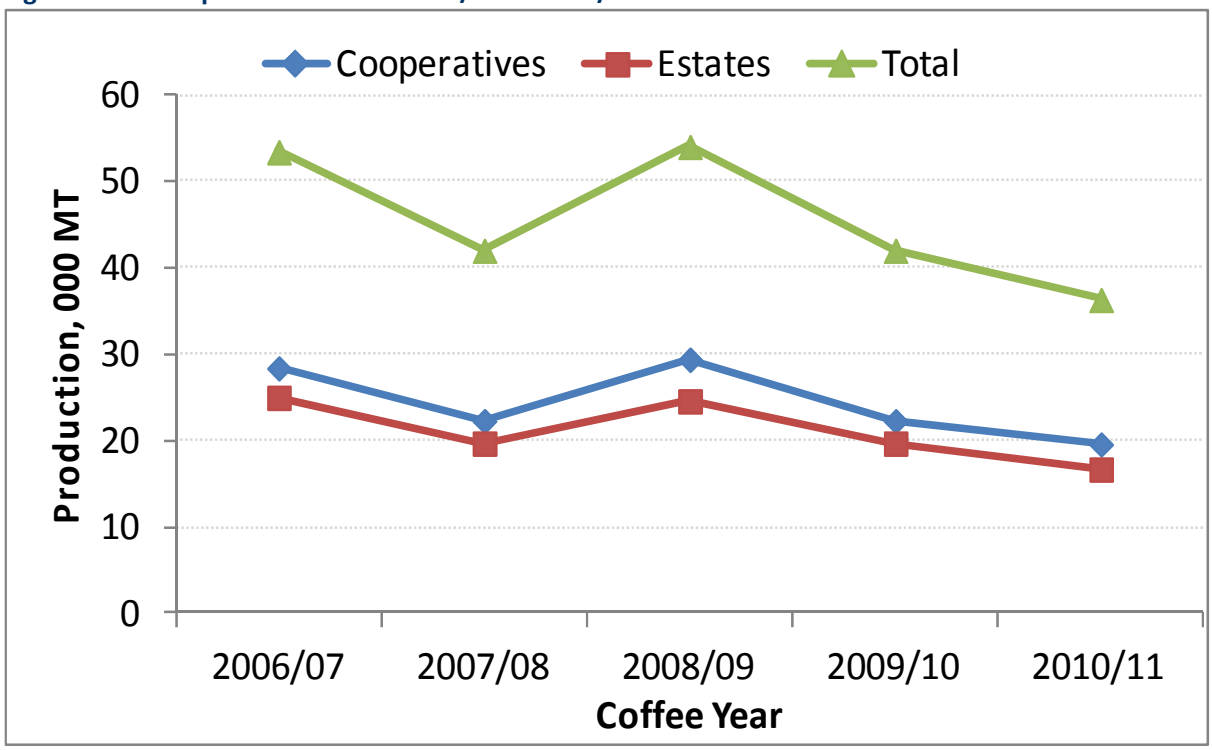
Source: Economic Survey (2012)

Kenya's coffee cooperative system was formed after the end of World War II and is regulated by the government under the Cooperatives Act. This act requires smallholders to come together and form coffee cooperative societies. The societies vary greatly in size, and merging and splitting are common. Some cooperatives have only one wet mill whilst other have more. Factories typically provide services to 300 to 800 members of a society.

Coffee production has been on a declining trend since 1987/88 when a record 130,000 MT of clean coffee was produced. In the last five years, the country's production has been declining, despite a temporary increase in 2008/2009 (see Figure 3.3). In this time period the production averaged 45,540 MT, which is only 35% of what was being produced in 1987/88. The area under

coffee declined especially estates near Nairobi (see Figure 4.4). In cooperatives, coffee was stumped (not uprooted) or neglected, hence not in production. Overall production has been declining as coffee bushes were neglected (cherry not picked for delivery to the factory), due to poor prices in the past, lack of inputs, and mismanagement of the sector.

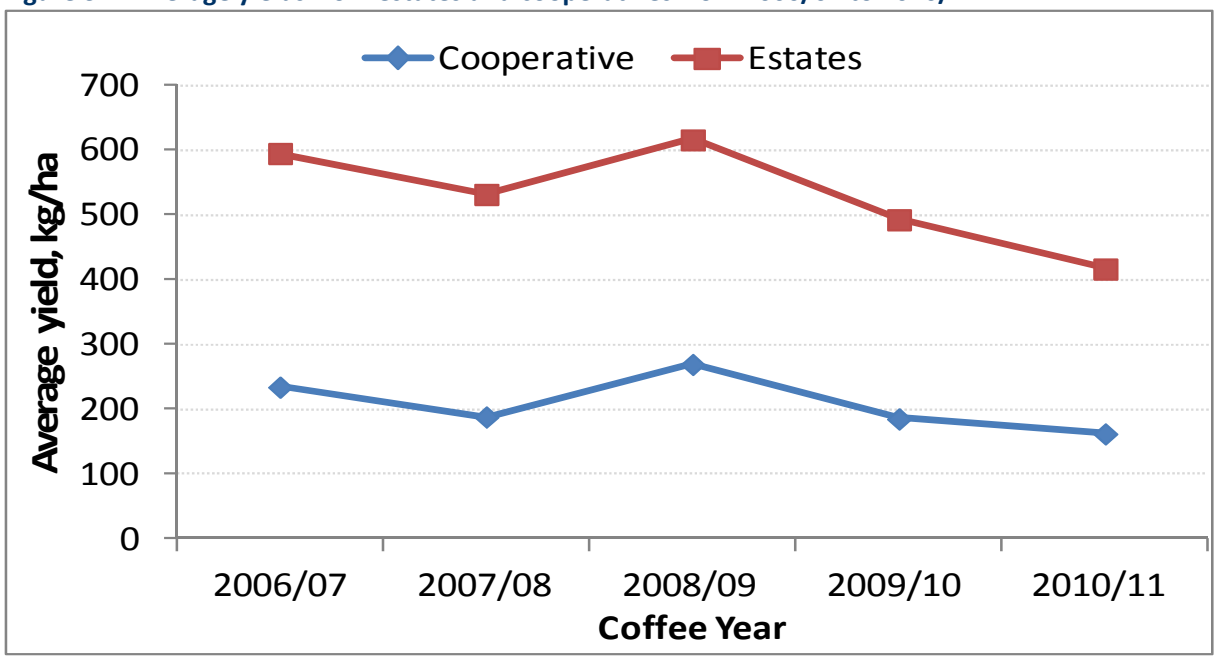
Figure 3.3: Total production from 2006/07 to 2010/11



Source: Economic Survey (2012)

Estates are more productive as they are professionally managed and have access to credit (see Figure 3.3). The average yields shown in Figure 3.4 are very low, compared to average yields for Arabica coffee worldwide of 698 kg/ha and yields of 1160 kg/ha in neighbouring Rwanda and 995 kg/ha in neighbouring Ethiopia (Condliffe et al., 2008). It is clear that the low yields in smallholder farms is one of the major challenges to be overcome if coffee is to remain a viable farm enterprise.

Figure 3.4. Average yields from estates and cooperatives from 2006/07 to 2010/11



Source: Economic Survey (2012)

In recent years, donors have initiated numerous projects to support the smallholder coffee sector in Kenya. While an overview of the impact of donor support on the coffee sector is absent, much attention has been paid to improving the quality and production of coffee (see Box 1).

Box 1. Coffee certification in Kenya

Coffee certification schemes such as Fairtrade, Utz and Rainforest Alliance have triggered a number of developments in the Kenyan smallholder coffee sector:

- Increased awareness of Good Agricultural Practices (GAPs), Good Processing Practices (GPP), environmental concerns including activities related to climate change (adaptation and mitigation)
- Improved working conditions, e.g. safety, environmental protection, timely payment of salaries to workers and coffee producers
- Improved record keeping and traceability
- Better governance due to capacity building programmes, including mores table leadership (management committees are not replaced overnight as was the case before)
- Better collaboration between producers, traders and roasters thereby increasing sustainable sourcing and marketing of coffee
- Both traders and roasters have come up with Corporate Social Responsibility projects to assist the producers such as construction of health clinics and supporting women and youth projects

Source: interview Mzeeh Hamisi Ngutu (Noble Consultants), 15-1-13

3.1.6 Marketing and prices

The major destinations for Kenyan coffee include Germany (30%), Benelux (12%), USA/Canada (11%), Sweden (9%), Finland (6%) and the United Kingdom (6%) (KCTA, 2012). While domestic consumption of coffee in Kenya remains limited, there has been an increase in recent years. This increase is reflected in the rise of coffee shops such as Savannah, Java, Dorman's and Coffee World. At the same time, the high cost (compared to income levels) of brewed coffee in coffee shops and the high prices exported coffee fetches may not push domestic consumption of locally produced coffee beyond the current 3-4% in the medium term.

In the coffee value chain, so-called marketing agents fulfil an important role.[27] There are two categories of Marketing Agent i.e. Commercial Marketing Agents who offer their services purely for commercial purposes and Grower Marketing Agents who are growers marketing their own coffee. By the year 2009, over 40 companies were registered to participate in coffee marketing. Details can be found in the Kenya Coffee Directory (KCTA, 2012).

There are two coffee marketing systems in Kenya: (1) central auction and (2) the direct sales system.

1. *Auction system:* Commonly referred to as Nairobi Coffee Exchange, this is a market where the licensed coffee dealers purchase coffee through competitive bidding. Before the coffee is brought to the auction, the marketer sends samples to the members of the Nairobi exchange. After the auction, members pay the marketing agents and move the coffee to their own warehouses. The marketing agent in turn pays the farmer (cooperative or estate) via the bank. Coffee auctions are conducted every Tuesday of the week. The auction is under the management of the Kenya Coffee Producers and Traders Association (KCPTA).
2. *The Direct Sales system:* Commonly referred to as the "Second Window", the direct sales system requires that a grower directly negotiates with the buyer outside the country and a sales contract is duly signed and registered with the Coffee Board.[28] The Board registers the contract after carrying out an inspection and analyzing the coffee for quality and value as per the contract. There are two categories of marketing agents, namely: commercial marketing agents who offer their services purely for commercial purposes and the grower marketers who market their own coffee. The key players in this latter category are Coffee Management Services Ltd, Kenya Cooperative Coffee Exporters, Tropical Farm Limited (K), Sasini (K) Limited, Oakland's Marketing (Kofinaf Co. Ltd), Grower Marketing Agents, Thika Coffee Mills, Nyambene Coffee Mills and Sustainable Management Services Ltd.

[27] Several of the key stakeholders and their roles in the Kenyan coffee value chain are more extensively discussed in the annex.

[28] Direct sales have the potential of being beneficial to smallholder coffee farmers as the cooperative can directly negotiate with a buyer while auction prices are fixed by bidding. Others potential benefits of direct sales include a shorter duration between sales date and the time cash is remitted. The actual impact of direct sales on smallholder coffee farmers, however, has not been systematically assessed yet.

Most of the Kenyan coffee is sold at the General Auction (see 3.5 below). In the 2010/2011 coffee year, marketing agents handled 8% of the total marketed coffee (610,493 bags) while the Nairobi Coffee Exchange handled the rest.

Table 3.2: Quantity sold through the auction and direct sales from 2006/07 to 2011/12

Year	Total production, MT	Auction sales, MT	Direct Sales, MT
2006/07	54340	53344	996
2007/08	41248	39448	1800
2008/09	57336	51881	5455
2009/10	42096	36197	5899
2010/11	36629	33680	2949
2011/12	49003	43366	5637

Source: KCTA (2013)

Figure 3.5 provides a breakdown of the volumes of direct sales per marketing agent. While some of the coffee sold via direct sales is sold as certified, there is no data indicating which part is sold as certified coffee and which part as conventional coffee.

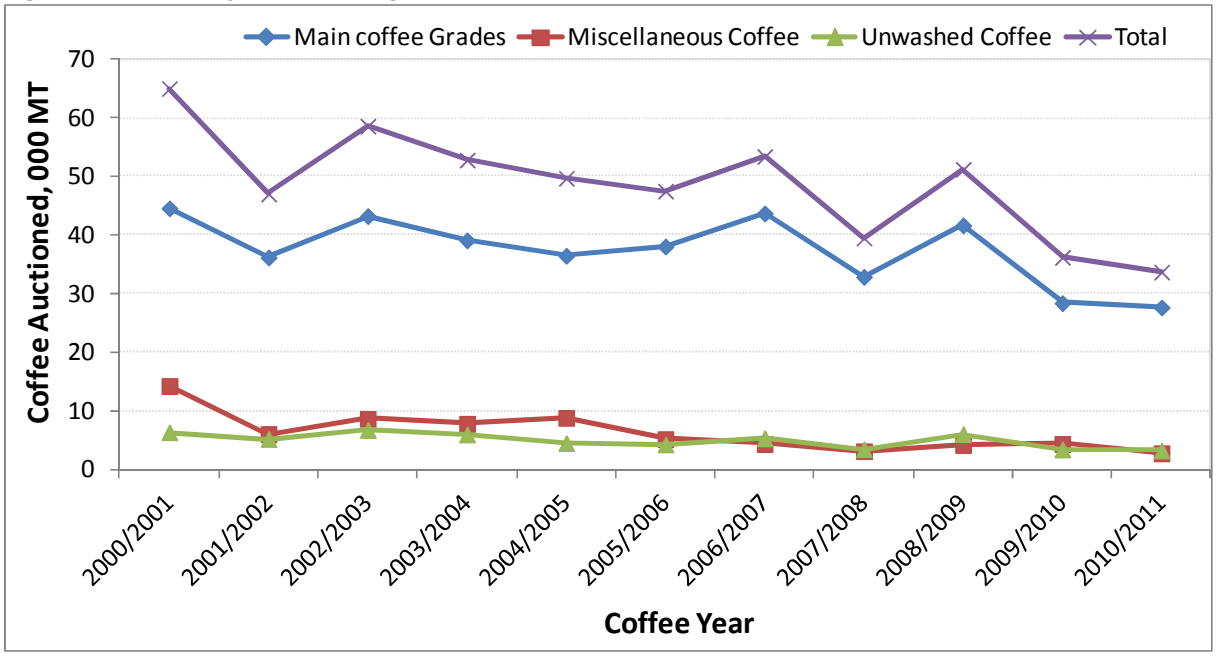
Figure 3.5: Volume of coffee sold via direct sales for the 2010/2011 coffee year

Source: Coffee Quarterly (2011)

The key distinctions in grading coffee are liquor profile, bean (screen) sizes and the numbers of defects in a standard coffee sample. Consumer purchasing decisions are primarily driven by the liquor distinctions. Roasters prefer beans packed in relatively uniform sizes to enhance roast evenness that produces balanced liquor. In Kenya, seven grades (KCPTA, 2013) are adopted for the main coffee (AA, AB, C, E, PB, T and TT), sixteen grades for miscellaneous coffee (F, HE, KB1, KB2, KB3, KB4, KB5 KB6, SB, SC, UG, UG1, UG2, UG3, UG4, UG5) and 3 grades for unwashed coffee (MH, ML RH). Figure 3.6 below shows the volumes of the different grade categories traded at the Central Auction.

Prices of Kenyan coffee are relatively high compared to world prices (USAID, 2010). Although production has been on the decline, prices have continued to rise steadily over the years (see Figure 3.6 and Figure 3.7). Prices have increased to a large extent due to superior quality (superior quality but small volumes – demand/supply effects) as well as the world market (disease outbreaks in other countries). The rise of prices is generally viewed as not being sustainable. The price corrected itself after the world market got an increasing supply (availability) of Mild Arabica coffee from many origins coupled with a deteriorating world economy (Oikocredit 2010) and coffee price dropped to a low in July 2013. [29]

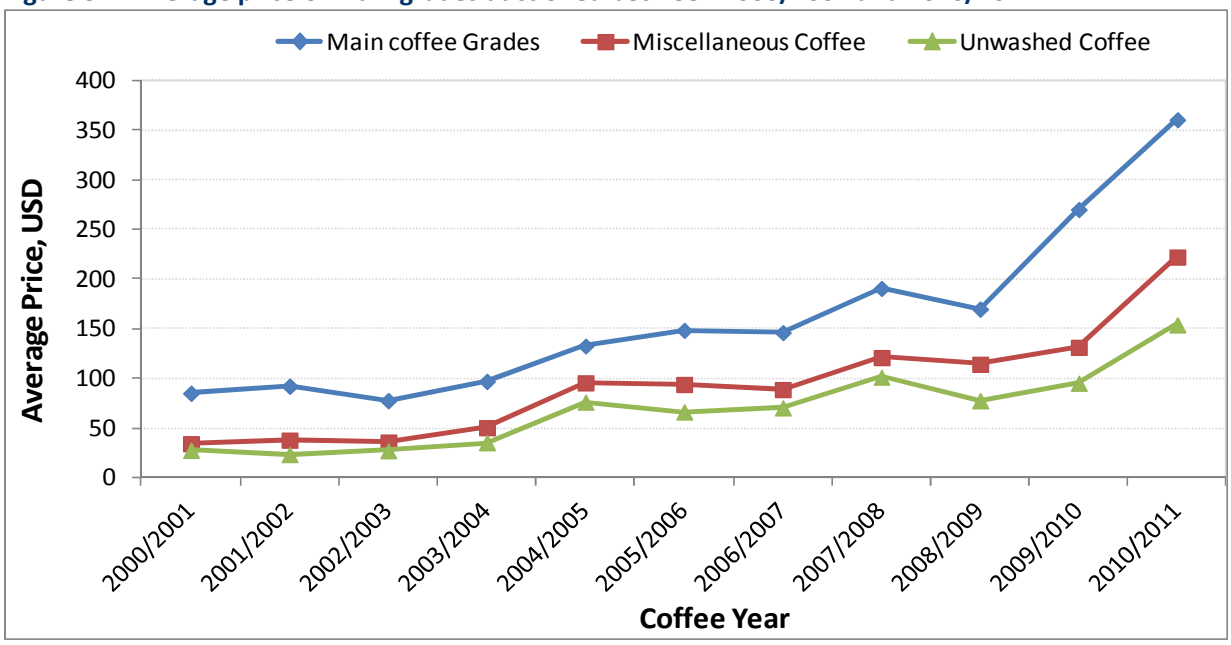
Figure 3.6: Quantity of different grades auctioned from 2000/2001 to 2010/2011



Source: KCTA (2012)

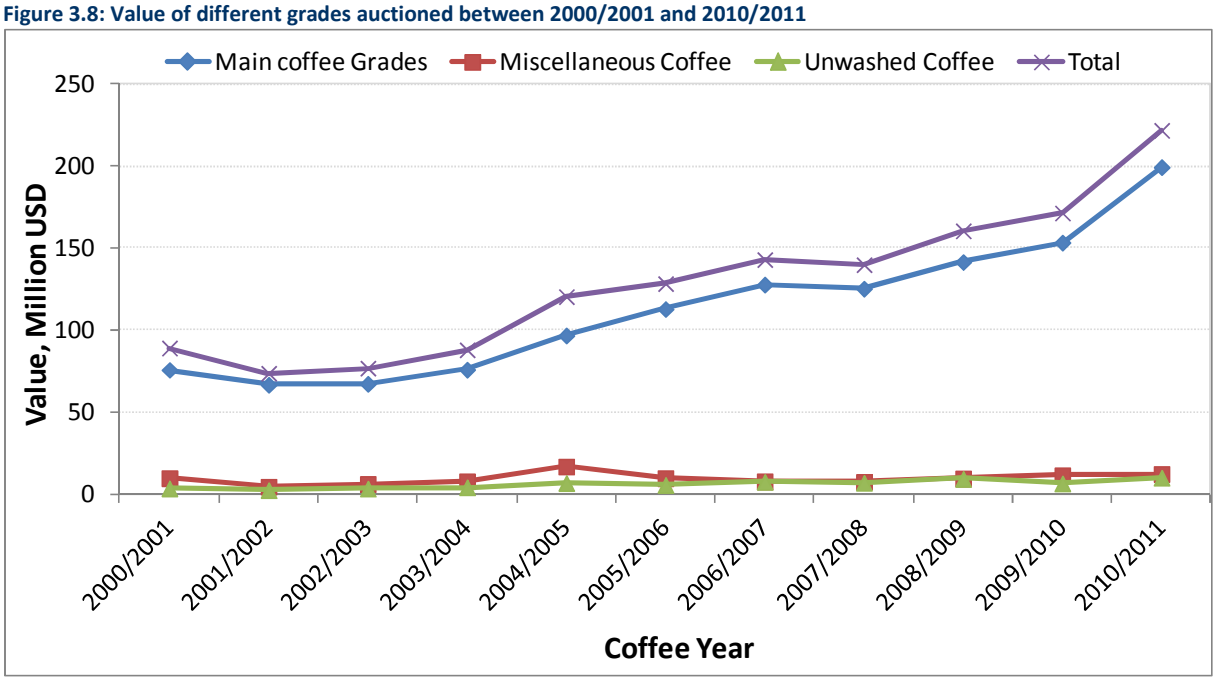
[29] Kenyan coffee prices may also be affected by developments in others countries which are working towards improving the quality of their coffee and introducing new varieties resistant to diseases. Consumers may not be willing to pay more for Kenyan coffee if high quality alternatives are available.

Figure 3.7: Average price of main grades auctioned between 2000/2001 and 2010/2011



Source: KCTA (2012)

Figure 3.8: Value of different grades auctioned between 2000/2001 and 2010/2011



Source KCTA (2012)

In the years 2008-09 to 2011-12, on average 79.2 percent of all coffee sold at the Nairobi Coffee exchange was sold as a main coffee grade (see also Annex 0). A closer look at the prices paid for the different main coffee grades (AA, AB, C, E, PB, T and TT) shows that there are considerable differences between the grades (see Table 3.7). Not surprisingly, high quality coffee on average

gets a higher price than low quality coffee. For example, AA-graded coffee on average pays between two and three times more than T-graded coffee.

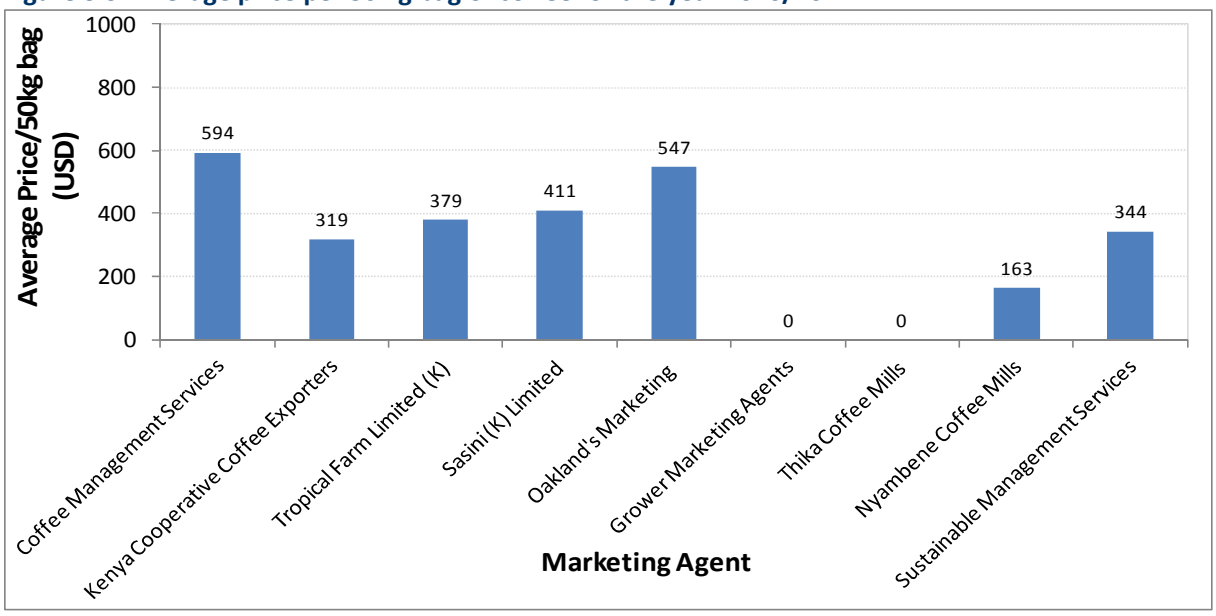
Table 3.3: Average prices for main coffee grades from 2008-09 to 2011-12 (USD)

Grade	2008-2009	2009-2010	2010-2011	2011-2012
AA	192.33	343.89	432.59	329
AB	176.39	301.08	280.52	253.55
C	155.62	218.07	299.21	198.85
E	209.93	272.49	331.27	342.28
PB	172.45	292.59	379.53	250.88
T	94.58	108.22	194.15	140.75
TT	157.08	241.45	320.14	205.66

Source: Nairobi Coffee Exchange

For the year 2010/2011 the price paid by the various marketing agents varied between USD 163 and USD 594 per bag of 50kgs (see Figure 3.9). Detailed information regarding the prices of different types of certified coffee in Kenya is unavailable.

Figure 3.9: Average price per 50 kg bag of coffee for the year 2010/2011



Source: Coffee Quarterly (2011)

Inputs make up a large share of the production costs of smallholder coffee farmers. A study by Oikocredit (2010) found that fertilization and spraying make up respectively 13.4% and 33.4% of the production costs of smallholder coffee farmers. Coffee production costs have escalated in the recent past mainly due to major increases in the cost of purchased farm inputs. While exact data is unavailable, Table 3.4: Value of Purchased Agricultural Inputs (excluding labour) in KShs millions shows that the value of purchased agricultural inputs has increased considerably between 2007 and 2011. Currency devaluation, inflation and inefficient input markets have been some of factors

behind the increase in costs. Poor road infrastructure also has significantly contributed to the costs of inputs due to high transport costs.

Table 3.4: Value of Purchased Agricultural Inputs (excluding labour) in KShs millions

Item	2007	2008	2009	2010	2011
Fertilizers	3,594.9	6,160.2	5,680.1	6,021.9	9,397.4
Other Agricultural inputs	1,389.0	1,258.4	3,941,0	4,307.0	3,362.1
Livestock drugs and medicines	942.0	857.4	1,856.0	1,467.2	1,382.7
Bags	604.0	428.8	520.8	425.0	267.3
Manufactured Feeds	2,038.0	4,849.0	5,543.5	4,453.0	3,910.8
Purchased Seed	2,547.7	3661.0	3,182.1	4,227.0	3,337.9
Other Material Inputs	453.0	651.0	565.8	536.2	592.6

Source: Economic Survey, 2012

The rising cost of production combined with the inability of most farmers to get access to credit has forced some farmers to abandon coffee farming and/or neglect their coffee trees. Declining farming skills and some instances of adulteration of chemicals and fertilizers are some of the reasons responsible for the declining production. Low and delayed payments have been cited as main causes for the many debts in the farmer cooperatives due to accrual of interests on loans. To rescue the sector, the Kenyan government released KSh 1 billion coffee debt waiver owed to coffee cooperatives in 2011 (Mwangi, 2011).

3.2 The impact of certification

3.2.1 Introduction

This section reports the findings of the fieldwork in Kenya. Sub-section 3.2 focuses on direct welfare effects (e.g. production, prices, income), sub-section 3.3 on indirect effects (e.g. spill-over effects, risk attitudes) and sub-section 3.4 on institutional implications (e.g. organizational capacity, regional externalities). Sub-sections 3.5 and 3.6 discuss the main issues experienced by farmers and cooperative boards.

3.2.2 Direct welfare effects

Farmers from both the FT and Utz certified cooperatives received training on good agricultural practices. These trainings focused on a variety of topics, including inputs and nutrition, planting, pruning and maintenance of coffee trees, intercropping, weeding, soil conservation and erosion, rainwater harvesting, spacing, picking and keeping records. Farmers were organized in groups headed by promoter farmers. The promoter farmers monitor the performance of other farmers and pass on their skills to their groups' members.

Tekangu cooperative received donor support to hire its own agronomist to promote good farming practices as part of the Utz certification process. Ndumberi cooperative used Fairtrade premiums and also a grant from Fairtrade's technical assistance fund to hire its own agronomist support in the promotion of good farming practices. Farmers from Ndumberi and Kiambaa cooperative made exposure visits to Tekangu as part of the FT trainings. These visits had important motivating effects because they clearly showed that the application of good farming practices pays off in higher yields.

Overall, farmers pointed out that the trainings had made them more aware of the importance of investing in higher production and better quality. Through the example of 'early-adopters', farmers could see for themselves that employing good farming practices resulted in higher production and quality. As explained by a Board member of Tekangu: 'we could see that farmers that had previously neglected their coffee started to take much better care of their plants when they started to see the benefits [of good agricultural practices]' (FGD Board, 28-1-13).

Table 3.5: Difference in difference - Kiambaa (FT) vs Mecari (Control)

	2009							2013							Difference in difference		
	Control		FT		Difference			Control		FT		Difference					
	B	SE	B	SE	B	*p*	SE	B	SE	B	SE	B	*p*	SE	B	*p*	SE
Coffee income (x1000 Kes)	19.8	2.3	23.6	3.5	3.7		4.2	11.3	1.5	19.8	3.7	8.4	**	4.0	4.7		5.8
Coffee income net (x1000 Kes)	12.9	3.1	14.0	5.3	1.1		6.1	6.5	2.1	9.6	3.4	3.1		3.9	2.0		7.3
Dry coffee income (x1000 Kes)	2.1	0.5	3.1	0.8	1.0		0.9	1.3	0.3	2.7	1.0	1.3		1.1	0.4		1.4
Cherry coffee income (x1000 Kes)	17.8	2.0	20.6	3.3	2.9		3.8	10.0	1.5	14.7	2.9	4.7		3.3	1.8		5.1
Share of income from coffee (%)	4.2	0.8	14.5	6.2	10.3		6.3	5.4	1.9	43.2	7.4	37.8	***	7.7	27.5	***	9.9
Share of income from coffee versus cattle[1]	10.1	1.9	18.8	4.6	8.7		5.0	9.4	2.2	28.0	5.5	18.6	***	5.9	9.9		7.7
Income other crops (x 1000 Kes)	3.8	0.8	3.0	0.8	-0.7		1.1	0.7	0.4	0.2	0.2	-0.5		0.5	0.2		1.2
Income Livestock (x 1000 Kes)	264	103	288	32	24		108	308	141	55	26	-253	*	143	-277		179
Non-farm income (x 1000 Kes)	115	24	141	25	26		35	97	22	95	35	-2		41	-29		54
Non-farm income net (x 1000 Kes)	115	24	139	25	24		35	36	11	77	32	41		34	17		49
Total income (x 1000 Kes)	653	120	324	99	-329	**	155	436	141	126	31	-310	**	144	19		212
Input costs coffee (x 1000 Kes)	4.1	0.6	2.8	0.5	-1.4	*	0.8	4.7	1.4	2.8	0.7	-2.0		1.6	-0.6		1.8
Input costs other crops (x 1000 Kes)	3.4	0.5	2.4	0.4	-1.0	*	0.6	3.5	0.7	2.1	0.6	-1.4		1.0	-0.4		1.1
Seed costs other crops (x 1000 Kes)	3.2	0.5	2.1	0.2	-1.1	*	0.6	1.3	0.2	1.8	0.5	0.5		0.6	1.6	**	0.8
Hired labour coffee (yes/no)	0.7	0.1	0.7	0.1	0.0		0.1	2.2	0.3	1.3	0.3	-0.9	**	0.4	-0.8	*	0.4
Costs livestock (x1000 Kes)	29.1	6.0	22.5	4.9	-6.5		7.7	46.5	9.0	28.3	7.3	-18.2		11.6	-11.7		13.9
Credit (x1000 Kes)	79.4	20.1	28.7	10.3	-50.7	**	22.6	7.9	7.5	20.0	11.0	12.1		13.4	62.9	**	26.2
Savings (x1000 Kes)	46.4	8.5	49.7	13.6	3.3		16.1	21.1	7.5	26.6	10.2	5.6		12.6	2.3		20.4
Expenditure food (x1000 Kes)	4.6	0.3	3.9	0.4	-0.7		0.5	6.2	0.6	8.8	1.4	2.6	*	1.5	3.4	**	1.6
Expenditure education (x1000 Kes)	15.1	3.6	8.6	2.1	-6.6		4.2	8.2	3.6	12.9	4.0	4.7		5.4	11.2		6.9
Expenditure energy (x1000 Kes)	1.6	0.3	1.8	0.3	0.2		0.4	3.7	0.6	5.0	1.2	1.2		1.3	1.1		1.4
Expenditure transport (x1000 Kes)	3.8	0.6	5.0	1.0	1.1		1.2	3.4	0.6	0.9	0.3	-2.5	***	0.7	-3.7	***	1.3
Expenditure total (x1000 Kes)	44.3	6.2	49.0	9.0	4.7		10.9	58.2	13.0	34.9	6.4	-23.3		14.5	-28.0		18.1
Coffee area (acres)	0.8	0.1	0.7	0.1	-0.1		0.1	1.1	0.2	0.7	0.1	-0.3		0.2	-0.2		0.2
Number of mature coffee trees	417	52	349	29	-68		60	545	72	374	66	-170	*	98	-102		115
Coffee trees per acre	534	14	508	17	-26		22	583	44	611	66	28		79	54		82
Coffee yield (kg/acre)	1.4	0.1	1.2	0.1	-0.3	*	0.2	0.8	0.1	0.9	0.2	0.1		0.2	0.4		0.3
Coffee yield (kg/tree)	2.6	0.2	2.3	0.2	-0.3		0.3	1.5	0.2	1.7	0.5	0.2		0.5	0.5		0.6
Coffee sold in cherry form (kg)	870	107	938	173	68		204	425	44	332	51	-94		67	-161		214
Dry coffee sold (kg)	62.5	11.7	50.9	6.0	-11.6		13.1	42.7	6.6	54.5	17.7	11.8		18.9	23.4		23.0
Cherry coffee price (Kes/kg)	21.4	0.8	24.6	0.7	3.3	***	1.1	27.2	1.9	52.6	5.6	25.4	***	5.9	22.2	***	6.0
Dry coffee price (Kes/kg)	33.6	1.8	40.7	0.8	7.1	***	1.9	57.1	8.7	138.0	17.7	80.6	***	19.7	73.5	***	19.8
Have piped water (yes/no)	0.0	0.0	0.4	0.1	0.3	***	0.1	0.4	0.1	0.5	0.1	0.1		0.1	-0.2		0.1
Have improved latrine (yes/no)	0.5	0.1	0.5	0.1	-0.1		0.1	0.6	0.1	0.5	0.1	-0.1		0.1	0.0		0.2
Animals in stock	7.7	1.1	5.9	0.9	-1.8		1.4	8.1	1.3	5.0	0.8	-3.2	**	1.6	-1.4		2.1
Land attached investments (x1000 Kes)	9.1	3.2	6.1	2.9	-3.1		4.4	12.2	4.9	7.1	6.5	-5.1		8.1	-2.1		9.2
Made house improvements (yes/no)	1.8	0.1	1.7	0.1	-0.2	**	0.1	1.8	0.1	1.7	0.1	-0.1		0.1	0.1		0.1
Investment in new coffee (yes/no)	0.1	0.0	0.3	0.1	0.2	*	0.1	0.6	0.1	0.5	0.1	-0.1		0.1	-0.2		0.1
Economic situation versus 5 years ago (1-3)	2.0	0.1	1.9	0.1	0.0		0.2	1.5	0.1	1.4	0.1	-0.1		0.2	0.0		0.3
Economic situation versus 5 years later (1-3)	1.6	0.1	1.6	0.1	0.0		0.2	1.3	0.1	1.3	0.1	0.0		0.1	0.0		0.2
Number of organizations	1.4	0.1	1.3	0.1	-0.2		0.1	0.5	0.1	0.5	0.1	-0.1		0.1	0.1		0.2
Satisfaction technical assistance (1-5)	3.4	0.2	3.3	0.2	-0.1		0.3	2.7	0.2	3.0	0.1	0.3		0.3	0.4		0.4
Satisfaction trade assistance (1-5)	3.2	0.2	3.3	0.2	0.1		0.3	2.8	0.2	2.7	0.1	-0.1		0.2	-0.2		0.4
Identification index (1-3)	2.7	0.1	2.6	0.1	-0.1	*	0.1	2.5	0.1	2.4	0.1	-0.1		0.1	0.0	*	0.2
Force index (1-3)	2.6	0.1	2.4	0.1	-0.2		0.1	2.1	0.1	2.1	0.1	0.0		0.1	0.3		0.2
Risk (1-3)	2.1	0.1	2.1	0.1	0.0		0.1	2.2	0.1	2.2	0.1	0.0		0.1	0.0		0.1
Gender index (5-25)	17.8	0.6	18.0	0.6	0.2		0.8	14.2	1.0	14.2	0.5	-0.1		1.2	-0.3		1.4
Days lost due to poor health (logarithm)	3.4	0.6	3.4	0.3	0.0		0.7	0.9	0.6	1.9	0.9	1.0		1.1	1.0		1.3

Means and Standard Errors are estimated by linear regression. Estimation on the common support. Robust Standard Errors. [1] Income coffee/(income livestock/100) *** p<0.01; ** p<0.05; * p<0.1

Table 3.6: Difference in difference - Rugi (FT) vs Kiama (Control)

	2009							2013							Difference in difference		
	Control		FT		Difference			Control		FT		Difference					
	B	SE	B	SE	B	*p*	SE	B	SE	B	SE	B	*p*	SE	B	*p*	SE
Coffee income (x1000 Kes)	21.4	2.1	34.6	3.6	13.2	***	4.2	38.7	5.3	34.4	5.2	-4.3		7.4	-17.5	**	8.5
Coffee income net (x1000 Kes)	14.5	2.1	20.9	3.2	6.4	*	3.8	27.4	5.0	27.0	5.3	-0.4		7.3	-6.8		8.3
Dry coffee income (x1000 Kes)	1.4	0.2	1.9	0.3	0.5		0.3	4.2	0.6	2.4	0.3	-1.8	***	0.7	-2.3	***	0.7
Cherry coffee income (x1000 Kes)	20.0	2.0	32.7	3.5	12.7	***	4.0	31.6	4.4	32.0	5.1	0.4		6.8	-12.3		7.9
Share of income from coffee (%)	9.6	1.8	16.3	2.0	6.7	**	2.8	16.5	3.8	23.0	4.9	6.6		6.2	-0.1		6.8
Share of income from coffee versus cattle[1]	31.2	7.7	39.2	5.1	8.1		9.2	93.4	23.7	92.6	25.8	-0.8		35.0	-8.9		36.2
Income other crops (x 1000 Kes)	6.3	0.8	4.4	0.7	-1.9	*	1.1	0.4	0.3	0.4	0.3	0.0		0.4	2.0		1.2
Income Livestock (x 1000 Kes)	138	14	130	20	-8		24	48	10	34	7	-14		12	-6		27
Non farm income (x 1000 Kes)	115	15	91	15	-24		22	113	16	102	15	-11		22	13		31
Non farm income net (x 1000 Kes)	121	18	89	15	-32		24	122	19	92	14	-29		23	3		33
Total income (x 1000 Kes)	305	31	295	45	-10		55	222	38	203	32	-19		50	-9		74
Input costs coffee (x 1000 Kes)	4.9	0.4	8.3	0.6	3.3	***	0.7	9.3	1.6	8.1	1.1	-1.3		2.0	-4.6	**	2.1
Input costs other crops (x 1000 Kes)	4.0	0.4	5.4	0.8	1.4		0.9	3.4	0.7	2.6	0.7	-0.8		1.0	-2.2		1.4
Seed costs other crops (x 1000 Kes)	2.9	0.2	2.7	0.3	-0.2		0.4	1.4	0.2	0.9	0.2	-0.5	**	0.3	-0.3		0.4
Hired labour coffee (yes/no)	0.6	0.1	0.7	0.1	0.1		0.1	1.8	0.3	2.4	0.4	0.6		0.5	0.6		0.5
Costs livestock (x1000 Kes)	9.9	1.2	8.4	1.0	-1.5		1.6	12.6	1.8	12.2	1.8	-0.4		2.6	1.1		3.0
Credit (x1000 Kes)	34.9	13.6	15.7	7.2	-19.2		15.4	4.5	3.0	6.6	3.2	2.2		4.4	21.3		16.0
Savings (x1000 Kes)	35.8	5.0	40.7	8.2	5.0		9.6	17.9	3.0	16.2	3.1	-1.7		4.3	-6.6		10.5
Expenditure food (x1000 Kes)	2.5	0.1	2.6	0.2	0.1		0.2	6.5	0.6	6.8	0.9	0.3		1.1	0.2		1.1
Expenditure education (x1000 Kes)	8.3	1.6	7.7	2.0	-0.6		2.6	12.9	2.3	15.3	3.4	2.5		4.1	3.1		4.8
Expenditure energy (x1000 Kes)	0.9	0.1	0.8	0.2	-0.1		0.2	5.7	0.7	4.3	0.6	-1.4		0.9	-1.3		0.9
Expenditure transport (x1000 Kes)	1.7	0.3	1.2	0.1	-0.6	*	0.3	2.3	0.3	1.8	0.2	-0.5		0.4	0.1		0.5
Expenditure total (x1000 Kes)	27.0	5.1	21.4	2.9	-5.5		5.8	42.9	5.9	35.7	3.2	-7.2		6.7	-1.6		8.9
Coffee area (acres)	0.4	0.0	0.5	0.0	0.1	**	0.0	0.8	0.1	0.6	0.1	-0.1		0.1	-0.2	**	0.1
Number of mature coffee trees	200	14	246	19	46	*	24	210	18	241	21	31		28	-15		36
Coffee trees per acre	523	10	495	14	-29	*	17	411	37	551	53	140	**	64	169	**	66
Coffee yield (kg/acre)	1.8	0.1	2.3	0.2	0.5	**	0.2	1.6	0.4	1.6	0.3	0.1		0.5	-0.5		0.6
Coffee yield (kg/tree)	3.6	0.2	5.1	0.5	1.5	***	0.6	3.9	0.5	3.6	0.8	-0.3		1.0	-1.8		1.1
Coffee sold in cherry form (kg)	660	60	1034	110	374	***	125	565	57	645	88	80		104	-294	*	163
Dry coffee sold (kg)	33.2	5.0	39.7	5.0	6.5		7.0	56.6	6.9	39.6	4.8	-17.0	**	8.4	-23.5	**	10.9
Cherry coffee price (Kes/kg)	29.7	0.6	31.3	0.5	1.6	**	0.8	59.1	2.5	49.5	3.0	-9.6	**	3.9	-11.2	***	4.0
Dry coffee price (Kes/kg)	49.1	0.9	47.3	1.3	-1.8		1.6	89.3	4.0	76.6	3.4	-12.7	**	5.3	-10.9	**	5.5
Have piped water (yes/no)	0.2	0.0	0.1	0.0	-0.1	*	0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.1		0.1
Have improved latrine (yes/no)	0.6	0.1	0.6	0.1	0.0		0.1	0.3	0.0	0.4	0.1	0.1		0.1	0.1		0.1
Animals in stock	9.6	1.0	8.1	0.8	-1.6		1.3	10.0	1.0	6.6	0.6	-3.4	***	1.2	-1.8		1.8
Land attached investments (x1000 Kes)	4.0	1.8	1.6	0.4	-2.4		1.9	9.9	3.1	6.8	2.8	-3.1		4.1	-0.7		4.5
Made house improvements (yes/no)	1.8	0.0	1.8	0.1	-0.1		0.1	1.7	0.0	1.9	0.0	0.2	***	0.1	0.2	**	0.1
Investment in new coffee (yes/no)	0.2	0.0	0.2	0.1	0.0		0.1	0.6	0.1	0.4	0.1	-0.1	*	0.1	-0.2	*	0.1
Economic situation versus 5 years ago (1-3)	1.7	0.1	1.7	0.1	0.0		0.1	1.4	0.1	1.2	0.1	-0.2	*	0.1	-0.2		0.2
Economic situation versus 5 years later (1-3)	1.2	0.1	1.6	0.1	0.4	***	0.1	1.3	0.1	1.1	0.0	-0.2	***	0.1	-0.6	***	0.1
Number of organizations	1.2	0.0	1.4	0.1	0.3	***	0.1	0.0	0.0	0.2	0.1	0.2	***	0.1	-0.1		0.1
Satisfaction technical assistance (1-5)	4.0	0.1	3.8	0.2	-0.2		0.2	3.3	0.1	3.3	0.1	0.0		0.2	0.2		0.3
Satisfaction trade assistance (1-5)	4.1	0.1	3.9	0.2	-0.2		0.2	3.2	0.1	3.3	0.1	0.1		0.2	0.4		0.3
Identification index (1-3)	2.6	0.1	2.5	0.1	-0.1		0.1	2.3	0.1	2.4	0.1	0.1		0.1	0.2		0.1
Force index (1-3)	2.5	0.1	2.3	0.1	-0.1		0.1	2.3	0.1	2.4	0.1	0.1		0.1	0.3	*	0.1
Risk (1-3)	2.3	0.0	2.2	0.1	-0.1	**	0.1	2.2	0.0	2.2	0.0	-0.1		0.1	0.1		0.1
Gender index (5-25)	17.9	0.7	19.2	0.6	1.3		0.9	14.0	0.5	13.9	0.5	-0.1		0.7	-1.4		1.1
Days lost due to poor health (logarithm)	2.8	0.3	3.6	0.3	0.7	*	0.4	0.3	0.3	1.1	0.5	0.7		0.5	0.0		0.7

Means and Standard Errors are estimated by linear regression. Estimation on the common support. Robust Standard Errors. [1] Income coffee/(income livestock/100) *** p<0.01; ** p<0.05; * p<0.1

Table 3.10: Difference in difference - Tekangu (UTZ) vs Kiama (Control)

	2009							2013							Difference in difference		
	Control		UTZ		Difference			Control		UTZ		Difference					
	B	SE	B	SE	B	*p*	SE	B	SE	B	SE	B	*p*	SE	B	*p*	SE
Coffee income (x1000 Kes)	22.9	2.3	37.2	3.4	14.3	***	4.1	39.4	5.9	49.4	6.2	10.0		8.6	-4.3		9.5
Coffee income net (x1000 Kes)	14.5	2.3	22.2	3.5	7.7	*	4.2	26.2	5.1	40.5	7.0	14.4	*	8.6	6.7		9.6
Dry coffee income (x1000 Kes)	1.4	0.2	3.9	0.6	2.5	***	0.6	4.2	0.6	5.4	0.8	1.1		1.0	-1.4		1.2
Cherry coffee income (x1000 Kes)	21.6	2.2	33.4	3.1	11.8	***	3.8	31.7	4.5	42.9	5.4	11.2		7.1	-0.6		8.0
Share of income from coffee (%)	10.4	2.4	21.6	3.6	11.3	**	4.3	20.8	5.9	31.7	7.4	10.9		9.5	-0.4		10.4
Share of income from coffee versus cattle[1]	25.4	5.9	57.2	10.9	31.8	**	12.4	89.6	28.7	59.3	15.6	-30.3		32.6	-62.1	*	34.9
Income other crops (x 1000 Kes)	6.4	0.9	5.0	0.8	-1.4		1.2	0.3	0.3	0.0	0.0	-0.3		0.3	1.0		1.2
Income Livestock (x 1000 Kes)	138	20	121	23	-17		31	43	11	85	40	43		42	60		52
Non farm income (x 1000 Kes)	122	18	114	22	-8		28	125	19	112	21	-13		28	-4		40
Non farm income net (x 1000 Kes)	128	19	110	21	-18		28	130	21	121	25	-9		33	9		43
Total income (x 1000 Kes)	330	46	268	55	-62		72	182	40	245	58	63		71	125		101
Input costs coffee (x 1000 Kes)	5.1	0.5	8.6	0.7	3.5	***	0.9	9.8	1.7	9.3	1.2	-0.5		2.1	-4.0	*	2.3
Input costs other crops (x 1000 Kes)	4.0	0.4	4.1	0.5	0.2		0.7	3.6	0.9	4.0	0.6	0.4		1.0	0.2		1.2
Seed costs other crops (x 1000 Kes)	3.0	0.2	2.2	0.2	-0.8	**	0.3	1.3	0.2	1.3	0.2	0.0		0.3	0.8	*	0.4
Hired labour coffee (yes/no)	0.6	0.1	0.8	0.0	0.2	***	0.1	1.8	0.3	1.8	0.3	0.0		0.4	-0.2		0.4
Costs livestock (x1000 Kes)	10.7	1.4	9.9	2.6	-0.8		3.0	12.8	1.7	14.6	1.9	1.8		2.6	2.6		3.9
Credit (x1000 Kes)	37.9	19.0	47.5	32.5	9.6		37.6	0.0	0.0	5.0	4.7	5.0		4.7	-4.6		37.9
Savings (x1000 Kes)	37.7	6.0	40.0	7.0	2.3		9.2	21.7	4.2	28.4	7.5	6.7		8.6	4.4		12.6
Expenditure food (x1000 Kes)	2.6	0.1	2.7	0.2	0.1		0.3	6.5	0.6	6.0	0.5	-0.5		0.8	-0.6		0.8
Expenditure education (x1000 Kes)	8.3	1.7	13.5	3.8	5.3		4.2	12.4	2.3	11.6	2.4	-0.8		3.4	-6.1		5.4
Expenditure energy (x1000 Kes)	0.9	0.1	1.4	0.2	0.4	*	0.2	5.6	0.7	4.2	0.7	-1.4		1.0	-1.8	*	1.0
Expenditure transport (x1000 Kes)	1.8	0.3	1.9	0.3	0.2		0.4	2.1	0.3	2.9	0.5	0.8		0.5	0.7		0.7
Expenditure total (x1000 Kes)	28.1	5.6	34.1	5.1	6.0		7.6	40.5	5.5	43.9	5.4	3.4		7.7	-2.6		10.8
Coffee area (acres)	0.4	0.0	0.6	0.1	0.2	***	0.1	0.8	0.1	0.7	0.1	0.0		0.1	-0.2	*	0.1
Number of mature coffee trees	204	14	275	29	71	**	32	218	19	208	17	-10		26	-81	**	41
Coffee trees per acre	525	11	478	14	-48	***	18	424	41	391	31	-32		51	15		54
Coffee yield (kg/acre)	1.9	0.1	2.1	0.2	0.2		0.2	1.9	0.6	1.7	0.4	-0.1		0.7	-0.4		0.8
Coffee yield (kg/tree)	3.7	0.2	4.4	0.3	0.7	*	0.4	3.7	0.4	3.7	0.5	0.0		0.6	-0.7		0.7
Coffee sold in cherry form (kg)	708	66	975	91	267	**	112	587	64	632	98	45		117	-223		162
Dry coffee sold (kg)	35.5	5.3	80.2	9.4	44.7	***	10.8	56.8	7.3	72.7	9.7	15.9		12.2	-28.8	*	16.2
Cherry coffee price (Kes/kg)	30.0	0.6	34.5	0.5	4.5	***	0.8	58.4	2.4	86.6	3.8	28.1	***	4.5	23.7	***	4.6
Dry coffee price (Kes/kg)	49.3	0.9	50.5	0.9	1.2		1.2	92.4	4.2	105.0	5.5	12.8	*	6.9	11.7	*	7.0
Have piped water (yes/no)	0.2	0.0	0.1	0.0	-0.1	**	0.1	0.1	0.0	0.0	0.0	0.0		0.0	0.1	*	0.1
Have improved latrine (yes/no)	0.6	0.1	0.5	0.1	-0.1	*	0.1	0.3	0.1	0.3	0.1	-0.1		0.1	0.1		0.1
Animals in stock	9.8	1.0	10.3	1.1	0.5		1.5	9.4	0.8	10.6	1.0	1.1		1.3	0.7		2.0
Land attached investments (x1000 Kes)	3.6	1.5	6.1	2.6	2.5		3.0	10.2	3.6	9.3	2.8	-0.9		4.6	-3.4		5.5
Made house improvements (yes/no)	1.9	0.0	1.7	0.1	-0.2	**	0.1	1.8	0.0	1.6	0.1	-0.2	**	0.1	0.0		0.1
Investment in new coffee (yes/no)	0.2	0.0	0.3	0.1	0.1	*	0.1	0.6	0.1	0.6	0.1	0.0		0.1	-0.1		0.1
Economic situation versus 5 years ago (1-3)	1.7	0.1	1.6	0.1	-0.1		0.1	1.4	0.1	1.3	0.1	-0.1		0.1	0.0		0.2
Economic situation versus 5 years later (1-3)	1.2	0.0	1.6	0.1	0.4	***	0.1	1.3	0.1	1.3	0.1	-0.1		0.1	-0.5	***	0.1
Number of organizations	1.1	0.0	1.3	0.1	0.1	*	0.1	0.0	0.0	0.2	0.1	0.1	*	0.1	0.0		0.1
Satisfaction technical assistance (1-5)	4.0	0.1	3.9	0.1	-0.1		0.2	3.3	0.1	3.3	0.1	0.0		0.2	0.1		0.3
Satisfaction trade assistance (1-5)	4.1	0.1	3.9	0.1	-0.3		0.2	3.2	0.1	3.3	0.2	0.1		0.2	0.3		0.3
Identification index (1-3)	2.7	0.1	2.6	0.0	0.0		0.1	2.3	0.1	2.4	0.1	0.1		0.1	0.1		0.1
Force index (1-3)	2.5	0.1	2.4	0.1	-0.1		0.1	2.3	0.1	2.2	0.1	0.0		0.1	0.1		0.1
Risk (1-3)	2.3	0.0	2.2	0.0	-0.1	*	0.1	2.2	0.0	2.3	0.0	0.0		0.1	0.1	*	0.1
Gender index (5-25)	17.9	0.7	20.3	0.8	2.4	**	1.1	14.1	0.5	14.6	1.3	0.4		1.4	-2.0		1.8
Days lost due to poor health (logarithm)	2.8	0.3	3.8	0.3	1.0	**	0.4	0.5	0.3	0.8	0.4	0.2		0.5	-0.8		0.7

Means and Standard Errors are estimated by linear regression. Estimation on the common support. Robust Standard Errors. [1] Income coffee/(income livestock/100) *** p<0.01; ** p<0.05; * p<0.1

Table 3.11: Difference in difference - Tekangu (UTZ) vs Rugi (FT)

	2009							2013							Difference in difference		
	FT		UTZ		Difference			FT		UTZ		Difference					
	B	SE	B	SE	B	*p*	SE	B	SE	B	SE	B	*p*	SE	B	*p*	SE
Coffee income (x1000 Kes)	30.7	3.1	37.0	3.5	6.4		4.7	35.1	4.7	49.5	6.3	14.4	*	7.9	8.0		9.2
Coffee income net (x1000 Kes)	17.7	3.1	20.0	3.2	2.3		4.5	25.8	4.9	37.7	6.3	11.9		8.0	9.6		9.1
Dry coffee income (x1000 Kes)	1.8	0.3	3.8	0.6	2.0	***	0.6	2.4	0.3	5.3	0.8	2.9	***	0.9	0.9		1.1
Cherry coffee income (x1000 Kes)	28.8	3.0	33.2	3.1	4.3		4.3	32.7	4.7	42.9	5.5	10.2		7.3	5.9		8.4
Share of income from coffee (%)	17.0	2.4	21.6	3.3	4.6		4.1	21.5	4.9	30.3	6.7	8.7		8.3	4.2		9.3
Share of income from coffee versus cattle[1]	34.4	5.1	60.5	10.1	26.2		11.3	83	29.7	72.1	18.4	-10.8		34.9	-37.0		36.7
Income other crops (x 1000 Kes)	4.3	0.9	4.8	0.7	0.5		1.1	0.4	0.4	0.1	0.1	-0.2		0.4	-0.8		1.2
Income Livestock (x 1000 Kes)	122	20	120	23	-2		30	28	7	84	40	57		41	58		51
Non-farm income (x 1000 Kes)	95	17	116	22	21		28	114	18	111	21	-3		27	-24		39
Non-farm income net (x 1000 Kes)	94	17	111	22	17		27	105	16	122	26	18		31	0		41
Total income (x 1000 Kes)	287	51	263	50	-24		71	169	24	249	54	80		59	105		93
Input costs coffee (x 1000 Kes)	8.1	0.6	8.3	0.7	0.2		0.9	8.8	1.2	9.9	1.3	1.1		1.8	0.9		2.0
Input costs other crops (x 1000 Kes)	5.7	0.7	4.1	0.5	-1.6	*	0.9	2.9	0.7	4.0	0.6	1.1		0.9	2.7	**	1.3
Seed costs other crops (x 1000 Kes)	2.8	0.3	2.2	0.2	-0.6	*	0.3	0.9	0.2	1.3	0.2	0.4		0.3	1.1	**	0.4
Hired labour coffee (yes/no)	0.7	0.1	0.8	0.0	0.1		0.1	2.4	0.3	1.8	0.3	-0.6		0.4	-0.7		0.5
Costs livestock (x1000 Kes)	8.3	1.0	9.3	2.3	1.1		2.5	12.0	1.9	14.7	2.0	2.7		2.8	1.6		3.7
Credit (x1000 Kes)	29.6	12.2	20.0	7.6	-9.6		14.4	7.1	3.2	0.0	0.0	-7.1	**	3.2	2.5		14.7
Savings (x1000 Kes)	40.8	8.0	39.1	7.1	-1.7		10.7	14.4	2.6	28.4	7.7	13.9	*	8.2	15.7		13.5
Expenditure food (x1000 Kes)	2.6	0.2	2.7	0.2	0.1		0.3	6.7	0.8	6.0	0.5	-0.7		1.0	-0.7		1.0
Expenditure education (x1000 Kes)	8.7	2.1	14.1	3.8	5.4		4.4	15.2	3.2	13.2	2.8	-2.0		4.2	-7.4		6.1
Expenditure energy (x1000 Kes)	0.7	0.1	1.4	0.2	0.6	**	0.3	4.2	0.6	4.2	0.7	0.0		0.9	-0.6		0.9
Expenditure transport (x1000 Kes)	1.4	0.2	1.9	0.3	0.5		0.3	1.8	0.2	2.9	0.5	1.1	**	0.5	0.6		0.6
Expenditure total (x1000 Kes)	23.1	3.0	34.7	5.1	11.7	*	6.0	34.8	3.1	45.3	5.5	10.5	*	6.3	-1.2		8.7
Coffee area (acres)	0.5	0.0	0.6	0.1	0.1	*	0.1	0.6	0.1	0.7	0.1	0.1		0.1	0.0		0.1
Number of mature coffee trees	226	15	273	29	47		33	219	17	205	17	-14		24	-61		41
Coffee trees per acre	494	13	481	15	-13		20	521	48	401	33	-120	**	59	-107	*	62
Coffee yield (kg/acre)	2.3	0.2	2.0	0.2	-0.3		0.3	1.3	0.2	1.5	0.4	0.2		0.4	0.5		0.5
Coffee yield (kg/tree)	4.7	0.5	4.2	0.3	-0.4		0.5	3.0	0.4	3.4	0.4	0.4		0.5	0.8		0.8
Coffee sold in cherry form (kg)	898	88	971	92	73		127	662	83	631	100	-31		129	-104		182
Dry coffee sold (kg)	41.1	6.0	74.5	7.8	33.4	***	9.9	39.1	4.6	67.2	8.1	28.1	***	9.4	-5.4		13.6
Cherry coffee price (Kes/kg)	31.7	0.6	34.6	0.6	2.8	***	0.8	51.3	3.0	87.6	3.8	36.2	***	4.8	33.4	***	4.9
Dry coffee price (Kes/kg)	48.0	1.5	50.6	0.9	2.5		1.7	79.2	3.9	106.0	5.6	26.3	***	6.8	23.8	***	7.1
Have piped water (yes/no)	0.1	0.0	0.1	0.0	0.0		0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.1
Have improved latrine (yes/no)	0.6	0.1	0.5	0.1	-0.1		0.1	0.4	0.1	0.3	0.1	-0.1		0.1	0.0		0.1
Animals in stock	8.5	0.9	10.1	1.1	1.6		1.4	7.5	0.9	10.5	1.0	3.0	**	1.3	1.4		1.9
Land attached investments (x1000 Kes)	3.1	1.2	5.9	2.8	2.8		3.0	6.7	2.6	9.9	3.1	3.2		4.0	0.4		5.0
Made house improvements (yes/no)	1.8	0.1	1.7	0.1	-0.1		0.1	1.9	0.0	1.6	0.1	-0.3	***	0.1	-0.2	**	0.1
Investment in new coffee (yes/no)	0.2	0.0	0.3	0.1	0.1		0.1	0.4	0.1	0.6	0.1	0.2	**	0.1	0.1		0.1
Economic situation versus 5 years ago (1-3)	1.7	0.1	1.6	0.1	-0.1		0.1	1.2	0.1	1.3	0.1	0.1		0.1	0.1		0.2
Economic situation versus 5 years later (1-3)	1.5	0.1	1.6	0.1	0.1		0.1	1.1	0.0	1.3	0.1	0.2	**	0.1	0.1		0.1
Number of organizations	1.4	0.1	1.3	0.1	-0.2	*	0.1	0.2	0.1	0.2	0.1	-0.1		0.1	0.1		0.1
Satisfaction technical assistance (1-5)	3.8	0.2	3.9	0.1	0.1		0.2	3.2	0.1	3.3	0.1	0.1		0.2	0.0		0.3
Satisfaction trade assistance (1-5)	3.9	0.1	3.9	0.1	0.0		0.2	3.2	0.1	3.3	0.2	0.1		0.2	0.1		0.3
Identification index (1-3)	2.6	0.1	2.6	0.1	0.1		0.1	2.3	0.1	2.4	0.1	0.1		0.1	0.0		0.1
Force index (1-3)	2.4	0.1	2.4	0.1	0.0		0.1	2.4	0.1	2.2	0.1	-0.2	*	0.1	-0.2		0.1
Risk (1-3)	2.2	0.1	2.2	0.0	0.1		0.1	2.1	0.0	2.2	0.0	0.1		0.1	0.0		0.1
Gender index (5-25)	19.2	0.9	20.1	0.8	0.9		1.2	14.0	0.9	14.6	1.4	0.6		1.6	-0.3		2.0
Days lost due to poor health (logarithm)	3.4	0.3	3.8	0.3	0.4		0.4	1.1	0.6	0.8	0.4	-0.3		0.7	-0.6		0.8

Means and Standard Errors are estimated by linear regression. Estimation on the common support. Robust Standard Errors. [1] Income coffee/(income livestock/100) *** p<0.01; ** p<0.05; * p<0.1

3.2.2.1 Production levels

While farmers of both the FT and Utz certified cooperatives stressed the positive effects of trainings on good agricultural practices during the FGDs, the effects found in the quantitative data are ambiguous. Involvement in FT certification does not influence production volumes in one case (Kiambaa versus Mecari) and in the other case (Rugi versus Kiama) negatively influences coffee production volumes, compared to non-certification. In the case of Rugi it should be noted that farmers had only received trainings on good agricultural practices for one year.

Utz certified farmers showed higher production at baseline (2009) compared to NC farmers, but at endline (2013) these effects disappear. Comparing FT and Utz shows a higher production of dry coffee for Utz farmers in both years. In 2009 we saw significant differences in input use in coffee between groups; in 2013 however, these differences disappeared. We observed a significant change in input use between FT and NC farmers, caused by the NC farmers (Kiama) starting to use more inputs.

Overall, the level of awareness amongst farmers regarding FT and Utz appeared to be low (see 3.12). In the case of Ndumberi, which is both Utz and FT certified, farmers reported that they had been trained but were not able to tell whether the training was related to Utz or FT. At FT cooperatives less than 1 out of 7 farmers are aware of the FT certification. For Utz certified cooperatives only 11% knows that their cooperative is Utz certified. In the case of Ndumberi these percentages are respectively 11.69% and 7.79%.

Table 3.7: Awareness of certification

	Utz & FT	Utz	FT	NC
Are you aware of FT certification?	11.69%	25.00%	13.57%	6.97%
Is your own coop FT certified?	11.69%	18.75%	10.05%	1.23%
Are you aware of Utz certification?	7.79%	15.00%	3.02%	2.46%
Is your own coop Utz certified?	7.79%	11.25%	1.51%	0.41%

Percentage of interviewed cooperative members who answered positively.

3.2.2.2 Prices

In theory, better farming practices should lead to better quality, which should enable farmers to receive a higher price for their coffee. Furthermore, certified coffee is associated with higher prices. The price premiums of FT and Utz coffee in Kenya are 3-5% per clean green exported pound of coffee (interview, representative of Taylor Winch, 1-2-13).

FT farmers (Kiambaa) received higher prices compared to NC farmers in both years and the difference between the two grew significantly over the years (see Table 3.5). Other FT certified farmers (Rugi) received lower prices over time. In the case of Rugi cooperative, no coffee had yet

been sold as FT certified at the time of the data-collection in 2013. As such, it is difficult to attribute the observed effect to FT.

Utz certified farmers received better prices compared to NC and FT farmers in both years (see Table 3. and Table 3.). This difference between the Utz and other farmers also increased significantly over time. For the comparison with FT we have to make the same reservation as mentioned in the paragraph above, but this does not hold for the Utz versus non-certified comparison.

One of the key benefits associated with certification is that it shortens the supply chain as cooperatives sell directly to international buyers. Two of the cooperatives in our study, Tekangu (Utz certified) and Ndumberi (Utz and FT certified), sold part of their coffee via the direct sales option, also called 'the second window'. In 2011-2012, Tekangu sold 90% of its coffee through the second window. The secretary manager of Tekangu explained that they only sold their low quality coffee through the auction. Ndumberi reported selling roughly 20% of its coffee through direct sales. The main benefit of direct sales, according to the two cooperatives, is that it pays slightly better compared to the general auction. As far as we could establish, the utilization of the 'second window' was not directly related to FT in the case of Ndumberi cooperative.

3.2.2.3 Household Income and expenditure

On average, in the farmers surveyed, most money is earned off-farm and the proportion of income generated from coffee is small as shown in Table 3.8. A significant difference is that the income of non-certified farmers is higher on average compared to certified farmers. The share of income generated from coffee is smaller for non-certified farmers, compared to their certified colleagues. Looking at the differences over time, we observed a significant difference between FT and conventional farmers at baseline in off-farm earnings, but these differences disappear at endline and no significant differences over time are reported. The same holds for total income.

Table 3.8: Income from coffee as percentage of total income

	Utz & FT	Utz	FT	NC
% income from coffee 2009	21.09	33.62	29.64	20.68
% income from coffee 2013	46.20	43.41	43.86	30.70

An important question is whether the higher prices of certified coffee have a significant positive effect compared to the total household income. Around one third of the total income of the farmers in our survey (between 20 and 46 percent) is generated from the production of coffee (see Table 3.8). Roughly one third of the certified coffee in Kenya (28% for Utz, 30% for FT) is sold as certified coffee (i.e. using the Fairtrade or Utz Certified label). Taking these two observations together, this means that roughly one ninth of the total income (1/3 * 1/3) is earned from coffee that fetched a certified price. Therefore, it can be concluded that the effect of certified prices (both FT and Utz) on total household income is relatively small.

FT and Utz farmers earn more (and in some cases the same) money from coffee compared to conventional farmers, and Utz farmers earn more than (or the same as) FT farmers. No significant difference-in-difference between the groups was detected. Earnings from other crops do not contribute substantially to the household income. If we observe significant differences between farmers regarding other crops, we observe that NC farmers report higher income from other crops. A possible explanation could be that FT and Utz farmers, due to certification, specialize more in coffee than NC farmers, as they expect more benefits from coffee production.

Household expenditure is generally considered a key welfare indicator and an important overall indicator of impact. In most cases no significant differences are observed between the groups. Only in one case do we observe a significant difference over time, caused by a drop in household expenditure by FT farmers, while NC farmers keep the same expenditure level over time.

3.2.2.4 Savings, assets and credit

Whether farmers are able to accumulate capital (money or assets) from past returns, or can access credit, is another important question in impact analysis. Increased financial room for manoeuvre reinforces households' capacity to withstand adverse shocks. Certification did not lead to significantly more accumulation of capital, whether we looked at FT or Utz farmers. We did not find significant differences between certified and non-certified farmers regarding assets or savings. Non-certified farmers had more livestock in 2013 compared to FT farmers, although the difference in the change over time is not significant. Comparing FT certified and Utz certified farmers in 2013 shows Utz farmers to have more assets, more livestock units and more savings compared to FT farmers.

3.2.2.5 Welfare perceptions

Welfare perceptions regarding experiences during the past five years do not reveal significant differences for any of the groups. Asking about their future expectations regarding the economic situation, we observe more pessimism among non-certified farmers in 2009 compared to Utz and FT farmers. Over time both Utz and FT farmers became less optimistic about the future economic prospect, shown by the negative values for the difference-in-difference (see Table 3.10). In 2013 non-certified farmers are more optimistic than FT farmers, and there is no significant difference between Utz and non-certified farmers anymore. Comparing Utz and FT farmers shows than FT farmers are less optimistic about their future economic outlook compared to Utz farmers in 2013, but no significant differences are observed in the changes over time (see 1).

3.2.3 Indirect effects

The quantitative research also examined several indirect effects of certification, such as spill-over effects, risk attitudes and gender effects.

3.2.3.1 Spill-over effects

Spill-over effects refer to the implications of engagement in certification for other economic household activities. Coffee farmers are usually involved in multiple activities and the share of income that is generated by coffee sales is not more than a quarter or a third of the total household income on average. For FT certified farmers the share of income generated by coffee sales increases over time. Again, this may be because certified farmers have more trust in coffee as a reliable and profitable crop due to their membership of a certified cooperative.

3.2.3.2 Risk attitudes and investment

Risk aversion and restraint in investments are believed to play an important role in perpetuation of poverty. Certification is believed to strengthen these behavioural attitudes. Risk attitudes hardly changed in the groups we studied. Only in one comparison did we observe a significant difference-in-difference. Utz farmers became less risk averse compared to NC farmers.

Looking at actual investments made we detected differences between FT and NC farmers, in the difference-in-difference of investments in new coffee. NC farmers started to invest significantly more in new coffee compared to FT farmers (see Table 3.6).

3.2.3.3 Gender

Coffee farming is traditionally a men's crop in Kenya, which explains why the majority of the members of the cooperatives in the study are men. Few women were found to be members of the boards of the cooperatives in the study. Three of the cooperatives (Mecari, Kiama and Rugi) had female board members. At Mecari, for example, the secretary manager is a woman. No clear relationship was encountered during fieldwork between the certification (either Utz or FT) status of a cooperative and the number of women that were board members. We also studied the relation between certification and gender. No significant differences were observed between groups in the perceptions and attitudes, either for men or women.

3.2.3.4 Health

The relationship between certification (both FT and Utz) and health was also studied. We looked at days lost due to health problems and we analyzed the treatment sought. No significant differences could be detected between groups and/or over time.

3.3 Institutional implications

Part of the study involved examining the institutional implications of FT and Utz. In particular, we looked at board-level satisfaction with certification and farmers' satisfaction with cooperative performance. In addition, we identified a number of institutional challenges that are relevant for understanding the potential of certification schemes.

3.3.1 Board-level satisfaction with certification

Board-level satisfaction with FT and Utz certification was mixed. On the one hand, the boards expressed their satisfaction with the trainings associated with both certification schemes. Besides the trainings in good farming practices mentioned earlier, part of the 'package' of Utz and FT certification includes training of the board regarding issues such as good (financial) management practices, marketing and the strategic importance of improving production and quality. The boards of certified organisations without exception explained that they valued these trainings which, according to them, had contributed to better management practices and heightened awareness regarding the importance of employing good farming practices. In the specific case of Ndumberi cooperative, the Board explained how their cooperative had benefited from a water tank, metal drying beds and toilets at the factories which they were able to get through the FT social premium.

A key benefit of certification that was cited by the boards of Tekangu and Ndumberi cooperatives is that it improves sales options. Especially being Utz certified was considered to be of key importance due to its demanding nature. In fact, Utz was considered the most demanding of all certification schemes, resulting in a board member of Tekangu describing Utz as 'the mother of all' certifications (FGD Board, Tekangu, 18-1-13). Once a cooperative has met all the conditions for Utz certification, it reportedly becomes easy to get other types of certification such as FT or Rainforest Alliance. Such multi-certification is considered to be desirable as it increases sales options at the general auction and therefore the chance to get a higher price. Furthermore, board members of Tekangu cooperative also pointed out that certification is key to selling coffee via direct sales. Tekangu tries to sell as much coffee as possible via 'the second window' (between 70-90%) as it gives them slightly higher prices.

The boards of the certified cooperatives were disappointed with the price premiums associated with both FT and Utz. Their initial expectation had been that once certified, coffee would yield much higher prices. Thus far, however, this expectation has not materialized. According to the boards, the prices they have received for their coffee only marginally increased once they became certified. In the case of Kiambaa cooperative, the Board was especially vocal about its disappointment with the FT price premium. In 2011-2012, the first year that they sold their coffee as certified, the FT price premium they received was only 157 US dollars in total. The board of Tekangu pointed out that the benefits from the slightly higher price of Utz is partly offset by the high costs (400.000 Kes) of the annual Utz audit.

3.3.2 Farmers' satisfaction with cooperative

Organizational consolidation of cooperatives is seen as an important objective of certification. We asked farmers their opinion of the technical services offered by the cooperative and found no differences in most cases. Only when comparing NC and FT farmers in one case at endline did we find that NC farmers were more satisfied compared to FT farmers, but no significant effects were found over time.

We also asked farmers their opinion regarding the commercial and trading capabilities of their cooperatives. Regarding FT farmers we found contradictory effects at baseline and no significant effects at endline. Comparing Utz and NC farmers showed a significant change in levels of satisfaction with the commercial services offered, which was mainly caused by a change in satisfaction among NC farmers, who became less satisfied about this aspect of their cooperation.

3.3.3 Institutional challenges

According to the (certified) cooperative board members, getting and keeping their members motivated to employ good agricultural practices remains a challenge. This is consistent with the results from the FGDs with farmers in which it was repeatedly asserted that due to the (relatively) low prices, the price fluctuations and the high cost of production 'doing the good agricultural practices is not worth the effort' (FGD farmers, 24-1-13). The underlying problem is that coffee farming has an image problem as it not necessarily seen as a profitable business.

A topic that kept recurring during the fieldwork was the issue of youth involvement in coffee farming. A huge problem, encountered at all cooperatives included in our study, is that very few young people are interested in becoming coffee farmers. This is clearly reflected in the average age of the farmers in this study, which is 64 years, with a standard deviation of 15 years. Board members reported very little rejuvenation of their membership. Even at the best performing cooperatives (Ndumberi and Tekangu), board members explained that the youth is not interested in coffee farming. Assuming that the age of the coffee farmers in our study is somewhat representative for Kenyan cooperatives in general, the lack of the interest of the youth means that the future of smallholder coffee farming in Kenya looks rather bleak.

During the FGDs, a number of reasons were put forward as to why young people are not interested in becoming coffee farmers. In summary, young people typically do not perceive coffee farming as a profitable and attractive enterprise due to poor and unstable prices, the high costs of inputs, a lack of regular monthly payments and poor working conditions. Young people were described as having a different mentality compared to their parents' generation and not being patient enough to wait for months between the delivery of the cherry and the payment. 'Young people, they want quick cash and do not want to get dirty' (FGD farmers, 22-1-13). One of the few young farmers attending the FGDs pointed out that young people 'have seen their parents living a life in poverty. They want something better for themselves' (FGD farmers, 28-1-13). One farmer even explained that 'my son told me that coffee farming is like slavery. You work hard and at the end of the day you only see low returns' (FGD farmers, 22-1-13). Overall, most young people are inclined to look for other jobs which are better paying and offer better working conditions and a continuous income. Consequently farmers explained that they were reluctant to give their land to their sons and daughters out of fear that their coffee trees would be cut.

Another issue that relates to the adoption rate of good agricultural practices is that farmers are paid the same price, irrespective of whether they sell high or low quality coffee to the cooperative. This means that those farmers that do not invest in the quality of their coffee are paid the same

price as those making the extra time and money investments. One farmer explained this as follows: 'Here in the factory, all the coffee from different farmers is mixed together whether it is low quality or high quality. Now the farmers who work very hard end up getting disadvantaged because their high quality coffee gets a poor price because of those who bring poor quality' (FGD farmers, 24-1-13). This situation demoralizes farmers and also causes tensions. Several farmers, for example, argued that farmers who fail to adopt good practices should be banned from the factory. Cooperatives, however, cannot force farmers to adopt good practices.

It became clear during the fieldwork that both cooperatives and farmers have a tendency to focus primarily on higher prices and price premiums. While Board members and farmers were enthusiastic about FT and Utz certification and the benefits it had brought them, they kept emphasizing the fact that it had not brought them significantly higher prices. The potential of certification, both FT and Utz, lies largely in the improvement of quality and production through better farming practices. It thus seems that the existing expectations regarding certification are not always realistic. Not only do the unrealistic expectations have a demoralizing effect on farmers once the prices end up lower than anticipated, they divert attention from a key aspect of certification where much gain is to be expected: improving production and quality.

3.4 Issues at the farm level

During the FGDs farmers were asked to explain and rank the problems they experienced in coffee farming. Five key problems emerged which were similar for all six cooperatives visited in the study: low prices, price fluctuations, high costs of production, long payment periods and climate change.

- *Low prices.* The most important complaint voiced by farmers was that coffee farming yielded little profit due to low prices. Farmers considered any amount above 100 Kes for a kilo of cherry to be a good price. In the past few years, however, they reported only having received a 'good' price for their coffee in 2010. Since 2009, the price per kilo had averaged around 50 Kes. Farmers complained that the low price of coffee has a demoralizing effect, resulting in some farmers cutting down trees to plant other crops, neglecting their coffee farms or engaging in other activities such as cattle farming. Especially in Kiambu district, which is located close to Nairobi, farmers were reported to be abandoning or neglecting coffee farming.

- *Price fluctuations.* In the period 2009-2012, farmers reported that prices of cherry per kilogram varied between 20 Kes and 100 Kes. Both certified (FT and Utz) and non-certified farmers experienced such fluctuations. Particularly for FT this is a relevant observation as one of its starting-points is offering farmers protection from price fluctuations by means of a floor price. In Kenya, however, it seems that such a floor price has not been offered. Farmers explained that the price fluctuations contribute to a perception that coffee farming is not a reliable venture to engage in. In addition, they pointed out that the fluctuations undermine their ability to make long-term plans. As a farmer explained, 'how

can I make investments in my farm if I don't know what I'll get next year?' (FGD farmers, 28-1-13). Overall, farmers did not understand how the prices of coffee were established and what caused the high fluctuations.

- *High costs of production*. During all the FGDs, farmers complained about the high costs of inputs (e.g. fungicide, herbicide, and fertilizer), transport costs and labour. According to farmers, these costs had increased over the years, which is confirmed by the survey data. It was argued that the high costs of production contribute to some farmers reducing their use of farming inputs, resulting in lower production and quality. A farmer explained that 'for me the problem is cash. How can I do the inputs if I don't have the cash to buy them and the returns are so low?' (FGD farmers, 25-1-13). The high costs of inputs are expected to be particularly relevant for certified farmers (both FT and Utz), as employing good agricultural practices is associated with a strong emphasis on using farming inputs. Looking at the quantitative data we observe that NC farmers (Kiama) used less inputs at baseline, but started to use more inputs compared to Utz and FT farmers over time and the difference disappeared.

- *Long payment periods.* Due to the way in which coffee is marketed in Kenya, there is a considerable time lag between the moment in which farmers deliver their coffee to the wetmill and the moment they get paid. The study found considerable differences between the cooperatives, with payment periods ranging from three months to a full year being reported. As coffee is the main cash crop for many farmers, the long payment periods means that they lack a continuous income. Especially in the case of emergency expenses, this can be problematic. The long waiting period was said to reduce the attractiveness of coffee farming – especially for young people – and to be a major cause of coffee hawking (sales to middlemen).

- *Climate change*. According to farmers, the weather is a key factor affecting the production of coffee. Farmers reported increasingly unstable weather conditions and attributed this to climate change. Some of the farmers argued that they had only one 'normal' year in the past five years. The issue of climate change is not only important because it contributes to lower yields and quality, it also undermines the predictability of farmers' income from coffee farming. In addition, climate change is also a relevant issue for this study because it undermines the positive impact of the application of good agricultural practices due to certification.

An issue that was encountered in three of the six cooperatives that participated in this study is that of farmers distrusting their board. Farmers from the cooperatives in question suspected the board of their cooperative of abusing their position for personal monetary gain. They suspected, for example, that their boards earned money by delaying payments and taking the interest, 'snatching' the discount gained from buying large quantities of farming inputs and not paying all insurance money in the case of theft. During several FGDs, farmers also raised concerns regarding the lack of real democracy in the cooperative due to the absence of secret ballots and the buying

of votes using money or alcohol. While the above issues are certainly relevant as they affect the internal functioning and efficiency of cooperatives, they could not be examined in depth.

3.5 Issues at the institutional level

In addition to the FGDs with farmers, FGDs were also held with the boards of all six cooperatives. One of the aims of these meetings was to get an idea of the problems faced at the cooperative level. The main issues brought forward during these meetings included low and unstable coffee prices, hawking and theft:

- *Low and unstable prices.* Similar to the farmers, the cooperative leadership expressed their frustration about the price of coffee which they perceived as artificially low and largely beyond their control. As voiced by one board member, 'we always hear that Kenyan coffee is amongst the best in the world, but still we get paid very little. How is this possible?' (FGD Board, 21-1-13). Like the farmers, board members do not understand why coffee prices are so low and why there are so many price fluctuations. An explanation for the low prices that was repeatedly brought up was that Board members suspect the existence of cartels at the general auction in Nairobi (for more about prices, see box 2). They argued that it is already determined beforehand who buys which coffee at what price. In addition, some Board members suggested that the grading of coffee is rigged, resulting in high quality coffee receiving consistently lower grades. Overall, there was a widespread feeling that people and organizations higher up in the coffee value chain were making lots of money at the expense of smallholder coffee farmers. During several interviews, it was pointed out that the low and unstable prices had resulted in severe tensions between the cooperative board on the one hand and the farmers on the other hand. For example, one board member explained that 'during the Annual General Meeting we encountered a lot of frustration. They [farmers] did not understand how the prices could drop so suddenly and so low. We had to show them everything [grading statement, administrative documents] and still they were not satisfied' (FGD Board, 21-1-13).

Box 2. Price differences between cooperatives

The price of coffee is determined by numerous factors, many of which lie beyond the cooperatives' control (e.g. changing weather conditions due to climate change, diseases, operations of hedge funds, competition from other coffee producing countries, exchange rate of the dollar). Coffee prices also follow a cycle. There are two key factors, however, that to a certain degree lie within cooperatives' control: (1) the quality of coffee and (2) the size of their overheads.

Regarding the first, there is an abundance of evidence indicating that better quality results in higher coffee prices (see also section 3.2 and annex 6.7). This means that cooperatives with many members producing high quality coffee have higher revenues and in principle should be able to pay higher prices to their farmers. The fact that a cooperative has favourable coffee grades, however, does not automatically result in higher prices being paid to farmers. There are many examples of Kenyan cooperatives with relatively good quality coffee that still pay relatively poor prices and of cooperatives with relatively low quality coffee that still pay relatively good prices. This raises the question of how to explain such variations.

Discussions with Solidaridad staff revealed that the overheads of cooperatives are the key factor explaining the above variations. Cooperatives that operate efficiently and are able to reduce overhead costs can pay a larger part of their revenues to farmers, resulting in higher prices. Tekangu cooperative, for example, spends less than 16% of its annual revenues on overheads, which is considerably lower than the legal maximum of 20%. 'We are constantly looking for ways to improve our efficiency, you know, to tighten our belt. Because in the end, we know that the farmer will benefit' (Interview, Board of Tekangu, 28-1-13).

- *Hawking.* Smallholders coffee farmers in Kenya are legally obliged to sell their produce to the cooperative. When they are not selling to the cooperative this is called hawking.[30] At the cooperative-level, hawking is a problem because it reduces the amount of coffee that is sold to the cooperative, leading subsequently to lower total overall revenues. High volumes/revenues are crucial, as Kenyan legislation dictates that cooperatives can only spend a maximum of 20% of their revenues on overhead costs. Consequently, higher revenues mean that the cooperative can invest more in, for example, factory repairs, maintenance and trainings to farmers. In addition, hawking was said to undermine the predictability of revenues which reduces the ability of the cooperative to plan ahead. A board member explained that 'due to hawking, we are missing a lot of coffee. It is hurting us because it affects the cash flow. […] Because you don't know how much you'll get, you become limited in what you can do' (FGD Board, 21-1-13). Overall, hawking appeared to be affecting some of the cooperatives more than others.

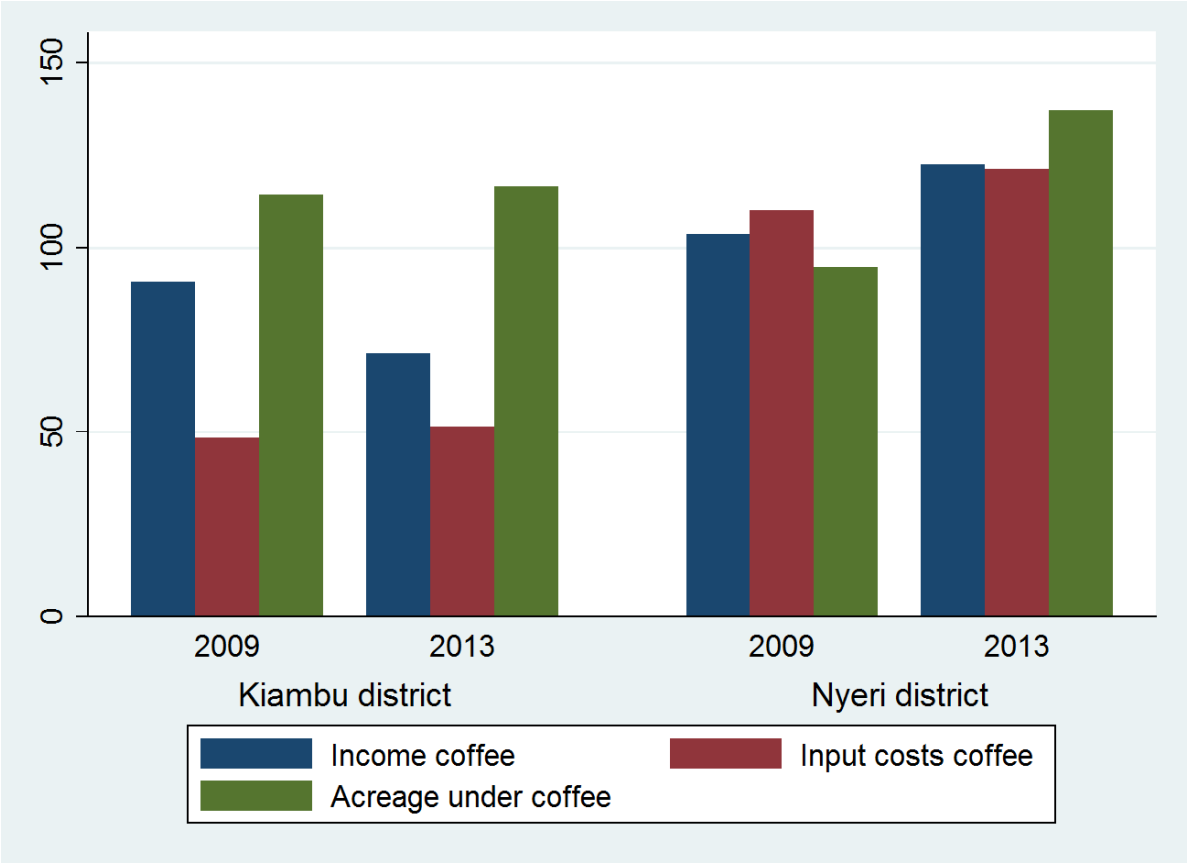
[30] Hawking is typically caused by farmers' urgent cash needs as it gives quick cash as opposed to the long waiting period associated with selling to the cooperative. In addition, hawking may give farmers a higher price compared to what they would get from the cooperative. In fact, several farmers explained they would like to have the freedom to decide for themselves to whom to sell their coffee. During the fieldwork three types of hawking were mentioned: 1) from farmer to farmer, 2) from farmer to (big) estate farmer, 3) from farmer to miller.

- *Theft.* All cooperatives experience severe problems related to theft, which was reported to be a common problem in Kenya. Board members explained that criminals engaged in coffee theft do not hesitate to use violence. In Kiambaa cooperative, for example, there was a big robbery in 2010 in which one armed guard was killed and another one hospitalized for two months. All six cooperatives spend considerable sums of money on security measures (e.g. steel doors, guards), particularly at times when there is a lot of coffee stored in the factories. Without such security measures, it was explained, insurance companies would not pay in the case of theft. Overall, security costs are a major expense for the cooperatives and contribute to higher overhead costs.

3.6 Regional differences

From FGDs it became clear that farmers in Kiambu district are far less focused on coffee farming compared to their colleagues in Nyeri district. As Kiambu district lies very close to Nairobi, farmers in the area have a lot of alternatives to producing coffee. Farmers explained that besides coffee they can easily sell other farm products, such as eggs or milk, to earn an income. In addition, farmers made clear that the proximity to Nairobi meant that there are also opportunities to earn an income outside farming. In Nyeri district on the other hand, local market opportunities appeared to be much more limited. The absence of a large urban area means that farmers in this district have fewer livelihood options available and are more dependent on coffee farming. If they want to increase their income, they have little alternative except to invest in coffee production.

Figure 3.9: Differences between Kiambu and Nyeri districts (normalized indices)



The regional differences are clearly reflected in the survey data (see Figure 3.9). Farmers in Nyeri district get a higher gross income from coffee compared to farmers in Kiambu district. Furthermore, farmers in Nyeri district spend significantly more on inputs (e.g. fertilizer, spraying) compared to their peers in Kiambu district. This strongly suggests that farmers in Nyeri district are much more involved in employing good agricultural practices. Moreover, spending on farm inputs has increased considerably in Nyeri district between 2009 and 2013 while it has stayed the same in Kiambu district. Finally, the acreage under coffee production has increased considerably in Nyeri district in the period 2009-2013 while the area under coffee production in Kiambu district has stayed the same.

These findings are relevant because they suggest that the returns from certification are highest in areas characterized by high dependence on coffee farming where few alternative livelihood options are available.

Conclusions

The impact of the price premiums of certified coffee (both FT and Utz) on farmers' income in the six cooperatives surveyed remains limited. Coffee makes up roughly one third to a quarter (between 20% and 46%) of farmers' total income. Furthermore, less than one third of the certified coffee produced in Kenya (28% for Utz, 30% for FT) is sold as certified coffee in Kenya. This means that (roughly) less than one ninth to one twelfth of farmers' income comes from coffee which fetched a certified price (i.e. was sold as certified).

We observed significant differences in prices for cherry and dry coffee within years and over time. Certified farmers fetch significantly better prices for their coffee, compared to their NC colleagues. Utz farmers get better prices than their FT colleague farmers.

No significant effects were observed in terms of increased production due to certification. Utz farmers were and are selling more dry coffee than FT farmers, but we did not observe significant differences with NC farmers. Although there seems be a lot of room for improvement, production does not seem to be the most important problem, but rather trade. Certification does not seem to have caused significant changes in the coffee chain.

Most farmers, whether certified or not, maintain a strong specialization in coffee and are increasing the acreage under coffee. Differences in acreage under coffee between certified and NC farmers disappear over time.

Farmers selected for certification are usually found in sub-optimal production areas. Consequently, initial gains from certification are usually high, but these tend to disappear once other NC farmers catch up in the process. Most initial gains from trade, therefore, gradually disappear due to spatial externalities. This points to important certification effects in the beginning of the coffee life cycle that tend to even out over time.

Utz farmers maintain the relative advantage in expenditure levels compared to FT farmers that already existed from the beginning, but differences with NC farmers are mitigated.

The willingness of farmers to invest in coffee farming in Kenya is undermined by (relatively) low prices, price fluctuations, the high costs of production, long payment periods and climate change. Cooperative boards reported that due to these problems it remains a challenge to get and keep their farmers motivated to employ good farming practices.

Farmers expressed their satisfaction with the trainings on good agricultural practices associated with FT and Utz. At the same time, farmers demonstrated a strong tendency to focus primarily on the higher prices associated with certification. This focus can be considered undesirable as it as unrealistic, given the relatively small price premiums of FT & Utz in Kenya, while diverting attention from those aspects of certification where the most gain is to be expected: improving production and quality.

Farmers in Kiambu district are far less focused on coffee farming compared to their colleagues in Nyeri district. As Kiambu district lies very close to Nairobi, farmers in the area have a lot of

alternatives to producing coffee. Farmers in Nyeri district are more dependent on coffee farming. The absence of a large urban area with a lot of economic activity means that farmers in this district have fewer livelihood options available and are more dependent on coffee farming. If they want to increase their income, they have little alternative except to invest in coffee farming. This suggests that certification has the highest impact in areas characterized by high dependence on coffee farming.

Youth involvement in coffee farming is problematic. The average age of the farmers in this study was 64 years. Board members reported very little rejuvenation of their membership. Young people do not perceive coffee farming as a profitable and attractive enterprise. Overall, most young people are inclined to look for other jobs which are better paying and offer better working conditions and a continuous income. If the interest of youth in smallholder coffee farmer does not change in the coming years, the future of smallholder coffee farming in Kenya looks rather bleak.

Table 3.13. Summary of the Impact of Coffee Certification, Kenya

	Kiambu district			Nyeri district								
	FT1 vs NC			FT2 vs NC			UTZ vs NC			UTZ vs FT		
Income	09	13	Diff	09	13	Diff	09	13	Diff	09	13	Dif
Coffee income (x1000 Kes)		>		>		-	>				>	
Coffee income net (x1000 Kes)				>			>	>				
Dry coffee income (x1000 Kes)					<	-	>			>	>	
Cherry coffee income (x1000 Kes)				>			>					
Share of income from coffee (%)		>	+	>			>					
Share of income from coffee versus cattle[1]		>					>		-			
Income other crops (x 1000 Kes)				<								
Income Livestock (x 1000 Kes)		<										
Nonfarm income (x 1000 Kes)												
Nonfarm income net (x 1000 Kes)												
Total income (x 1000 Kes)	<	<										
Inputs												
Inputcosts coffee (x 1000 Kes)	<			>		-	>		-			
Inputcosts other crops (x 1000 Kes)	<									<		+
Seedcosts other crops (x 1000 Kes)	<		+		<		<		+	<		+
Hired labour coffee (yes/no)		<	-				>					
Costs livestock (x1000 Kes)												
Savings, Credit and Expenditure												
Credit (x1000 Kes)	<		+								<	
Savings (x1000 Kes)											>	
Expenditure food (x1000 Kes)		>	+									
Expenditure education (x1000 Kes)												
Expenditure energy (x1000 Kes)							>		-	>		
Expenditure transport (x1000 Kes)		<	-	<							>	
Expenditure total (x1000 Kes)										>	>	
Production and Prices												
Coffee area (acres)				>		-	>		-	>		
Number of mature coffee trees		<		>			>		-			
Coffee trees per acre				<	>	+	<				<	-
Coffee yield (kg/acre)	<			>								
Coffee yield (kg/tree)				>			>					
Coffee sold in cherry form (kg)				>		-	>					
Dry coffee sold (kg)					<	-	>		-	>	>	
Cherry coffee price (Kes/kg)	>	>	+	>	<	-	>	>	+	>	>	+
Dry coffee price (Kes/kg)	>	>	+		<	-		>	+		>	+
Welfare												
Have piped water (yes/no)	>			<			<		+			
Have improved latrine (yes/no)							<					
Animals in stock		<			<						>	
Investment												
Land attached investments (x1000 Kes)												
Made house improvements (yes/no)	<				>	+	<	<			<	-
Investment in new coffee (yes/no)	>				<	-	>				>	
Perceptions												
Economic situation versus 5 years ago (1-3)					<							
Economic situation versus 5 years later (1-3)				>	<	-	>		-		>	
Number of organizations				>	>		>	>		<		
Satisfaction technical assistance (1-5)												
Satisfaction trade assistance (1-5)												
Identification index (1-3)	<		+									
Force index (1-3)						+					<	
Risk, Gender & Health												
Risk (1-3)				<			<		+			
Gender index (5-25)							>					
Days lost due to poor health (logarithm)				>			>					

Results from matched difference-in-difference estimation. p > .1

References

Anmer Coffee Company Limited (2010). *Monthly Kenya Coffee news*, November.

Coffee and Conservation (2008). See https://www.coffeehabitat.com/2008/03/coffee-growing-in-kenya/. Accessed on 11th August 2012.

Coffee Research Foundation (2013). See https://www.crf.co.ke/. Accessed on various dates in February and March 2013.

Condliffe, K., W. Kebuchi, C. Love and R. Ruparell (2008). *Kenya Coffee: A Cluster Analysis*. Harvard Business School, USA.

Giovannucci D. and J. Potts. (2008). *Seeking Sustainability. COSA Preliminary Analysis of Sustainability Initiatives in the Coffee Sector*. International Institute for Sustainable Development.

GIZ (2012). *Climate Change Adaptation and Mitigation in the Kenyan Coffee Sector Guide Book - Sangana PPP - 4C Climate Module.*

Government of Kenya (2008). *The Sacco Societies Act.* No. 14 of 2008.

Ibero (2005). *Manual for Sustainable Coffee Production*, Ibero Uganda Limited.

Commission for revenue Allocation (2011). *Kenya County Fact Sheets*.

Oyuga, C. O. (2011). *Identifying and Addressing the Factors that Promote Coffee Theft in Kenya. Report of the national coffee stakeholders round table meeting held on March 4th, 2011 at the Kenya Comfort Hotel, Nairobi*.

Kabura E. and W. Doppler (2005). *Smallholder Tea and Coffee Production and its Impact on Food Production and Living Standards in Kenya*. Tropentag 2005

KCTA (2011). *The Coffee Quarterly*, Issue 17/2011

Karanja A. K & J. Nyoro. (2002). *Coffee Prices and Regulation and their Impact on Livelihoods of Rural Community in Kenya*. Tegemeo Institute of Agricultural Policy and Development, Egerton University, Kenya.

KCTA (2012). *Nairobi Coffee Exchange Statistics 2000/2001 to 2010/2011 coffee year*. KCTA Kenya Coffee Traders Association.

KCTA (2012). *Kenya Coffee Directory*, Kenya Coffee Traders Association.

KCPTA (2013). See http://www.kcpta.co.ke/. Accessed on various dates in February and April 2013

Kegode, P. (2005). *Economic Governance of Coffee Sector- Focus Central Province. Report Submitted to Center for Governance.*

Kennedy. P. (2005). *Kenya Coffee.* Royal News, June 2005.

Kenya Coffee Network (2013). See http://kenya-coffee.net/. Accessed on various dates in February and March 2013.

Kenya Open Data (2013). *County data sheets*. See https://opendata.go.ke/. Accessed on various dates in February and March 2013.

Kenya Investment (2013). *Investment by County Website*. See https://www.investmentkenya.com. Accessed on various dates in February and March 2013.

Kimemia, J. K. (2011). *Batian coffee: A New Coffee Variety Resistant To Coffee Berry Disease and Coffee Leaf Rust*. Coffee Research Station, Ruiru, Kenya.

Kinoti, J. (2005). *Opportunities for Investment in the Coffee Sector. Presentation to the USA-Africa Business Summit in Baltimore, June 21-24 2005*, Kenya Coffee Board.

Matching Grant (2012). *Value Chain Analysis of Selected Strategic Sectors in Kenya.*

MSME Competitiveness project (2008). *Coffee stakeholders chart way for Kenya coffee standards*. MSME Bulleting Issue 4, March 2008.

Muchomba, I. (2013). Personal communication both orally and by email on various dates in March 2013.

Mureithi, L.P. (2008). *Coffee in Kenya. Some challenges for decent work*. International Labour Office, Geneva.

Mwangi, J. (2011). *Government Releases Sh1 Billion Coffee Debt Waiver*. The Star Newspaper, Friday, 16 December 2011.

NCA USA (2013). See http://www.ncausa.org/i4a/pages/index.cfm?pageid=68/. Accessed on various dates in February and March 2013.

Sweetmarias Coffee (2013). See http://www.sweetmarias.com/coffee.africa.kenya.php, accessed on various dates in February and April 2013.

The Point (2000). *The Coffee industry in Kenya*. Issue no. 36, July 2000. Published by The Institute of Economic Affairs, Bishop Garden Towers, Nairobi.

Annexes

Annex 1: Descriptives of cooperatives under study

Table 3.9: Characteristics of households in 2013 of treatment and control groups in Kiambu district

	Treatment			Control		
Household characteristics	N	Mean	SD	N	Mean	SD
Age of the head	62	69.24	14.73	165	65.88	12.71
Gender of head	62	1.47	0.50	165	1.38	0.49
Marital status of head	62	2.65	1.09	165	2.59	0.98
Highest education level	62	11.00	4.75	166	11.76	4.41
HH size (sum persons)	62	4.52	2.12	167	4.66	2.27
HH size (sum adult equiv.)	62	3.55	1.65	167	3.71	1.85
HH years of educ (sum years)	62	32.27	21.25	167	35.17	20.92
Farming experience (yrs)	59	42.25	15.10	157	36.48	17.50
Years lived in locality	58	44.19	13.45	159	42.71	19.68
Accessibility						
Distance to nearest wet mill	62	2.76	2.24	158	2.25	1.76
Distance to wet mill where coffee is delivered	62	1.98	1.25	167	2.21	1.94
Distance to nearest electricity supply	62	0.11	0.29	167	0.09	0.34
Distance to nearest dairy	62	3.05	4.50	167	4.81	5.02
Distance to nearest extension advice	62	3.23	3.26	167	4.20	3.50
Distance to vet service	62	2.75	3.18	167	3.49	3.17
Distance to nearest major market for farm produce	62	4.21	3.48	159	4.56	2.74
Land						
Acreage at HH inception	56	2.30	2.49	158	2.49	2.31
Acreage owned now	57	2.14	2.16	160	2.35	1.84
Number of coffee parcels	62	1.00	0.00	163	1.01	0.11
Number of coffee plots	62	1.10	0.30	163	1.01	0.11
Coffee variety	62	0.79	0.41	167	0.86	0.35
Acreage under coffee	61	0.60	0.61	162	0.87	0.86
Number of mature coffee trees	62	289.77	336.79	160	461.75	433.89
Assets						
Assets owned in 2006 (x1000)	52	42.45	71.73	146	49.55	72.07
Value of assets in 2013 (x1000)	62	225.19	504.43	163	126.46	348.57
Total livestock units in 2013	61	6.97	9.95	162	6.70	7.63
Productivity, input use and sales						
Coffee input cost per acre	53	6.59	16.40	139	6.83	15.98
Kgs of cherry sold	58	371.48	510.42	154	376.83	463.61
Kgs of Mbuni sold	39	34.13	32.60	93	47.87	53.72
Price per Kg of cherry	53	50.74	35.98	134	36.74	23.30
Price of Kg of mbuni	36	171.83	61.42	80	91.28	78.32
Income						
Coffee income (reported prices)	62	21.69	37.53	158	13.09	16.29
Income from other crops	61	0.65	3.07	163	1.05	5.08
Income from livestock	61	68.71	129.27	162	93.67	159.56
Share of income from coffee	55	32.11	37.36	145	23.74	35.64
Share of income from coffee versus cattle	33	37.62	58.68	95	19.60	32.51
Perceptions and organization						
Number of organizations	62	0.24	0.43	163	0.52	0.53
Economic situation versus 5 years ago (1-3)	62	1.37	0.71	160	1.43	0.76
Economic situation versus 5 years later (1-3)	62	1.21	0.52	160	1.29	0.63
Satisfaction technical assistance (1-5)	60	3.12	1.14	161	2.76	1.25
Satisfaction trade assistance (1-5)	60	3.07	1.15	161	2.75	1.17
Identification index	59	2.48	0.62	160	2.48	0.51
Force index	59	2.38	0.53	160	2.12	0.51
Gender and risk						
Gender index male	34	14.35	2.59	97	13.98	3.17
Gender index female	40	14.80	2.00	80	15.11	2.49
Risk	60	2.18	0.47	162	2.14	0.45

Treatment = Ndumberi, Control = Kiambaa + Mecari

Table 3.10. Characteristics of households in 2013 of treatment and control groups in Nyeri district

	Treatment			Control		
	N	Mean	SD	N	Mean	SD
Household characteristics						
Age of the head	76	60.461	13.377	176	61.403	14.003
Gender of head	76	1.2105	0.4104	177	1.2938	0.4568
Marital status of head	76	2.3289	0.7727	176	2.517	0.907
Highest education level	77	10.74	3.7711	187	9.9198	4.0902
HH size (sum persons)	77	4.1299	1.9758	187	3.9037	1.8202
HH size (sum adult equiv.)	77	3.1169	1.4777	187	2.9519	1.3611
HH years of educ (sum years)	77	28.442	17.309	187	26.332	17.365
Farming experience (yrs)	77	36.338	19.356	182	36.082	17.009
Years lived in locality	77	42.429	20.598	182	36.973	17.639
Accessibility						
Distance to nearest wet mill	76	2.0316	1.0193	183	1.6595	1.1233
Distance to wet mill where coffee is delivered	77	1.7916	1.5542	187	1.2658	1.1213
Distance to nearest electricity supply	77	0.5486	0.9017	187	0.4601	0.7193
Distance to nearest dairy	77	2.2903	3.9173	187	1.1907	1.946
Distance to nearest extension advice	77	2.5156	3.7615	187	3.1652	3.0226
Distance to vet service	77	1.9962	1.7158	187	2.2963	2.1205
Distance to nearest major market for farm produce	76	4.9276	2.9897	184	4.1603	3.8529
Land						
Acreage at HH inception	76	2.0046	1.7084	183	2.0794	1.8639
Acreage owned now	76	1.8704	1.7386	183	1.7616	1.3901
Number of coffee parcels	77	1.013	0.114	185	1.0162	0.1266
Number of coffee plots	77	1.013	0.114	185	1.0162	0.1266
Coffee variety	77	0.7792	0.4175	187	0.8289	0.3776
Acreage under coffee	76	0.7017	0.6509	183	0.6862	0.6577
Number of mature coffee trees	77	203.32	139.34	185	217.02	165.66
Assets						
Assets owned in 2006 (x1000)	73	35.329	39.17	177	38.838	51.014
Value of assets in 2013 (x1000)	76	68.939	108.92	185	100.94	233.91
Total livestock units in 2013	77	10.026	8.3398	185	8.3297	8.1304
Productivity, input use and sales						
Coffee input cost per acre	64	18.866	26.75	166	14.543	21.465
Kgs of cherry sold	77	652.86	841.38	179	604.5	648.43
Kgs of Mbuni sold	65	65.046	70.432	147	48.391	48.402
Price per Kg of cherry	74	87.858	30.797	170	54.508	22.873
Price of Kg of mbuni	65	106.55	40.488	141	84.235	29.513
Income						
Coffee income (reported prices)	74	49.538	50.549	182	35.104	43.673
Income from other crops	76	0.5546	3.8174	180	1.3826	5.89
Income from livestock	77	41.576	124.72	186	34.118	72.918
Share of income from coffee	71	38.326	31.146	173	29.211	27.77
Share of income from coffee versus cattle	33	267.4	483.99	93	129.27	195.31
Perceptions and organization						
Number of organizations	76	0.1579	0.5429	184	0.125	0.3316
Economic situation versus 5 years ago (1-3)	77	1.3377	0.6409	185	1.3405	0.6148
Economic situation versus 5 years later (1-3)	77	1.2857	0.5817	184	1.2554	0.5381
Satisfaction technical assistance (1-5)	77	3.2987	1.1705	183	3.2514	1.1824
Satisfaction trade assistance (1-5)	77	3.2857	1.2759	183	3.1858	1.2173
Identification index	77	2.4078	0.5567	182	2.3121	0.6566
Force index	77	2.2234	0.5341	182	2.2959	0.5897
Gender and risk						
Gender index male	42	14.214	2.9594	112	13.893	2.5304
Gender index female	45	14.356	3.0238	86	15.151	2.6369
Risk	77	2.2489	0.3849	184	2.1812	0.3335

Treatment = Tekangu, Control = Rugi + Kiama

Annex 2

List of interviews and Focus Group Discussions

- 18-1-13 Focus Group Discussion, Board Rugi cooperative
- 18-1-13 Focus Group Discussion, Board Tekangu cooperative
- 21-1-13 Focus Group Discussion, Board Mecari cooperative
- 21-1-13 Focus Group Discussion, Board Kiambaa cooperative
- 22-1-13 Focus Group Discussion, farmers Kiambaa cooperative
- 23-1-13 Interview General Manager Kiambaa cooperative
- 23-1-13 Focus Group Discussion, farmers Kiambaa cooperative
- 23-1-13 Focus Group Discussion, farmers Kiambaa cooperative (2nd group)
- 24-1-13 Focus Group Discussion, farmers Ndumberi cooperative
- 24-1-13 Focus Group Discussion, farmers Ndumberi cooperati (2nd group)
- 24-1-13 Focus Group Discussion, farmers Kiambaa cooperative
- 25-1-13 Focus Group Discussion, farmers Mecari cooperative
- 25-1-13 Focus Group Discussion, farmers Tekangu cooperative
- 28-1-13 Focus Group Discussion, Board Tekangu cooperative
- 29-1-13 Focus Group Discussion, farmers Mecari cooperative
- 30-1-13 Focus Group Discussion, farmers Rugi cooperative
- 1-2-13 Interview representative Taylor Winch
- 1-2-13 Interview representative Kenya Coffee Traders association

Annex 3

Interview guide – Focus Group Discussions farmers

- Introduction
    - Introduction researcher(s)
    - purpose study
    - design study
    - Benefits for cooperative
        - (objective) information about benefits certification
        - Learning from experiences other cooperatives
        - Enabling Solidaridad to learn and help others
    - expected time interview
    - questions?
- Importance coffee production
    - How important is coffee for your income in comparisons to other crops?
        - Have there been changes over time?
    - What are the main reasons why you are producing coffee?
    - What are reasons to grow other crops?
- Challenges farmers
    - What are the biggest problems and challenges that coffee farmers face?
        - Regarding production?
        - Regarding the quality of the coffee?
        - Regarding prices?
        - Other problems/challenges?
- Productivity and quality
    - Farming practices
        - To what extent have the farming practices of farmers changed in the past 3 years? (e.g. protective clothing, first aid, irrigation, washing coffee, agrochemical use, reforestation and shade trees, waste water treatment, post-harvest)? How?
        - What are the main reasons why you adopt good farming practices?
        - To what extent is maintaining good farming practices worth the effort?
    - Production
        - What are the main costs involved in the production and marketing of coffee? (e.g. labour, fertilizer, manure, pesticides, herbicides, tarpaulin, transport, stealing) (ranking)
        - To what extent has your production changed in the past 3 years? Why (not)?
    - Quality
        - To what extent has the quality of the coffee changed in the past three years?
- Finance

- Prices
  - What prices do farmers get for their coffee from the cooperative in 2009-2012?
    - Are you satisfied with these prices? Why (not)?
  - What prices do farmers get for coffee from other traders? (hawking?)
  - What determines the price that farmers get for their coffee? (e.g. quality, level of processing)
  - What influence do farmers have on the price of coffee sold to the cooperative?
    - How does quality affect the price you get for your coffee?
  - Some people are selling coffee outside the cooperative. Why would they do so?
  - To what extent is the cooperative a reliable buyer (good prices throughout the year)?
  - Have you been receiving a premium price for your certified coffee? Why (not)?
  - How does certification affect the price you get for your coffee?
- Payment and delivery
  - Is there a time delay between selling coffee and getting money? How long?
    - Do you get a picking advance? How much is it?
  - Where are farmers paid for their coffee (on the spot, on a specific location)?
  - What are the prices of transporting your coffee to the factory/mills?
- Credit
  - To what extent do farmers try to get credit/loans?
  - From whom do they get loans? To what extent is it difficult for farmers to get loans? Why?
  - Where do they use the money for? (ranking)

- Benefits and drawbacks certification (when applicable)
  - Awareness certification
    - Are you aware of Fairtrade / Utz?
    - Do you know what it means and how it works?
    - Do you know whether your cooperative is certified?
  - What have been the positive impacts of certification for farmers? How?
  - How has certification contributed to these impacts?
    - Improved farming practices
    - Higher prices (premium)?
    - Strengthening of cooperative board?
    - Community benefits through premium?
    - Higher levels of safety due to adoption safety standards?
    - Better cost efficiency through better management practices?
    - Improved access to credit?
    - Other?
  - What are potential drawbacks associated with certification (specify per type of certification)? Please explain.
    - Higher production costs due to inputs?

        - Higher time investment?
        - Reduced revenue derived from other crops & off-farm work due to higher time investment?
        - Increased costs due to necessity to hire labour?
        - Quality requirements act difficult for farmers to meet?
        - Expensive to maintain?
- Strengths & challenges cooperative
    - What do you consider the main strengths of the cooperative (funding, capacity etc.)?
        - Have there been changes over time?
    - What do you consider the main problems or challenges experienced by cooperative (funding, capacity etc.)?
        - Have there been changes over time?
    - How does the cooperative try to address these problems and/or challenges?
- Satisfaction cooperative
    - Satisfaction
        - Are farmers satisfied with the performance of the cooperative? Why (not)?
        - To what extent do the farmers trust the cooperative? Why (not)?
        - To what extent do farmers perceive the cooperative to be transparent? Why (not)?
        - If you could suggest three improvements the cooperative has to make, which improvements would you suggest?
    - Questions or comments?

Annex 4

Interview guide – cooperatives

- Introduction
    - Introduction researcher(s)
    - purpose study
    - design study
    - Benefits for cooperative
        - (objective) information about benefits certification
        - Learning from experiences other cooperatives
        - Enabling Solidaridad to learn and help others
    - sharing results
    - expected time interview
    - questions?
- Organizational profile
    - What year was the organization established?
    - How many members does the cooperative have?
        - Changes over time? Why?
    - How many paid staff does the cooperative have in 2012? (split: male/female)
    - What kind of assets does the cooperative possess? (e.g. truck, car, warehouse, grainer
    - How many wetmills does the cooperative have?
    - Besides coffee, does the cooperative have other source(s) of funding?
- Governance
    - What is the organisational structure of the cooperative?
        - How are Board members chosen?
    - How often does the general assembly meet?
        - What is discussed during the general assembly?
- Challenges farmers
    - What are the biggest problems and challenges that the farmers of the cooperative face?
        - Regarding production?
        - Regarding the quality of the coffee?
        - Regarding prices?
        - Other problems/challenges?
- Support activities
    - What kind of services do you offer to your members? (e.g. technical training, education, transport, marketing of goods, credit)
    - Which of these services do farmers find most important? Why?
- Strengths and challenges cooperative

  - What do you consider the main strengths of the cooperative (funding, capacity etc.)?
    - Have there been changes over time?
  - What do you consider the main problems or challenges experienced by cooperative (funding, capacity etc.)?
    - Have there been changes over time?
  - How does the cooperative try to address these problems and/or challenges?
- Certification (when applicable)
  - What year(s) was the organization certified by Utz/FT/other?
  - What year did the organization start exporting certified coffee?
  - What kind of support has cooperative received from Solidaridad? When? How has this affected the organization?
  - To what extent are farmers aware of certification schemes (Utz, Fairtrade, Rainforest Alliance)?
- Farming practices, quality and production
  - To what extent have the farming practices of farmers changed in the past 3 years? (e.g. protective clothing, first aid, irrigation, washing coffee, agrochemical use, reforestation and shade trees, waste water treatment, post-harvest)? How?
    - What role has certification played in these changes? (when applicable)
  - How does the cooperative keep track of the farming practices of its farmers?
    - What happens to farmers who don't practice good farming practices?
  - Have there been changes in the total annual coffee production in the past few years?
    - What role has certification played in these changes? (when applicable)
    - Have there been changes in the total number of coffee trees owned by members of the cooperative in the past few years? If yes, what explains these changes?
  - Have there been changes in the quality of the coffee produced?
    - What role has certification played in these changes? (when applicable)
- Sales
  - With which marketing agent does the cooperative work?
  - What percentage of the coffee in 2012 has been sold directly and which part to the auction? Why?
    - What are the drawback and benefits of direct export/ auction?
  - Have there been changes in the volume of coffee sold over the past few years? If yes, what explains these changes?
  - What percentage of the coffee does the cooperative sell as UTZ/FT/organic/conventional? Why? (when applicable)
  - To what extent are the cooperatives able to sell all coffee as certified? Why (not)? (when applicable)
    - To what extent are farmers aware under which certification schemes (Utz, Fairtrade, Rainforest Alliance) their coffee is sold?
  - Are there also farmers who do not sell all their coffee through the cooperative? If so, why?

- Prices & payment
    - What prices did the cooperative get for its coffee in the period 2009-2012?
    - What determines the price that farmers get for their coffee? (e.g. quality, level of processing)
        - To what extent and how can the cooperative influence the price it gets for the coffee?
    - How does certification affect the price of coffee? (when applicable)
        - What are the differences between the different certification schemes?
    - To what extent is the cooperative satisfied with the prices it got for coffee during the past three years? Why (not)?
    - Where are farmers paid for their coffee (e.g. on the spot, on a specific location)?
    - How are farmers paid for their coffee?
        - What was the average time farmers had to wait between weighing of the coffee and payment, what was the longest (in 2012)?
    - How is the premium allocated to farmers? (when applicable)
- Benefits and drawbacks certification (when applicable)
    - To what extent has certification positively affected the lives of farmers? How?
    - What are the benefits associated with certification (specify per type of certification)? Please explain.
        - Improved farming practices → higher quality & production?
        - Higher prices (premium)?
        - Strengthening of cooperative board?
        - Make farmers/cooperative attractive for other certification schemes?
        - Community benefits through premium?
        - Higher levels of safety due to adoption safety standards?
        - Better cost efficiency through better management practices?
        - Improved access to credit?
        - Other?
    - What are potential drawbacks associated with certification (specify per type of certification)? Please explain.
        - Higher production costs due to inputs?
        - Higher time investment?
        - Reduced revenue derived from other crops & off-farm work due to higher time investment?
        - Farmers cannot sell all produce as certified?
        - Increased costs due to necessity to hire labour?
        - Delayed speed of payment?
        - Quality requirements act difficult for farmers to meet?
        - Expensive to maintain?
- Do you have any questions or comments?

Annex 5

General Information on Kiambu and Nyeri districts

Table 3.11. District information

General Information	Kiambu district	Nyeri district	*Kenya
Population	1,623,282	693,558	821,491
Surface area (km²)	2,543	3,337	12,368
Density (people per km²)	638	208	66
Poverty rate, based on KIHBS (%)	27.2	32.7	47.2
Share of urban population (%)	60.8	24.5	29.9
Health and Education Outcomes			
Fully-immunized pop <1yr (%, 2010/11)	64.8	46.3	64.0
Malaria (as % of all 1st outpatient visits)	19.0	3.2	27.7
TB in every 10,000 people (2009/10)	46	32	39.0
HIV+ ante-natal care clients (%, 2010)	4.8	4.4	5.9
Population with primary education (%)	58.5	61.4	66.6
Population with secondary education (%)	17.3	19.8	12.7
Access to Infrastructure			
Improved water (% households 2009)	78.1	69.3	66.5
Improved sanitation (% households 2009)	99.6	99.6	87.8
Electricity (% households 2009)	53.0	26.3	22.7
Paved roads (as % of total roads)	16.0	8.9	9.4
Good/fair roads (as % of total roads)	44.8	40.7	43.5
Service coverage			
Delivered in a health centre	68.9	84.0	37.5
Qualified medical assistant during birth	68.4	84.0	37.6
Had all vaccinations	90.0	85.1	75.0
Adequate height for age	69.3	44.8	59.8
Can read and write	87.4	92.9	66.4
Attending School, 15-18 years	70.1	72.8	70.9

*All entries in the 'Kenya' column show County averages

County poverty rates are derived by dividing the total number of poor people in each county in 2005/06 by the total population in each county.

Annex 6

Kenyan Coffee Calendar

January
- Processing (picking, pulping and drying)
- Marketing of coffee
- Pruning and change of cycle
- Insect pest survey and control
- Land preparation for new establishment
- Soil and leaf sampling
- Farm records

February
- Marketing of coffee
- Disease and insect pests control
- Pruning and change of cycle
- Land preparation for new establishment
- Soil and leaf sampling
- Farm records

March
- Land preparation
- Marketing of coffee
- Disease and insect pests control
- Farm records
- Fertilizer application

April
- Planting new establishment
- Weed control
- Disease and insect pests control
- Fertilizers application
- Handling and desuckering
- Processing (picking, pulping and sun drying)

May
- Disease and insect pests' control
- Processing (picking, pulping and drying)
- Handling and desuckering
- Fertilizers application
- Farm records
- Weed control

June
- Disease and insect pests' control
- Handling and desuckering
- Processing (picking, pulping and sun drying)
- Farm records

July
- Handling and desuckering
- Processing (picking, pulping and sun drying)
- Insect pests control
- Farm records
- Pruning and change of cycle
- Weed control
- Marketing of coffee

August
- Processing (drying and storage)
- Pruning and change of cycle
- Land preparation for new establishment
- Weed control (perennial weeds)
- Soil and leaf sampling
- Farm records
- Marketing

September
- Insect pest survey and control
- Soil and leaf sampling
- Pruning and change of cycle
- Farm records
- Processing and marketing of coffee

October
- Diseases and insect pest control
- Soil and leaf sampling
- Farm records
- Processing (picking, pulping and drying)
- Weed control

November
- Processing (picking, pulping and drying)
- Disease and insect pests control
- Fertilizer application
- Weed control
- Farm records
- Handling and desuckering

December
- Processing (picking, pulping and drying)
- Weed control
- Disease and insect pests control
- Handling and desuckering
- Fertilizer application
- Farm records

Annex 7

Coffee Sales at the Nairobi Coffee Exchange

Table 3.12. Coffee sales at the Nairobi Coffee Exchange - 2008 / 2009

Period: 1st Oct 08 - 30 September 09
Source : Nairobi Coffee Exchange
Dated : Friday, 2 October, 2009
Summary: 2008 / 2009

Grade	Bags Bought	Weight Bought	Lowest Price	Highest Price	Avg Price	Value (US $)	% age
Main Coffee Grades							
AA	106,252	6,375,120	43	378	192.33	24,521,932.74	12.29%
AB	347,574	20,854,424	23	279	176.39	73,570,857.42	40.20%
C	127,998	7,679,878	22	207	155.62	23,902,180.50	14.80%
E	1,287	77,235	126	282	209.93	324,280.96	0.15%
PB	41,819	2,509,121	48	248	172.45	8,653,946.00	4.84%
T	33,427	2,005,615	17	181	94.58	3,793,973.60	3.87%
TT	35,693	2,141,557	23	227	157.08	6,727,916.22	4.13%
Sub-Total:	**694,049**	**41,642,950**	**17**	**378**	**169.89**	**141,495,087.44**	**80.27%**
Miscellaneous Coffee							
F1	74	4,448	65	104	72.63	6,461.42	0.01%
F2	24	1,462	58	58	58.00	1,695.92	0.00%
HE	2,991	179,482	35	195	102.37	367,458.60	0.35%
SB	2,928	175,694	4	91	47.33	166,315.22	0.34%
SC	332	19,927	35	175	113.01	45,040.20	0.04%
UG	3,025	181,510	23	190	122.35	444,163.80	0.35%
UG1	37,104	2,226,212	40	206	138.14	6,150,438.16	4.29%
UG2	22,001	1,320,040	32	191	87.53	2,310,920.16	2.54%
UG3	1,268	76,096	27	95	53.82	81,914.22	0.15%
Sub-Total:	**69,748**	**4,184,871**	**4**	**206**	**114.39**	**9,574,407.70**	**8.07%**
Unwashed Coffee							
MH	77,081	4,624,884	40	135	82.62	7,642,255.10	8.91%
ML	23,805	1,428,321	30	99	61.18	1,747,625.72	2.75%
Sub-Total:	**100,887**	**6,053,205**	**30**	**135**	**77.56**	**9,389,880.82**	**11.67%**
Grand	**864,684**	**51,881,026**			**154.64**	**160,459,375.96**	**100.00%**

Table 3. 13. Coffee sales at the Nairobi Coffee Exchange - 2009 / 2010

Period: 1st Oct 09 - 30th Sept 2010							
Source : Nairobi Coffee Exchange							
Dated : Monday, 4 October, 2010							
Summary: 2009 / 2010							
Grade	Bags Bought	Weight Bought	Lowest Price	Highest Price	Avg Price	Value (US $)	% age
Main Coffee Grades							
AA	61,650	3,698,974	68	702	343.89	25,440,921.24	10.22%
AB	218,738	13,124,264	50	485	301.08	79,029,816.10	36.26%
C	107,781	6,466,869	26	351	218.07	28,205,015.68	17.87%
E	586	35,133	95	311	272.49	191,467.78	0.10%
PB	25,101	1,506,067	50	510	292.59	8,813,087.00	4.16%
T	34,696	2,081,763	15	249	108.22	4,505,740.94	5.75%
TT	24,668	1,480,088	26	389	241.45	7,147,298.98	4.09%
Sub-Total:	**473,219**	**28,393,158**	**15**	**702**	**270.02**	**153,333,347.72**	**78.44%**
Miscellaneous Coffee							
HE	4,334	260,052	25	260	127.37	662,441.06	0.72%
SB	4,563	273,774	10	111	44.4	243,132.30	0.76%
SC	23	1,364	66	106	83.95	2,290.08	0.00%
UG	3,888	233,307	28	312	135.94	634,316.64	0.64%
UG1	37,333	2,239,967	32	302	163.84	7,340,005.56	6.19%
UG2	22,087	1,325,216	20	243	96.36	2,553,850.54	3.66%
UG3	584	35,053	33	96	57.08	40,016.24	0.10%
UW1	26	1,552	106	135	126.67	3,931.72	0.00%
UW2	13	780	82	86	83.38	1,300.80	0.00%
Sub-Total:	**72,851**	**4,371,065**	**10**	**312**	**131.33**	**11,481,284.94**	**12.08%**
Unwashed Coffee							
MH	41,568	2,494,067	22	213	105.54	5,264,649.50	6.89%
ML	15,640	938,389	16	205	67.61	1,268,905.84	2.59%
Sub-Total:	**57,208**	**3,432,456**	**16**	**213**	**95.17**	**6,533,555.34**	**9.48%**
Grand Total:	**603,278**	**36,196,679**			**236.69**	**171,348,188.00**	**100.00%**

Table 3.2014. Coffee sales at the Nairobi Coffee Exchange - 2010 / 2011

Period: 1st Oct 2010 - 30th Sept 2011							
Source : Nairobi Coffee Exchange							
Dated : Friday, 4th Nov, 2011							
Summary: 2010 / 2011							
Grade	**Bags Bought**	**Weight Bought**	**Lowest Price**	**Highest Price**	**Avg Price**	**Value (US $)**	**% age**
Main Coffee Grades							
AA	82,420	4,945,170	54	1011	432.59	42,784,265.92	14.68%
AB	207,587	12,455,247	64	759	380.52	94,790,153.80	36.98%
C	105,472	6,328,311	50	463	299.21	37,869,325.74	18.79%
E	1,168	70,085	255	393	331.27	464,335.26	0.21%
PB	26,047	1,562,838	108	761	379.53	11,862,820.74	4.64%
T	20,597	1,235,794	16	322	194.15	4,798,548.74	3.67%
TT	17,514	1,050,830	60	563	320.14	6,728,191.40	3.12%
Sub-Total:	**460,805**	**27,648,275**	**16**	**1011**	**360.42**	**199,297,641.60**	**82.09%**
Miscellaneous Coffee							
F1	48	2,892	232	232	232	13,418.88	0.01%
HE	2,730	163,772	73	335	237.17	776,835.90	0.49%
SB	2,510	150,628	11	300	66.17	199,349.60	0.45%
UG	4,772	286,299	37	406	260.44	1,491,301.04	0.85%
UG1	22,694	1,361,657	41	409	252.07	6,864,750.68	4.04%
UG2	12,712	762,714	31	330	189.97	2,897,852.68	2.26%
UG3	734	44,039	45	283	134.89	118,806.82	0.13%
Sub-Total:	**46,200**	**2,772,001**	**11**	**409**	**222.99**	**12,362,315.60**	**8.23%**
Unwashed Coffee							
MH	40,586	2,435,136	38	277	173.32	8,441,058.74	7.23%
ML	13,719	823,122	24	223	96.96	1,596,164.56	2.44%
RH	30	1,774	90	90	90	3,193.20	0.01%
Sub-Total:	**54,334**	**3,260,032**	**24**	**277**	**153.99**	**10,040,416.50**	**9.68%**
Grand Total:	**561,338**	**33,680,308**			**329.12**	**221,700,373.70**	**100.00%**

Table 3.15. Coffee sales at the Nairobi Coffee Exchange - 2011 / 2012

Period: 1st Oct 2011 - 30th Sept 2012
Source : Nairobi Coffee Exchange
Dated : Friday, 16th Nov 2012
Summary: 2011/ 2012

Grade	Bags Bought	Weight Bought	Lowest Price	Highest Price	Avg Price	Value (US $)	% age
Main Coffee Grades							
AA	75,653	4,539,183	108	630	329	29,867,614.22	10.4
AB	273,713	16,422,794	61	521	253.55	83,281,559.90	37.8
C	123,727	7,423,595	54	403	198.85	29,524,294.74	17.1
E	1,197	71,844	202	431	342.28	491,819.92	0.1
PB	34,899	2,093,944	76	546	250.88	10,506,536.66	4.8
T	24,581	1,474,839	48	267	140.75	4,151,640.18	3.4
TT	21,300	1,278,017	40	367	205.66	5,256,652.27	2.9
Sub-Total:	**555,070**	**33,304,216**	**40**	**630**	**244.83**	**163,080,117.89**	**76.8**
Miscellaneous Coffee							
HE	4,653	279,177	52	269	155.73	869,519.26	0.6
SB	4,052	243,132	38	141	74.08	360,234.48	0.5
UG	4,036	242,173	74	351	174.74	846,357.26	0.5
UG1	46,302	2,778,100	50	343	162.16	9,009,816.73	6.4
UG2	15,422	925,337	50	265	127.22	2,354,365.86	2.1
UG3	2,488	149,276	31	163	96.45	287,951.02	0.3
Sub-Total:	**76,953**	**4,617,195**	**31**	**351**	**148.66**	**13,728,244.61**	**10.6**
Unwashed Coffee							
MH	71,725	4,303,474	52	260	137.45	11,830,486.20	9.9
ML	19,021	1,141,257	40	178	95.16	2,171,929.00	2.6
Sub-Total:	**90,746**	**5,444,731**	**40**	**260**	**128.59**	**14,002,415.20**	**12.5**
Grand Total:	**722,769**	**43,366,142**			**220.00**	**190,810,777.70**	**100.0**

Chapter 4

THE MORE THE BETTER?

THE EFFECTS OF MULTIPLE CERTIFICATION ON SMALLHOLDER COFFEE FARMERS LIVELIHOOD: EVIDENCE FROM SOUTHERN ETHIOPIA

Amsaya Anteneh, MSc

Dr. Roldan Muradian

Prof. dr. Ruerd Ruben

Centre for International Development Issues

Radboud University Nijmegen, The Netherlands

Abstract

Using a random sample of 700 member smallholder coffee farmers, data was collected in 2011 from 10 different primary coffee cooperatives in the Sidama Zone Southern Ethiopia, this article assesses the impact of double and triple certifications on the performance of smallholder coffee grower farmers. Despite a very low level of awareness among cooperative member farmers of certification schemes, our empirical results provide clear evidence of an additive impact of double and triple certification on coffee revenue, average price, and productivity in the study area. However, the number of certifications did not have a positive effect on other livelihood-related variables such as savings and access to credit. More and further research and training is needed to further improve the practical performance, efficiency and effectiveness of future certification interventions and activities in coffee producing areas of the country so as to improve the livelihoods of rural smallholder coffee farmers.

Chapter 4
The impact of multiple certification on smallholder coffee farmers' livelihoods: evidence from southern Ethiopia

4.1 Introduction

Next to petroleum, coffee is one of the most valuable agricultural commodities traded in international markets (Arslan and Reicher, 2010; Rodriquez, 2012). Today coffee remains one of the most important sources of export income for the East African nations of Ethiopia, Uganda, Kenya, and Tanzania. Ethiopia is known to be the birthplace and the primary centre of diversity of coffee Arabica (Daviron and Ponte, 2005; Labouisse et al., 2008). The four systems of production are forest coffee in the traditional way, semi-forest coffee, garden coffee, and plantation coffee owned by the state (Labouisse et al, 2008; Stellmacher and Grote, 2011). Considering the country's suitable altitude, rainfall, temperature, and fertile soil, the potential for coffee production in Ethiopia is very high.

The country produces around 5% of world coffee production and more than 30% of the total coffee production (Arslan and Reicher, 2010) in Sub-Saharan Africa (SSA) and is the 5th largest global producer of coffee Arabica (ICO, 2011) next to Brazil, Vietnam, Indonesia, and Colombia. Similarly, in Africa Ethiopia is the largest coffee producer, followed by Ivory Coast and Uganda, yet it supplies only around 2.8 percent of the global coffee market (ICO, 2012). Coffee, besides its cultural importance, has an important place in the Ethiopian economy since it provides 35% of the total export earnings of the country (CSA, 2008). In contrast to other coffee producing countries, Ethiopian coffee production is characterized by two distinct features, namely a) it is dominated by smallholder subsistence farmers, while plantation production plays a minimum role only, and b) Ethiopia is the origin of the worldwide coffee Arabica gene-pool (Stellmacher and Grote, 2011).

In Ethiopia, 95 percent of coffee is produced by over one million smallholder coffee farmers on farms smaller than half a hectare of land (Gemech and Struthers, 2007), and only 5 percent of coffee is produced by large scale plantations. About quarter of the Ethiopian population directly or indirectly belongs to the coffee value chain (Bastin and Matteucci, 2007). The livelihoods of these smallholder coffee farmers in Ethiopia are based on insecure low input-low output agricultural production systems which make them particularly vulnerable to poverty, and their wellbeing is mainly dependent on income from coffee. On the other hand, as explained above, coffee is a worldwide traded cash crop, with new markets emerging; many coffee-dependent developing countries such as Ethiopia are struggling with production and marketing of their coffee. Although coffee is an important income source for developing countries, including Ethiopia, coffee prices are highly volatile and crises are common (Cashin et al., 2002). The international nature of coffee marketing and sales directly exposes smallholder coffee producer farmers in developing countries to international price fluctuations.

The coffee price crisis which happened in the period between 1990-2004 had enormous economic and social impacts on smallholder coffee grower farmers around the globe (Mendez, 2010). In the world market, since the coffee price is largely determined by

international exchange markets in New York and London (Kodama, 2009), coffee producing countries are price-takers and are therefore prone to external shocks in coffee prices over which they have little influence or control. Due to this, coffee producing countries will continue to be highly vulnerable to the natural cycles that are endemic in the production of primary agricultural commodities such as coffee. Since coffee price is largely determined by international exchange markets, smallholder coffee farmers have been among the hardest hit by coffee price volatility. Due to this, although coffee is big business, local Ethiopian smallholder coffee farmers receive only a fraction of the retail price and continue to engage in subsistence farming.

In an effort to identify ways out of the periodic crisis and to confront the coffee price crisis, high expectations were placed on the role of various 'sustainable coffee' certification initiatives (Wollni, 2006; Mendez, 2010) as key alternative options for smallholder coffee farmers in coffee producing regions of the world. Following this, due to the interplay between the increasing poverty of smallholder coffee farmers in major coffee producer countries and growing demands for healthier and more socially and environmentally-friendly coffee produced in larger consumer countries in the recent past, coffee certification of cooperatives has gradually gained wider recognition and significance worldwide (Petit, 2007; Stellmacher and Grote, 2011; Jena, 2012). The main idea of certification labelling is to provide smallholder coffee grower farmers with new opportunities to improve their wellbeing and it is also argued that it is a recommended strategy to provide smallholder coffee farmers access to markets that allow them to generate higher and more stable cash income from coffee sales.

Certification as an instrument to add value to a product addresses a growing worldwide demand for healthier and more socially- and environmentally-friendly products. The principal idea behind certification is that consumers are motivated to pay a price premium for products that meet certain precisely defined and assured standards (Grote et al., 2007; Wissel et al., 2010). In today's consumer markets, being able to label a product as 'Organic' or 'Fairtrade' and to protect the label from counterfeiting is considered a valuable marketing advantage. The price premiums are intended to be used to promote socio-economic change and/or environmental sustainability in the areas of production. In this context, voluntary product certification standards such as Fairtrade are promoted as critical devices to make smallholder farmers in developing countries less vulnerable to volatile 'free' world market prices and to enhance their market integration in order to increase their socio-economic situation.

Some of the most common sustainable certification types found in Ethiopia are Organic, Fairtrade, Forest Stewardship Council (FSC), Utz Certified, Rainforest Alliance, Bird Friendly, as well as combinations of these certifications, such as the double certified, Organic and Fairtrade (Volkmann, 2008). Each certification works on different standards and principles, defined with a set of criteria and indicators. Various certifications are expected to offer a combination of benefits to smallholder coffee farmers, including a higher price and more stable income, increased market access, technical assistance and they serve as a means to support the livelihoods of coffee producing households (Fort et al., 2009). In turn, smallholder coffee farmers are required to meet certain required standards. Furthermore their respective organizations (in this case primary coffee cooperatives) are also subject themselves to periodic inspections by certifying organizations since certification is undertaken through cooperatives.

As the number of certification initiatives in coffee increased, and consumers in the north became more and more aware of different certification types regarding issues of quality, taste, health, and environment, it became more important for them and for national governments, cooperative organizations, and international donor agencies supporting coffee co-ops to investigate and accurately document the impact of these alternative forms of certification on smallholder coffee farmers' livelihoods.

Despite expansion of coffee cooperative certification and the importance of certification in the improvement of the livelihoods of smallholder coffee farmers in the coffee producing areas of Ethiopia, there is still a lack of empirical local studies and evidence that can quantify and substantiate the welfare impact of certification in general and double and triple certification in particular on smallholder coffee farmers' livelihoods. In general, our understanding of the empirical impact of coffee cooperatives on rural livelihoods in Ethiopia is limited.

Although various empirical studies have been carried out in previous years to assess the impact of product certification on smallholder coffee farmers' livelihoods, these studies lack reliable baseline studies to use as a benchmark. Most of the previous studies have also used biased methodology. Furthermore, many of the certification studies were surprisingly conducted focusing on the effect of a single certification (Fairtrade). Generally, given the importance of evaluating claims that participation in the certification chain brings advantages to producers, the literature on certification impact analyses is surprisingly scarce in our study area.

Earlier empirical studies (Milford, 2004; Ronchi, 2004; Philpott, 2007; Dorr, 2009; Fort and Ruben, 2009; Kodama, 2007) showed that certification improved returns to smallholder coffee grower farmers. Other studies (Valkila, 2009; Valkila and Nygreen 2009; Jena, 2012) indicated that the increase in income due to certification is modest. This is surprising as, to my knowledge, no work systematically investigated the impact of double and triple certification on participating households' livelihood in Ethiopia. We seek to understand and measure the impact with the aim of making continuous improvements in certifications systems and processes. This study, therefore, is designed to fill this information/knowledge gap by conducting an empirical investigation at household level using household survey data from Sidama Zone, Southern Ethiopia. To compare smallholder coffee farmers that are categorized under Fairtrade/Organic (double) and Fairtrade/Organic/Utz (triple) certified with farmers certified only by FT (single) we apply quantitative research methods. Certification is expected to significantly contribute to better livelihoods of smallholder coffee farmers by enhancing their income through premium prices and by stabilizing it through minimum prices. We, therefore, hypothesize that double and triple certification has an additional effect on the livelihoods of smallholder coffee farmers over and above the impact of single certification.

4.2 Objectives of the study

The principal objective of this study was to empirically estimate the impact of double (Fairtrade/Organic) and triple (Fairtrade/Organic/UTZ) certifications on various well-being indicators of smallholder coffee farmers at household level in Sidama Zone, Southern Ethiopia, using the Propensity Score Matching (PSM) method. By analyzing double and triple certification impacts, this study aims to contribute to a better understanding of the potential role different of certification labels and provide valuable insights. The information from the study will be useful to generate empirical evidence of whether double and triple certification has rural livelihood development impacts on smallholder coffee producer farmers in the study area.

The remainder of this article is structured as follows: Section 2 starts with concise descriptions of the certification experience in Ethiopia. In section 3, we discuss the sources of data and methods used. In Section 4 we use descriptive statistics to compare the characteristics of smallholder coffee farmers by dividing them into treatment and control groups and highlighting major differences between coffee farmers in different certification categories. In Section 5 we outline the propensity score matching method for impact estimation. Section 6 analyzes the main differences between treatment and control groups for the selected outcome indicators, and finally in section 7 we discuss our major study findings and suggest policy implications.

4.3 Certification experience in Ethiopia

As compared to other regions such as Latin America, the use of environmental, socio-economic, and/or health-related certification standards in agriculture is a relatively new and recent phenomenon in Ethiopia (Jena, 2012). However, in recent years, attention has been given to the certification of agricultural products in general and non-timber forest products in particular, such as coffee in Ethiopia, by international certification agencies, standard bodies, governmental and non-governmental development organizations, and private companies supplying specialty markets (Stellmacher and Grote, 2011 and Jena, 2012). The certification of forest coffee in Ethiopia is started in 2002 with the aim of conserving the coffee forests and providing the smallholder farmers with a better livelihood. The coffee certification is mainly undertaken within the coffee cooperative structure (Stellmacher and Grote, 2011), and smallholder coffee farmers participate in certification through cooperatives. In Ethiopia, the certification focuses mainly on coffee because coffee is both: a) the main export crop of the country's economy and the main income source for millions of smallholder coffee farmers that live in poverty and b) it is a resource with high potential to be marketed as a specialty gourmet product on the world's major coffee markets.

Normally, the Ethiopian coffee marketing chain follows two paths: one through the Ethiopia Commodity Exchange (ECX), which was established in April 2008 with the objectives of implementing a national agricultural marketing information system that connects all regions and provides relevant and timely market information to various market actors and establishing and strengthening vertical and horizontal linkages among producers, cooperatives, wholesalers, processors and exporters through an organized trading platform; and the other a direct export path through the cooperative unions (Mheen-Sluijer, 2010). Certified coffee is expected to be sold only through the coffee marketing cooperative unions and is directly exported to different countries in the world, although coop unions are not able to buy all of the certified coffee from individual coffee producer farmers (Kodama, 2009). Since

2001 co-op unions have been legally allowed to bypass the national coffee auction system and since 2009 the Ethiopian Commodity Exchange (ECX), and to sell directly to international exporters (McCarthy, 2001; Petit, 2007; Stellmacher, 2007; FDRE, 2008; Jena, 2012).

To improve the overall effectiveness of cooperative performance in the country, the current government of Ethiopia (FPRDF) promoted restructuring of the whole cooperative sector, including the coffee sub-sector, and has established coffee cooperative unions (second-layer co-op organizations) as umbrella organizations since the 1990s (Getnet and Anullo, 2012; Jena, 2012). The main aim of establishing coffee co-operative unions is to provide protection, resources and expertise to the primary coffee co-operatives, so that they can overcome coffee export problems and receive increased revenue from coffee sales. Currently 10 coffee cooperative unions function in the country, and the Sidama Farmers' Coffee Cooperative Union, the second largest union in the country, our case study, is one of them.

4.4 Data and Methodology

To evaluate double and triple certification impacts on the livelihoods of smallholder coffee growing households' that were members of cooperatives, household survey data was collected from a random sample of coffee farmers in southern Ethiopia through face-to-face interviews. The survey was conducted from June 2010 to January 2011 in 5 districts (Dale, Wonsho, Shebdino, AletaWondo, and AletaChuko) of the Sidama Zone, one of the major coffee growing zones of the country in the southern region of the country. The survey was carried out by 4 field assistants and the first author. The study area is located 270 km south from the capital, Addis Ababa.

To select our sample, we followed a multi-stage random sampling method. Out of the 45 primary coffee cooperatives composing Sidama Farmers' Cooperative Union 31, we selected ten co-ops, based on performance indicators. The members' sample was drawn randomly from the registration lists of the primary cooperatives selected. The total surveyed sample consists of 700 co-op member smallholder coffee farmer households. The sample was designed to include three distinct groups of respondents: 1) smallholder coffee farmers certified only by Fairtrade (single certified); 2) coffee farmers certified Fairtrade/Organic (double certified); and 3) coffee farmers certified Fairtrade/Organic/Utz (triple certified). Household-level data was collected through an identical questionnaire for single, double, and triple certifications.

The survey covered a large number of issues such as household characteristics, production and marketing of coffee, social capital, farmers' perception of co-ops' performance, types of marketing channels, savings and credit, participation in coffee marketing cooperatives and the status of various certification schemes. In order to complement quantitative data with qualitative information, interviews were also held with various relevant cooperative stakeholders at district, zonal, regional, and federal levels, as well as with the surveyed coffee

[31] The union is a second level cooperative organization established by more than one primary cooperative organization with similar objectives.

farmers in the field. Additional expert interviews were also conducted with staff members of the Sidama Union and co-op experts in Addis Ababa, the capital.

4.5 Measuring the impact of double and triple certification on coffee farmers' livelihood

Our objective here is to empirically estimate the impacts of double and triple certification on smallholder coffee farmers' livelihoods in the study area, using identified outcome variables. Usually the main empirical challenge to conducting an impact evaluation study of this kind resides in the ability to answer the question: 'What would have happened to households participating in double and triple certifications if they had not participated?' In this type of hypothetical situation, empirically, it is not possible to observe the counterfactual. Just taking the mean outcome of non-participants as a control group to conduct impact analysis is also likely to generate selection bias (Bourguignon, 1999; White and Bamberger, 2008; Fort, 2009). The selection bias makes the observed control group an inappropriate counterfactual.

In any non-randomized sample usually there are two main potential sources of selection bias, i.e., observable and unobservable characteristics biases. Participating households might differ from non-participants in observable aspects such as wealth and educational level, which might influence the household's decision to join/participate (Fischer and Qaim, 2011). Furthermore, participating households might differ from non-participating households in un-observable aspects such as motivation, risk preference, and entrepreneurial spirit (Heckman et al., 1997; and Bernard, 2008). This might also influence a household's decision to join a programme/co-op.

To overcome the above selection problem, Propensity Score Matching (PSM) (Rubin, 1974; Rubin and Thomas, 1996; Heckman, Ichimura, and Todd, 1997; Smith, 1997;Rosenbaum and Rubin, 1983; Jelan and Ravallion, 2003a; Fort, 2009) is used. This is because PSM finds a counterfactual that controls all other factors except the treatment.

A two-stage propensity score matching method was used to overcome such biases and it is possible to measure double and triple certification impact on coffee farmers' livelihoods by comparing the mean difference of double and triple certified coffee households with single certified households having similar propensity scores. To do so, we first need to estimate each treatment group household's "propensity score" or likelihood of joining both certification using probit model where the dependent variable is certification status as the selection variable conditional on basic characteristics of both, the treatment and the control group. The propensity score of each coffee farmer measures his or her tendency to participate in double and triple certification. The magnitude of a propensity score lies between 0 and 1; the larger the score, the more likely it is that the coffee farmer would join the certification programme.

After estimating the propensity score, the second step is to form balanced groups based on their estimated propensity scores. Coffee farmers in each group have similar propensity scores. Both groups can then be compared with respect to the performance based on several matching methods. Various methods of matching have been proposed in the estimation process of the Average Treatment Effects on the Treated (ATT) in the literature, and four of the most widely used are: Nearest-Neighbor Matching, Radius Matching, Kernel Matching,

and Stratification Matching. To discuss our findings in this particular study, we used the Kernel matching method proposed by Heckman (Heckman, et al., 1997) because it is a widely-used method for estimating results in this type of analysis. In kernel matching, each treated unit is matched with a weighted average of all control units with weights that are inversely proportional to the distance between the propensity scores of treated and controls (Getnet and Anullo, 2012). Based on the matched sample, we compute measures of double and triple certification impact on the participating coffee farmers. In this study, impacts of both certifications on participating coffee farmers is measured in terms of household coffee income, average price, productivity, access to credit, savings, and accessing technical assistance. The ATT measures the average difference between the (treated) units and their corresponding non-treated (control) match. Once each treated unit is matched with a control unit, the difference between the outcome of the treated unit and the outcome of the control unit is obtained. Finally, the mean difference in the performance between the matched treated observations follows a t-test for statistical significance. If the difference is positive and statistically significant then the treatment is yielding its expected result.

4.6 Results section

4.6.1 Descriptive statistics

In this section we present the descriptive part of our sample. The aim is to give an overall picture of the surveyed smallholder coffee farmers in different certification groups. To do this we selected 10 primary coffee marketing cooperatives out of 45 coffee co-ops under the Sidama Union that single certified (Fura, DebonaWiecho, Megara and Ganie Cooperatives), double certified (Fero, Telamo, HalonaGelma, and Gerbicho Lela Cooperatives) and triple certified (Gedibonasheicha and Bokasso Cooperatives). We divided smallholder co-op member coffee farmers into three groups: a) only Fairtrade certified (single certified), b) Fairtrade/Organic certified (double certified), and c) Fairtrade/Organic/Utz certified (triple certified). In this study FT certified (single) coffee farmer households are used as a control group. Table 4.1 below describes the number of cases and sample sizes per certification type.

Table 4.1: Number of cases and sample sizes per certification type

Certification type	Number of cases	Frequency	Percent
Fairtrade/Organic	4 cooperatives	280	40
Fairtrade/Organic/Utz	2 cooperatives	140	20
Fairtrade only	4 cooperatives	280	40
Total	**10 cooperatives**	**700**	**100**

Source: Own data

Table 4.1 above indicates that the total sample consisted of 700 co-op member smallholder coffee farm households, including 280 FT certified, 140 FT/Organic/Utz certified, and the remaining 280 households certified FT/Organic. Table 4.2 indicates average values of indicators from our survey in the study area for FT certified groups of smallholder coffee farmers only.

Table 4.2: Average values of indicators for FT certified groups

Indicators	Unit of measurement	Values
Average price	Birr	3.40
Coffee produced	Kg	1047.50
Revenue from coffee	Birr	3561.50

Source: Own data

Table 4.3 below describes the characteristics of coffee farmers from the two (double and triple) certification groups. The livelihood of local coffee farmers in the study area is based on household-based subsistence agriculture, mainly focusing on the production of coffee. According to our survey result, farmers cultivate extremely small plots of agricultural land. On average coffee farm households own 0.5 hectares of land (which reflects the dramatic land scarcity in the study area) – mainly for the cultivation of coffee. As explained above, coffee is the main cash crop for many households living in and around the study area. The descriptive result shows that the educational level of the cooperative members is extremely low. Most interviewed cooperative members stated that they obtain most of their cash income from coffee sales.

The ethnic and religious composition of the study area follows the country-wide heterogeneity in Ethiopia. The interviewed cooperative members are dispersed among several ethnicities. 97.1 percent belonged to the Sidama people, 1.3 percent to the Amhara, 0.7 percent to Guragie, 0.6 percent to Oromo, while 0.3 percent identified themselves as belonging to other ethnic groups. 85 percent of the interviewed cooperative members are Protestant, 3.5 percent are Catholic, 2.7 percent are Muslim, 2.5 percent are Ethiopian Orthodox Christian, and the remaining 6.3 percent are categorized as other.

The comparison of coffee farm households between groups (see table 4.3) reveals some differences that need to be taken into account for the impact analysis. Control group coffee farmers (with single certification) are relatively younger and less educated when compared with FT/Organic/Utz (triple certified) farmers. In terms of wealth status, there is also a statistically significant difference between farmers categorized under single certification and triple certification, showing that farmers categorized under triple certification are wealthier than farmers certified by FT only.

A statistically significant difference is also observed between single certified and triple certified coffee farmers in terms of land allocation for coffee production. The mean area of

land for coffee production in the triple certified group is (0.49 hectares) still larger than the average one for single certified farmers. However, we did not find statistically significant differences between the two groups in terms of family size, access to credit, access to technical assistance, and savings. This might be due to the fact that coffee co-ops did not provide this service to their members.

Table 4.3: Description of variables and summary statistics

Variables	Fairtrade + Organic (double)			Fairtrade + Organic + Utz (triple)		
	Certified (Double)	Only FT certified	P-value	Certified (Triple)	Only FT certified	P-value
Age of the household head	49.37	50.79	0.259	46.56	50.79	0.007
Educational level of the household head	1.92	1.85	0.538	2.31	1.85	0.002
Family size	7.71	7.42	0.181	7.64	7.42	0.441
Years of coffee farming	29.05	30.25	0.263	27.28	30.25	0.024
Proportion of land allocated to coffee	0.45	0.44	0.398	0.49	0.44	0.024
Amount of coffee produced	868.54	992.34	0.234	1427.98	992.34	0.002
Access to credit	0.02	0.04	0.219	0.03	0.04	0.578
Saving	0.12	0.16	0.182	0.16	0.16	0.926
Access to technical assistance	0.39	0.36	0.542	0.41	0.36	0.287
Wealth status	1.65	1.67	0.792	1.94	1.67	0.000

Note: *Significant at 1% level, **Significant at 5% level, ***Significant at 10% level.

Source: Own data calculations.

4.6.1.1 Awareness levels of certification

Table 4.4 below reports the percentage of respondents that were aware of being certified. All certified co-op member respondents were asked whether they knew about their cooperative's certification. We found that there was still a low level of awareness of certification schemes and how certification premiums are allocated, and much confusion among members of certified coffee cooperatives about what certification is. There were serious questions over the widespread lack of a clear understanding of Fairtrade among cooperative members.

About 98.6 percent of the farmers interviewed did not have any knowledge of the certification of their cooperative. It seems that certification is not actively promoted nor understood by those who are certified. When we compare each certification's level of awareness separately, farmers (15%) understood FT/ORG/UTZ certification much better than Fairtrade.

Table 4.4 Percentage of respondents that were aware of being certified

Label	Co-ops with single certification (FT)	Coops with double certification (FR/ORG)	Coops with triple certification (FT/ORG/UTZ)
FT	1.4	4.2	6
ORG	-	2.5	18
UTZ	-	-	15

According to our field observation, certification in general was better understood by the executive committee members of primary coffee cooperatives, and fully understood by the staff and board members of the second-level coffee cooperative (Sidama Union) in the study area. These findings show the existence of general deficiencies in the information transfer and promotional capacity on certifications. Similarly, we also asked the same respondents about the existence of certification premiums. Even though the FT premium is supposed to be one of the most important benefits for smallholder coffee farmers from the FT certification, farmers receive limited information about FT premium use. Out of all respondents 86.8 percent coffee farmers did not know about the existence of the certification premium. In the field we observed that the certified cooperatives in the study area invested most of the premium in elementary school construction, the provision of electricity for rural community, and the construction of a coffee warehouse. From our study and field observation we found clear concerns related to accountability, lack of transparency, misunderstanding and miscommunication between coffee cooperative member households, primary coffee cooperatives and the union.

4.6.1.2 Household savings and credit

Cooperative member smallholder coffee farm households in our survey were asked whether or not they had any monetary savings. While it is not common for smallholder coffee-producing households to have savings, the percentage of single certified households with savings (16%) was higher than the figure for double certified households (12%) and triple certified (15%) households (see Table 4.4). In terms of savings, there were significant differences between single and double certified coffee producing households in the study area.

As with savings, coffee farmer households' access to credit showed a similar pattern: the association between credit access and certification when all certified households were combined into a single group was not statistically significant. Overall, 3% of all certified coffee farmer households reported having access to credit. When certification types were also considered separately there was also no significant association between certification types and credit access. This is not surprising, given the fact that coffee cooperatives with limited financial resources were not able to extend credit to their member coffee grower farmers in the study area.

4.6.2 Empirical results

In this sub-section, we report the empirical results of our study. To analyze the study we used only the results of the kernel estimation method. The empirical analysis builds on survey data from 700 coffee marketing cooperative member households collected in Sidama zone, southern Ethiopia. Based on the propensity score matching procedure explained above, we made a comparison between (a) single and double certified; and (b) single and triple certified co-op member smallholder coffee farmers. Table 4.5 below presents the difference between single and double and Table 4.6 presents the difference between single and triple certified coffee farmers' wellbeing. Each comparison analyzes significant differences in the defined impact indicators included in the study (coffee income, average price, productivity, access to credit, savings, and access to technical assistance).

According to the results of the kernel estimation method in Table 4.5, we did not find statistically significant differences between single and double certified coffee farmers in terms of productivity, access to credit, access to technical assistance and savings. On the other hand, a statistically significant difference is observed in coffee revenue and average price between the single and double certified coffee farmers after matching. In this case, double certified coffee farmers receive a better price and better coffee revenue than single certified coffee farmers in the study area. Although not statistically significant, the results of the kernel matching estimation for coffee farmers under the category of double certification reveal a negative effect on savings. This negative effect seems to be driven by the significantly lower savings of double certified farmers as compared to single certified farmers.

As explained above, Table 4.6 presents the mean difference between single certified and triple certified groups. We did not find a statistically significant difference between single and triple certified coffee producer farmers in the study area in terms of livelihood-related variables such as credit. This is not surprising, given the fact that Fairtrade contracts often did not include pre-financing for producers. Similar results are also observed in relation to savings and access to technical assistance. Although not statistically significant, the results of the matching

estimation for coffee farmers under the category of single and triple certification reveals a negative effect on access to credit and savings. This negative effect seems to be driven by the significantly lower credit access and savings of triple certified coffee farmers as compared to single certified farmers.

On the other hand, interestingly, there is a statistically significant difference between the triple certified and single certified coffee farmers after matching. Triple certified farmers earned better coffee revenues, got better average prices, and had higher productivity. In this case, price and productivity seem to be the main mechanism through which certification effects are realized. These differences are strong enough to represent a clear welfare effect on the member coffee farmers. In both cases we did not find significant differences between single against double and triple certified coffee farmers in terms of livelihood-related indicators such as access to credit. This is not surprising, given the fact that coffee cooperatives with limited financial resources were not able to extend credit to their member coffee farmers in the study area.

Table 4.5: Comparison of Fairtrade/Organic versus only FT certified coffee farmers using various matching methods

Outcome variable	Ps-match kernel			Ps-match Neighbour(5)			Radius		
	Difference	S.E.	T-stat	Difference	S.E.	T-stat	Difference	S.E.	T-stat
Coffee revenue	636.09	534.78	1.21	367.95	429.33	0.86	235.87	317.38	0.74
Average price	0.36	0.14	2.68	0.38	0.12	3.14	0.41	0.10	4.32
Productivity	151.44	138.90	0.37	217.36	108.77	2.00	240.29	84.52	2.84
Access to credit	0.00	0.02	0.28	-0.01	0.02	-0.77	-0.02	0.01	-2.03
Saving	-0.05	0.04	-1.16	-0.03	0.04	0.84	-0.02	0.03	-0.70
Access to technical assistance	-0.02	0.06	0.32	0.04	0.05	0.80	0.03	0.03	0.80

Table 4.6: Comparison of Fairtrade/Organic/UTZ versus only FT certified coffee farmers using various matching methods

Outcome variable	Ps-match kernel			Ps-match Neighbour(5)			Radius		
	Difference	S.E.	T-stat	Difference	S.E.	T-stat	Difference	S.E.	T-stat
Coffee revenue	2081.46	753.78	2.76	1424.77	626.57	2.27	2491.68	523.22	4.76
Average price	0.71	0.14	5.20	0.73	0.04	3.16	0.77	0.08	9.70
Productivity	516.14	166.69	3.10	670.30	141.47	4.74	795.53	120.26	6.61
Access to credit	-0.02	0.03	-0.82	-0.00	0.02	-0.13	-0.01	0.02	-0.72
Saving	-0.01	0.06	-0.12	-0.04	0.04	-0.85	0.00	0.03	0.11
Access to technical assistance	0 .05	0.07	0.69	0.05	0.06	0.90	0.05	0.04	1.24

Source: Own data

4.7 Discussion

Using a propensity score matching technique, this paper has analyzed the impacts of double and triple certifications on the well-being of smallholder member coffee farmers in southern Ethiopia, paying special attention to issues of coffee revenue, coffee price, productivity, access to credit, saving, and access to technical assistance. In this section, we discuss the following major findings of the study; a) Cooperative member coffee farmers' level of knowledge of certification is poor and limited; b) a combination of certification does not have a statistically significant effect on livelihood related variables and c) additional effects of certifications on the livelihoods of smallholder coffee farmers have been gained i.e., the more certification labels the better the effect.

The livelihoods of smallholder coffee farmers in Ethiopia are based on insecure, low input-low output agricultural production systems, which make them particularly vulnerable to poverty. Certification of their main export crop, coffee, through cooperative structures is argued to be one of the recommended strategies for providing small-scale coffee farmers access to markets that allow them to generate higher and more stable cash incomes. Although certification is a new and a recent phenomenon in Ethiopia, various types of coffee certifications such as Fairtrade, organic and Utz have been implemented since 2002.

Using a propensity score matching method, we estimated the impacts of double and triple certification on the livelihoods of smallholder coffee farmers using household survey data from Sidama Zone, southern Ethiopia. According to our descriptive results and field observations, certification in general was better understood by the executive committee members of primary coffee marketing cooperatives, and fully understood by the staff and board members of second-level coffee cooperatives (unions). However, most of the cooperative member coffee farmers interviewed did not have much knowledge of the certification of their cooperatives and the certification premium. Only very few respondents know about certification. This might influence member coffee farmers' efforts to meet the standards required by certifying organizations. Our findings also show general deficiencies in information transfer and lack of promotional capacity in certification and related activities at local level. Generally, it seems that certification is not actively promoted or understood by those who are certified. Therefore, there is a need for the government and the certifying organizations to further promote certification awareness, and for the creation of publicity at various levels, particularly focusing at household coffee producer level.

This study comes up with important and new empirical findings and evidence which help us to understand the impact of double and triple certification on smallholder coffee farmers' livelihoods in the study area. Due to double and triple certification, significant impacts were observed in terms of identified indicator variables. Additional impacts on the livelihoods of smallholder coffee farmers have been gained, i.e. the more labels, the better the effect. Generally, due to different certifications there are significant additional effects (double more than single, and triple more than double) of the number of certifications on the livelihoods of smallholder coffee farmers along identified indicator variables.

Although it is argued that certified coffee markets alone will not solve the livelihood challenges faced by smallholder coffee farmers, they can still contribute to broad-based rural

development in coffee producing areas. This can be done by developing more active and sustainable partnerships between coffee farmers, certifying agencies, rural development organizations and researchers. Unlike in many Latin American countries, where coffee certification started long ago, coffee certification is a new and recent development in Ethiopia. Therefore, more and further research is needed to further improve the practical performance, efficiency and effectiveness of future certification interventions and activities in the coffee producing areas of the country, so as to improve the livelihoods of rural smallholder farmers in Ethiopia.

4.8 References

Alemu, D., and Pender. J., 2007. Determinants of Food Crop Commercialization in Ethiopia. Washington, DC: International Food Policy Research Institute Mimeo.

Bastin, A., and Matteucci, N., 2007. Financing Coffee Farmers in Ethiopia: Challenges and Opportunities. International Conference on Rural Finance Research: Moving Results into Policies and Practice.

Daviron, B., and Ponte, S., 2005. *The Coffee Paradox: Global Markets, Commodity Trade and the Elusive Promise for Development*. London and New York: Zed Books.

Dempsey, J., and Campbell, R., 2006. A Value Chain Approach to Coffee Production: Linking Ethiopian Coffee Producers to International Markets. (ACDI/VOCA) Technical Bulletin. Addis Ababa: Ethiopia.

Dörr, A. C., 2009. Economic Analysis of Certification in the Brazilian Fruit Chain. Göttingen: Cuvillier Publisher.

Heckman, J. J., 1979. 'Sample selection bias as a specification error'. *Econometrica*, 47(1): 153–161.

Jena, P., Stellmacher, T., and Grote, U., 2012.The Impact of Coffee Certification on Small-Scale Producers' Livelihoods: Evidence from Ethiopia, A *Paper presented at the International Association of Agricultural Economists (IAAE) Triennial Conference, Foz do Iguaçu, Brazil, 18-24 August, 2012.*

Labouisse, J., Bellachew, B., Kotecha, S., and Bertrand, B., 2008. 'Current status of coffee (Coffee Arabica L.) genetic resources in Ethiopia: implications for conservation'. *Genetic Resources and Crop Evolution*, 55(7): 1079-1093.

Méndez, V., Bacon, C., Olson, M., Petchers, S., Herrador, D., Carranza, C.,Trujillo, L., Guadarrama-Zugasti, C., Cordon, A., and Mendoza, A., 2010. 'Effects of Fair Trade and organic certifications on small-scale coffee farmer households in Central America and Mexico'. *Renewable Agriculture and Food Systems*, 25(3): 236- 251

Milford, A., 2004. Coffee, Co-operatives and Competition: The Impact of Fair Trade. Bergen: Chr. Michelsen Institute.

Petit, N., 2007.'Ethiopia's Coffee Sector: A Bitter or Better Future?' *Journal of Agrarian Change*, *7*(2): 225-263.

Philpott, S., Bichier, P., Rice, R., and Greenberg, R., 2007. 'Field-testing ecological and economic benefits of coffee certification programs'. *Conservation Biology,* 21(4): 975–985.

Rosenbaum, P. R., D. B. Rubin, 1983. The Central Role of the Propensity Score in Observational Studies for Causal Effects.Biometrika 70, 41–55.

Ruben, R., and Heras, J., 2012. 'Social Capital, Governances and Performance of Ethiopian Coffee cooperatives'. *Annals of Public and Cooperative Economics,* 83 (4): 463-484.

Ruben, R., and Fort, R., 2011. 'The Impact of Fair Trade Certification for Coffee Farmers in Peru'. *World Development,* 40(3): 570–582.

Ruben, R., and Fort, R., 2011. The Impact of Fair Trade Certification for Coffee Farmers in Northern Peru. Contributed Paper prepared for presentation at the International Association of Agricultural Economists Conference, Beijing, China, August 16-22, 2009.

Stellmacher, G., 2011. Forest Coffee Certification in Ethiopia: Economic Boon or Ecological Bane? Working Paper Series 76, Zentrum für Entwicklungsforschung, University of Bonn.

Valkila, J., 2009. Fair Trade organic coffee production in Nicaragua—Sustainable development or a poverty trap?. *Ecological Economics*, 68(12): 3018–3025.

Valkila, J., and Nygren, A., 2009. Impacts of fair trade certification on coffee farmers, cooperatives, and laborers in Nicaragua. *Agriculture and Human Values*, 27(3): 321–333.

Volkmann, J., 2008. Assessment of Certification Options for Wild Forest Coffee in Ethiopia: CoCE Project Report Sub-project 5.4.

White, H., & Bamberger, M. (2008).Impact evaluation in official development agencies. Special issue on impact evaluation. *IDS Bulletin*, 39(1), 1–11.

Wollni, M. and M. Zeller (2007). Do farmers benefit from participating in specialty markets and cooperatives? The case of coffee marketing in Costa Rica. *Agricultural Economics* 37(2): 243-248.

Chapter 5:
Maintaining a sustainable livelihood: An analysis of the effects of Utz certification on market access, risk reduction and livelihood strategies of Kenyan coffee farmers

By Mirjam Schoonhoven-Speijer and Ruerd Ruben

Introduction

A renewed focus on agriculture and rural development has been visible since the turn of the century. For 500 million rural households, representing an estimated 1.5 to 2 billion people worldwide, it remains the best opportunity to work their way out of poverty (World Bank 2007; Hazell et al. 2010). In order to make development through agriculture happen, farmers need to be able to market their products at local or global markets. These represent opportunities for income generation, professionalization and diversification (Ruben et al. 2006); however, risks such as price uncertainties and the requirements and high standards of international markets might raise barriers for new, small-scale, producers to enter them (Fafchamps 2004; Shiferaw et al. 2008; World Bank 2011).

Bridging the gap between local economic development and global value chain integration asks for the emergence of new institutional and organisational networks. Where Fair Trade, launched some twenty years ago, is based on voluntary standards promoting equitable market access of coffee small-holder cooperatives, newer initiatives such as UTZ certified emphasize on private initiatives with market-conform conditions with an support of farmer's income through dynamic efficiency gains (Raynolds et al. 2007; Ruben and Zuniga 2011). Large commodity companies often favour private standards, because voluntary standards may favour production inefficiencies (Ruben and Zuniga 2011). Critiques of a market-based approach however emphasize that a market-based approach might be too much focused on export markets and too little on reducing vulnerability (Vorley et al. 2012).

Our research focuses on this latter issue, whether farmers included in Utz Certification schemes not only benefit in terms of higher production and income, but also in terms of vulnerability reduction and enhanced resilience. With this focus we contribute to several strands of research and knowledge. Many studies assessing the impact of standards only focus on outputs (e.g. higher prices, training activities) rather than on outcomes (e.g. higher outcomes, new skills) or livelihood impacts (changes in material wealth, social well-being and empowerment) (Nelson and Pound 2009). Here, we add to knowledge concerning outcome effects such as attitudes towards the cooperative, and impact effects concerning risk reduction of certified farmers. Additionally, most studies examine the effects of Fair Trade, while less substantial research is done on new (private) standards such as Utz Certification (Ruben and Zuniga 2011).

Theoretically we make connection between the sustainable livelihoods (SL) framework (Chambers and Conway 1992) and value chain theory (Kaplinsky and Morris 2001). Advantage of the SL framework is that it adapts a multi-dimensional definition of poverty. It focuses however too much on the household level, and much less on macro-linkages on regional or

international level (Scoones 2009). To overcome this problem, we link the SL analysis with broader processes of globalisation and international trade by integrating it with a value chain perspective. Value chain theory pays attention to the distribution of value-added throughout the supply chain. We focus on how Utz Certification influences distribution of benefits to farmers participating in producer organisations through the enforcement of contracts. We thus also contribute to debates concerning inclusion in value chains, by examining how farmers manage risks in formal markets (Seville et al. 2011).

The research was done among coffee farmers in central Kenya, who are organised in cooperatives. We selected two Utz-certified cooperatives, and compared them with two neighbouring non-certified cooperatives that were not involved in any certification scheme, but were otherwise similar to certified farmers.

Theory

The livelihoods framework and institutions

A livelihood is the means of gaining and securing a living through the use of assets, capabilities and activities. Assets, the capital base from which different productive streams are derived, are closely related to capabilities, the opportunities and abilities a person has to generate valuable outcomes (Chambers and Conway 1992). Together assets and capabilities shape the opportunity set of activities for the livelihood strategies of a household (Ellis 1998). Activities include for instance growing coffee and/or keeping livestock. The ability to follow a certain strategy is also determined by the context of a household. The agro-ecology of a certain context determines in which crops a farmer can specialize, whereas politics can determine how easy it is for farmers to cooperate. Our research focuses on the link between context and livelihoods, namely institutions. Institutions are defined as 'the rules of the game that define incentives and sanctions affecting people's behaviour' (Dorward et al. 2005). Institutions thus mediate the ability to carry out strategies and achieve certain outcomes (Scoones and Wolmer 2003). Institutions can create barriers or restrictions and opportunities or gateways to sustainable livelihoods. However, much depends on *why* households make choices to use a combination of resources for certain strategies, and, secondly, the mediating capacities of institutions. Because the SL framework does not emphasize on these aspects, we draw on theories of risk perception and risk behaviour to explain why certain choices are made. Thereafter, we explain how institutions, enforced by producer organisations and Utz Certified, influence (perceived) risks and mediate choices.

Market constraints and other shocks

For small-scale farmers, the choice to be involved in certain markets contains a continuous tension between the risky advantages of market participation and the conservation of a non-market basis for survival (Ellis 1998; World Bank 2001). The markets in which smallholders are engaged are often imperfect and incomplete, and deficiencies such as the absence of institutions are especially profound in rural areas (Dorward et al. 2005). Farmers' insecurity is further increased by other shocks such as climate variations, low social economic status and bad politics at the state level (Dercon 2008). Thus, farmers' objectives are not only to maximize income and consumption, but also to manage risks and avoid vulnerability (Ellis 1998).

Risk refers to the possibility that something unfavourable might occur (Smith et al. 2000). People's behaviour is not only influenced by measurable, objective risks that they face, but

also, or even more, by their subjective perceptions of risks and the possible consequences of different events (Doss et al. 2008). The combination of experienced shocks and risk perceptions leads to the choices farmers make. This includes choices for income activities and insurance via savings or network-based risk-sharing arrangements (Fafchamps 2003). Being persistently prone to a variety of shocks might lead to chronic poverty, since the priority might become more and more to minimize vulnerability to shocks and thus to avoid investments that might yield higher returns in the future. People then become trapped below a critical threshold of wealth that is necessary to get out of poverty (Barrett 2005).
Institutions such as producer organisations (POs) and certification standards can have a positive influence on risk attitudes, as they have the ability to make market systems more inclusive and integrated by for instance reducing transaction costs and enforcing contracts (Rodrik 2000; World Bank 2001). They are linked together since Utz Certification is often provided through producer organisations.

Improving market access and improving vulnerability: producer organisations and Utz Certification
Being member of a producer organization (PO) can improve the efficiency of agricultural marketing (Bijman and Wollni 2008). Collective marketing of the harvest reduces transaction costs of individual farmers and improves their marketing power by abilities to negotiate for better prices (Dorward et al. 2005). Sales are likely to become more stable, leading to a more stable income through the mutual insurance of otherwise uninsured risks (Key and Runsten 1999). Due to low managerial capacity, however, also involuntarily costs might occur, such as a delay of payment, and insufficient provision of technical and commercial assistance (Milford 2004). Other governance issues that can occur are elite capture, legal restrictions and exclusion of the poor (World Bank 2001; Mude 2006). POs need strong internal institutions and a good asset base to make sure these involuntary costs are kept to a minimum (Barham and Chitemi 2009; in Seville et al. 2011).

The strength of internal institutions depends on several underlying dynamics, the most important being collective action and trust. Collective actions means that group resources, knowledge and efforts are combined to reach a goal shared by everyone (Place et al. 2004). Trust is a condition that facilitates collective action, it has instrumental value in reducing risks and transaction costs of relationships, strengthening bonds between individuals and facilitating information exchange (Williamson 2000; Murphy 2002). Especially when formal institutions are failing to meet local information or market needs, the exchange of knowledge through trust is important for meeting cooperation and collective action. Trust is therefore considered as the most relevant factor providing voluntary cooperative action (Ostrom 2003).

For the successful functioning of the cooperative through trust and collective action, the member's active participation in the cooperative is of importance. Problems arise when not all members participate in the creation of its benefits, but free-ride on the work of others without contributing to the provisions the PO is offering (Milford 2004). Free-riding may encourage the under-production of the cooperative's commodity (Olson 1965; in Ostrom 2003). Another problem is the cost of control (Milford 2004). Since costs to control the management are shared, the incentive for an individual farmer might not be high enough to

participate actively in situations in which the management underperforms, or shows to be corrupt (IBID).

Receiving Utz Certification should lead to several improvements in a cooperative management and practices, from which farmers benefit. These comprise the following: the strengthening of farmer organisations in terms of good governance, and increased efficiency in provision of technical as well as commercial services (Tegemeo institute 2009). The greater accessibility of farmers to these services leads to higher productivity, higher producer prices and higher enterprise and farm incomes. Utz Certified adds to the resilience of farmers by enforcing contracts which provide the security of prices and extension services (Ruben et al. 2006). For Utz Certified, contracts reduce monitoring costs and are especially preferred in markets with high-quality demand, such as coffee. For farmers, the contractual arrangement reduces price uncertainty. Saenz and Ruben (2004) showed that the existence of a contract reduces uncertainty for the producer, enables investments in land improvements, and better crop management. Product quality is also further reinforced by institutional variables like technical assistance and delivery frequency.

We formulated 3 hypotheses to assess the effects of Utz Certification on the livelihood of coffee farmers in Kenya. We argue that Utz Certification reduces vulnerability in several direct and indirect ways. They do so through intervening in the services producer organisations offer. An important guarantee for the accumulation of assets to upgrade quality and quantity of coffee is the perceived support farmers receive from their organisation (Ruben 2008). These interventions directly lead to a harvest of higher quantity and better quality, for which farmers receive a higher price (hypothesis 1). This has the indirect effect that farmers perceive their cooperative as a more reliable partner (hypothesis 2), where reliable is operationalized with trust and loyalty. In the presence of trust, a farmer can realize an action with the confidence that other farmers will do what they are supposed to do (Blandon et al. 2009). We expect this to affect farmers' vulnerability reduction. Due to trust and loyalty, individual risks are partially shared (Fafchamps 2003). Collective activity advantages smallholders better to withstand years of bad production (Carter 1987). A good functioning cooperative assures the basis for further individual improvements (Ruben 2008). Market related shocks are reduced, which allows farmers to cope better with non-market related risks and shocks (hypothesis 3).

Materials and methods

Study area

Four Kenyan coffee cooperatives where selected for the research; two cooperatives who received Utz Certification (treatment groups) and two cooperatives not participating in the Utz program (control groups). Solidaridad, the non-governmental organisation (NGO) funding Utz certification programs, was instrumental in the choice of the following treatment groups: Rianjagi, situated in the Embu district, and Kangunu, located in the Mathioya district. We aimed for control cooperatives located close to the treatment groups to ensure similar agro-ecological circumstances and a similar socio-economic context. In addition, we preferred cooperatives with similar characteristics in terms of the number of wet mills, membership and governance structures. This allows for a with/without appraisal, whereby differences in

behaviour and responses between target and control group provide a counterfactual to the results reached by the target group (Ruben 2008:23).

The control group selected for Rianjagi cooperative in the Embu district is Kithungururu. Both Kithungururu and the UTZ coop split from the same larger cooperative (Kapingazi) in 1997. The control group chosen for Kangunu, a single factory cooperative, is Kamagogo, part of the four wet mill cooperative Kiru in Mathioya district[32]. Table 1 shows the main figures on coffee production, sales and coffee prices of all four cooperatives for the 2009-2010 season.

Table 5.1: overview of production and payments of four cooperatives, 2009-2010 season

Cooperative	Number of members	Production (x1000 kgs)	Kgs per member	Sales (x1000 ksh)	Payment (x1000 ksh)	Payment (ksh/kg)	Payment (% of sales)
Embu							
Rianjagi (Utz)	1502	857	571.00	50,324	38,154	50	75.82
Kithungururu	1811	643	355.40	39,755	31,444	47	85.28
Mathioya							
Kangunu (Utz)	1360	723	529.07	47,327	40,219	55.65	85
Kamagogo	756	339	448.67	992.0	920.80	40.10	80

Source: data received at cooperatives, February 2011

Methods

Mixed methods (Creswell 2003) were used to get insights in the market access, vulnerability and risk perception of farmers by the use of participatory risk mapping (PRM), a household survey, a risk game and in-depth interviews. A mixed methods approach allows for the triangulation of data and more complete insights in the research subjects.

PRM (developed by Smith et al., 2000) is used to get insights in the experienced and perceived risks among cooperative members on individual, household and cooperative level (for more information see Smith et al. 2000; Pratt and Loizos 2003; Quinn et al. 2003; Tschakert 2007). Data gathered through risk mapping shows the relative importance of problems perceived by individual people. One PRM consisting out of 10 people was done at every cooperative, so to take into account variation among cooperatives. Sampling was done in a stratified random way because farmers out of different areas of the cooperative were included. During group discussions risks were identified, ranked ordered in terms of severity, and it was discussed how participants solve these risks.

A survey was conducted to gather most household level data, which was done through single farm visit interviews. Survey questions were based on literature and a questionnaire used by Tegemeo Institute and the Centre for International Development Nijmegen (CIDIN) (Kamau et

[32] It was not possible to compare Kangunu with another single factory cooperative in the district, since only one other coffee cooperative with a single wet mill existed. This wet mill had a much lower coffee production and had different growing conditions since it was on other altitude levels.

al. 2010). All statements were translated from English to locally used languages (Ki-embu or Kikuyu). Respondents were mainly the household[33] head, or the spouse to the household head. The data collection covered coffee production and marketing activities for the 2010 coffee calendar year i.e. the period from September 2009 to August 2010. We used a stratified systematic sample from the population of each cooperative (Thomas et al. 1998). The sample was divided in strata either based on villages (Utz), or election areas (non-Utz). The total number of surveys completed is 218: 56 for Rianjagi (Utz), Kithungururu and Kangunu (Utz) each, and 50 for Kamagogo.

A risk game was performed by 50/56 people per cooperative, in the form of a Choose Lottery (CL) experiment. A behavioural field experiment examines attitudes towards risks. Participants are presented with a series of lotteries and are asked to pick one from a list which varies high and low pay-outs. Depending on how risk averse a participant is, he or she should trade off expected return for less variability (Cardenas and Carpenter 2008). We used the price a farmer might receive for the harvest of one of his or her coffee trees in the coming year, resembling a two days income, which creates the necessary incentive for participants to take the game seriously (Cardenas and Carpenter 2008). The choices we presented to the participants ranged from risk averse to risk neutral (see Appendix 1).

At the end of the research, a semi-structured questionnaire was used to interview six to eight farmers per cooperative. Semi-structured interviews are especially valuable to answer 'why' or 'how' research questions, since answers to such questions are often too complex to answer with predefined survey options (Thomas et al. 1998). The topics explored in the interviews were attitudes towards the cooperative, and issues related to risks. Since a large part of the interview emphasizes risk attitudes and choices related to risks, the selection of farmers was based on those who participated in the risk game. A sample of farmers was selected that included farmers ranging from extreme risk averse to almost risk neutral.

Data

Data was collected between January 2011 and May 2011, and processed in the field as much as possible. Quantitative data were analysed by performing independent sample t-tests, factor analysis and multiple regression. Validity and reliability of the data was ensured by performing tests such as Cronbach's Alpha and Chow tests. To examine the comparability of treatment and control groups we compared the probabilities of being in the treatment or control group for several variables which should be independent from the impact of certification. Table 2 shows that for the Embu region there are differences in age of hh, the land owned and distance to the market. For the Mathioya region differences occurred in the age of hh, and the distance to the marketed. These differences are relatively small and in the case of distance to the market almost insurmountable due to the study design. Therefore, we can conclude that our samples are comparable to a great extent. To extent the validity of the

[33] A farm household was defined as 'each family member who stayed within the household for a period of at least one month for the last twelve months. Together the household members have a shared income and shared expenditures' Kamau, M., L. O. Mose, et al. (2010). The impact of certification on smallholder farmers in Kenya: The case of UTZ certification programme in coffee. M. Kamau, L. O. Mose, R. Forte and R. Ruben. Nairobi, Kenya, Tegemeo Institue, Egerton University..

results differences between the groups will be controlled for in future analyses and triangulations will be used by comparing the outcomes to those of other data.

Table 5.3: Model 1 - Probability of becoming an Utz Certified farmer (logistic regression)

	Embu				Mathioya			
	B	S.E.	Exp(B)		B	S.E.	Exp(B)	
Constant	-7.220	3.747	.001	**	-12.993	7.671	.000	**
gender hh (% male)	.459	.707	1.583		.503	.726	1.653	
age hh (yrs)	.292	.133	1.339	**	.342	.255	1.408	*
age^2 hh	-.003	.001	.997	**	-.003	.002	.997	
education hh (yrs)	.008	.059	1.008		.028	.085	1.028	
household size (no)	.153	.140	1.166		-.112	.165	.894	
land owned by hh (acres, log)	-.603	.335	.547	**	.374	.429	1.453	
value assets (ksh, log)	-.045	.225	.956		-.109	.277	.897	
distance to the market (km)	-.176	.097	.839	**	.935	.214	2.547	***
Chi2	14.420	**			39.136	***		
Nagelkerke pseudo R2	.177				.492			
Chow test	27.000	***			26.030	***		

Dependent = Utz y/n; * = α< 0,10; ** = α< 0,05; *** = α< 0,01*(source: household survey 2011)*

Results

We will discuss three categories of impact of the Utz Certified label subsequently: direct effects including production; behavioural effects for trust and loyalty towards the cooperative; and lastly risk attitudes concerning coffee marketing and other shocks. Hypotheses are tested on a series of dependent variables: yield, trust in the cooperative, loyalty to the cooperative, risk index of all risks and a risk index of coffee risks. The first regression model run is a logistic regression model where the possibility of being Utz Certified is tested against independent variables that are thought not to be influenced by membership of a cooperative. Secondly, an ordinary least square (OLS) regression is ran to get more insight in the effects of Utz Certification on the coffee yield of farmers. This is followed by a two stage least squares (2SLS) regression, analysing the effects of trust, loyalty and risk occurrence on each other. 2SLS is used since loyalty and trust are endogenous variables for the model explaining risk occurrence (Wooldridge 2008).

Productivity of farmers

The characteristics concerning coffee production for all four cooperatives are described in Table 5.4.

For the Embu region, the differences in inputs between the Utz certified farmers and the control group farmers are minimal. Farmers only differ on the number of young coffee trees, which is significantly higher for Utz Certified farmers. The technical information received by farmers is significantly higher for Rianjagi (Utz) than it is for Kithungururu farmers. 96% of the farmers received training in the last four years, against only 49% of the control-group farmers. In addition, Rianjagi farmers are more content with the technical assistance they received: they score significantly higher on the index technical assistance. The averages for the index

monetary benefits do however not significantly differ from each other. Farmers are thus equally content with the price they receive for their crop.

Table 5.4: Characteristics concerning coffee productivity and attitudes

	Embu					Mathioya				
	Rianjagi (Utz)		Kithungururu			Kangunu (Utz)		Kamagogo		
	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
Input										
no of young trees (0-3 yrs)	20.23	53.99	5.22	23.36	**	7.98	22.98	6.63	17.48	
no of mature trees (> 3 yrs)	304.37	223.22	361.00	324.40		251.07	115.74	227.39	300.30	
Workforce in farm hh (no)	2.00	1.08	1.90	0.92		2.02	1.18	1.88	0.88	
hired labour, %	.67	0.47	0.63	0.49		0.83	0.38	0.70	0.47	*
Use of fertilizer, %	.940	0.24	0.84	0.37	**	0.98	0.15	0.93	0.26	
total inputs costs (1000 ksh)	5.44	5.08	5.29	4.75		8.53	6.44	5.51	3.92	***
Technical assistance										
Attended training (%)	0.96	0.19	0.49	0.51	***	1.00	0.00	0.86	0.35	***
Technical assistance (index)	0.40	0.53	-0.92	1.23	***	0.54	0.23	0.02	0.96	***
Monetary benefits (index)	-0.04	1.02	0.15	0.96		0.25	0.76	-0.41	1.16	***
Output										
total harvest (kgs)	809.67	827.79	1171.48	1057.70	**	1541.21	1123.72	1022.40	1496.58	**
kgs of coffee/ mature tree	3.32	4.13	4.45	4.67	*	6.42	4.03	5.40	7.19	
coffee revenue (1000 ksh)	40.48	41.39	55.06	49.71	*	85.77	62.54	41.00	60.01	***
profit per tree (1000 ksh)	0.14	0.19	0.19	0.21		0.32	0.22	0.18	0.28	***
perception of turnover (1=loss, 2=equal, 3=profit)	2.35	0.89	2.49	0.87		2.33	0.93	1.86	0.95	**
Attitudes										
Performance of coop	.132	1.048	.188	.793		0.147	0.855	-0.527	1.193	***
Trust in coop	.106	1.000	.149	.892		-0.107	0.972	-0.225	1.192	
Trust in members	-.161	.937	-.585	1.020	**	0.141	0.976	0.645	0.773	***
Loyalty	.336	.689	-.338	1.150	***	0.176	0.979	0.029	1.004	
Corruption	3.077	1.557	2.184	1.302	***	2.452	1.400	3.419	1.651	***
Risk index all	0.076	1.091	0.447	1.152	*	-0.563	0.352	0.163	0.990	***
Risk index coffee shocks	0.150	1.047	-0.246	0.673	**	-0.485	0.234	0.573	1.354	***
Outcome risk game	2.889	1.183	3.789	1.273	**	3.737	1.327	2.905	1.758	*

** = α< 0.10; ** = α< 0.05; *** = α< 0.01.* N of risk game: Rianjagi 18, Kithungururu 19, Kangunu 19, Kamagogo 21

(source: household survey 2011)

The outputs realized by the above described inputs and technical assistance show that Kithungururu (non-Utz) farmers have an absolute higher coffee harvest than Rianjagi (Utz) farmers. The harvest per tree of Kithungururu farmers is also slightly higher, with significance on the 10 per cent level. This difference in output results in a higher absolute revenue from and a higher profit out of coffee for Kithungururu (non-Utz) farmers. From interviews it appeared that Utz-certified farmers appreciate the technical assistance they receive, but the

descriptives show that this does not yet pay off in a higher harvest than the control group. The difference found in the number of young, not fruit bearing trees might be an explanation. Investments done in terms of fertilizer and labour do, for these trees, not yet show results in terms of harvest and revenue. Secondly, Rianjagi was certified in 2007, and the survey was done over the 2009-2010 season. It might thus be too early to already see effects of certification in terms of improved harvest. Thirdly, and alternatively, unobserved effects might play a role; for instance, more effective investments in the provision of inputs by the cooperative.

For Mathioya region the differences between the certified and non-certified cooperative are more profound. The average amount of money spent on inputs is significantly higher for Utz-certified farmers. Farmers of both cooperatives also differ significantly on the assistance they receive of their cooperative: The Utz Certified farmers received significantly more training, are more satisfied with the technical assistance received, and with their monetary benefits. The significantly higher outputs realized by Kangunu (Utz) farmers combined with technical assistance, shows that the certification program seems to have a strong positive effect on the coffee productivity of its farmers; Kangunu farmers have, on average, 500 kilograms more berries harvest than Kamagogo farmers. This translates in almost a kg more per tree, and higher profits per coffee tree. The higher input costs Kangunu farmers make are thus paying off in a higher profit. In interviews, certified farmers were mainly positive about their cooperative efforts to stimulate good coffee production, especially in training and higher coffee payments. Coffee prices encourage farmers very much to put more efforts into their coffee.

Trust and loyalty

Trust was measured with a set of 8 statements based on a Likert scale. Factor analyses showed that these items are directed to two dimensions of social trust; one for trust in the cooperative as a whole (trust in coop), and the second representing the trust farmers have in the coffee growing practices of cooperative members (trust in members). Loyalty is defined as the loyalty of a farmer in selling coffee only to the cooperative. It was measured with 5 items which were combined to one factor.

Table 4 shows the descriptives of our dependent variables and main explanatory variables. Farmers in the Embu region do not differ in their opinion on the performance of the cooperative; both are equally satisfied with the way the cooperative performs in terms of efficiency and profits. Rianjagi farmers have more trust in the coffee production of the members of their cooperative than Kithungururu farmers. Farmers explained during interviews that improvements in coffee practices due to Utz Certification increased their trust in the performance of other farmers. Rianjagi farmers score higher on the proxy for loyalty to the cooperative, which implies that they are less inclined to sell to another party than Kithungururu farmers. Rianjagi (Utz) farmers do however perceive more corruption in their cooperative than non-Utz certified farmers do. The cost of controlling the management seems problematic for Rianjagi farmers. Farmers were especially pointing at the secretary manager

and the bookkeeper,[34] who are the ones in charge of the cooperative funds. Kithungururu (Non-Utz) farmers however praised their current management committee, which is an improvement in comparison with their former committees.

Descriptives of the two cooperatives in Mathioya region are slightly different. Members of Kangunu (Utz) cooperative consider the performance of their cooperative higher, and corruption lower, than their counterparts. The trust in the cooperative does not significantly differ between both cooperatives, while trust between members of the cooperative is higher for Kamagogo (Non-Utz) members than Kangunu farmers. At Kangunu, free-riding seems to occur. Kangunu farmers showed some critique to their cooperative members, especially to the ones producing, in their view, coffee of less quality and quantity. These farmers are thought to lower prices of those farmers who bring coffee of higher quality, which is a typical free-riders problem. For Kamagogo farmers, most farmers appear to be on the same side. They understand from each other that farmers are demoralized by low prices they receive for their coffee, and feel that most farmers do the best they can with the little money they have to reinvest in their coffee.

OLS regression is used to explain the trust and loyalty farmers have towards their cooperative. Table 5 presents the results of the OLS-regression with the proxies for loyalty (model 2A) and trust (model 2B) as dependent variables. For Embu region, household characteristics are of little influence on trust and loyalty of farmers towards their cooperative. Wealth of the household, in terms of the asset value and the coffee harvest, is only of significant influence on trust in the cooperative. This can be explained by the fact that a higher yield is caused by the benefits farmers received from the cooperative. Technical assistance only influences loyalty, while monetary benefits explains both models; higher perceived monetary benefits lead to higher levels of trust and loyalty. This is in line with the findings of Saenz and Ruben (2004), who found that loyalty is influenced by non-price factors such as technical assistance, as well as price factors. It also confirms the importance of the price farmers receive for their coffee. Whether farmers were Utz Certified is, while controlling for all the above effects, not significant for trust, but it is for loyalty. Other variables, such as trust in cooperative members and technical assistance, are of greater importance for trust. These differences between loyalty and trust in the cooperative might be due to the focus of Utz Certification programs. Their main focus is on improving the coffee practices of farmers through technical assistance, and less through improvements in the management (Raynolds et al. 2007). Technical assistance is indeed influencing farmer's loyalty towards the cooperative. Managerial improvements have however not occurred; it even seems that levels of corruption even have risen since Utz Certification.

[34] While executing the research, we also noticed ourselves that the bookkeeper and secretary manager were suspicious about how we were proceeding with our research, and tried to control the way in which the research was executed.

Table 5.5: Model 2 - trust in cooperative and loyalty towards cooperative (OLS regression)

	Embu						Mathioya					
	Model 2A trust			Model 2B loyalty			Model 2A trust			Model 2B loyalty		
	B	S.E.	Sig.	B	S.E.	Sig.	B	S.E.	Sig.	B	S.E.	Sig.
Constant	.610	.819		-.082	.892		1.56	1.15	*	1.202	1.218	
Household characteristics												
gender hh head (1=male)	-.202	.255		.118	.278		-0.14	0.26		-.243	.271	
age hh head (years)	.013	.006	**	.008	.007		-0.01	0.01		-.006	.010	
max educ hh (years)	-.022	.024		-.019	.026		-0.03	0.03		.033	.030	
total value assets in ksh (log)	-.150	.081	**	-.047	.088		0.09	0.11		-.086	.117	
total coffee harvest in kg (log)	.200	.098	**	.105	.107		-.194	.148	*	-.015	.158	
Cooperative characteristics												
technical assistance (index)	-.051	.089		.195	.097	**	.368	.163	**	.054	.173	
monetary benefits (index)	.286	.083	***	.115	.090	*	.254	.118	**	.066	.125	
trust in coop. Members (index)	.230	.088	***	.180	.095	**	.317	.129	***	.228	.137	**
corruption	-.183	.059	***	-.201	.064	***	-.197	.070	***	-.074	.074	
Utz certified (1=yes)	.193	.211		.551	.229	***	-.121	.261		.132	.278	
adj. R-square	.326			.313			.246			-0.24		
F-value	5.799	***		4.793	***		3.736	***		.802		

** = α< 0,10; ** = α< 0,05; *** = α< 0,01(source: household survey 2011)*

For Mathioya region, trust in the cooperative is not explained by household characteristics except for the total coffee harvest, which is negatively related to trust; farmers with a lower harvest have higher levels of trust in their cooperative. Technical assistance and monetary benefits are both positively significant for trust in the cooperative, as does trust in its members. Lastly, corruption has a negative influence. In both models, there appears to be no significant difference in trust for Utz certified or non-certified farmers. The model for loyalty has a very low explained variance; only trust in the cooperative members is positively explaining loyalty. The loyalty farmers have is thus for the most part mediated by the trust they have in their members.

Indirect effects – risk reduction

We expect that trust and loyalty towards the cooperative influence the risk perception of members of a cooperative. This hypothesis is examined by the use of a two stage least square (2SLS) regression, because the model we use involves endogeneity (Wooldridge 2008). We want to explain the risk perception of farmers with, among others, the trust and loyalty of farmers towards the cooperative. Trust and loyalty are however endogenous in this model; they are explanatory variables, but are jointly determined with our dependent variable because we use the same control variables in both models. We therefore control for the correlation of the variables trust and loyalty with the error term of the model. The variables used for risk perception are based on participatory risk mapping (PRM) (Smith et al. 2000). We questioned farmers on the incidence and severity of several risks, which resulted in two indexes, one for the risk perception of risks specifically related to coffee, and one index explaining risk perception of farmers in general (which includes coffee risks).

Descriptives of these variables are presented in table 4. On average, farmers of Kithungururu (non-Utz) score higher on the joint risk index than Rianjagi (Utz) farmers. In other words, they are more concerned about the incidence and severity of a range of future shocks. If we, however, focus on risks concerning coffee, Utz certified farmers score higher than non-certified farmers. Rianjagi farmers are thus stronger concerned about (coffee) market constraints, but significantly less about other shocks. These outcomes were confirmed by the outcomes of the risk game, since the game was framed in such a way that it related to coffee farming. This is not confirming our hypothesis that Utz Certified farmers are less risk averse. In Mathioya region, the control group (Kamagogo) experiences both more concerns about coffee shocks, as well as other shocks not related to coffee. Utz Certified farmers are thus less risk averse concerning coffee risks, as well as other issues, and these risk perceptions were confirmed during the risk game. This can be explained by Chris Barrett's (2005) theory on thresholds. It seems that Kamagogo farmers are 'below the threshold' of assets and capabilities that is required to grow toward a high productive steady-state. Instead, they are struggling with choosing between making investments in consumption or in the production of coffee. For Kangunu farmers, Utz Certification appears to work as a cargo net being in place, which helps them to find ways out of poverty, and overcome structural forces such as market constraints.

Table 5.6a: Model 3 - explaining risk perceptions, Embu (2SLS regression)

2SLS	Model 3A Dep: all risks			Model 3B Dep: all risks			Model 3C Dep: coffee risks			Model 3D Dep: coffee risks		
Embu	B	S.E.	Sig.	B	S.E.	Sig.	B	S.E.	Sig.	B	S.E.	Sig.
Constant	3,142	,952	***	2,729	,994	***	1,382	,691	**	1,111	,787	*
Household characteristics												
gender hh head (1=male)	,212	,323		,362	,329		,236	,234		,403	,261	*
age hh head (years)	-,011	,008	*	-,013	,008	*	-,009	,006	*	-,013	,007	**
max educ hh (years)	-,030	,031		-,023	,031		-,026	,022		-,015	,025	
total asset value(ksh, log)	-,253	,101	***	-,204	,103	**	-,116	,073	*	-,060	,081	
total coffee harvest (kg, log)	,106	,128		,051	,129		,035	,093		-,048	,102	
Cooperative characteristics												
trust in cooperative (index)	-,396	,114	***				-,447	,083	***			
loyalty to cooperative (index)				-,285	,114	***				-,184	,091	**
Utz certified (1=yes)	-,433	,210	**	-,241	,230		,317	,152	**	,436	,182	***
Adj. Rsquare	,193			,144			,309			,129		
SEE	1,009			1,039			,733			,823		
F-value	4,378	***		3,381	***		7,339	***		3,091	***	

** = α< 0,10; ** = α< 0,05; *** = α< 0,01(source: household survey 2011)*

The analysis of variables explaining the score of farmers on both risk indexes are shown in Table 6a for Embu. Of the household characteristics, the most important indicators are the age of the household head, and the value of assets and livestock. Farmers with a higher level of physical and/or human assets are less worried about coming shocks, and are important in the level of security experienced. They help farmers to cope with and recover from shocks (Hulme and Sheperd 2003).

Variables at the cooperative level are of main importance, for both indexes. The level of trust in the cooperative and loyalty towards the cooperative are both strong negatively significant in all models. Higher levels of trust in the cooperative lead to a less negative perception of future shocks, and the same holds for stronger loyalty towards the cooperative. Risk sharing within the cooperative is thus an important way of reducing risks related to the cooperative, as well as other household shocks, which confirms research of for instance Carter (1987) and Fafchamps (2003).

The influence of Utz Certification is however not confirming our expectations. The influence of Utz Certification is negatively significant in model 3A, indicating that Utz Certified farmers are less risk averse when it concerns all risks. Utz Certified has however a positive parameter in model 3C and 3D. Utz certified farmers are thus more risk averse when it concerns risks within coffee. It might be that certified farmers, for instance due to the corruption at managerial level, invest less of their returns in coffee, but instead spread their risks by investing in other income activities.

Table 5.6b shows the results for Mathioya. A remarkable difference with the model explaining risk aversion in Embu is that household characteristics are of more influence, while wealth in asset value and coffee harvests are not significantly influencing risk occurrence. Age and education are both positively significance, implying that risk occurrence and severity is higher for farmers with a higher age and a higher level of education. We expected a higher level of education, and therefore a higher level of capabilities in the households, to lead to lower levels of vulnerability. Paying school fees might however be a risk in itself. On the other hand, it is not in line with other findings. Stefan Dercon (2008) argues that not finishing school is often done as a coping strategy, but leads to a reduction of capabilities in the future.

Table 5.6b: Model 4, explaining risk perceptions, Mathioya (2SLS regression)

2SLS	Model 4A Dep: all risks			Model 4B Dep: all risks			Model 4C Dep: coffee risks			Model 4D Dep: coffee risks		
Mathioya	B	S.E.	Sig.	B	S.E.	Sig.	B	S.E.	Sig.	B	S.E.	Sig.
Constant	,013	,696		,347	,784		-,464	,880		,049	1,055	
gender hh head (1=male)	-,120	,164		-,133	,186		-,001	,207		-,018	,249	
age hh head (years)	,015	,006	***	,017	,007	***	,011	,008	*	,014	,009	*
max educ hh (years)	,028	,018	*	,048	,020	***	,014	,022		,044	,027	**
total asset value (ksh, log)	-,039	,071		-,107	,079	*	,034	,090		-,072	,107	
total coffee harvest (kg, log)	-,101	,093		-,090	,105		-,030	,118		-,014	,141	
trust in cooperative (index)	-,340	,065	***				-,533	,082	***			
loyalty to cooperative (index)				-,177	,079	**				-,258	,107	***
Utz certified (1=yes)	-,642	,149	***	-,668	,168	***	-,998	,188	***	-1,042	,226	***
Adj. Rsquare	,427			,269			,489			,264		
SEE	,626			,707			,792			,951		
F-value	9,940	***		5,423	***		12,470	***		5,297	***	

** = α< 0,10; ** = α< 0,05; *** = α< 0,01 (source: household survey 2011)*

The proxies for trust in the cooperative and loyalty towards the cooperative are negatively significant, meaning that higher trust in the cooperative and higher loyalty towards the

cooperative again both lead to lower risk occurrence and severity. This confirms our earlier findings for Embu region. A producer organization is thus an important factor reducing risks of small-scale coffee farmers. In addition, being Utz Certified is now for all models negatively significant. Utz Certified farmers thus experience fewer risks and shocks than their counterparts, while we controlled for household and cooperative characteristics. These findings are in line with our hypothesis, and contrary to the findings for Rianjagi (Utz Embu).

Discussion

Vulnerability reduction is an essential condition if small-scale farmers are to gain effective income strategies. We argued that Utz Certification reduces vulnerability through the cooperative of which coffee farmers are a member, in several direct and indirect ways. Table 7 shows our hypotheses and their outcomes per region.

Table 5.7: Overview of hypotheses and their outcomes

Utz-certified compared to non-certified farmers:	Embu	Mathioya
1. have a higher harvest, because	-	+
a. they receive better extension services	+	+
b. and receive higher prices for their coffee.	-	+
2. start to see their organization as a reliable partner, because	±	±
a. they have more trust in their cooperative	-	-
b. and are more loyal towards their cooperative.	+	+
3. are less risk-averse	±	+

+=confirmed, -=rejected, ±=partly confirmed

Hypothesis 1, which predicts that Utz Certification leads to a higher harvest, was rejected for the Utz Certified cooperative in Embu. Utz Certified farmers in Embu did only receive better technical assistance than their counterparts, and this assistance was indeed a significant influence on their production function. The hypothesis was confirmed for the Mathioya region: their coffee yields were significantly higher. Good technical assistance, a good system of input provision and a high coffee price are main conditions stimulating a high harvest (Ruben 2008; Barham and Weber 2012), and are more or less in place in Kangunu (Utz). Farmers agreed that higher prices were especially stimulating when it comes to producing coffee of high quality and quantity.

Concerning *hypothesis 2*, we can conclude that for the Embu region, Utz Certification positively influences the loyalty of farmers towards the cooperative. However, certified farmers did not differ from their counterparts in trust towards the cooperatives; they even experience higher levels of corruption. Certified farmers were thus experiencing difficulties with controlling their management, which is a familiar aspect of cooperatives (Milford 2004). However, certified farmers do have stronger trust in the fact that their cooperative members produce coffee of a high quality and quantity. These differences between loyalty and trust in

the cooperative might be explained by the focus of Utz Certification programs. Their main focus is on improving coffee practices of farmers through technical assistance, and they focus less on structural improvements in cooperative management (Raynolds et al. 2007). In the Mathioya region, outcomes on these hypotheses are similar. Utz Certified farmers are more loyal towards their cooperative, but we did not find differences with regard to the levels of trust in the cooperative. The explanation for the latter is slightly different than for the Embu region: farmers have significantly lower levels of trust in their cooperative members, which is thought to be caused by free-riding. Farmers who were doing well thought this lowered the price they received for their coffee. Certified farmers were thus not achieving the economic optimal production. Still, they received good prices for their coffee, which were higher than those of the control cooperative.

With respect *to hypothesis 3*, loyalty and trust towards the cooperative were both important in explaining the risk perception of farmers: higher levels of trust and loyalty lead to the reduction of risk aversion. Utz Certification in Embu, however, has a partially positive influence on risk perceptions. Overall, risk aversion is lower among Utz Certified farmers, but risk aversion related to coffee shocks is higher for Utz Certified farmers, and especially so if we control for trust towards the cooperative. This might be explained by the lower confidence Utz Certified farmers in Embu exhibited in their management and is in line with our theory; trust has an instrumental value in helping reduce risks and transaction costs of market relationships (Williamson 2000).
Results for Utz Certified farmers in the Mathioya region are in accordance with our hypothesis: they are less risk averse than non-certified farmers, and this holds for coffee shocks specifically, as well as shocks in general. Again, loyalty and trust towards the cooperative were a positive influence on risk reduction. This confirms our theory that producer organisations can have an important risk sharing function (Carter 1987; Fafchamps 2004), and that Utz Certification has possibilities to contribute to this by enhancing farmer's trust and loyalty towards the cooperative.

Our results indicate that the conditions under which cooperatives operate are important for a successful implementation of certification schemes in cooperatives. We confirmed that the combination of technical assistance and higher prices that Utz Certification offers to farmers is indeed important, and these benefits enhance loyalty and trust towards the cooperative. On the other hand, Utz might be negatively influencing trust: in the Embu region, certification seems to be causing corruption among management, while it appears to initiate free-riding in the Mathioya region. Higher yields and better coffee quality thus also depend on transparency and efficiency within the management of a producer organisation, as well as a well-functioning input supply system. The assessed certified cooperatives, especially the one in Embu, scored less convincingly on these factors. However, overall, we conclude that Utz Certification can indeed play an important role in the successful inclusion of smallholders in value chains.

Contributions to theory: new insights and remaining questions

Our research findings emphasise the importance of understanding the influences of institutions on rural livelihoods. Institutions are acknowledged in the livelihoods framework

as important factors influencing livelihoods. Our theoretical framework gives better insights into how local livelihoods are linked to (international) markets through, for instance, producer organizations and Utz Certification. A good understanding of the influence of the global economy on local economies and economic choices is increasingly important due to the renewed focus of development policy and practice on agriculture.

We also contribute to theories on the application of Utz Certification and other certification schemes. Most research on certification focuses on Fair Trade schemes, while little research has been done so far on private standards such as Utz Certified (Ruben and Zuniga 2011). In addition, studies that focus on evaluating the impact of certification mainly focus on outputs and outcome levels (Nelson and Pound 2009). We examined vulnerability reduction both within and outside markets. Our findings show that the successful reduction of market imperfections, due to Utz Certification, reduces vulnerability in other non-market shocks as well. However, our findings are still quite broad and more research is needed to closely examine these effects.

Producer organisations and certification schemes are important institutions mediating the access of farmers to these international markets. Our article confirms earlier research, in that producer organisations are indeed important in reducing market vulnerability (Milford 2004; Blandon et al. 2009). On the other hand, we also found (slight) evidence of the fact that producer organisations might constrain access to market through corruption and free-riding (f.i. Mude 2006; Barham and Weber 2012). Utz Certification schemes appear to be particularly successful if they offer a complete package of technical assistance, higher prices, and input supply, which then needs to be executed by an efficient and transparent management committee. Of these, input supply appeared to be the least successfully organised, even though a good input supply system is very important for boosting production (Mude 2006). Our findings show that this is especially a problem for poorer farmers, who do not have the means to buy inputs elsewhere if the supply system of their cooperative fails. This demonstrates the risks of inclusion in value chains with high quality standards. Farmers face the risk of being locked into unprofitable production activities if market constraints are severe which seems to lead to risk-averse choices and being trapped in chronic poverty. More in-depth research is however needed with regard to farmers' choice-making processes; as well as the dependence of (poorer) farmers on support systems such as POs and certification schemes.

Our research leaves open questions on other strands of theory and research as well. Regarding to livelihood strategies, we mainly examined risk perceptions, and did not study effects on income strategies thoroughly. For theory on certification schemes as well as inclusion in value chains, it would be very interesting to examine these parts of vulnerability reduction as well. We also mainly focused on the production side of the household, and less on consumption patterns. One recurring theme in our research findings was, for instance, the preference farmers have for a 'lump sum pay-out', because they can use this large amount for specific investments such as education. More research might be done on these relations.

A last issue we want to emphasize is that Utz Certified is still a relatively 'young' label. At the time of research, the certified cooperatives in Mathioya and Embu had been certified for respectively 5 and 4 years. Research done a few years from now may notice a stronger internalization of certification schemes, which might have other outcomes. It might then also be possible to do longitudinal research and examine changes over time. Longitudinal research could give more insight into longer-term effects of certification schemes, and whether shifts in livelihood strategies are sustainable over a longer time period.

REFERENCES

Barham, B. L. and J. G. Weber, 2012, The economic sustainability of certified coffee: recent evidence from mexico and Peru. *World Development* 40(6 : 1269-1279.

Barrett, C. B., 2005, Rural poverty dynamics: development policy implications. *Agricultural Economics* 32(1 : 45-60.

Bijman, J. and M. Wollni, 2008, Producer Organizations and vertical coordination: an economic organization theory perspective. International conference on cooperative studies, ICCS, Köln, Germany.

Blandon, J., S. Henson, et al., 2009, Small-scale farmer participation in new agri-food supply chains: case of the supermarket supply chain for fruit and vegetables in honduras. *Journal of International Development* 21: 971-984.

Cardenas, J. C. and J. Carpenter, 2008, Behavioural Development Economics: Lessons from Field Labs in the Developing World. *Journal of Development Studies* 44(3 : 311-338.

Carter, M. R., 1987, Risk sharing and incentives in the decollectivization of agriculture. Oxford Economic Papers 39(577-595,

Chambers, R. and G. R. Conway, 1992, Sustainable rural livelihoods: practical concepts for the 21st century. IDS Discussion Paper. Brighton, IDS. 296.

Creswell, J. W., 2003, *Research design: Qualitative, Quantitative and Mixed Methods approaches*. Thousand Oaks, California, Sage Publications, Inc.

Dercon, S., 2008, Fate and Fear: Risk and its consequences in Africa. *Journal of African Economies* 17(2 : 97-127.

Dorward, A., J. Kydd, et al., 2005, Institutions, markets and economic co-ordination: linking development policy to theory and praxis. *Development and Change* 36(1 : 1-25.

Doss, C., J. McPeak, et al., 2008, Interpersonal, Intertemporal and Spatial Variation in Risk Perceptions: Evidence from East Africa. *World Development* 36(8 : 1453-1468.

Ellis, F., 1998, *Peasant Economics: Farm households and agrarian development.* Cambridge, Cambridge University Press.

Fafchamps, M., 2003, *Rural poverty, risk and development.* Cheltenham, UK, Edward Elgar Publishing Ltd.

Fafchamps, M., 2004, *Market institutions in sub-Saharan Africa: theory and evidence*, MIT Press.

Hazell, P., C. Poulton, et al., 2010, The Future of Small Farms: Trajectories and Policy Priorities. *World Development* 38(10 : 1349-1361.

Hulme, D. and A. Sheperd, 2003, Conceptualizing Chronic Poverty. *World Development* 31(3 - special issue chronic poverty and development policy : 403-423

Kamau, M., L. O. Mose, et al., 2010, The impact of certification on smallholder farmers in Kenya: The case of Utz certification programme in coffee. Nairobi, Kenya, Tegemeo Institue, Egerton University.

Kaplinsky, R. and M. Morris, 2001, Handbook for value chain research. IDRC. Canada.

Key, N. and D. Runsten, 1999, contract farming, smallholders, and rural development in latin america: the organization of agroprocessing firms and the scale of outgrower production. World Development 27(2 : 381-401.

Milford, A., 2004, Coffee, cooperatives and competition: the impact of fair trade. Bergen, Norway, Chr. Michelsen Institute.

Mude, A. G., 2006, Weaknesses in Institutional Organization: Explaining the dismal performance of Kenya's Coffee Cooperatives. International Associaton of Agricultural Economists Conference. Gold Coast, Australia.

Murphy, J. T., 2002, Networks, trust and innovation in Tanzania's manufacturing sector. *World Development* 30(4 : 591-619.

Nelson, V. and B. Pound, 2009, the last ten years: a comprehensive review of the literature on the impact of fairtrade. Greenwich, Natural Resources Institute, NRI,

Ostrom, E., 2003, How types of goods and property rights jointly affect collective action. *Journal of Theoretical Politics* 15(3 : 239-270.

Place, F., G. Kariuki, et al., 2004, Assessing the factors underlying differences in achievements of farmer groups: methodological issues and empirical findings from the highlands of Central Kenya. Agricultural Systems 82: 257-272.

Pratt, B. and P. Loizos, 2003, Choosing research methods: Data collection for Development. Oxford, Oxfam.

Quinn, C. H., M. Huby, et al., 2003, Local perceptions of risk to livelihood in semi-arid Tanzania. *Journal of Environmental Management* 68: 111-119.

Raynolds, L. T., D. Murray, et al., 2007, Regulating sustainability in the coffee sector: a comparative analysis of third-party environmental and social certification initiatives. *Agriculture and Human Values* 24: 147-163.

Rodrik, D., 2000, Institutions for high-quality growth: what they are and how to aqcuire them. *Studies in Comparative International Development* 35(3 : 3-31.

Ruben, R., Ed., 2008, the Impact of Fair Trade. Wageningen, Wageningen Academic Publishers.

Ruben, R., M. Slingerland, et al., 2006, Chapter 1: agro-food chains and networks for development: issues, approaches and strategies. Agro-food chains and networks for development. R. Ruben, M. Slingerland and H. Nijhoff. Dordrecht, the Netherlands, Springer.

Ruben, R. and G. Zuniga, 2011, How standards compete: comparative Impact of coffee certification schemes in Northern Nicaragua. *Supply Chain Management: an International Journal* 16(2 : 98-109.

Saenz, F. and R. Ruben, 2004, Export contracts for non-traditional products: Chayote from Costa Rica. *Journal on Chain and Network Science* 4.

Scoones, I., 2009, Livelihoods perspectives and rural development. *Journal of Peasant Studies* 36(1,

Scoones, I. and W. Wolmer, 2003, Introduction: livelihoods in crisis - challenges for rural development in southern Africa. *IDS Bulletin* 34(3 : 1-14.

Seville, D., A. Buxton, et al., 2011, Under what conditions are value chains effective tools for pro-poor development? London, IIED/Sustainable Food Lab.

Shiferaw, B., G. Obare, et al., 2008, Rural market imperfections and the role of institutions in collective action to improve markets for the poor. *Natural Resources Forum* 32(1 : 25-38.

Smith, K., C. B. Barrett, et al., 2000, Participatory Risk Mapping for targeting research and assistance: with an example from East African Pastoralists. *World Development* 28(11 : 1945-1959.

Tegemeo institute, 2009, Impact assessment of fair and responsible trade in coffee - Kenya household survey November 2009. Nairobi, Egerton University.

Thomas, A., J. Chataway, et al., 1998, *Finding out Fast: investigative skills for policy and development.* London, SAGE publications.

Tschakert, P., 2007, Views from the vulnerable: Understanding climatic and other stressors in the Sahel. *Global Environmental Change* 17: 381-396.

Vorley, B., E. Pozo-Vergnes, del, et al., 2012, Making markets work for smallholders? Capacity.org - a gateway for capacity development. Leiden, Contactivity bv.

Williamson, O. E., 2000, The New Institutional Economics: Taking Stock, Looking Ahead. *Journal of Economic Literature* 38(3 : 595-613.

Wooldridge, J. M., 2008, Chapter 15: Instrumental variables and two stage least squares. Introductory Econometrics: a modern approach. J. M. Wooldridge. Mason, USA, South-Western Cengage Learning.

World Bank, 2001, Building institutions for markets. World Development Report 2002. Washington DC, World Bank.

World Bank, 2007, Agriculture for Development. World Development Report 2008. Washington DC, World Bank.
World Bank, 2011, Africa Development Indicators 2011. Washington, World Bank.

Appendix

Table A: Choices, payoffs, risk aversion classes, and expected values[35]

Choices	Option 1 = green (p=50%	Option 2 = red (p=50%	RA Class	Expected Value
1	100 KSh/10 kg coffee	100 KSh/10 kg coffee	Extreme	100 KSh
2	190 KSh/10 kg coffee	90 KSh/10 kg coffee	Severe	140 KSh
3	240 KSh/10 kg coffee	80 KSh/10 kg coffee	Intermediate	160 KSh
4	300 KSh/10 kg coffee	60 KSh/10 kg coffee	Moderate	180 KSh
5	380 KSh/10 kg coffee	20 KSh/10 kg coffee	Slight-neutral	200 KSh
6	400 KSh/10 kg coffee	0 KSh/10 kg coffee	Neutral-negative	200 KSh

[35] Based on the worksheet of Barr (2003); values used by Barr are framed to the local Kenyan context of coffee farmers.

Chapter 6
Gender equity within UTZ certified coffee cooperatives in Eastern Province, Kenya

By Eveline Dijkdrenth[36]

Introduction

Development agencies are becoming more aware of the importance of a gender approach in their projects. This is also the case for certification labels like Fairtrade, Max Havelaar and Utz Certified (hereafter called Utz). These labels have, besides the objective of reducing poverty, the objective to empower women and achieve gender equity. The objective of poverty reduction has been studied in multiple impact studies (Ruben 2009; Bechetti and Constantino 2008). However, the objective that Certified producers, especially women are empowered, or that we can speak of gender equity has not been studied thoroughly.

There are broadly speaking two gender approaches within the field of development. First, the Women in Development (WID) approach, which assumes that the benefits of modernisation would eventually trickle down to women. This approach upholds the view of seeing women as victims of Third World problems. The common believe is that employment empowers women. This is based upon the assumption that gender relations will change themselves as women become full economic partners in development. Therefore the WID approach focusses on the public domain, the economy. The concept of gender became visible in the 1970's in development analysis, but it focused mainly on women instead of addressing inequalities between men and women and among men and women (Rathgeber 1990, 491-492; Kabeer 1994).

The second gender approach, Gender and Development (GAD) was formed because the WID approach was seen as inadequate. It failed to deal with inequality and it did not deal with understanding structural problems (Brown 2006, 58). The GAD approach shifted its focus from women to gender and unequal power relations between and among men and women. The concept of social construction of gender is explicitly included into the formulation of GAD policies and programmes (Razavi and Miller 1995, 12). According to the GAD approach gendered problems in the society are not fixed, they are historically formed so they can also be changed (Cartier and Rothenberg-Aalami 1998, 286). It is a more holistic approach to gender, it looks at gender relations and is about the meaning of masculinity and femininity and the power relations between and among men and women. These power relations are not only present in the public domain, but also in the private domain, they can not be seen as separate domains, as people are part of both domains.

Although, by the beginning of the 1990's, the concept of social construction of gender had become the dominant discourse around the world - and NGO's began to add some elements of the GAD approach in their existing WID programmes - development programmes still dominate many development projects, programmes and gender analysis. This is also the case in certification programmes, where the emphasis lies on involving women within the economy through certification. Besides positive effects, improving of self-esteem and status, this

[36] The MA thesis of Eveline Dijkdrenth was published in 2011 and has 74 pages.

approach has also led to negative effects because gender relations are not addressed. It can lead to heavier workload and heighten the unequal division of labour at home (Hopkins in Hutchens 2009, 452). After studying 18 Fairtrade producer-partners of Oxfam, Hopkins (2000) noted that in all cases gender relations remained largely unaffected. Van Dooren (2005, 124) states that there is often little attention to the woman's responsibility toward the family and their role in the Fairtrade rice production. Finally Mayoux (2001) problematises women's disadvantage position with respect to returns and premiums of Fairtrade. Payments usually go to the man within the household, even though women also participate in the Fairtrade production.

In this research I have looked into the gender approach of Utz as part of an impact study of UTZ. Their main objectives concerns poverty reduction, but for the last few years Utz has been more concerned with gender equity in their certification program. Their gender approach is formulated in the following criteria of the Code of Conduct:

> ...discrimination based on gender is prohibited; in compliance with ILO convention 100, equal work must be remunerated with equal pay; the responsible person for worker health and safety must be able to demonstrate awareness of and access to national regulation concerning maternity leave; health and safety conditions is applicable to permanent as well as temporary workers. (Utz Kapeh 2004)

In 2009 maternity leave, maternal health care and protection against sexual harassment were added (Utz Certified 2009). Besides poverty reduction lays on involving women within the economy and giving them equal rights in the workplace. Cooperatives are themselves responsible for implementing the Code of Conduct which they signed.

The gender approach of Utz mainly focusses on the public domain and explicitly on women. Taking the GAD discourse into mind, this gender approach leaves some questions: How, for example, are the structural problems of gender relations addressed when it only focusses on women? Why are men not involved in this approach? Why are structural problems of gender asymmetry not addressed, like social norms an perceptions about the division of labour? How is the private domain affected by this gender approach, when the focus is only on the public domain? Finally how can cooperatives themselves implement this gender approach, especially when they are not trained in addressing gender issues? Are they even aware of gender differences and power relations? All these questions concern the approach of UTZ on power relations and understanding structural problems. It is important, if one of the objectives of Utz is gender equity, to understand how gender relations work both within the public and the private domain. I wanted to know what the effect of the gender approach of Utz was on gender relations within an Utz Certified cooperative, therefore I needed to compare the Certified cooperative to an non Certified cooperative. I have worked with the following research question: Is there a difference in how an Utz Certified and an non-Certified cooperative try to influence gender equity within the cooperative and does this influence gender relations within the household?

In this research the gender approach of an Utz Certified coffee cooperative was analysed and compared with an non Certified coffee cooperative in Kenya. I have both focussed on the field of the cooperative (public domain) and that of the household (private domain). Gender

relations within both cooperatives and within the households of farmers of both cooperatives have been compared in order to see if there were differences, and if gender based programmes within the coffee cooperative led to changes in gender relations within the cooperative and the household.

This research was conducted in Kenya in the Eastern Province, north of the city of Embu, on behalf of the East African regional office of the NGO Solidaridad. Rianjagi Cooperative Society Limited, hereafter called Rianjagi, was chosen as the Utz Certified cooperative because women formed a majority of the management committee. The NGO saw this as an interesting development, because in Kenya most management committees of coffee cooperatives consists of a majority of men. Kithungururu Farmers Co-operative Society Limited, hereafter called Kithungururu, was chosen as the non-Certified cooperative. Both cooperatives are located on the same geographical location, at an altitude of approximately 1700 meters. They are comparable by size and composition of members.

Gender Equity

Understanding what is meant with gender in this research is crucial for understanding why the focus in gender approaches needs to be not only on women but on men too, because both are part of the social construction of gender relations. When talking about gender in this research we talk about the cultural meaning that is given to someones sex. Someones sex is not the only factor that determines gender (Erikson 2001, 127-128; Moore 1994, 12). Gender is more complex. The differences between gender are socially and culturally constructed. For example: embroidering and rugby are two hobby's that don not have anything to do with biology. There will only be a few people who think that embroidering is typically a hobby for men and rugby a typical girls sport. However, what in one society is seen as a typical female-thing, can in other societies be seen as the opposite. For example in western societies, like Northern America and Europe nobody would frown upon two girls walking hand in hand. People would probably presume that they are friends or perhaps sisters. While this is 'normal' in western societies, this is different in, for example, Nepal. Here, two girls walking hand in hand is something that is socially not acccepted, and is seen as a sexual expression. However, if two men would walk hand in hand, it would be seen as normal, while this would probably be the opposite in western societies.

The example above shows that gender is socially created and is also 'hegemonic in that many of its foundational assumptions and ubiquitous processes are invisible, unquestioned, and un-examined' (ibid, 2). Davis et al. explain further that 'gender is constructed and maintained by both the dominant and the oppressed, because both ascribe to its values in personality and identify formation and in appropriate masculine and feminine behaviour' (ibid 2). Furthermore gender is about the division of people into two different groups, 'men' and 'women', and the organisation of major aspects of society that comes along this binary division. Davis et al. explain this as follows:

> It overrides individual differences and intertwine with other major socially constructed differences - racial categorisation, ethnic grouping, economic class, age, religion, and sexual orientation - which interact to produce a complex hierarchical system of dominance and sub-ordination (ibid, 2).

Gender division is not only visible in families and friendships, but it also structures among for example education, law, medicine, the military, politics, religions and work. Gender is a system of power in that it privileges some while disadvantaging others (ibid, 2). Gender is about power relations, meanings, social relations, perceptions, norms and hierarchy (Chambers 1996). There are variations between gender relations in different societies, ranging from almost completely equal, to societies where women's influence over their own destiny seems very limited (Howel 1989).

Gender equity and empowerment

Gender equity and gender equality are often used to describe the same process. But these concepts are not the same. An important distinction must be made. Equality stresses that people are treated the same. Gender equality indicates that women have the same opportunities in life as men. Progress in women's status is measured against a male norm. Through measures to increase women's participation in public live, policies and legislation try to tackle the problem of inequality. However, when people are treated the same this does not automatically mean that significant differences are hold into account, which may affect the outcomes of 'equal' treatment. Equality policies assume that once the barriers to participation are removed, everybody plays by the same rules. It does not recognise that women's reality and experience may be different from men (Reeves and Baden 2000, 10). 'Where conditions do not take the difference in gender into account, 'equal' treatments tends to default to the unequal status quo' (Chambers 1996).

Gender equity recognises differences in gender and hold this into account in order to prevent the continuation of the inequitable status quo. It emphasis fairness in process and outcome, and it does not presume that people are the same and need the same, as is the case with gender equality (Chambers 1996). Gender equity recognises that women and men have different needs, preferences and interests and that equality of outcomes may mean a different treatment of men and women (Reeves and Baden 2000, 10).

Gender equity can lead to gender equality in certain fields. For examples a woman gets the same amount of salary paid for the same work as a man. We speak of equality because men and women are treated equally. However, a woman can still be seen as inferior to men, or be discriminated against because gender relations are not changed by giving equal payment. Gender equity holds the differences between men and women into account. For example a pregnant woman can not do heavy work and when she delivered her baby she needs a period of rest before she can come back to work. In this case it is important that a woman is treated differently than a man and that her situation is taken into account. However if the payment is not hers to control but her husband. We can not talk of gender equity if he decides how the money is spend and she only gets a small portion. Therefore to achieve gender equity, there not only need to be equality in certain fields, the differences between women and men and unequal power relations need to be taken into account. Also in the private domains (Chambers 1996). To achieve gender equity social power relations need to be changed. Both women and men are part of the social construction of gender relations therefore both need to be included in gender development programmes to address gender relations.

Empowerment is often seen as an important factor. Kabeer understands empowerment in terms of power and social justice. She formulates it as follows:

> ...the notion of empowerment is that it is inescapably bound up with the condition of disempowerment and refers tot the processes by which those who have been denied the ability to make choices acquire such an ability. (Kabeer 1999, 437)

Empowerment is a process. Someone who has a great deal of choices may be powerful, but they are not empowered, because they were not disempowered in the first place. To be empowerment means the change from disempowerment to empowerment, thus from not having the ability to choose to having the ability to choose. As it becomes clear the ability to make a choice is important in the concept of empowerment and to make this choice someone must gain power. Kabeer defines three main dimensions of empowerment and thus for the power to be able to make a choice:

Figure 6.1 Interrelated Dimensions of Choice
Source: Kabeer 1999: 437

Resources are the pre-conditions for choices, agency is the process of making choices and achievements are the outcomes of the choices made (Kabeer 1999, 437). The resources include material and non-material resources. Material resources are for example economic assets, non-material resources are for example someone's social network. As far as empowerment is concerned, possible inequalities in people's capacity to make choices are of particular interest, rather than differences in the choices they make.

Empowerment cannot be given through purely economic means. Empowerment is something that can be created if the opportunity is given and taken, these opportunities are limited by power relations. To understand how this works we must understand the concept of power.

Power

Power is a complicated concept. Power has different faces and is more than only the outcome of conflicts. Power is also making compromises, negotiating and struggling, it is a process in thinking. But this does not mean that power can be measured by looking at a reaction to or the significance of the effects of a reaction. It is not the case that one can only posses power when the other has none. Power is also not inherent to a position, space or a person, but power can be restricted by those in inferior positions. These restrictions, or the thought of these restrictions, are shaped by the ideology of a dominant class and determines the wants of the subordinates and prevents them from trying to exercising control (Villareal 1994, 202-205). Dominant classes are those who have the most power to influence discourse, a formalised way of thinking, a socially defined boundary of what can be said about a certain topic. As Butler puts it 'the limits of acceptable speech' (Butler 1999), and discourses constrain the actions of the power someone has. In order to exercise power, power must be excepted, as Villarreal puts it: 'The wielding of power presupposes the exercise of yielding to it, of recognising the other as powerful' (Villareal 1994, 8). In the field of development when we talk about power we do not talk about power to let someone do what the other wants him to

do. We talk about power that produces gender relations, hierarchy, division of labour, perceptions, norms etc.

So we could say that power relations reproduce power relations and establishes systems of domination and social hegemonies. However this is often taken as an explanation of the patterns social relations assume. Villarreal argues that these dominant systems and social hegemonies could also be outcomes of the process of power relations (ibid, 205). Opening these black boxes, we need to look at the dominant discourses and at the social processes that produce these discourses. In this research this means looking at how gender relations work, what the division of labour is, who owns and controls what, what the social perceptions and norms are and how these social processes reproduce power relations. Foucault's and Bourdieu's theories will help to better understand in which way social processes reproduces power relations.

For Foucault power is not localised in institutions or sovereigns, but it takes form through the use of strategies, tactics and techniques. Discourse influences gender relations in particular ways. Discourses are embedded in social relations and activities and are mostly taken for granted (Foucault 1980, 92). Villareal summarises Foucault approach to power, it is a 'particular understanding of the way in which the world is organised and should be organised, images of self and other, of people's roles and capacities, and associations with the environment help reproduce and maintain power relations and fix asymmetries' (Villarreal 1994, 213). Power takes form through the use of strategies, tactics and techniques. Discourse influences gender relations in particular ways. Discourses are embedded in social relations and activities and are mostly taken for granted (Foucault 1980, 92). Social relations are by Foucault portrayed as systems and chains and individuals are included within them. In this way individuals have limited agency.

Bourdieu sees individuals more as 'creative, active subjects with inventive capacity, social agents in their roles as practical operators of the construction of objects' (Bourdieu 1990, 13). Bourdieu argues that the actions of agents are structured by their habitus. To put it real simple, habitus are those things that we do that are a habit or that we find ordinary. This originates from an adaption of certain habits which have been in the past been formed. In every field (social context) people unconsciously develop certain habitus, a sustainable way to observe, think and act, as for people to maintain them selves in a certain field. The position of people in a certain field is not calculated, in a way that people look at all the objective regularities and calculate which outcome could be the most successful. Rather the position of people is a cause of earlier experiences, acquired in comparable situations and ethical concepts. An individual internalizes the reality that presents it from the outside. At the same time the individual presents this internalized reality in its own way to the society. This shows that there is a constant (slow) process of incorporations and objectification (Bourdieu 1977, 73-78). Habitus is, in other words, a discourse that is taken for granted.

The concept of habitus helps to understand those discourses that are not questioned and seen as natural or as part of the culture. A certain habitus is formed in a certain field, a social context. Fields are areas where meanings and interpretations are debated and defined through habitus, which defines the 'categories of perception and assessment'. They are normative processes, reflected in practices, where the battle around power struggles over

economic, social and cultural capital influences social relations. We can see fields as a setting, for example the setting of a school or of the household/family. The social world is made up by all kinds of fields, like religion, family relations, labour conditions, markets, education etc.

The gender approach of Utz concerns coffee cooperatives and their farmers, therefore, the field of the cooperative is of special interest as is the field of the household. As explained in the introduction if we would leave out the field of the household we would not take into account that gender relations are socially constructed in both fields and these fields interact with each other. Discourse analysis within the field of the cooperative concerns an analysis of the power relations as documented in the policies of the cooperative and social norms and perceptions that exit about men and women within the cooperative. Within the field of the cooperative a limit number of people are active and they run and control the cooperative. Coffee farmers all have to deal with the cooperative because they sell their coffee through the cooperative, therefore the policies of the cooperative directly influence the lives of farmers. I have analysed policy documents and looked at how certain rules affected the participation of men and women and what the perception were about men and women within the cooperative. I did a discourse analysis on answers given during interviews with farmers and with staff members. I have looked at those things that were seen as normal or part of their culture, in other words in their habitus.

In the field of the household all persons were included living under one roof or on one plot (this could be a nuclear household, an extended household or a whole family). Decisions within a household can be influenced by family members who are not actually living within the household, but decide on certain issues. For example who a person will mary, or how money is spend. This field is concerned with the activities in the homes of the farmers and on the farm surrounding the home as most of the households were self-sufficient. This includes activities on the coffee plot but also the cultivation of other crops, diary farming and other income generating activities. The discourse analysis in the field of the household concerns the division of labour, control of assets, decision making power and social norms and perceptions about gender relations. I have looked at answers given to questions during the interviews. What were the respondents saying, how did they say this, what kind of examples and explanations did the respondents gave, especially concerning norms, and were respondents aware of their own habitus.

Analytical Framework

In this research gender relations in the field of the household and the cooperative are central. Gender relations are influenced by power relations and social norms and perceptions people have. In return, power relations and social norms and perception also influence each other. A gender policy will try to influence social perceptions and power relations. By trying to change power relations and social perceptions the policy tries to achieve gender equity. Gender relations in both fields are influenced by power relations and social perceptions. Power relations and social perceptions influence gender equity within the society. The gender policy of the cooperative tries to influence these power relations and social perception in order to achieve gender equity. In the end power relations and social perception need to be changed to achieve gender equity.

Based on the theoretical framework I have formulated nine subquestions. The subquestions are divided in questions concerning the field of the cooperative and the household. The subquestions concerning the field of the cooperative were mainly concerned with the kind of gender equity approach that was used, and the questions concerning the field of the household were mainly concerned with power relations. The first two subquestions (1 and 2) concerned questions about power relations within the cooperative. In order to say something about the gender policies of the cooperatives we need to ask: (1) What are the policies towards gender within the cooperative? This subquestion is concerned with analysing policies, and especially the position of men and women as described in the policies of the cooperative. This subquestion only analyses how it is described on paper, the second subquestion is concerned with how the position of men and women is in reality. (2) What is the position of women and men within the cooperative? Subquestion three and four are concerned with the policies of the cooperatives that were especially developed to achieve gender equity, (3) What kind of programmes are there to achieve gender equity?, and (4) How are programmes to achieve gender equity implemented? These two subquestions will give more insight in how the cooperative interpret gender equity, and how they try to influence gender relations. The gender discourse of the cooperative will become more clear in this way. Subquestion five concerns the social perceptions in the field of the cooperative. Especially the social perception gives insight in perception that allows people to understand the individuals and groups of their social world (Smith and Mackie 2000, 20). (5) What are the social perceptions about men and women within leadership positions? Social perceptions will give more insight in the habitus of the respondents. The five subquestions, as discussed above, made it possible to get more insight in the gender policies and the existing gender relations within the cooperative.

In order to get more insight in the existing gender relations within the household and to see if gender policies of the cooperatives had an influence on gender relations within the household level I have worked with another four subquestions. The first three subquestion concern power relations within the household and are concerned with the division of labour, decision making power, and control of assets. By concentrating on these three subjects I was able to get more insight into the hierarchy within the household. For every subject I have formed an subquestion: (6) How is the division of labour within the household?; (7) Who decides on which issues within the household?; (8) Who owns what and who controls what within the household? The ninth subquestions is concerned with social norms and perception about men and women: (9) What are the social norms and perceptions about men and women within the household? This allowed me to get more insight in the habitus of the respondents.

By making the devision between cooperative and household I was able to look at how gender relations were within both cooperatives and how both cooperatives influenced gender relations with their policies. I was also able to look if there was a difference in the gender relations within the household of the cooperatives farmers.

Methodological Framework

This research was conducted in three phases. In the first phase semi-structured interviews were held with employees of the cooperatives and as many committee members as possible. In the second phase focus-group discussions were held with a total of 40 farmers (20 per cooperative). In the third and last phase 63 semi-structured interviews were conducted. Households were visited multiple times. In this way it was possible to observe the activities of

the household members. Especially the activities of men differed from what they said in the semi-structured interview and what they actually were doing. Finally I have used discourse analysis to analyse the semi-structured interviews. I have looked especially at those answers that were given and implied that it is a norm in their society. In these cases respondent often said that it is their culture or that is how they always do it. For triangulation, as far as this was possible, I depended on my own observations and the observation of my enumerator, who spoke the local language.

Researched Cooperatives

I started my research with Rianjagi, the cooperative that was picked by Solidaridad. They picket this cooperative because it had a majority of women within the management committee. The cooperative had been founded in 1997 after splitting from the coffee cooperative Kapingazi, due to mismanagement. Rianjagi had a total of 1519 members of which 1037 were active members in 2011. Of the 1037 members 673 were men and 353 were women. The cooperative had one factory and two cherrie mills[37]. Rianjagi has been Utz Certified since 2008. It was important that the control cooperative needed to have a similar size of total membership and a similar percentage of male and female memberships as Rianjagi, in order to compare the both.

On the basis of official data, obtained from the district cooperative officer in Embu, Kithungururu was chosen. This cooperative was located close to the village of Gatoori, into the mainland. The cooperative had been founded in 2001 after splitting from the same coffee cooperative where Rianjagi split from, Kapingazi, also due to mismanagement. Kithungururu had a total of 1811 members of which 1262 were active members 878 were men and 374 were women. Kithungururu currently (2011) has one factory. In the near future this will become two. The current factory has two cherrie mills. The factory manager was a man. Kithungururu had no certification, they only received training from the Melinda and Bill Gates foundation.

Table 3.1. Statistics of Total Membership and Production (2009/2010)

Cooperative	Active membership	Total		Production in Kg's	Sales in Ksh	Payments	%

[37] Cherries are the coffee beans called when they are not yet dried. A cherrie mill is an tool to rinse of the outer layer of the cherrie before it can be dried.

	male	female		Shared			in Ksh	
Rianjagi	673	353	1036	305,600.00	857.641	50,324,992.90	38,154,930.70	75,8
Kithungururu	859	360	1229	326,400.00	643,637	39,755,102.03	39,755,102.03	85,3

Source: Data provided by the District Cooperative Officer in Embu

Table 6.1 shows the member data from both cooperatives. The second and third column shows the active membership. This means the number of members who in recent harvest year (2009/2010) have delivered their coffee harvest to the factory. Not all members delivered their coffee to the factory, some sold it to another farmer (although this is illegal it happens because farmers need their money earlier than the cooperative can pay them) or because their harvest failed. The fourth column shows the capital in Kenyan Shillings the cooperatives had in savings. This money was used to pay the staff and for repairing property of the factory and was sometimes used to give a loan to a member. The production in kilogram gives the amount of coffee beans that had been sold in total to the middle man before it went to the auction. The Sales in Kenyan Shilling presents the amount of money the cooperative received for the produced coffee in total. The Payment in Kenyan Shilling was the amount of money that was eventually payed to the farmers. For Rianjagi this was 75.8% of the amount of money received after selling it on the auction, and for Kithungururu this was 85.3%. Kithungururu gave in percentage more to their farmers, but Rianjagi got a better price per kilo. Therefore, the payment rate of Rianjagi is higher (50 Ksh) than that of Kithungururu (47 Ksh).

Besides the number of members the shared capital, production in kilos and payments were all comparable. Finally, the fact that both cooperatives split from Kapingazi Cooperative Society due to mismanagement, made Kithungururu the most suitable cooperative for comparing gender relations with Rianjagi.

Table 6.2: Sample of farmers

cooperative	total households	total of interviews	men	women	single women	widow(s)
Rianjagi	19	31	14	17	0	1
Kithungururu	19	32	12	20	3	2
Total	38	63	26	37	3	3

Sample of farmers

Table 6.2 shows the sample of farmers for both cooperatives. I interviewed 63 farmers, chosen trough snowball sampling. The criteria was that they had to be a member of Rianjagi or Kithungururu. Rianjagi had 11 villages. In almost every village, two households were interviewed. Nineteen households participated, 31 interviews in total, 14 men and 17 women. Kithungururu had five villages, of every village four households were interviewed, except one village where three households were interviewed. Twenty households of Kithungururu participated, 32 interviews in total, 12 men and 20 women were interviewed once. It was not always possible to interview both the wife and the husband within the household, this had several different reasons. Some husbands were employed in another region of Kenya and only came home a few times per year. Others were employed in town and were to busy to make time to be interviewed. Although it was not always easy to talk to women (mainly because some women were afraid that their husband would find out that they were interviewed), only two women were not interviewed because they were employed as civil servant in another region of Kenya.

A majority of the households (22) were nuclear households. There were six households with a single woman or widow as head of the household. The rest (10) were extended households. Extended households often consisted of children and grandchildren or in case multiple families lived on the same plot because the land was not yet divided. While elderly couples often had six or more children, young couples had five or less children.

Gender Development Approach on the Cooperative Level

Subquestions concerning the field of the cooperative - the policies towards gender within the cooperative, the position of women and men within the cooperative, social norms and perceptions about women within the cooperative and finally gender equity programmes that are implemented - are discussed here. Due to the privacy of the respondents the name of farmers are not used, instead respondents are referred to as numbers plus letters. A woman gets a number plus a, and a man gets a number plus b. Members of the same family have the same number. For example a woman and man in one household were interview, the woman is 1a and the man 1b. Before we turn to discussing the data of the subquestion in the field of the cooperative the difference between the composition of both cooperatives is discussed.

Cooperative Composition

Both cooperatives had the same organisational structure. Shareholders are the ones who own the cooperative. Shareholders elect the management committee members, which all must be shareholders. The elected members decide themselves who gets which position. The management committee works closely with the manager. The manager works together with a bookkeeper and clerk(s). The supervisor committee controls both the management and the management committee and consists of a chairperson, vice-chairperson and secretary. The manager is the superior of the factory manager. The factory manager is in charge of all labourers, which are often casual labourers, and he is responsible for the factory, the maintenance and the machinery. Finally, below in the structure are the workers, they help during the harvesting seasons, in between with repairs and do all kinds of other chores at the factory. All these functions were the same for Rianjagi and Kithungururu.

The difference between Rianjagi and Kithungururu lies in the composition of the management committee and the function women have within the cooperative. The manager of Kithungururu was a woman, while at Rianjagi this was a man. However, this was only a formal title, she had only administrational duties and the management committee did not consult her. While at Rianjagi the manager had a powerful position and consulted regularly with the chairperson. The biggest difference between both cooperatives was the fact that Rianjagi had three women at some influential positions within the management committee. Whereas Kithungururu had none. The first woman to enter the management committee of Rianjagi was Sophia Ndwiga in 2007. She was elected after the former vice-chairperson, currently the chairperson, started to make shareholders aware of the importance of women within the management committee. He felt it was important to include women within the committee because women were also an important part of the community. He was aware that women were the ones who did most of the work within the household and on the coffee farm. However, women were not respected by men for their work. To empower them he saw it as an important development that women would become part of the management committee. Besides this, the Kenyan government aimed at a 30% representation of women within institutions, organisations and parliament. So the awareness of the problems women faced and the wish to favour women, as within the policies of the government, finally resulted in three female committee members as of 2008.

Sophia Ndwiga was elected by the shareholders and chosen to be the treasurer. In 2008 Cynthia Njoka and Molly Njeru joined the management committee, after being elected by the shareholders. Cynthia Njoka has since been the secretary, and Molly Njeru the vice-chairperson. While the position of treasurer and secretary is not particularly a position of influence, the position of vice-chairperson is. The vice-chairperson had the same power and duties as the chairperson in case he or she was absent or had other duties to attend on behalf of the cooperative. The power and duties of the vice-chairperson are the same as that of the chairperson in case of absence. A woman in the position of vice-chairperson was nog common at coffee cooperatives, which were dominated by men.

Kithungururu had no women within the management committee. Although the chairperson, James Namu, liked to see women in the board he thought they were too shy to vie for a position during elections. However female farmers of Kithungururu gave other reasons for the

absence of women within the management committee. For example men were bribed with alcohol by members who wanted to be elected or re-elected and the meetings were chaotic, this discouraged women to come. Women were not taken serious, when they wanted to say something they were booed. Another problem which I noticed was that the recent election, of March eight 2011, was announced only days before the election, which made it difficult for both male and female shareholders to campaign to get elected.

The Position of Women within the Cooperative

The position of women within the cooperative societies was influenced by the representation of women within the management committee, but also by the rules concerning participation during general meetings and elections. The rules of requirements for both cooperatives will be discussed followed by how women of both societies felt they were represented within the cooperatives.

Cooperative societies in Kenya are free to make their own rules concerning requirements to participate during general meetings and to be elected within the management committee (The Co-operative Societies Act 1997: article 7:1:g). The rules are made by the management committee, presented to the shareholders during general meetings and if agreed upon by the shareholders documented in the by-law of the cooperative. Rules to participate concern among other things the required amount of produced cherries to be allowed to participate during general meetings - where decisions of the management committee are presented and where shareholders can discuss these decisions and present new topics - and to vote during elections for new management committee members. Rules to be elected within the management committee also concern required amount of produced cherries - which is often higher than the required amount of cherries to participate during general meetings and elections - and also the ability to write and speak English. English is the official language of Kenya and members of the management committee have to communicate with government officials. Because cooperatives are free to make their own rules there can be differences between cooperatives as was the case with Rianjagi and Kithungururu.

Table 6.3 shows the required kilos for participating during general meetings and vote during elections and the required kilos to be elected for Rianjagi and Kithungururu. Shareholders of Rianjagi needed to produce at least 300 kilos of cherrie to participate during general meetings and to vote in case new management committee members needed to be elected. Whereas shareholders of Kithungururu needed to produce at least 500 kilos of cherries. In case a shareholder would liked to give themselves up for election, for a position within the management committee, shareholders of Rianjagi needed to produce at least 500 kilos of cherrie, and shareholders of Kithungururu 1000 kilos of cherrie. Rianjagi thus required significantly less kilos of produced cherries for participating and to vote and to be elected within the management committee, than Kithungururu.

Table 6.3: Required Kilos of Cherrie for participating during Meetings and to be elected within the Management Committee at Rianjagi and Kithungururu

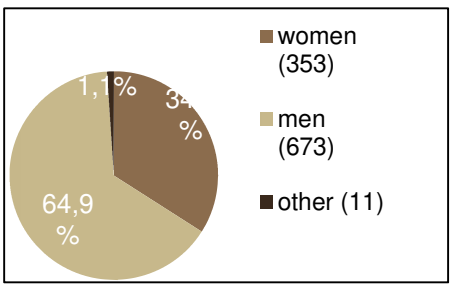
Cooperative Society	Required kilos of cherries to participate	Required kilos of cherries to be elected
Rianjagi	300 Kgs	500 Kgs
Kithungururu	500 Kgs	1000 Kgs

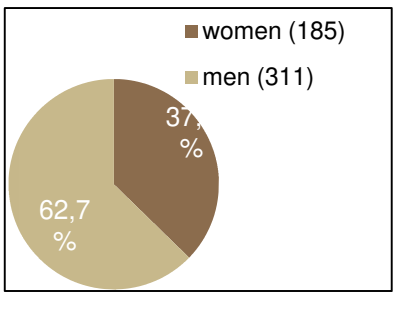
Source: By-law of Rianjagi Rianjagi Farmers Cooperative Society Limited 2008

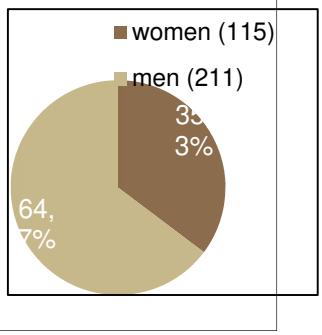
These rules of requirement influenced the percentage of female and male shareholders that could participate or be elected (hereafter called active shareholders). Especially the percentage of female participation in both cooperatives was influenced by these requirements. In general women produced less kilos than men, because they often owned smaller portions of land, or could only use a small part of the land of their husband. Figure 4.2 gives an overview of the percentage and number of active shareholders of Rianjagi and Kithungururu. The first piecharts of both cooperatives present the percentage of male and female shareholders, the category of others includes churches, schools and other organisations who have a share at the cooperative. The second piecharts present the percentage of active male and female shareholders who could participate during general meetings and vote. And the last piecharts present the percentage of active male and female shareholders who could be elected within the management committee. The absolute numbers are parenthesised and show the absolute number of shareholders in the first piecharts and the absolute number of active shareholders in the second and third piecharts.

The first piecharts show that the percentage of male and female shareholders of both cooperatives were comparable. At Rianjagi 34.0% were female and 64.9% were male shareholders and at Kithungururu 29.3% were female and 70% were male shareholders. When we look at the second piecharts the percentage of active shareholders differ between both cooperatives. At Rianjagi 37.3% of the active shareholders were female, while at Kithungururu this percentage was significantly lower at 16.6%. This means that at Rianjagi an significantly higher percentage of women could participate during general meetings and vote during elections. In the last piecharts the difference between both cooperative are less significant if we look at the percentage of active female shareholders. However, if we look at the absolute numbers we, see that at Rianjagi 115 women are active shareholders, while at Kithungururu this number is significantly lower; 41 women, although both cooperatives have in absolute numbers an comparable number of women. This means that significantly more women at Rianjagi had the opportunity to give them self up for election during management committee elections. The rules of requirement of both cooperatives thus influenced the degree in which women are represented within the cooperative, if this also means that women felt they were represented will be now discussed.

Rianjagi







Percentage of shareholder

Participation during general meetings and elections

Percentage of shareholders that can be elected

The fact that women were present or absent in the management committee had a big influence on how women of both cooperative perceived their position within the cooperative society and if they felt they were represented. In general women were shy and felt uncomfortable to talk to men, who were not related to them. For women of both cooperatives it was important that they could talk to a woman in case of problems. However, this was not possible for women in the society of Kithungururu. Because no woman was part of the management committee they did not felt that they were represented. They also did not thought that this situation would change, because it was very difficult for women to get elected. During interviews with women of the Kithungururu society they told me that besides that women often did not have a share, the relatively high amount of required kilo's of cherries and the hostile climate during general meetings and elections, formed one of the biggest obstacle for women. Even if a woman had the right amount of kilo's, they were discouraged to go to general meetings and elections. Men were bribed with alcohol during elections and this resulted in chaotic circumstances.

In contrast, women within the society of Rianjagi felt that they were represented, because women were seated within the management committee. They could go to one of these women if they had problems. These women could bring up their issues during discussions at meetings with the rest of the committee. Female farmer of Rianjagi, 101a, emphasised that women were familiar with the problems faced at home and therefore were more willing to help women,

> It is easier now to get the school checks, because the women know how difficult it is to pay the school fees. Men sometimes forget about the school fees. You will find the men is employed somewhere and he goes to the bank, forgetting that he has children at home that need to go to school. Women are not like that, women are generally concerned.

Female farmer of Rianjagi, 102a, explained why for her women in the management committee were important and how it benefited women,

> They are at least able to fight for women issues. Women are now able to approach them [the management committee] and tell them the problem they are facing. And women are generally kind. If you need pesticide they see you have potential, but not the kilos. If you approach a woman and you can explain, they usually understand and are kinder and they try to get you more pesticide.

Having women within the management committee of Rianjagi, had as result that women within the society of Rianjagi felt they were represented, and in case they needed help they had someone to go to.

Nevertheless, the fact that women in the society of Rianjagi felt represented, did not imply that relations were equal between men and women within the cooperative. The cooperative was still dominated by male shareholders. Women were often next of kin[38], but they needed permission from their husband, the shareholder, to do businesses with cooperative or to be representative at meetings. Women were the ones who were most active on the coffee farm, yet they were often not the ones with the share at the cooperative. As a consequence a large part of women in the society of Rianjagi had no opportunity to influence the decision making process. This was the same for a large part of women in the society of Kithungururu. Therefore, a lot of women in both societies rarely interacted with the cooperative. However, when women were shareholder at Rianjagi, the opportunity to be active in the decision making process at the cooperative gave them the opportunity to influence the process of decision making. In this way these women had the ability to strengthen their position within the society, which could also benefit other women within the society. To conclude, representation of women within the management committee and during general meetings and elections did make a difference in the position women had within the society of the cooperative, but men still dominated the cooperatives.

Empowerment Programmes

The empowerment programmes of Rianjagi and the absent of empowerment programmes at Kithungururu are briefly discussed. Kithungururu did not have any programmes that had as objective to empower farmers; not for women, neither for men or youth. The only activity of Kithungururu was to process cherries and buni that farmers brought to the factory and sold to the middle men, who then took it to the auction, and payed the farmers their share when the cherrie and buni was sold at the auction. When farmers wanted to, they could also buy new coffee plants at the cooperative. In other words, they only focussed on the coffee production.

[38] A next of kin is a person that is written down in cooperatives document as the person who would inherit the cooperative share of a certain shareholder when this shareholder would pass away.

The empowerment programmes of Rianjagi were not programmes that were developed by Utz, but were the result of the commitment of the chairperson of Rianjagi and the rest of the committee members. In 2011, Rianjagi wants to start an empowerment programme. According to the chairperson, women do most of the work in the household. 'Yet everything in the home belongs to the man. Because everything belongs to the man, the man tends to think that all the other things from the wife are his, and the wife is an inferior person'. The chairperson wanted to empower women and use the dairy programmes for this purpose. He explained his idea as follows,

> 'I will show you how we could bring women in some activities. For example, with fish dairying, this is an activity that will be done in that chamber. So, at the end of the day she will have access to some funds and she now will be a member of the society through that activity. So whatever income earned from that activity will be in the possession of that woman. She will start feeling that she owns some things and brings some income to the home, and the man will have to be taught that the activity belongs to the woman and not him. We will use the society for this purpose.'

In this program, women would also be included that are not shareholders but are in fact next of kin. In this way those women, who before were not officially members of the cooperatives, could become members through these programmes. By giving women their own way of generating income the chairperson hoped to give women the feeling that they are contributing to the household. However, as he also explained women already had a lot of work on the plot and in their homes, so this would mean that women would have more work. It was not clear how this would change power relations. The chairperson did understood that the man of the household also needed to be educated, that it is that the woman has ownership over this activity and thus over the money that is earned with this activity. To educate men, the chairperson wanted to use the general meetings, in which he wanted to discuss the position of women within the household.

There are two assumptions about gender relations in the empowerment programs of Rianjagi. First, the assumption that if a woman gets her own income, she will be respected at home because she contributes to the household. Women already contributed financially to the household by cultivating the coffee and often other crops like banana's, the only difference was that women often do not control the income derived from these crops, and are not respected for their contribution. The chairperson further assumed that women would get control over the income from these activities. However, he also said that in other income generating activities women did most of the work and yet they were not in control of this money.

Second, by including a woman in the economic market she will be empowered and gender relations will change because of this inclusion within the economic market. This assumption was also present in the gender discourse of the WID approach. As was discussed in the introduction this gender approach does not pay attention to power relations between men and women, and the social construction of gender. Both men and women had certain perceptions about women that could limit the power a woman had. The chairperson wanted to to change the perception of male farmers. However, he did not discuss perceptions women had about power relations within the household. He only planned to discuss the position of

women within the household with male farmers, and he wanted to empower women by giving them more work and an own income. It is questionable if existing power relations will change with the proposed empowerment programs of Rianjagi.

Social Perceptions about Women in Leadership Positions

In this section, the social perception and norms about women in leadership positions will be elaborated. This will give some insight in the different discourses about the perception of the position of women within a leadership position. By looking into what farmers thought about women in leadership positions two things became apparent. Both men and women from Rianjagi and Kithungururu were asked questions if they thought women could lead a cooperative society, and if a woman would be part of the management committee which position the respondents thought she was able to hold. First of all, there was a difference in how women of Rianjagi perceived the abilities of women to lead a cooperative society. Second, no difference was found in how men of both cooperatives think about this issue. There was also no difference in age observed. Through the use of examples, in the next paragraphs, a more general insight will be given in the social perceptions on women.

After analysing the data of the interviews four different categories of reasons were found why male and female farmers of Rianjagi and Kithungururu thought a woman could be in a leadership position. The first category explained that women could be in leadership positions, but only if she met certain qualifications. In the second category women were seen as less corrupt and more trustworthy than men. In the third category women were seen as developers and therefore should have been in a leadership position. Finally, in the fourth and last category the leadership of women was seen as something positive and was explained by giving examples of successful women within other cooperatives or within politics. Table 4.2 gives an overview of the division of answers given by male and female respondents of both cooperatives. Not all respondents answered these questions. The first category is the category of Qualifications, this category is about certain qualifications men and women ascribed to persons in leadership positions. The second category, Trustworthy, is about trust people said they needed to have in a person, trusting that a person was not corrupt. The third category is called Women as Developers, this category has this name because in this category women were often called developers of the home. The last category, Female Leaders, is about examples of female leaders who were doing well in their position.

Seven male and zero female farmers of Rianjagi and three male and eight female farmers of Kithungururu answered yes, according to them a woman was able to lead an cooperative society, but only if she met certain qualifications. These qualification varied between having the gift of leadership, being intelligent, and having experience. For example male farmer of Rianjagi, 103b, said not all women could lead ‘because not all have the gift to lead, even not all men have that gift but most men have it’. Male farmer of Rianjagi, 102b, also explained that if women were wise than they could lead. Even though not all men were wise, according to him most of them could lead. In other words, according to these male farmers most men can lead and also a few women, but only if they had certain qualifications. Leadership skills were defined as having a strong character and standing up against corruption.

Table 4.2 Division of Answers given by Male and Female Respondents

Category	Rianjagi		Kithungururu		Total	
	Male	Female	Male	Female	Male	Female
Qualifications	7	0	3	8	10	8

`

Source: Data derived from Interviews

Four male and one female farmer of Rianjagi and four male and three female farmers of Kithungururu answered that women were not, or less corrupt than men, or as translated from Swahili, more kind, and therefore could lead the society. The description of 'more kind' refers to the kindness and honesty that is ascribed to women by the respondents. Especially when it came to financial issues within the cooperative women were seen as more trustworthy. The perception farmers had about women in leadership positions influenced the position farmers ascribed to them. In this category all farmers ascribed the position of treasurer or secretary to women because they were trusted most in those positions.

Respondents in above two categories were critical about women in leadership positions. They either saw it as difficult for a woman to come in such a leadership position because she needed certain qualifications, which men were thought to have more often than women. Or they thought the position of treasurer or secretary suited women better. In these categories both the majority of men from Rianjagi and Kithungururu and the majority of women from Kithungururu were represented. While only one woman of Rianjagi was represented.

Women of Rianjagi were mainly represented in the third category where women could lead a cooperative because she was seen as developer. Seven female farmers and on male farmer of Rianjagi and five female farmers and one male farmer of Kithungururu answered that women were more aware of the needs of families and were therefore more able to lead the cooperative, taking the needs of farmers into account. Especially women, of both cooperatives, elaborated on this. Female farmer of Kithungururu, 15a, said that 'women are able to see the problems that the community has and can bring development'. Female farmer of Rianjagi, 117, explained that women were more understanding than men. Female farmer of Rianjagi, 111, said that women in the management committee were more concerned with solving problems of women. Male farmer of Rianjagi, 116b, explained that most farms were being taken care of by women and most homes were taken care of well.

In the last category one male and three female farmers of Rianjagi and one male and three female farmers of Kithungururu saw women in leadership positions as a more natural development. These eight farmers saw women in leading positions in different settings, and according to them do a good job. This made them come to the conclusion that they thought women could also be in a leading position in other settings, like within the cooperative. They explained this by giving examples of situations where women were already in a leadership position. Female farmer of Kithungururu, 14, referred to two situations she knew in her direct surrounding where women were in leading positions:

> Nowadays women are the ones who go for more meetings and trainings and it are men who become more and more lazy. Women do more and work more. Men drink a lot and do less work. The sub chief is currently a woman and at the school the board has more women than men. The women are 12 and the men are 2.

She was critical about this development, because she did not necessarily believe this to be a positive development, because according to her this was a result of men doing less work than before. Female farmer of Kithungururu, 9a, referred to the women who work at the cooperative. She thought women could do a better job than men, if they were given a change: 'The ones who weigh the coffee are women and they do good'.

Overall were female farmers of Rianjagi more positive about women in leadership positions. The majority of female farmers of Kithungururu and the majority of men of both cooperatives preferred men to lead the cooperative and women to be in control of money belonging to the cooperative.

In conclusion the position of women within both cooperative differed because of two factors. First of all the position of three women within the cooperative of Rianjagi ensured that women at Rainjagi felt represented. Second the lower required kilo's at Rianjagi compared to Kithungururu ensured that more female farmers could participate during general meetings and vie for position within the management committee. While the opposite was the case for Kithungururu, where women were discouraged to participate because of the high amount of required kilo's and the hostile environment. When looking at the perception of women, female farmers of Rianjagi are more positive about women in leadership positions compared to female farmers of Kithungururu. But overall they all agreed that women should have a position within the management committee.

Gender Relations on the Household Level

As discussed in the introduction and chapter two, to achieve gender equity or to try to change gender relations, it is important to look at the construction of gender relations in both the public and private domain. This construction of gender relations not only takes place in the public domain, like the domain of the cooperative in this research, but also in the private domain. Therefore, we will turn now to the private domain, the field of the household, to discuss how the gender relations are within farmers households. While in the field of the cooperative there was a clear difference between gender relations at both cooperatives, this might be different in households.

Social Norms and Perceptions on Gender Relations within the Household

Throughout the interviews the social perceptions and norms became apparent. The general perception was that the man was the head of the household, because it was a norm that a man owned the land and most of the assets he could make most of the decisions.

When it concerned decision making within the household men were in charge. The man was considered to be the head of the household and therefor had most of the power within the household to make decisions. Decisions were made concerning financial issues, what was bought or sold and who could spend what, and concerning the education of children. It was often up to the male head of the household to make these decisions, sometimes in consultation with the spouse. Only in certain areas, like cleaning the household or cooking a women could decide for herself. It was often explained that the man is the head of the household because that was how it was in their culture or because the bible said so. Not only men thought about the hierarchy in the household this way, female farmers often thought about this the same way. Female farmer of Kithungururu, 4a, explained it by giving an Swahili saying '*Ngingo ndivitukaga kjongo*', translated it would be 'the neck can not pass the head'. This meant that there was not a single moment that a woman could be in charge or take the lead. It was the head who told the neck which way to bend. She said, 'If I would make a decision about the cow or the goat it would bring conflict to the home'.

When it came to what the norm was on who controls assets like money, land, cattle and other livestock it was also the man who was in control. Not many people said something about why it were men who owned most of the assets and not women, but those who spoke about this said it was part of their culture. For example female farmer of Rianjagi, 112a, said that 'In our culture everything with blood and land is owned by men. The cow is his, because women do not own cows. Although I milk it, I can never own it. Even the sheep and chicken are his'. Male farmer of Rianjagi, 113b, also said this, 'All things that have blood are the property of men'. In general in all households, except the households with single female farmers or widows, the land belonged to the man. Inheritance law in Kenya was part of the reason why men owned land and women often did not. The inheritance law was discriminating against women in that men's right were often registered while this was not the case for women's rights to land. Furthermore, it was a customary law that women did not inherit land, because when they marry they would live on the land of her husband, so she did not need the land (Human Right Watch 2003: 32).
When going back to the previous section about the position of women within the cooperative, women were perceived as being an important part of the cooperative, within the household this perception was different. A man was perceived to be the person who needed to have most of the power, because he was the head of the household. Both male and female farmers imposed this habitus.

Power structures within Households

In this subsection it will become apparent that the difference in gender relation between both cooperatives has not led to differences in gender relations between farmers households of Rianjagi and Kithungururu.

Decision making power

There were three kinds of household concerning decision making power. First of all there were households where all decisions were made by the male head of the household. Female farmer of Kithungururu, 1a, explained it is a custom that men took all decisions,

> It is a custom that women do not make decisions. If I need to make a decision I will call my husband to make the decision or wait until he comes home. If I would make the decision my husband would come and chase me away. Even if it is about school fees, I can not withdraw money without asking, I will have to consult first. If he says no I have to wait until he is back.

She saw it as a norm that women did not make decisions and that she did not have the power to make any decisions. Even when her husband was not around she could not make decisions. Second, there were households where the overall decisions were made by men, but women could make some small decisions, like what to cook for dinner. In these households women could make decisions about small issues. Even though women had more power it was their husbands who granted them these powers. Male farmer of Kithungururu, 4b, explained in which situation his wife could make decisions: 'She can decide over farm output like arrowroot, beans, potatoes and I decide on cows and coffee'. Third, there were also households where the overall decisions were made in consultation with the spouse and in the last kind of households all decisions were made by women, these were the household of single women or widowers. Male farmer of Rianjagi, 105b explained why he consulted his wife, 'We decide together, because you can not force someone, so we discuss it equally'. His wife said the same and explained that besides the decisions they made together, she could decide on small things herself 'If I want to sell the chicken or milk, or what we will eat or if I want to buy something for myself'.

In all households, where there was a male head of the household, either actually living under one roof or living away from home due to work related activities, women had limited decision making power. In the first group of households, they had little to no decision making power and their husband made all the decisions. In the second group women had some form of decision making power, even though it were decisions about small matters. Only those women who lived without a husband, either he had already died or they chose to stay single, had all the decision making power on all matters concerning their household. We can conclude that if there was a male head of the household he had most of the decision making power and he was in a position to give his wife some power to make her own decisions. The power women had thus depended on the power granted to them by men. The habitus of male and female farmers imposed men to make the overall decisions and even if a woman can take these decisions together with her husband, it is seen as natural that it is the husband who grants her this power and not the other way around. Even the chairman ascribes to this gender regime, by wanting to give women the opportunity to include them within the economy and trying to give them more power by providing them with work.

Control of Assets

Besides decision making power, farmers were also asked about who controlled which assets within the household. We can make a division between three different groups. First the households where all assets were controlled by men. Women in these households had little

or no power to control these assets. In all cases it was the husband who decided who controlled the assets in the household, this is seen in almost all households as a norm, because men owned land and therefore owned everything on it, or because he was the head of the household. Not only did men look at it this way, women did too, except for female farmer 2a, she tried to send her children to school by using her own money, she got from casual labor. However, in many households women did not own money they earned themselves. Like male farmer 113b said, his wife did not own anything, so where would she got the money from? This meant that even if she would sell bananas which she harvested herself, this could not be hers because the bananas grew on the land of the man and therefore he also owned whatever profit would come from selling these bananas.

Second, the households where women had control over certain assets. Although land was owned by men, in this group women still had a form of power over those assets belonging to the household and situated on the man's land. For example, Female farmer of Kithungururu, 8a, 'My husband is the owner of the land, but the cattle is ours and even the sheep'. Often livestock that was more valuable, like sheep, was controlled by men, and she was aware of this and therefore said that 'even the sheep' was hers. It was her husband who gave her the power to control this asset together. Finally there is also a third group of households, which consisted of single women and widows, who controlled all assets.

Overall men were in control of most or every asset within the household. Men had power to control these assets because they were the owners of the land. However in most households women also had some control over some assets. Often were these assets of little value, like chicken, or when it were assets of more value they had shared control over these assets. In all cases it was the man who decided if his wife could have control over assets. Like in the former subsection those women who were single or widow had control over all or almost all their assets. We can again conclude it was the male head of the households who had the power to control assets or to give power to their wife to control certain assets alone or together. Both men and women ascribed to this habitus.

Division of labour

For the last subquestion - what is the division of labour within the household - respondents were asked to tell their daily programme, and what they did on the farm, in the house and other forms of activities. Only two division are made here between households. In the first group of households women did most of the work in the house and on the farm. In the second group of households tasks were divided between household members. The difference between these two groups laid in how tasks were divided on the farm, because in all households, no exception, women were responsible for household tasks. Only in certain circumstances would a man do household tasks, like in case the wife was sick. Male farmer of Rianjagi, 113b, says the following about this,

> I think the tasks are divided equally, because everyone has tasks to do. My wife does the subsistence farming, maize and beans. I am in charge of the cash crops. My wife also does the cow that is her responsibility. My work is not a lot, but my wife also does not do a lot, only when she wants. The household, my wife does that, that is the work for women.

He was not aware of the time his wife was spending on chores, but he thought that she did not do a lot, and if it came to household tasks he thought it was normal that she did those. His wife agreed with her husband: 'Even my husband does some work and in the farm we do an equal amount of work'. When asking if this was the same for the household she responded, 'In the household he can not help, because he can not cook'.

Household tasks in all households thus depended on women and whether tasks on the farm were divided between men and women depended on if men helped out or not. The power to make decision laid with men, even though a woman would complain about the division of labour it was not up to her to decide if her husband helped on the farm or not. Some women were aware of the amount of work they did when they compared it to what their husband did. Others perceived it as normal that household tasks were done by women and that outside the household they had to do at least half of the tasks. The power to divide labour laid for most part with men, and for a big part it was decided through norms, who was supposed to do what in the society. It was apparent that the habitus of both male and female farmers imposed women to do most of the work around the house. Note that all women had this habitus, no woman questioned it. Even thought they complained about men not doing enough, they referred to men not doing enough on the farm.

In some households women were aware of the existing unequal power relations within their households. However, it was difficult for them to change this because they did not have the power to change this, because the dominant discourse perceived men to be in power within the household. This dominant discourse is also seen in the inheritance law, which favours men and is apparent in the answers given by male as well as female farmers. Not only men but also women perceived it as a social norm that male heads of the household were the ones who had most power. Almost the opposite of what both male and female farmers said about how the division of power within the cooperative needed to be and especially how power relations at Rianjagi were.

Influences of the Cooperative Field on the Household Field

In the previous subsections we discussed how gender relations were within the households of both Rianjagi and Kithungururu farmers. There was no difference found, while at the cooperative level there was indeed a difference in gender relations between both cooperatives. Women at Rianjagi were better represented, they felt represented and they were more positive about women in leadership positions than female farmers at Kithungururu. The rules of requirements of Rianjagi included an significant more amount of women to vote and be elected compared to Kithungururu. Overall women were more included and had more power at Rianjagi than at Kithungururu. However this has not (yet) led to changes in the gender relations within the household of Rianjagi farmers. The position of women within households of Rianjagi is the same as at Kithungururu. This leaves the question: Why do gender equity programmes or changes in gender relations at the cooperative level not lead to changes in gender relations at the household level? This was not one of my research questions but this question was derived from the empirical findings on the cooperative and household level. We have to go back to the definition of gender and power. Understanding these concepts in the context will help to better understand why the gender approach of Rianjagi has not led to a change in gender relation within the household.

Like seen in this research it is constructed in the field of the cooperative but also in the field of the household. The dominant discourse in the household for both Rianjagi and Kithungururu was the man as the head of the household and therefore he had most of the power. He controlled most assets, decided on the important issues, or in case the woman had some power it was granted to her by her man. The same for division of labour. The dominant discourse is one where women do all the household tasks and besides this an even or bigger part of the tasks outside the household. As long as this discourse is not addressed, I think it will be difficult, by changing power relations in the field of the cooperative to automatically change gender relations within the household. As long as this dominant discourse is not addressed in both fields, it is difficult to change power relations in all fields.

At Rianjagi, female farmers were given a change to be active members, including three women within the management committee, but also by giving them more income generating activities. All with the goal of trying to change the perception of women within the cooperative. To say it bluntly from being of no use to adding value to the cooperative, and becoming respected members of the cooperative. In the field of the cooperative the management committee and in specific the chair person, tried to influence the dominant discourse that men are the more important members of the society and that they needed to be in control and have most of the power. However, this dominant discourse is not only constructed in the field of the cooperative. What we have seen in this chapter is that in the field of the household, most men and women ascribe to this discourse. Social norms and perception perceived men as head of the household and to be in charge of decisions, and in control of assets. Whenever a woman did not wanted to ascribe to this discourse, she had only limited power to do so. The gender discourse and power of the dominant class restricted her from exercising control.

The gender policy of Rianjagi was in most part focussed on including women within the cooperative, the public domain, of the economy. By giving women an means of income it was thought she would be seen as a person who contributed to the household. But what became apparent was that women already do a lot of work on the farm and do most for the coffee production, however they had no control over the money they earned, because men controlled this. As one farmer said, it is his land and his wife did not bring anything to his land when they got married, therefore everything that she brought to his land would automatically became his. Including someone in the economy does only change the position of women in the public domain and not in the public domain, because the gender discourse is not challenged. Most of the lives of farmers took place within their households and families, gender relations within the household were not put up for discussion. Even though Rianjagi had three women in the management committee who held influential positions, this did not change the perception on men or women within the household, because these perception were never questioned.
To change gender relations, it is important to change the dominant discourse. Without questioning the gender discourse women can gain power in one field through economic inclusion, but in society in general this does not change the gender discourse.

Conclusions

This research analysed the gender approach of Utz Certified and how Utz tries to achieve gender equity, by looking at gender relations in Utz Certified coffee cooperative Rianjagi, in Kenya, and comparing this to gender relations at an non Certified coffee cooperative, Kithungururu. Note that the conclusions only apply to Utz Certified coffee cooperative Rianjagi and can only partly be generalised, as this was a case study.

As explained in the introduction, there are broadly speaking two main gender discourses, the WID and GAD discourse. The WID discourse focusses on women and including them into the economy to empower them and change gender relations. The GAD discourse takes a more holistic approach to gender and looks at gender relations in both public and private domains, this discourse looks at power relations between and among men and women. The focus of Utz gender approach can be placed within the WID discourse. The focus lays on including women within the economy and giving them equal rights in the workplace. As discussed in the introduction this raised some questions concerning the construction of gender relations and especially how the private domain of the household can be affected when the approach only focusses on the public domain, the inclusion within the cooperative. This research showed, as the criticism stated, that this approach does not address power relations or understands the social construction of gender.

The focus on including women within the economy at Rianjagi did result in women being more involved within the cooperative, compared to Kithungururu. Because in general women produced less kilos of coffee, and Rianjagi requested a significantly lower amount of produced coffee to actively participate than Kithungururu, women were more active within the cooperative. The management committee consisted of three women, at Kithungururu none, and twice as much women could join general meetings and vote for new committee members at Rianjagi. Although the relatively low required amount of produced kilos was not part of the gender approach it made a huge difference in representation of women within the cooperative. The gender approach of Rianjagi was focussed on bringing women within the management committee and the intention of creating income generating activities for women. The fact that women were part of the management committee positively changed the perception of women had about their position within the cooperative. However, the intention of creating income generating activities for women could become problematic. As the chairperson of Rianjagi already explained and also became apparent in this research is the heavy workload women already have. Women already did a lot of work and creating more work does not address power relations nor would it change power relations. Not addressing power relations and only focussing on creating equal opportunities for women within the public domain was exactly the criticism the WID approach got. Equity is not creating the same opportunities in life as men. Gender equity is recognising the differences in gender, power relations and needs.

What became apparent was that the dominant discourse perceived men as being the most important person within the household and the habitus of both male and female farmers imposed most of the power to men in the society and especially to men within the household. Important is to explicitly state that both men and women construct these power relations. It is not the case that women are a victim of the discourse they also construct the discourse. This unequal power balance can not be addressed by giving women an income generating activity or by giving some women an position within the management committee. Therefore the

significantly more women who were involved within the cooperative of Rianjagi and the fact that three women were within the management committee did not lead to any difference in gender relations within the households of farmers. Gender relations were the same as within farmers households of Kithungururu.

What this research has made clear is that the gender approach of Utz Certified coffee cooperative Rianjagi focusses on including women within the public domain, and this does not lead to a change in gender relations in the private domain, the household. As explained, gender is socially constructed in all domains of the society, whether it is the economy, law or the family, and the dominant discourse about gender determines gender relations within the society. Both men and women are part of this discourse. To achieve gender equity, as the objective of Utz is, the dominant discourse on gender relations shall need to be discussed with both male and female farmers. The dominant discourse needs to change before women can be empowered in the public as well as the private domain, and to finally achieve gender equity.

References

Bechetti, L. and M. Costantino. 2008. The Effects of Fair Trade on Affiliated Producers: An Impact Analysis on Kenyan Farmers. *World Development.* 36(5): 823-842.

Bourdieu, P. 1977. *Outline of a theory of practice*. Cambridge: Cambridge University Press.

_____ 1981. *Men and Machines, in Knorr-Cetina and Cicourel, Advances in Social Theory and Methodology: Towards an integration of Micro- and Macro-Sociologies*. London: Routledge.

Brown, A. M. 2007. WID and GAD in Dar es Salaam, Tanzania: Reappraising Gender Planning Approaches in Theory and Practice. *Journal of Women, Politics & Policy* 28(2): 57-83.

Butler, J. 1999. *Gender Trouble: Feminism and the Subversion of Identity.* New York: Routledge.

Bryman, A. 2004. *Social Research Methods.* New York: Oxford University Press.

By-Law of Kithungururu. 2005. Kithungururu Farmers Co-operative Society Limited By-Laws C.S. NO.8812.

By-Law of Rianjagi. 2008. By Laws of Rianjagi Farmers Cooperative Society Limited C.S. NO 8491

Cartier, C. and J. Rothenberg-Aalami. 1999. Empowering the "Victim"? Gender, Development, and Women in China under Reform. *Journal of Geography* 1998(6): 283-294.

Chambers. A. 1996. Definition of gender equity. http://www2.edc.org/womensequity/edequity96/0371.html accessed at January 11 2011.

Davis, K. M, Evans, J, Lorber. 2006. *Handbook of Gender and Women's Studies.* London: SAGE Publications Ltd.

Erikson, T. H. 2001 [1995]. *Small Places, Large Issues An Introduction to Social and Cultural Anthropology.* London: Pluto Press.

Foucault, M. 1980. *Power/Knowledge*. New York: Pantheon.

Hopkins, R. 2000. Impact Assessment Study of Oxfam Fair Trade. Oxfam.

Human Right Watch. 2003. Double Standards: Women's Property Rights Violation in Kenya. *Human Right Watch* 15(5A): 1-51.

Hutchens, A. 2010. Empowering Women through Fair Trade? Lessons from Asia. *Third World Quarterly* 31(3): 449-467.

Kabeer, N. 1994. *Reversed realities: Gender hierarchies in Development Thought.* London: Verso.

Kabeer, N. 1999. Resources, Agency, Achievements: Reflections on Measurement of Women's Empowerment. *Development and Change* 30 (108):435-464.

Mayoux, L. 2001. 'Impact Assessment of Fair Trade and Ethical Enterprise Development' http://www.sed.man.ac.uk/research/iarc/ediais/pdf/IAofFairTrade.pdf accessed at October 23 2010.

Moore, H.L. 1994. *A Passion for Difference.* Bloomington: Indiana University Press.

Rathgeber, E.M. 1990. WID, WAD, GAD: Trends in Research and Practice. *The Journal of Developing Areas* 24(4): 489-502.

Razavi, S and C. Miller. 1995. From WID to GAD: Conceptual Shifts in the Women and Development Discourse. *Occasional Paper, UNRISD*. 1-57.

Reeves, H. and S, Baden. 2000. Gender and Development: Concepts and Definitions. *Institute of Development Studies University of Sussex.*

Ruben, R. 2009. *The Impact of Fair Trade.* Wageningen: Wageningen Academic Publishers.

Smith, E.R., D.M. Mackie. 2000. *Social Psychology.* Psychology Press: London.

Utz Kapeh. 2004. Utz Kapeh Code of Conduct. Utz Kapeh Foundation

Utz Certified. 2009. The Role of Certification and Producer Support in promoting Gender Equality in Cocoa Production. Utz Certified and Solidaridad-Certification Support Network. 1-43.

Villarreal, A. 1994. *Yielding and Wielding: Power, Subordination and Gender Identity the Context of a Mexican Development Project, Rural development*. Wageningen: Landbouw Universiteit Wageningen.

Chapter 7:
Back to the birthplace of the bean – Women's bargaining position and trust in Ethiopian coffee cooperatives

By Annemarie Groot Kormelinck[39]

Introduction

Recent years have witnessed a renewed interest in the role of agriculture in international development. The importance of linking smallholder farmers to agri-food markets, and the need for inclusive value chains in order to overcome poverty and to sustainably feed the world, are now widely acknowledged among international organizations and at the highest policy levels (FAO 2009; World Bank 2011). Agricultural cooperatives are therefore increasingly seen as key to the development of smallholder agriculture.[40] Such cooperatives can enable small-scale producers to better take advantage of opportunities offered in the market place and can improve members' bargaining position in decision-making processes. Moreover, agricultural cooperatives can be instrumental in addressing some of the challenges facing these smallholder farmers, such as galvanizing collective action to benefit from economies of scale and efficiency gains along value chains. Realizing this potential requires that agricultural cooperatives perform well (World Bank 2007; Bernard & Spielman 2008).

Critical for well-performing cooperative institutions such as agricultural cooperatives are social capital dimensions, such as institutional trust, cooperation and reciprocity. These can function as bonding elements to reduce transaction costs and enhance coordination, thus contributing to the performance of cooperatives (Valentinov 2004; James & Sykuta 2005). Above all, institutional trust is important for successful cooperation and effectiveness in organizations: it conveys real economic advantages to cooperatives and is crucial for the development of long-term cooperative behaviour (Pruitt & Kimmel 1977; Lewicki 2006; Bhuyan 2007).

Cooperatives can also be a powerful mechanism for supporting marginalized groups, such as women. In many regions of the developing world, women form the majority of farmers (FAO 2009; World Bank 2011), and, especially in rural areas, they are among the poorest and most

---

[39] This chapter has initially been published for the tenth anniversary of the Prince Claus Chair (Foeken *et al.* 2013). It is based on Ms Groot Kormelinck's Master thesis (Groot Kormelinck 2010), which was written for the Radboud University Nijmegen. Ms Groot Kormelinck currently works for the Centre for Development Innovation, part of Wageningen University & Research Centre, as advisor on farmers organisations and value chain development. Annemarie Groot Kormelinck's thesis won the thesis prize of the Gerrit Huizer Foundation, had 92 pages and was published in 2010.

[40] For example, the Food and Agriculture Organization (FAO), the International Fund for Agricultural Development (IFAD) and the World Food Programme (WFP) have joined forces to promote rural organizations, including agricultural cooperatives, to ensure that they remain high on the international development agenda.

vulnerable people (Prakash 2003; IFAD 2012a). Nonetheless, most research on (rural) cooperatives neglects the gender perspective, despite the fact that studies have shown that gender equality and women's empowerment are essential for economic growth. Furthermore, excluding women can worsen power relationships, eventually leading to a further disempowerment of women. This necessitates recognition of the key role that women, along with men, play in agriculture (Agarwal 2001; Mayoux & Mackie 2007; IFAD 2012a).

Conceptual issues

Bargaining positions

This paper's gender perspective focuses on the bargaining positions of men and women. Bargaining positions influence a person's ability to change rules, norms, perceptions and endowments (Agarwal 1994, 1997; Quisumbing 2003; World Bank 2007). In addition, understanding differences in preferences and resource allocation within household bargaining is critical if policymakers are to improve livelihoods (Agarwal 1994; Frankenberg & Thomas 2001).

Bargaining positions are addressed here using a collective bargaining model of the household. Such a model takes as starting point the possibility that different household members have different preference orderings, thereby challenging the more traditional unitary models that treat the household as a 'black box' (Kabeer 1995; Agarwal 1997; Adam *et al*. 2011). If preferences differ between husbands and wives, the final allocation of resources and the production mix will reflect the distribution of bargaining power (Agarwal 1994, 1997; Kabeer 1995; de la Brière *et al*. 2000; Lim *et al.* 2007).

Investigating gender bargaining relations should go beyond focusing on intra-household bargaining only; it should also look at extra-household bargaining. Quisumbing (2003) reports that membership in organizations can improve bargaining positions by, for example, influencing a person's power to affect household decisions. Research by Holvoet (2005) showed that women with certain positions outside the home – in this case micro-finance institutions – had stronger decision-making power within the household. Similar evidence has been reported by Agarwal (1994, 1997) and Kabeer (1995).[41]

The present study, therefore, focuses on both the intra- and extra-household bargaining domains, zooming in on three levels in particular: the household level, the (agricultural) production level and the (coffee) cooperative level. This is measured using four main indicators: (1) a person's 'threat point', which consists of the range of options a person has when a cooperation breaks down (Kabeer 1995; Agarwal 1997); (2) ownership of income and assets; (3) decision-making processes; and (4) the task division between spouses. The choice

[41] According to Sen (1987), women's participation in outside gainful employment improves their bargaining position within the household, which is associated with greater gender equality in the distribution of household resources (see also Kabeer 1995).

of these four indicators is based on the relevance to the research topic, as well as their prevalence in existing research.[42]

Institutional trust

Institutional trust refers to the trust people have in institutions or organizations (Dakhli & de Clercq 2004) and is described by James & Sykuta (2005: 549) as "trust among an organization's members existing within or impacted by the organizational setting". Research results from the US indicate that norms of equality and homogeneity are key correlates of institutional trust in agricultural cooperatives and show that an open membership policy is positively correlated with perceived trust among all members (James & Sykuta 2005).

From an economic viewpoint, institutional trust has the ability to facilitate inter- and intra-organizational exchanges at relatively low cost (Dakhli & de Clercq 2004). For instance, trust lowers market transecting and bureaucratic costs, thus facilitating cooperation and coordination within organizations. In addition, organizations exhibiting greater levels of trust among members are likely to operate more efficiently than organizations with lower levels of trust, other things being equal (James & Sykuta 2005). Given that cooperatives are members-owned and members-controlled and operate for their members' benefit, institutional trust in a cooperative refers to members' trust in both the cooperative and their fellow members.

The measurement of institutional trust in this study is based on the specific layers and characteristics that exist in the agricultural cooperatives concerned. The selected Sidama coffee cooperatives operate with a board and various committees and organize a bi-annual General Assembly. As a result, institutional trust is operationalized as trust in (1) board members, (2) committee members, (3) the General Assembly, and (4) fellow members. Since institutional trust not only concerns persons, trust is also measured in terms of (5) rules of the cooperative, (6) information and (7) services provided by the cooperative.

The Ethiopian context

Fieldwork was conducted in the period January–April 2010 in rural Ethiopia, a context highly relevant for investigating gender bargaining relations and institutional trust in agricultural cooperatives. Agriculture is the backbone of the Ethiopian economy, and the country is characterized by its great potential for agricultural development (see e.g. CSA 2005; Petit 2007; World Bank 2007). With an agricultural growth rate of 10%, the agricultural sector has contributed considerably to the strong economic progress that Ethiopia has made since 2007 (IFAD 2012b). Hence, agriculture is earmarked to play an important role in achieving sustainable economic growth. The Ethiopian government has allocated 10% of its national budget to rural development, and it has placed emphasis on agricultural growth in its *Growth and transformation plan for 2010–2015* (FDRE 2012; IFAD 2012b).[43] Furthermore, the

[42] See for instance Agarwal (1997), Quisumbing & Maluccio (2003), Lim *et al*. (2007) and Bernard & Spielman (2008).

[43] In this strategic plan, the Ethiopian government has seven strategic objectives, among which are the following: sustaining equitable economic growth, maintaining growth focused on agriculture and rural areas,

Ethiopian government has developed its *Agricultural cooperatives sector development strategy 2012–2016* (FDRE 2012), in which agricultural cooperatives are assigned a key role as facilitators of rural socio-economic development.

Nonetheless, Ethiopia's agricultural cooperatives are currently not living up to their potential. According to Bernard *et al*. (2007) and Francesconi (2008), Ethiopian cooperatives are characterized by exclusion of the poor, low membership, lack of trust and difficulties in obtaining bargaining power. Although the regulations governing Ethiopian cooperatives have no means to exclude particular groups, Frank (1999) and Bernard & Spielman (2008) report that female membership in Ethiopian cooperatives is low and that women face various constraints related to their bargaining position at the cooperative level.

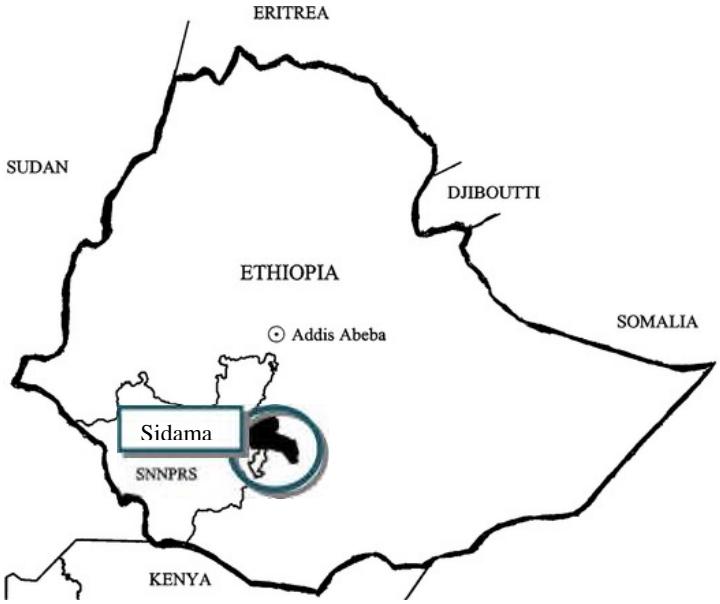
The present study focuses on coffee cooperatives. Ethiopia is the birthplace of the coffee bean, and the country is the largest coffee producer and exporter in Africa (Petit 2007; World Bank 2007; Francesconi 2008). In addition, coffee is the most important crop in Ethiopian agriculture – while at the same time, Ethiopian coffee cooperatives are characterized by varied and mixed performance results (Oxfam 2008).

The coffee cooperatives selected for this paper are located in the Sidama region in southern Ethiopia (Map 1), one of the poorest yet most important coffee-producing regions. Coffee is one of the main cash crops in Sidama, and the area is known for its ideal soil type and climatic conditions for the production of Arabica coffee. In addition, almost every household in the region produces coffee and over half of the total population in Sidama directly or indirectly depends on coffee for their livelihoods (CSA 2005).

At the time of the fieldwork, the Sidama region had 46 coffee cooperatives. These were characterized by a two-tier structure: the cooperatives receive red coffee cherries from their members, process these cherries, and sell them to the Sidamic Coffee Farmers Cooperative Union (SCFCU) as dried coffee. SCFCU is the umbrella organization of the Sidama coffee cooperatives and is the second largest coffee-producing union in Ethiopia.

and promoting empowerment of women and young people (IFAD 2012b).

Map 1 **Location of the Sidama region in Ethiopia**



Research methods

Since institutional trust is assumed to be related to the performance of cooperative organizations, the two strongest and two weakest performing Sidama coffee cooperatives were selected.[44] This selection was based on different economic and non-economic indicators[45] collected during interviews with officials and board members at cooperative, district and regional levels.

Between 50 and 60 member households per cooperative were selected using random stratified sampling (i.e. both male and female members were randomly selected from the members' lists of the four cooperatives), with an aggregated number of 232 member households. Considering the importance of measuring gender bargaining relations in this research, both male and female member households were part of the sample. Male member households are households in which the male is the primary member of the cooperative, accompanied by the man's spouse.[46] In female member households, the woman is the primary cooperative member. This group consists of female-headed households (widows) and male-

[44] These are denoted below as high-performing and low-performing cooperatives, respectively.

[45] Economic indicators were total sales, net profit and dividends of the cooperative for 2009 and 2010. Non-economic indicators were quantity and quality of coffee delivered, quality of internal governance, and services that cooperatives offer, all of which were annually measured and ranked by the Sidamic Coffee Farmers Cooperative Union.

[46] Officially, *households,* not individuals, are members of the cooperatives. In practice, in male-headed households, only the male heads are approached by the cooperatives and asked to participate. Only when the male head works for the cooperative or for the government, can the female spouse take his place.

headed households in which the man works for the government or cooperative (and therefore cannot be the primary cooperative member).

Looking at the characteristics of the member households of the two high-performing and the two low-performing cooperatives, there were statistically significant differences in the socio-economic conditions of the member households (see Groot Kormelinck 2010). More specifically, member households of the two high-performing cooperatives had significantly more assets (machinery and household goods) and a higher farm and non-farm income (whether calculated per adult, per hectare or per household member) than member households of the low-performing cooperatives.

Three different research methods were employed. First, a survey was undertaken among the 232 member households. Data were collected on individual and household characteristics, on income and (coffee) production variables, on intra- and extra-household bargaining, and on variables measuring levels of trust, participation, commitment and satisfaction with the cooperative. Second, three different 'one-off' economic experiments were conducted to investigate mechanisms of trust and cooperative behaviour of individual cooperative members: the Trust Game, the Dictator Game and the Voluntary Contribution Mechanism (VCM) Game (see Appendix 1) These were executed among 64 randomly selected male and female members who took part in the survey. Third, 16 semi-structured interviews were held with key informants, i.e. male members and their spouses, and female members. These key informant interviews served to obtain more qualitative and in-depth knowledge about concepts and relations between bargaining positions and trust. Table 1 presents an overview of the number of respondents for each method.[47]

Table 7.1 Overview of respondents by cooperative and by gender

Method	Total	Low-performing cooperatives				High-performing cooperatives			
		Cooperative 1		Cooperative 2		Cooperative 3		Cooperative 4	
		Male mem-bers	Female mem-bers	Male mem-bers	Female mem-bers	Male mem-bers	Female mem-bers	Male mem-bers	Female mem-bers
Survey	232	42 + 36	18	43 + 41	16	43 + 26	13	35 + 29	22
Games	64	8	8	8	8	8	8	8	8
Interviews	16	2 + 2	2	2 + 2	2	2 + 2	2	2 + 2	2

Note: The second figures in the male members' columns refer to the female spouses in male member households who were included in the survey and the interviews.

[47] For a more detailed account of the research design and methodology, see Groot Kormelinck (2010).

Results

Women's bargaining positions

This first part of the Results section zooms in on the gender equity perspective by examining women's bargaining positions in the household, in agricultural production and in the coffee cooperative. Table 2 contains the results on the four bargaining position variables. The table shows indexes as constructed for the four indicators, which are composed of different variables.[48] Considering the bargaining scoring system (1=male, 2=female, 3=jointly),[49] a higher score in the table indicates a stronger position of women in the household bargaining process *vis-à-vis* their husbands.

Table 7.2 Descriptive statistics on bargaining relations in the household[1]

	Husband and spouse in male member households[2]	Female member households		
		Total	Married	Widow
	(a)	(b)	(c)	(d)
1. THREAT POINT				
Assets into marriage				
- Tropical Livestock Index	*0.21*	0.10	*0.18* cd	0.05 cd
Assets upon divorce (1=husband, 2=wife, 3=jointly)				
- Assets upon divorce	*2.90* ab	2.77 ab	*2.89* cd	2.68 cd
Assets upon death (0=head's relatives, 1= surviving spouse)				
- Index assets death	*1.00* ab	0.94 ab	*1.00* cd	0.90 cd
2. OWNERSHIP ASSETS & FINANCES (1=husband, 2=wife, 3=jointly)				
- Index ownership assets	*2.94* ac ab	2.39 ab	*3.00* ac cd	2.00 cd
- Index ownership finances	*1.52* ac ab	1.97 ab	*1.94* ac	2.00
3. TASK DIVISION IN HOUSEHOLD (1=husband, 2=wife, 3=jointly)				
- Index task household	*2.00*	1.98	*1.96*	1.99
- Index task production	*1.36* ac ab	1.95 ab	*1.90* ac	2.00
- Index task cooperative	*1.15* ac ab	2.01 ab	*2.02* ac	2.00
4. DECISION-MAKING IN HOUSEHOLD (1=husband, 2=wife, 3=jointly)				
- Index household decisions	*1.70* ac ab	1.97 ab	*1.91* ac	2.00
- Index production decisions	*1.36* ac ab	1.85 ab	*1.64* ac cd	2.00 cd
- Index cooperative decisions	*1.40* ac ab	2.04 ab	*2.11* ac	2.00

Notes:

1) Superscripts refer to significant pairwise differences in T-tests (two-sided). Significant differences in bargaining position between spouses in male member households (column (a)) and married female members (column (c)) are referred to as *ac*. Widowed female members have no spouse to bargain with and hence score 2.00 on all variables.
2) The figures in column (a) are the bargaining outcomes between the male-head and his wife (i.e. according to both spouses' perceptions). The higher the score, the stronger the bargaining position for the female spouse.

[48] See Appendix 2 for an overview of the indexes.

[49] These are re-grouped categories. Combinations of answers indicating that tasks or decisions were made by spouses with others, for example men with children or women with daughters, were recorded to respectively 1 or 2. This results in mean scores, whereby a higher score represents a stronger bargaining position for women.

Concerning women's *threat point*, when controlled for the situation of female-headed households, not much difference can be seen between (married) female members and spouses of male members. Both groups of women brought no land and almost equally few livestock into marriage. Assets upon divorce are equally divided because of legal entitlements, while cultural norms determine that assets upon death will go to the surviving partner, as confirmed by interviews and literature sources.[50] This outcome is not surprising, given that an increased bargaining position gained through female cooperative membership and participation cannot reinforce the assets already brought into marriage, or the settlements for divorce and death, which are mainly culturally determined.

The findings regarding *asset and finance disposition* show a different pattern. Regarding all variables measured for this indicator – and especially for financial resources – female members have a significantly stronger bargaining position than spouses of male members. This means that these female members have more ownership and better access and control over assets and financial resources within the marriage compared with spouses of male members.

The *task division* between partners in the household shows only minor differences in the household domain, indicating that women perform all tasks in all household categories. Interviews revealed that women's role in household tasks is culturally determined, as can also be found in existing literature.[51] This role is different from women's involvement in production and cooperative tasks: the indexes for production and cooperative tasks show that female members reported a (strongly significant) higher involvement in the execution of coffee (and other crops') production and in tasks related to the cooperative domain when compared with spouses of male members.

The findings regarding *decision-making processes* between spouses coincide with task division patterns. Female members have a significantly stronger participation in household, production and cooperative decisions than their peers in male member households. The difference is strongest for decision-making in the cooperatives, indicating that female membership in the cooperatives increases their involvement in the decision-making process related to production and cooperative affairs.

From the viewpoint of male members' bargaining position (column (a)), the low scores indicate that male members have a stronger bargaining position than their spouses and female members. Interviews, survey statements and regression analyses on factors impacting bargaining positions demonstrate that bargaining aspects are influenced by cultural aspects, such as religious and social norms, in which men in this rural Ethiopian setting are the dominant sex.[52]

---

[50] See for example Frank (1999) and Quisumbing & Maluccio (2003).

[51] See for example Frank (1999) and Bernard & Spielman (2008).

[52] For instance, regression results show that ethnicity is a determining factor for finance disposition in marriage and that religion is related to women's involvement in production and cooperative tasks. See Groot

Interview results also revealed that most women – especially female members – felt constrained in their bargaining position in relation to their husbands. Some women, for instance, indicated that they would like to have a stronger voice in decisions about production and the cooperative and that they aspired to more equal ownership of finances and assets. According to one of them, "[i]t is usually the man who takes decisions, so we have less power. If I can make more production and cooperative decisions, it will contribute to the development of our household."

Yet, not all women advocated a stronger bargaining position *vis-à-vis* their husbands. Some of the spouses of male members stated that it is normal for them to have a weaker position compared with their husband, thereby seemingly accepting their situation.[53] Contrary to many spouses of male members, female members (from male-headed households) clearly indicated that they increasingly dared to advocate for a stronger bargaining position. They claimed that – with a higher involvement in the production and cooperative domain – they knew better what was going on and, as a result, dared to advocate for a stronger position.

Trust in Ethiopian coffee cooperatives

The second part of the Results section concentrates on the (agricultural) development part of the study by elaborating on trust results of the cooperatives' member households. Considering that institutional trust is important for the functioning of agricultural cooperatives, it can be assumed that member households of the high-performing cooperatives in this research exhibit higher levels of institutional trust than their peers in the low-performing cooperatives. Table 3 presents the results of indicators related to institutional trust, as measured through the survey and the games.

The three columns under *Performance* in Table 7.3 show trust results compared for the low- and high-performing cooperatives. These results indicate that members of high-performing cooperatives indeed have (strongly significantly) more *stated* trust in their cooperative – as measured in the survey (index *institutional trust*). Results of the Trust Game and VCM Game reveal that members of high-performing cooperatives also exhibit higher levels of trust and reciprocal and cooperative/investing behaviour than their peers in low-performing cooperatives.[54] Nevertheless, a causal relationship between high levels of institutional trust and a good cooperative performance cannot be made.[55]

Kormelinck (2010) for more detailed information. Similar results have been reported by studies of Sen (1987), Agarwal (1994, 1997), Frankenberg & Thomas (2001) and Quisumbing & Maluccio (2003).

53 Similar results were found by Frank (1999), Prakash (2003) and Lim *et al*. (2007).

54 This is in line with findings in earlier studies, e.g. Dakhli & de Clercq (2004) and James & Sykuta (2005).

55 It can be argued that either higher levels of institutional trust have led to a high performance of these cooperatives or the other way around. In addition, given that members of the high-performing cooperatives reported better socio-economic conditions, higher performance and trust levels can also be related to better socio-economic circumstances in which the cooperative members operate. This was not the focus of the study but would be an interesting topic for future research.

Table 7.3 Descriptive statistics of the survey and economic experiments[1]

Mechanisms	*Variables*	*Male member households*			*Female member households*		
		Male	Spouse		Total	Married	Widow
		(a)	(b)		(c)	(d)	(e)
Stated trust (survey)[2]	Institutional trust (Index) (1-5)	3.48[ad]	3.46[bd]		3.47	3.91[de ad bd]	3.19 [de]
		Performance			*Gender*		
		Low	High	Sig.	Male	Female	Sig.
		(1)	(2)	(3)	(4)	(5)	(6)
Stated trust (survey)[3]	*N*	*119*	*113*		*163*	*69*	
	Institutional trust (Index) (1-5)	3.06	3.86	***	*See above*		
Coopera-tiveness (VCM)[3]	*N*[4]	*64*	*64*		*96*	*32*	
	Sent to cooperative (1-10 ETB)	2.26	3.30	***	2.43	4.15	***
	Average amount gained per participant	12.23	13.22	***	13.46	11.99	***
Trust *behaviour* (Trust Game)[3]	*N*	*32*	*32*		*32*	*32*	
	Sent (1-10 ETB)[a]	1.78	2.45	**	1.95	2.28	
	Sent to male (1-10 ETB)[a]	1.78	2.56	**	2.00	2.34	
	Sent to female (1-10 ETB)[a]	1.78	2.34	**	1.91	2.22	
Reciprocity (Trust Game)[2]	*N*	*32*	*32*		*32*	*32*	
	Return ratio (1-10 ETB)[b]	0.29	0.37	**	0.29	0.36	*
	Return ratio to male (1-10 ETB)[b]	0.26	0.41	**	0.30	0.37	
	Return ratio to female (1-10 ETB)[b]	0.31	0.33		0.28	0.35	
Altruism (Dictator Game)[3]	*N*	*32*	*32*		*32*	*32*	
	Sent (1-10 ETB)[a]	0.91	3.02	***	1.83	2.09	
	Sent to male (1-10 ETB)[a]	0.94	2.97	***	2.06	1.84	
	Sent to female (1-10 ETB)[a]	0.88	3.06	***	1.59	2.34	*

Notes:
1) [a] means player *A* behaviour, [b] means player *B* behaviour. See also Appendix 11.1 for an explanation of the games.
2) Superscripts refer to significant pairwise differences in T-tests (two-sided).
3) *significant at 10%; **significant at 5%; ***significant at 1%. Sig. (3) tests significant differences between columns (1) and (2), Sig. (6) tests significant differences between columns (4) and (5).
4) The number of respondents (N) is higher for the VCM Game than for other games. Results were coupled with VCM Game results (N = 64) of my co-researcher. These 64 constitute 8 male players per cooperative.

In addition to the examination of trust differences between high- and low-performing cooperatives, it is interesting to make assumptions on optional gender differences in trust in cooperatives. A relation between bargaining relations and institutional trust remains largely unexplored in the literature, although research by Brewer (1981) and Tyler & Lind (1992) provides some insights by stating that membership in organizations can provide an important basis for trust. Given the low overall membership of female members in the Sidama cooperatives and the anticipated lower bargaining position of female members and spouses in these cooperatives, it can be expected that male members have the highest levels of institutional trust, followed by respectively female members and spouses of male members.

Survey and game results on gender differences are shown in columns 4, 5 and 6 of Table 3 (under *Gender)*. First, looking at levels of *stated* trust as measured in the survey (index Institutional trust), female members from male-headed households have significantly more trust than male members, spouses and widowed female members. Second, relating trust to bargaining positions, it is interesting to see that female members exhibit higher levels of trust in the cooperative than spouses of male members. Many interviewees related this to the higher participation of female members in cooperatives. As one female member said, “I can come here to the cooperative and talk and discuss with other members about the cooperative’s affairs. I am involved in this cooperative myself, while spouses only hear information through their husbands. That is why they have a lack of knowledge and information about what is going on.”

Comparing male and female member behaviour in the economic experiments, both groups of female members (from male- and female-headed households) were more trusting and reciprocal – although not always significantly (Trust Game) – and invested (strongly significantly) more in the cooperative (VCM Game) than male members. This is in line with some studies looking into gender differences in Trust Game and VCM Game behaviour, but contradicts other studies.[56]

[56] A considerable quantity of data exists on gender differences in economic experiments, with highly mixed results. The fact that women are more cooperative accords with, for example, Nowell & Tinkler (1994), Sequino *et al*. (1996) and Cadsby & Maynes (1998), but contradicts research of Brown-Kruse & Hummels (1993). The trust results are in line with Eckel & Grossman (1998), Ortmann & Tichy (1999) and Gneezy *et al*. (2003), but partly contradict Chaudhuri & Gangadharan (2002). Based on these mixed results, it seems fair to

In short, it can be stated that female members (from male-headed households) have higher levels of stated trust than all other groups and that both groups of female members exhibit higher trusting and cooperative behaviour in the experimental situations than male members. For the comparison of female members *vis-à-vis* spouses, these results are in line with Brewer (1981) and Tyler & Lind (1992).

Discussion

The gender orientation of Ethiopian coffee cooperatives

The results on bargaining positions and institutional trust require a closer examination of the orientation that these cooperatives have towards female inclusion. The four cooperatives had an average female membership of only 2.6%. Although official national and regional cooperative proclamations in Ethiopia make no distinction regarding the gender of cooperative membership (FDRE 2005), membership is often related to land ownership and property rights, which in southern Ethiopia are almost always exclusively men's domain.

Male and female members of all four cooperatives indicated that it is always the head of the household – the man – who gets invited to join the cooperative: "[I]t is just because that is how it goes in this area. The husband used to be a member; it has always been that way" (female member). In addition, spouses in male member households are not registered since many cooperative and district officers indicated that "it makes no sense to also register the spouses" (cooperative board member).

Interviewed members also stated that the four cooperatives had no special regulations to include (more) women, although some interviewees indicated that the Ethiopian government, some cooperatives and higher-level institutions[57] were starting to become more gender-sensitive. For instance, members of the two high-performing cooperatives indicated that their cooperative actively advocated more participation of women: "[I]n general, we try to include women in the committees, but women often refuse, because of a lack of confidence and because they are not used to it. We try to give them some responsibilities or some small jobs to motivate them" (board member of a high-performing cooperative).

In this context it is also interesting to examine whether high-performing cooperatives are more in favour of strengthening women's bargaining position – in this manner suggesting a potential link between performance and the inclusion of women in cooperatives. Survey results, as summarized in Appendix 3, revealed that bargaining gaps between male and female member households in low-performing cooperatives were (often significantly) greater on all four bargaining position variables than in high-performing cooperatives. In addition, interviews – with district officers, cooperative board members and member households – and personal observations pointed towards more gender-favoured conditions in the high-

suggest that gender differences are highly context-specific, as is also concluded in a number of these studies.

[57] Coffee-related institutions at district, zonal and regional levels.

performing cooperatives. Although this suggests a positive relation between the cooperative's performance and women's bargaining position, the data cannot show a causal relationship between the two variables. Besides, from a gender equity viewpoint, these results should not be received with too much enthusiasm, given the low levels of female membership, and given that many female members indicated that they faced a variety of constraints in their cooperative – as discussed in the following section.

Women's constraints in Ethiopian coffee cooperatives

The results on bargaining positions and institutional trust demand an elaboration on women's participation in the four coffee cooperatives. Interview results showed that female members – despite their higher levels of trusting and cooperative behaviour compared with male members – were not only restricted in their membership access, but also in their participation in the cooperative. Interviews confirmed that social and cultural norms impact the rural Ethiopian cooperative setting in the sense that the cooperative is regarded as a "man's domain", influencing attitudes of and towards female members: "[I]t is normal that men are members of the cooperative; women are not supposed to participate here" (male member).

Other constraints that were mentioned in relation to women's participation in the coffee cooperatives were women's lower education, their illiteracy and their lack of knowledge of coffee production and cooperative affairs. For instance, some interviewed members related male membership to better education and opportunities in the past: "[U]sually, women are not educated and they don't participate in these kinds of cooperative activities" (male member); and: "I did not get a chance to finish my education; I had to get married and work in the household. Therefore, I don't know enough about production and the cooperative – and because of household tasks, I don't have time for it either" (spouse of male member).

Box 1 Zem zem: a typical female member

Zem zem is a female member of one of the low-performing cooperatives. In addition, she is the female representative of cooperatives in the union in Addis Ababa.

"My dream is to become the first female board member in this cooperative. This is very difficult, because I am a woman. Men are not used to electing a woman. It is not that they don't want to, but more because there has never been a female board member, and because female members are low in number and don't attend assemblies. It is also culture: men don't want their wives to be chosen.

However, the situation is changing now. It would change even more if a woman could be elected to show that it works, and that it is possible to choose a woman. Women are also constrained because of their lack of education, so they have few opportunities to do things outside the household or to participate in, for instance, cooperatives.

It is also because of the general attitude here, that it is normal for men to participate and for women to stay at home. I am really trying to change this (…) I have the chance to go out and make myself strong. That way, I can be an example for both male and female members."

In addition, two female members pointed out that they were not regularly informed about the meetings; and if they were, they could often not attend these owing to their household tasks and the children they needed to take care of: "[W]omen have to perform all household tasks. That keeps them so busy that they usually come too late in the assembly. Then they

cannot vote, since they don't know what has been discussed. It is a constraint that men don't face" (male member). This was confirmed by the survey results, which showed that female members participated significantly less in general assemblies and in voting than male members. Furthermore, multiple interviewees indicated that *if* women participated in cooperative meetings, they rarely dared to speak and express their opinion, since they formed a small minority and were not used to doing so. Box 1 illustrates the constraints that female members face, as outlined by Zem zem, a typical female member.

Conclusions

This study had two main outcomes. First, female cooperative members appeared to have a stronger *bargaining position* than spouses of male members. This applied especially to the financial asset disposition and the involvement in tasks and decisions related to cooperative and production affairs. This confirms the conclusion in other studies that women's options outside the household have the potential of improving their bargaining position both within and outside the household.

Second, female members (from male-headed households) appeared to have higher levels of *institutional trust* than male members and their spouses; and both groups of female members (from male- and female-headed households) showed more cooperative and trusting behaviour in economic experiments than their male counterparts. This applied in particular to cooperative behaviour as measured in the VCM Game. The higher trust levels of female members *vis-à-vis* spouses of male members was in line with earlier studies, which stated that membership and participation are important conditions for trust.

In conclusion, the findings on bargaining positions seem to work in two ways. First, bargaining results imply that increasing women's outside options – such as in agricultural cooperatives – leads to a stronger bargaining position for these women in their household situation; or put differently: it increases equity in the household. This calls for increased attention to men's *and* women's preferences and positions in the household in designing future policies and interventions aimed at rural development.

At the same time, the findings on trust indicate that improving women's bargaining positions in the cooperative domain by active membership and participation also contributes to higher levels of trust and cooperation in the cooperative. In this way, this study may stimulate the thinking on how agricultural cooperatives can be improved. Placing women in more equal and participatory cooperative membership processes and positions can ensure an active role in the cooperative rather than being merely spouses of male members. In addition, female inclusion in cooperatives can contribute to an improvement in processes of trust building and, possibly, to improved overall functioning of cooperatives.

References

Adam, C., J. Hoddinott & E. Ligon (2011), Dynamic intra-household bargaining, matrimonial property law, and suicide in Canada. CUDARE Working Papers, vol. 1113. Berkeley: University of California.

Agarwal, B. (1994), *A field of one's own, gender and land rights in South Asia*. Cambridge: Cambridge University Press.

Agarwal, B. (1997), *"Bargaining" and gender relations: Within and beyond the household.* Washington: International Food Policy Research Institute.

Agarwal, B. (2001), Participatory exclusions, community forestry, and gender: An analysis for South Asia and a conceptual framework. *World Development* 29(10): 1623-1648.

Banerjee, A. & E. Duflo (2009), The experimental approach to development economics. *Annual Review of Economics* 1(1): 151-178.

Berg, J., J. Dickhaut & K. McCabe (1995), Trust, reciprocity and social history. *Games and Economic Behavior* 10: 122-142.

Bernard, T., E.Z. Gabre-Madhin & A.S. Taffesse (2007), *Smallholders' commercialization through cooperatives: A diagnostic for Ethiopia*. IFPRI Discussion Paper no. 00722, Washington DC.

Bernard, T. & D.J. Spielman (2008), *Mobilizing rural institutions for sustainable livelihoods and equitable development. A case study of agricultural marketing and smallholder cooperatives in Ethiopia.* Addis Ababa: International Food Policy Research Institute (IFPRI).

Bhuyan, S. (2007), The "People" factor in cooperatives: An analysis of members' attitudes and behavior. *Canadian Journal of Agricultural Economics* 55(3): 275-298.

Brewer, M.B. (1981), Ethnocentrism and its role in interpersonal trust. In: M.B. Brewer & B.E. Collins, eds, *Scientific Inquiry and the Social Sciences*. New York: Jossey-Bass, pp. 345-359.

Brown-Kruse, J. & D. Hummels (1993), Gender effects in laboratory public goods contribution: Do individuals put their money where their mouth is? *Journal of Economic Behavior and Organization* 22: 255-267.

Cadsby, C.B. & E. Maynes (1998), Gender and free riding in a threshold public goods game: Experimental evidence. *Journal of Economic Behavior and Organization* 34(4): 603-620.

Carpenter, J.P. (2002), Measuring social capital: Adding field experimental methods to the analytical toolbox. In: J. Isham, T. Kelly & S. Ramaswamy, eds, *Social capital and economic development: Well-being in developing countries*. Cheltenham: Elgar, pp. 119-138.

Carpenter, J.P., A. Daniere & L. Takahashi (2004), Social capital and trust in South-East Asian cities. *Urban studies* 41(4): 853-874.

Chaudhuri, A. & L. Gangadharan (2002), *Gender differences in trust and reciprocity.* Washington State University (Mimeo).

Cox, J.C. (2004), How to identify trust and reciprocity. *Games and Economic Behavior* 46(2): 260-281.

CSA (2005), Annual Sample Survey. Addis Ababa: Central Statistical Agency of Ethiopia.

Dakhli, M. & D. de Clercq (2004), Human capital, social capital and innovation: A multi-country study. *Entrepreneurship & Regional Development* 16: 107-128.

de la Briere, B., K. Hallman & A.R. Quisumbing (2000), Resource allocation and empowerment of women in rural Bangladesh. In: A.R. Quisumbing, ed., *Household decisions, gender, and development. A synthesis of recent research.* International food policy research institute. Washington, DC: Johns Hopkins University Press, pp. 85-94.

Eckel, C. & P.J. Grossman (1998), Are women less selfish than men? *The Economic Journal* 108(448): 726-735.

FAO (2009), *How to feed the world in 2050?* Rome: FAO.

FDRE (2005), *Plan for accelerated and sustained development to end poverty.* Addis Ababa: Federal Democratic Republic of Ethiopia.

FDRE (2012), *Agricultural Cooperatives Sector Development Strategy 2012-2016.* Addis Ababa: Federal Democratic Republic of Ethiopia, Ministry of Agriculture, Ethiopian Agricultural Transformation Agency (ATA), FDRE Cooperative Agency.

Forsythe, R., J. Horowitz, N. Savin & M. Sefton (1994), Fairness in simple bargaining experiments. *Games and Economic Behaviour* 6: 347-369.

Foeken, D., T. Dietz, L. de Haan, L. Johnson (eds). (2013). *Development and Equity. A collection of papers in celebration of the tenth anniversary of the Prince Claus Chair.* Leiden: Brill.

Francesconi, G.N. (2008), *Cooperation for competition. Linking Ethiopian farmers to markets.* Wageningen: University of Wageningen Academic Publishers.

Frank, E. (1999), *Gender, agricultural development and food security in Amhara, Ethiopia: The contested identity of women farmers in Ethiopia.* Addis Ababa: USAID Ethiopia.

Frankenberg, E. & D. Thomas (2001), Measuring power. In: A.R. Quisumbing, ed., *Household decisions, gender, and development. A synthesis of recent research.* International food policy research institute. Washington, DC: Johns Hopkins University Press, pp. 29-36

Glaeser, E., D. Laibson, J. Scheinkman & C. Soutter (2000), Measuring trust. *The Quarterly Journal of Economics* 115(3): 811-846.

Gneezy, U., M. Niederle & A. Rustichini (2003), Performance in competitive environments: Gender differences. *Quarterly Journal of Economics* 118: 1049-1074.

Groot Kormelinck, A. (2010), *Back to the birthplace of the bean. Women's bargaining position and trust in Ethiopian coffee cooperatives.* Master's thesis, Radboud University Nijmegen.

Holvoet, N. (2005), The impact of microfinance on decision-making agency: Evidence from south India. *Development and Change* 36(1): 75-102.

IFAD (2012a), *Gender equality and women's empowerment*. Rome: IFAD.

IFAD (2012b), *Enabling poor rural people to overcome poverty in Ethiopia*. Rome: IFAD.

Isaac, M., J. Walker & S. Thomas (1984), Divergent evidence on free-riding: An experimental examination of possible explanations. *Public Choice* 43: 113-149.

James, H.S. & M.E. Sykuta (2005), Property right and organizational characteristics of producer-owned firms and organizational trust. *Annals of Public and Cooperative Economics* 76(4): 545-580.

Kabeer, N. (1995), *Reversed realities: Gender hierarchies in development thought.* London: Verso.

Lewicki, R.J. (2006), Trust, trust development and trust repair. In: M. Deutsch, E.L. Thorndike & P.T. Coleman, eds, *The handbook of conflict resolution: Theory and practice*. San Francisco: Jossey-Bass, pp. 92-119.

Lim, S.S., A. Winter-Nelson & M. Arends-Kuenning (2007), Household bargaining power and agricultural supply response: Evidence from Ethiopian coffee growers. *World Development* 35(7): 1204-1220.

Mayoux, L. & G. Mackie (2007), *Making the strongest links. A practical guide to mainstreaming gender analysis in value chain development.* Geneva: International Labour Organization (ILO).

Nowell, C. & S. Tinkler (1994), The influence of gender in the provision of a public good. *Journal of Economic Behavior and Organization* 25: 25-36.

Ortmann, A. & L.K. Tichy (1999), Gender differences in laboratory: Evidence from prisoner's dilemma games. *Journal of Economic Behavior and Organization* 39: 327-339.

Oxfam (2008), *A consultancy report on Ethiopian coffee marketing cooperatives*. Addis Ababa: Oxfam.

Petit, N. (2007), Ethiopia's coffee sector: A bitter or better future? *Journal of Agrarian Change* 7(2): 225-263.

Prakash, D. (2003), Rural women, food security and agricultural cooperatives. Theme paper at the 4th Asian-African International Conference on Women in Agricultural Cooperatives in Asia and Africa.

Pruitt, D.G. & M.J. Kimmel (1977), Twenty years of experimental gaming: Critique, synthesis and suggestions for the future. *Annual Review of Psychology* 28: 363-392.

Quisumbing, A.R. (2003), *Household decisions, gender, and development. A synthesis of recent research.* International Food Policy Research Institute (IFPRI). Washington, DC: Johns Hopkins University Press.

Quisumbing, A.R. & J.A. Maluccio (2003), Resources at marriage and intrahousehold allocation: Evidence from Bangladesh, Ethiopia, Indonesia, and South Africa. *Oxford Bulletin of Economics and Statistics* 65 (3): 283-328.

Schechter, L. (2007), Traditional trust measurement and the risk confound. *Journal of Economic Behavior and Organization* 62: 272–292.

Sen, A.K. (1987), *Gender and cooperative conflicts*. Wider working papers. Helsinki: Wider

Sequino, S.T., M. Stevens & A. Lutz (1996), Gender and cooperative behavior: Economic man rides alone. *Feminist Economics* 2(1): 1-21.

Tyler T.R. & E.A. Lind (1992), A relational model of authority in groups. *Advances in Experimental Social Psychology* 25: 115–191. New York: Academic Press, Inc.

Valentinov, V. (2004), Toward a social capital theory of cooperative organization. *Journal of Cooperative Studies* 37(3): 5-20.

World Bank (2007), *World Development Report 2008*: *Agriculture for development.* Washington, DC: World Bank.

World Bank (2011), *World Development Report 2012: Gender equality and development*. Washington, DC: World Bank.

Appendix 1: Economic experiments

The rationale of economic experiments

The number of experimental studies is on the rise, reflecting a general trend towards a growing interest in experimental approaches in development economics (Banerjee & Duflo 2009). In addition, economic experiments are increasingly used in combination with surveys to measure socio-economic correlates of difficult-to-measure individual attributes (Glaeser *et al*. 2000; Carpenter 2002; Carpenter *et al*. 2004). In this study, three experiments (or 'games') were executed.

The Trust Game and Dictator Game

In the Trust Game (Berg *et al*. 1995), the *A*-player is endowed with a start endowment *X* (10 Ethiopian Birr, ETB), and the *B*-player receives no initial endowment. The first-mover (player *A)* is given the chance to send any share of the endowment $x \leq X$ to an anonymous second-mover as he/she wishes. The amount *x* sent to the *B*-player is multiplied by a constant c=3. The *B*-player therefore receives 3*x*. The *B*-player can return a certain amount, $y \leq 3x$ to the *A*-player. The game's gain of *A*-player is calculated by *X-x,* whereas the gain for *B*-players is 3*x-y. A*-player's behaviour is assumed to reveal trust, while *B*-player's behaviour is supposed to indicate trustworthiness and reciprocity. However, interpreting the outputs of the game may not be straightforward, since *A*-player's behaviour might be influenced by altruism as well as by the attitude towards risk (Schechter 2007).

The combination of the Trust Game with the Dictator Game (Forsythe *et al*. 1994) allows for controlling for altruism (Cox 2004). In the Dictator Game, there is also a first-mover (player *A)* with a start endowment of *X* (10 ETB), who can make a transfer to a *B*-player ($x \leq X$). However, *x* is not tripled and the *B*-player is not able to reciprocate. The gain of the *A*-player is therefore *X-x,* whereas the gain of *B*-player is *x*. Thus, there is no self-interested reason to transfer to the second-mover.

Ample attention was paid to an explanation of all games (visually and verbally) to the players, so they would fully understand the games and their mechanisms. The Trust and Dictator games were played in a mixed-gender setting, with two male and two female members simultaneously. This means that one male and one female *A*-player (respectively *A*1 and *A*2) were coupled to one male and one female *B*-player (*B*1 and *B*2). Out of the endowment, *A*-players had the option to send two amounts, i.e. to male and female *B*-players (*B*1 and *B*2).

The Voluntary Contribution Mechanism (VCM) Game

The third game that was conducted is the VCM Game (Isaac *et al*. 1984). This game is the most commonly used experimental situation for measuring cooperative behaviour around a public good (Carpenter 2002). Participants receive an endowment *X* (10 ETB), of which some part ($x \leq X$) can be transferred to a common pool (*Y).* Amount *x* is doubled by a constant $c=2$. The common pool is therefore constructed as $Y = 2xN$, *N* being the number of participants. Subsequently, *Y* is divided among all participants, who receive as final gain $y+X-x$ (the amount they kept for themselves plus the gains from the common pool).

Hence, the VCM Game creates incentives for both free-riding and cooperation. The gains from individuals will depend on the performance of the group as a whole, resembling very much the situation of agricultural cooperatives and other collective action dilemmas around the management of common pool resources. The VCM Game was conducted in groups of 32 participants. All members received two envelopes, one containing the endowment (10 ETB), and the second one empty. Members could decide how much to put in the empty envelope, which was allocated to the common pool.

Appendix 2: Operationalization of indexes

Indexes related to bargaining position

1. Threat point
   - Tropical Livestock Index (ratio)
     Indicators: cow; ox; goat; sheep; chicken; donkey; mule/horse (ratio calculated to TLI formula)
   - Ownership in/upon marriage/divorce/death (5)
     Indicators: land; livestock; house; household goods; money[58]
2. Assets and finances in marriage(4)
   Indicators: own income; access to cash; keeping money; keeping money from cooperative[59]
3. Task division
   - *Task household (5)*
     Indicators: cleaning; children; washing; cooking; water[60]
   - *Task production (6)*
     Indicators: manual weeding; ploughing; disease control; harvesting; drying coffee; transport[61]
   - *Task cooperative (3)*
     Indicators: going to meetings; delivering coffee; receiving extensional advisors[62]
4. Decision-making
   - *Household decisions (expenditures on) (8)*
     Indicators: food; consumption; child; education; clothes; health expenditures; house investments; house-building materials[63]
   - *Production decisions (expenditures on) (6)*
     Indicators: input; coffee trees; renting land; buying livestock; buying machines; hiring labour[64]
   - *Cooperative decisions (3)*
     Indicators: how much coffee to sell to the cooperative; how much coffee to sell to the market; going to cooperatives meetings[65]

Index related to institutional trust

Index institutional trust (8). Trust in:
Indicators: board members; committee members; cooperative members; general assembly; rules; information; services; statement: "the cooperative is trustworthy"; statement: "the cooperative I work for is characterized by corruption".[66]

---

[58] Cronbach's alpha ownership in marriage = Members 0.986, Spouses 0.926
Cronbach's alpha ownership upon divorce = Members 0.977, Spouses 0.971
Cronbach's alpha ownership upon death = Members 0.927, Spouse: n.a. (no variation in answers)
Cronbach's alpha ownership of assets = (marriage+divorce+death): Members 0.858, Spouses 0.819

[59] Cronbach's alpha finances in marriage = Members 0.761, Spouses 0.760

[60] Cronbach's alpha household tasks = Members 0.836, Spouses 0.901

[61] Cronbach's alpha production tasks = Members 0.756, Spouses 0.732

[62] Cronbach's alpha cooperative tasks = Members 0.805, Spouses 0.700

[63] Cronbach's alpha household decisions = Members 0.957, Spouses 0.915

[64] Cronbach's alpha production decisions = Members 0.954, Spouses 0.926

[65] Cronbach's alpha cooperative decisions = Members 0.909, Spouses 0.876

[66] Direction of the last statement is changed from negative to positive in index. Cronbach's alpha = Members 0.905, Spouses 0.863

Appendix 3: Bargaining gaps for low- and high-performing cooperatives

Table 4 Descriptive statistics: Comparing gender bargaining gaps within and between low- and high-performing cooperatives

	Low-performing cooperatives		*High-performing cooperatives*	
	Male member h'holds	Female member h'holds	Male member h'holds	Female member h'holds
	(a)	(b)	(c)	(d)
1. THREAT POINT				
Assets into marriage				
Tropical Livestock Index	0.17[ac]	0.00	0.27 [ac]	0.21
Assets upon divorce (1=husband, 2=wife, 3=jointly)				
Assets upon divorce	2.87[ab]	2.74	2.86 [ab]	2.73
Assets upon death (0=head's relatives, 1= surviving spouse)				
Index assets death	1.00	0.94	1.00	0.94
2. OWNERSHIP ASSETS & FINANCES (1=husband, 2=wife, 3=jointly)				
Index ownership assets	2.95 [ab]	2.12 [ab ac]	2.91 [cd ac]	2.68 [cd ac]
Index ownership finances	1.47 [ab]	1.97 [ab]	1.56 [cd]	1.98 [cd]
3. TASK DIVISION IN HOUSEHOLD (1=husband, 2=wife, 3=jointly)				
Index task household	2.01	2.00	1.99	1.96
Index task production	1.19 [ab]	1.92 [ab]	1.21 [cd]	2.01 [cd]
Index task cooperative	1.06 [ab ac]	2.00 [ab]	1.22 [cd ac]	2.01 [cd]
4. DECISION-MAKING IN HOUSEHOLD (1=husband, 2=wife, 3=jointly)				
Index household decisions	1.61 [ab]	2.00 [ab]	1.76	1.93
Index production decisions	1.40 [ab]	1.94 [ab]	1.33 [cd]	1.78 [cd]
Index cooperative decisions	1.38 [ab]	1.98 [ab]	1.47 [cd]	2.10 [cd]

Note: Superscripts refer to significant pairwise differences in T-tests (two-sided).

Chapter 8:
Blessing of the bean or curse of the cooperative? Willingness to invest engagement and trust of coffee farmers in the context of weak and strong coffee cooperatives in Ethiopia

By Christine Plaisier[67]

Introduction

Because of the dominant role of agriculture in the economy, it is of key importance to develop the agricultural sector for achieving economic growth (World Bank 2005, 2007). Most poor live in the rural areas and are smallholders depending on agriculture for their livelihood. Smallholder farmers in Ethiopia are facing high transaction costs, a lack of market information, poor infrastructure, and weak capital markets (Wolday and Gebre 2003). In order to overcome these constraints, the government of Ethiopia considered agricultural marketing cooperatives as one of the main pillars of development and key market institutions in its Agricultural Development Led Industrialization (ADLI) Strategy and to unlock Ethiopia's agricultural growth potential. The government tries to reduce poverty by providing a better institutional environment for integrating smallholders into international market (FDRE 2001)[68]. This is based on the idea that in an increasingly commercial and global chain for agricultural products, one of the most effective ways for smallholders and poor farmers to participate actively in the market is through cooperative action and collective organization (Hellin, Farmer and Meijer 2006). As a consequence of the difficulties individual farmers face, some of them seek to enhance this situation by forming or joining a cooperative to enhance their bargaining position in the current agricultural market (Blokland and Gouet 2007).

The present study focuses on coffee cooperatives. Coffee is the major export crop and coffee marketing cooperatives are the best-known and the largest cooperatives in Ethiopia. Ethiopia is the perceived birthplace of the coffee bean. And cooperatives are seen as the backbone of the Ethiopian agricultural policy. The cooperatives are social institutions that exist for mutual support purposes, as well as firms aiming at profit maximization (Francesconi 2009). This research wants to improve the understanding of the role played by cooperative organizations in behavioral aspects with regard to trust and willingness to invest. Another aim of this research is to get insight in the horizontal cooperative action mechanisms in the context of weak and strong performing cooperatives. Fieldwork was conducted in the period of January-April 2010. Three different methods were used: (1) 232 surveys were undertaken among member households of the four selected cooperatives; (2)3 experiments with regard to trust, risk attitude and investment were conducted per cooperative and (3) case study took place via several in depth interviews.

[67] The MA thesis of Christine Plaisier has 107 pages and was published in July 2010.

[68] This strategy is followed by the *Agricultural cooperatives sector development strategy 2012-2016* in which agricultural cooperatives are assigned a key role as facilitators of rural social-economic development(FDRE 2012).

1. Research questions and theories

1.1. Research question

This research relates the performance of the cooperative to the engagement of its members, mediated by the level of trust and willingness to invest . To do so, the study addresses the following research questions:

> To what extent does the performance of the cooperative influence members' engagement, willingness to invest and trust? How does trust influence willingness to invest and engagement? How are engagement and willingness to invest related to each other? [69]

1.2 Trust

Many studies stress the importance of trust in a cooperative context - both trust between members and trust of members in leadership (James & Sykuta 2005). Valentinov (2004) states that internal coordination and resource allocation in cooperatives is primarily determined by the quality of interpersonal relations between its members. According to Ostrom (2003), trust is the core link between networks and collective action and the most relevant factor to provide voluntary cooperative action. You would expect that if a group of people have a common interest they will naturally get together and fight for the common goal. Olson states in his famous Logic of the Collective Action (1971) that this is however generally not the case. One of the problems of collective action can be the danger of free-riding behavior: an individual who receives the benefit of the collective good without assuming the necessary individual costs. Trust is then very important since it assures that another person will not take advantage of you even if he might derive economic benefit, self-enforcement is possible. Even if it pays to commit a crime, or free-ride or ignore the rules in a contract, fewer people will do it in the presence of trust (Putnam 1993). Six (2007) mentions the downward or upward spiraling process of trust and feedbacks. The individual's initial beliefs will or will not be confirmed through the impact of her actions on the other person. If confirmed, the beliefs will appear as self-fulfilling prophesies. Prior beliefs about causation, affect the intake of information about the event observed (ibid).Trust-building is thus based on positive feedbacks which imply the possibility not only of upward spiraling processes, but also of downward spiraling processes. Based on these theories, this downward and upward spiraling processes can be applied to the cooperative's performance and the role of trust. A good performing cooperative leads to more trust (here downward) and more trust leads to a better performance (then upward). For the scope of this research it is unfortunately not possible to look into both relations, we therefore focus at the downward spiraling process. Expectation is that a good performing cooperative leads to higher levels of trust.

1.3 Willingness to invest

Theoretically cooperatives offer many advantages to smallholders, such as quality control, increased prices, economies of scale, and sustainable long-term relationships with foreign

[69] Presented is a summary of the research and not all results are presented. For more detailed account of the research design, methodology, perceived relations and results, see Plaisier (2010).

buyers, bargaining power, and the benefits of a larger business. They also provide access to information and niche markets to their members (Anteneh 2009). As a result of these advantages, risks and uncertainty are reduced and access to credit is improved, which enables producers to make long-term investments. Such long-term investments are considered to be of key relevance in poverty alleviation strategies that focus on changes in risk behavior as a pre-condition for reducing asset poverty (Ruben et al. 2009). Two of the structural causes of rural poverty are however the high risks farmers face and the limited (profitable) investment opportunities they have. Poor households are not able to withstand the losses which might result from taking risky decisions and they have little access to credit to make long-term investments in order to overcome their vulnerable position (Barrett 2005). Because of the importance of investments and the crucial role cooperatives could play in this regard, the research focuses in addition on the willingness to invest among farmers affiliated with cooperatives. It therefore elaborates on the relation between performance of the cooperative and willingness to invest and on the factors influencing willingness to invest.

Investments can be individual (e.g. planting more coffee trees on the private plot) or collective (e.g. building of a school in the community). This distinction is of particular importance when working in a cooperative. Collective goods are important in a cooperative because members cooperate not only for their individual benefit but also for the benefit of their community and the collective good. There can also be a collective investment in the cooperative in order to perform better. This type of investment is called engagement with the cooperative. Engagement with the cooperative is not limited to financial investments (like the re-investment of dividend in the cooperative) but it includes investment with time and efforts in participation in and loyalty to the cooperative (selling of produce).

Related to this is the issue of trust. The relationship between trust in the cooperative and willingness to invest in a cooperative is explained by Paldam and Svendsen (2000). They state that if members trust and are loyal to a cooperative, they will agree to set aside as much as they can afford in order to face possible (financial) shortages. Conversely, if farmers have a low level of trust in a cooperative, they are not likely to invest in collective goods for the benefit of the cooperative. In this research this presumed relationship between willingness to invest and different levels of trust is further investigated.

1.4 Time horizon, risk attitude, income

From literature and empirical research, it appears that factors which drive investment decisions are, among others, the attitude towards risk, the time preference (horizon) and composition of income. Smallholder farmers are generally risk averse and face constant difficulties in buffering various risks triggered by from health, climatic and socioeconomic shocks (Shiferaw and Holden 1998). And when future returns are uncertain, risk-averse decision makers will favor projects with shorter payback periods and will be less willing to invest in projects with long-term benefits (Bluffstone and Yesuf 2008). Another important issue with regard to willingness to invest is the so-called time-horizon or time preference of smallholders (Borgen 2004). It is typically argued that poor people, particularly those facing food shortages, have a higher rate of time preference than their wealthier counterparts because they are more concerned about their present needs than they are about saving for the future (Murphree 1993). Composition of the income of farmer households is the third important element when analyzing willingness to invest. Nonfarm activities can be an

important source of cash income, which can potentially improve farm productivity if it is used to finance farm input purchase or longer-term capital investments. Nonfarm activities can also provide income during periods other than harvest time; help reduce the variance of overall household income in cases of imperfect covariance between farm and nonfarm income; and help mitigate risk and improve food security by allowing the household to buy food in cases of food production shortfall, thus smoothing in-come inter-annually (Reardon et al. 1994). These three factors are therefore taken into account when understanding the attitude towards investments.

This research thus tries to understand behavioral aspects with regard to trust and willingness to invest in order to get insight in the horizontal cooperative action mechanisms which contribute to the performance of a cooperative. Besides, this empirical research can further the understanding of how to enhance the potential contribution of coffee cooperatives to improve livelihoods of smallholder member farmers in the research area. The level of trust is expected to be low in weak performing cooperatives compared to strong performing ones. Because of the presumed relationship between trust and investment, it is also expected that in a low trust environment, individual farmers are less engaged with their cooperative, are not very willing to invest in collective goods. Expected is a positive influence of the cooperatives' performance on engagement, willingness to invest and trust. Trust in turn, is expected to have a positive relation with engagement and willingness to invest. Relations are controlled for time-horizon, risk-attitude, income and several individual and household characteristics.

2. Operationalization main concepts

2.1 Trust

Several studies[70] emphasize a differentiation of trust in different levels, dimensions and objects. Trust is therefore operationalized in three different dimensions: general, social and institutional level. Generalized trust refers to the belief that most people, irrespective of their individual or group characteristics or objectives, can be trusted. This dimension of trust applies to the trust that people have in others in any given society (Dakhli and De Clercq 2004). This is commonly investigated by asking the question (Knack and Keefer 1997: 1256): "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" Social trust means confidence in people we know. According to Newton (2001) it is crucial to divide political and social forms of trust whereby the latter means trust in *family, friends, community-members and neighbors.* Dakhli and De Clercq (2004) consider institutional trust as the trust that people have in institutions and organizations. Institutional trust means *trust in the cooperative, in its board and in its members.* Since institutional trust not only concerns persons, this dimension of trust is also measured in terms of *rules* of the cooperative, *information* and *service* provided by the cooperative. Social and institutional trust are measured in survey questions with a Likert scale of the level of ranging from 1 (not at all) to 5 (very much). An index of institutional and social trust is constructed. In addition to the survey method, trust is measured in the so called trust game (see methods).

[70] E.g. Gambetta 2000, James and Sykuta 2005, Mistzal 1996, Platteau 1994a, Uslaner 2002.

2.2 Willingness to invest

With regard to investments, several decisions have to be made. The first is whether to invest yes or no. If there is willingness to invest, the second decision is whether to invest in individual and/or collective goods. Both types of investments, individual and collective, can be important in improving a persons' situation but a cooperative needs investments of the individual members in order to survive, to function and to perform well (e.g. Anteneh 2009, Heras 2009). The first open question in the survey to find out whether people prefer investments or consumption is: "If you would win x Birr, how would you spend the amount?" The statement „I will not make any investment because you never know what will happen. It's better to use and enjoy what you have right now" is added. Another open question is asked about preferences for kinds of investments and whether individual (land, house improvements, children's education, clothes, et cetera) or collective goods (construction school, water provision, infrastructure, cooperative, et cetera) are preferred. Several statements are also posed with regard to individual or collective investments; for example: "Whatever happens, you should first invest in your family" and "I would never invest in the community because no one invests in the community". In addition to the open question and the statements, respondents are asked for their preferences for five categories of which some are individual and some are collective types of investments. One type of collective investments is investment in the cooperative. This type is seen as a special kind of collective investments and dealt with as engagement with the cooperative.

2.3 Cooperative engagement

Members of the cooperative can be engaged with their cooperative in different ways. One could invest with money, but also with time, efforts and participation. Engagement with the cooperative is therefore operationalized with several concepts: (1) loyalty, (2) participation, (3) commitment and (4) financial investment. Loyalty means the economic transaction of members with the sale of their coffee crop to the cooperative. Respondents are therefore asked to whom they sell their coffee and if they would sell their coffee to another party if a certain amount is offered. The statements "I would sell more if…" are asked in addition. Another way of engagement is participation in the cooperative. Participation means the attendance of the general assembly and participation in voting for board and committee members. Here too statements are asked to measure members‟ participation and willingness to participate: "I would participate more if…". To measure commitment, several statements are asked like "I am very committed to the cooperative", "I intend to continue the relationship with the cooperative" and "It is most likely that I leave the cooperative when better opportunities elsewhere appear". Financial investments, the fourth dimension, can be done by re-investing the dividend in the cooperative (instead of dividing it among the members) and by buying additional shares of the cooperative in order to create more cooperative cash. Open questions are asked about the way dividend is spent, how the cooperative should divide the dividend and about the willingness to buy additional shares. Several statements like "I would never invest in the cooperative because it won't benefit me" and "Dividend should be re-invested in the cooperative" are asked in addition. Engagement with the cooperative is also measured in the so called VCM game. This game is conducted to look at members' behavioral investments in the cooperative (see methods).

2.4 Time horizon, risk attitude, income

The variables time horizon, risk attitude and income(-composition) are chosen as main control variables. The variable time-horizon is measured in the survey with a so called time preference question: 'Would you prefer to receive 100 Birr today' or 'Would you prefer to receive xxx Birr in one year'. Analysis of the answers will reveal a point of turnover (the mean amount of the switch from today to one year). The second key variable is risk attitude, which is measured with statements in the survey and in the so called risk game (see methods). Six statements are posed (1) "Every day I get more convinced that who takes not risk, does not earn"; (2)"In order to make some money, I am willing to risk and lose"; (3) "I only invest when I am certain that I have a good investment"; (4) "Investing in new crops is very risky, I had rather not do it"; (5) "I prefer to invest in something safe" and (6) "I would borrow money if I was convinced that investing in a business would give me good profits.". Income composition is measured in a survey question of which several income resources and their average percentage of the composition can be chosen from the answers.

3. Research context

Successful performance of marketing cooperatives is a necessary condition for the survival of cooperatives since there is competition from other firms in the market. In addition, cooperatives are member based organisations but incentives to become or stay member are very low at a weak performing cooperative. A number of studies conducted on Ethiopian coffee marketing cooperatives performance however, indicate that the performance results of these cooperatives have been varied and mixed (Oxfam 2008). There is an exclusion of the poor, low engagement and loyalty of members and lack of trust. These studies indicate that some are performing well while others are not for various reasons. According to Bernard et. al (2008) and Francesconi (2008) distrust is one of the reasons why cooperatives in Ethiopia hardly have impact on sales in the market. Research has thus taken place in the context of weak as well as strong performing coffee cooperatives which are selected by economic criteria from the cooperative union.

The choice for Ethiopia as research area is made for the dominant role of coffee in the agriculture and the importance and presence of many coffee cooperatives (World Bank 2005, CIA 2009). Sidama (southern region of Ethiopia) coffee cooperatives are chosen because coffee is main source of income in this region, they are relatively easily accessible and vary in performance from very weak to very strong.

Coffee cooperatives in Ethiopia have a two tiers structure. Farmers deliver the red beans to primary cooperatives, which process and store them, and later sell them to a cooperative union. The union is in charge of further processing, grading and international commercialization. The point of departure of the present study was the observation that the level of economic performance and strong management among primary cooperatives belonging to the Sidama coffee union varies considerably locally, which poses serious challenges to the governance and performance of the union. Such variation occurs despite the fact that all the primary cooperatives societies (PCS) are located in the same region and are composed by farmers with very similar cultural and socio-economic background.

4. Methods

4.1 Research location and unit of analysis

In the Sidama region, 46 cooperatives operate under the umbrella of the Sidama Coffee Farmers Cooperative Union (SCFCU). SCFCU represents 45 cooperatives with over 87,000 farmers and is the second largest coffee producing cooperative union in Ethiopia. The two strongest and weakest performing Sidama primary cooperatives were selected. The selection was based on different economic and non-economic indicators (e.g. good governance) collected during interviews with officials and board members at cooperative, district and regional levels. The coffee cooperatives studied in this research were situated in four different districts (Wonsho, Shebedino, Dale and Aleta Chuko) of this area. The cooperatives are all established in 1976. All cooperatives produce organic coffee and three cooperatives are Fair Trade certified. The cooperatives Telamo (n=56) and Fero (n=57) were defined as strong performing ones. Kege (n=60) and Dongora Kabado (n=59) were defined as weak performing ones. Since focus is on the attitude of coffee farmers towards investments and their levels of trust, research took place at different levels: the household and the individual farmer level.

4.2 Interviews

The survey sample was estimated using the method suggested by Poate and Daplyn (1993). This resulted in a number of 60 surveys per cooperative (240 in total). Eventually, 232 surveys were undertaken among member households of the four selected cooperatives[71]. Both male and female members participated[72]. The survey took between 1.5 and 2 hours per farmer household and was held in the local language *Sidamic*[73]. Non-response was very low because the completed surveys were immediately checked so errors and non-response could be dealt with in most cases. The survey of in total 42 questions primarily contained structured closed and open-ended questions and a preference ranking with regard to investments

4.3 Experiments

Participants for the experiments were randomly selected from the survey sample. Three different experiments in the four selected cooperatives were done with 16 participants in each experiment. The experiments were used to gather information about the three topics trust, risk and investment in the cooperative. Trust and risk attitude were also measured in the survey but the experiments allows measuring the existing norms of trust and reciprocity more precisely than 'just' in survey measures (Cardenas and Carpenter 2008). Possible contradictions in stated and actual behavior can thus be revealed by using both the survey and the game.

The three games were played at all four cooperatives with 16 participants in each game. The same persons of a cooperative participated in each game. Results from the two strong and the two weak cooperatives were combined so 32 observations were collected for each group. The games were played with money and amounts were adapted to local standards. The appropriate size of fees (starting amount of 10 Birr in each game) was determined in the field and fees were paid out immediately. Every game took about 2.5 hours

[71] Within probability sampling, the type simple random sampling was chosen.

[72] 163 Male members (85 in weak and 78 in strong coops) and 69 female members (34 in weak and 35 in strong coops).

[73] Four trained local enumerators were hired.

with explanation and the games were played with two enumerators. The games were played anonymously, but a registration system with simple signs (e.g. sun, moon) allowed tracing decisions back to specific people, so behavior of a participant in the game could be compared to information from that participant in the survey.

The trust game was played by pairs of individuals and each pair was made up of a player 1 and a player 2. Each player received an amount of 10 Ethiopian Birr and the experiment consisted of two stages. In the first stage, player 1 decided whether he wished to transfer part (or all) of the amount received to player 2 and if so, how much. The researcher tripled this amount so that sending money was socially efficient because player 2 was then asked to decide whether he wanted to return part (or all) of the money he received from player 1. This amount was not tripled. Second mover behavior measures trustworthiness and reciprocity while first mover behavior measures trust in the other player which is also a member of the cooperative. The game was played with envelopes and signs.

Experiments to construct risk preferences have a long tradition in development literature, which started with Binswanger (1980) and has been largely motivated by the proposition that impatience and risk aversion might explain why poor people remain poor. In the game setting, the participants were presented with a series of hypothetical gambles with outcomes of equal chance. Participants played the game with dies and could win on average one and a half day of wages. All players received 10 Birr and were asked with what amount they wanted to play the game with. The answer was written down before starting the actual game with the die. This in order to avoid influence of other players on the decision of an individual player. All numbers of the die (1-6) had a specific outcome. When the die rolled at 1 for example, the player lost the entire amount he bet. However, when the die rolled at 6, the amount bet was tripled. It appeared that the game was hard to understand for most farmers so extra attention was paid to the explanation and when necessary the game was played first by enumerators.

The third game played is the public goods game, the so called Voluntary Contribution Mechanism (VCM) game (Isaac et al. 1984). This game allows players to contribute to a public good, which has the incentive structure of a prisoner's dilemma (Cardenas and Carpenter 2008). In this game the same 16 farmers participated. Participants were given and an amount of 10 Birr in an envelope and they were given the choice to place the amount or part of it in the private account that would only benefit the decision-maker itself and in the public account that would benefit everyone in the group (the cooperative). The principle of the game is that when all players send the whole amount of 10 Birr to the cooperatives‟ account, all players will be better off in the end; they would receive the maximum then. Each player received two envelopes. One with 10 Birr and one empty envelope. The player then could put the amount for the public account of the cooperative in this empty envelope. When taking the decision, the farmers were given privacy. When all players made a decision, the envelopes meant for the public account were collected in one big envelope which stood for the cooperatives' account. The players waited outside while the researcher reported the amount each player sent and the total amount which was send to the cooperative. This total amount of the cooperative account was then tripled by the researcher and equally divided among all (16) players.

The quantitative data were analyzed by performing a wide range of statistical tests, notably the independent sample t-test, multiple regression, principal component and factor analysis. Moreover, certain tests were performed to ensure the validity and reliability of the data, such as the Cronbach's alpha, Chow and Durbin Watson tests. Regression was used to indicate whether a specific correlation is significant (at a 95% confidence interval). See figure 1 for the methodological scheme.

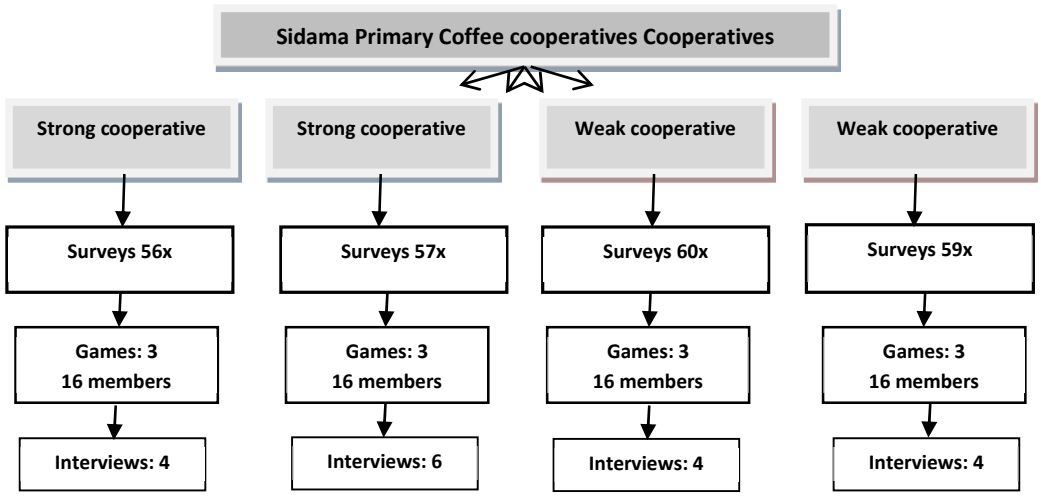


Figure 1. Methodological scheme

4.4 Interviews

Next to this, four case studies in each cooperative were conducted and the information necessary was gathered through in-depth and semi-structured interviews. For this, purposive sampling took place and 16 interviews were held in total. Interviews were held to obtain more qualitative and in depth knowledge about concepts and the perceived relations.

4.5 Descriptives respondents

Individual characteristics of respondents of the two types of cooperatives are similar concerning gender, civil status, ethnicity and education. There is however a significant difference in age for farmers of strong cooperatives are much younger. There are also several differences in household characteristics for households of strong cooperatives are relatively younger and larger. There are no significant differences in land owned, in the number of (coffee) trees and coffee harvest (red cherry). With regard to household and machinery assets and income (farm and non-farm), farmers of strong cooperative have significant higher scores. Figures show that farmers, both of strong and weak cooperatives, do not differ much in average years of membership which is 24 years. There are some differences in coffee sales to the cooperative. It appears that members of weak cooperative often sell their coffee to other parties than their own cooperative. It appeared from the interviews that several reasons exist. The weak cooperative have low capacity (cooperative workers, processing sites, transportation) and they therefore refuse sometimes to purchase the red cherries of their members. In addition, the incentives for farmers are low because for many years there are no

dividend payments, the cooperative offers no services, information is very little and there is a low level of trust in management (6x).
All members surveyed were asked for their perception the performance of their cooperative[74], their satisfaction[75] and perceived problems (1=yes, 0= no). As results show (see table xx) the division between weak and strong cooperatives was a correct one when verified with members' opinion.

Table 1 Perceptions, problems and satisfaction

Variables	N		Mean		St. dev.		Sig.
	Weak	Strong	Weak	Strong	Weak	Strong	
Perception performance	119	113	2.20	4.35	0.693	0.839	***
Problems in cooperative	119	113	0.71	0.23	0.454	0.423	***
Satisfaction cooperative	119	113	2.96	3.83	0.924	0.895	***

Note: *significant at 10%; **significant at 5%; ***significant at 1%.

Members of strong cooperatives rate the performance of their cooperative very high and this differs significantly from members of weak cooperatives. In weak cooperatives significantly more problems like no dividend or no immediate payment, corruption and no capacity to purchase coffee from the members are faced. Farmers were also asked for the satisfaction with their cooperative and here too significant differences occur between weak and strong cooperatives.

5. Results

Results are given of the three main concepts and presumed relations:

- trust and Ethiopian cooperatives and the relation with performance (5.1);
- willingness to invest and Ethiopian cooperatives and the relation with performance (5.2);
- engagement in Ethiopian cooperatives and the relation with performance (5.3);

5.1 Trust and Ethiopian cooperatives

Trust is measured both in the survey and in the trust game. In table xx significant differences per cooperative type are presented based on survey data. General trust is low, and the mean (yes=1) is 0.06 in weak and 0.21 in strong cooperatives which differ significantly from each other. Social trust has a mean of 3.1 and the mean of institutional trust is 3.5. Results of trust show significant differences in the level of trust. Members of strong cooperative have significantly more general, social and institutional trust. Reasons for the level of trust are found in the performance, the organization and capability of the management and experiences in the past. As one farmer of weak cooperative said: "People gave up to trust.".

Table 8.2. Trust data survey

[74] 1=very weak, 5=very strong
[75] 1 = strongly disagree) to 5 =strongly agree

Variables Trust Survey	N		Mean		St. dev.		Sig.
	Weak	Strong	Weak	Strong	Weak	Strong	
General Trust (0-1)	119	113	0.06	0.21	0.236	0.411	***
Social Trust (1-5)	119	113	2.969	3.248	0.884	0.871	**
Institutional Trust (1-5)	119	113	3.088	3.881	0.632	0.591	***

Results from trust statements in the survey are confirmed by outcomes of the trust game (see table xx). Although the mean amount out of 10 Birr sent to the other player is 2.84 Birr in the weak and 3.34 Birr in the strong cooperatives, the difference is not significant. The amount player 2 returned to player 1 is, however, significantly different between the two cooperatives: 2.50 Birr is returned in weak cooperatives compared to 3.44 Birr in the strong ones. The amount expected from the other player is always higher in the strong cooperatives which is, however, not significant different. There are no significant correlations between the trust variables from the survey and the game. Regression of the trust game shows significant influences from the variables age and household assets. Younger members which are have more household assets send a larger amount to the other player. It must be added here that members of the strong cooperatives are significantly younger and richer in household assets. It is therefore not possible to state on the basis of this game that members of strong cooperatives give because they have more trust.

Table 8.3. Trust data game

Variables Trust game	N		Mean		St. dev.		Sig.
	Weak	Strong	Weak	Strong	Weak	Strong	
Amount sent to other as player 1	32	32	2.84	3.34	1.483	1.771	
Amount expected from player 1	32	32	4.06	4.72	2.271	2.750	
Amount received from player 1 (x3)	32	32	8.53	10.03	4.450	5.313	
Amount returned to 1 as player 2	32	32	2.50	3.44	1.545	2.526	*
Amount expected from player 2	32	32	5.66	6.00	3.107	4.370	
Total amount game	32	32	15.69	24.17	4.395	15.60	**

Although there is no high level of trust in all cooperatives, almost all interviewees (10x) agree that trust ís very important for the cooperative to function well. Trust is necessary for the development of the cooperative (3x) and leads to more participation (5x) as one said “No trust, no coffee” and another farmer of Kege said “This cooperative still exists due to trust of the members.” .

Predictors for Trust

Regressions were conducted to perform models with predictors for trust[76]. The model consists of four groups of independent variables: 1. individual and household characteristics; 2. assets; 3. (coffee) production and 4. The cooperative (perception, satisfaction). The model for institutional trust is presented below in table 8.4.

Table 4 Regressions on institutional trust

[76] The chow tests reveal that regressions must be conducted separately for weak and strong cooperatives for both general and institutional trust.

Production function institutional trust by performance (Dep.var. = Institutional trust)

Variables	Weak			Strong		
	Coeff	SE	Sig.	Coeff	SE	Sig.
Individual & household						
Gender	-.363	.151	**	-.251	.471	**
Age household head	-.011	.008		-.016	.006	**
Education household head	-.031	.021		-.037	.018	**
Household size	-.057	.035		.017	.024	
Household age	.000	.016		.004	.011	
Household employment	-.744	.412	*	.420	.360	
Asset endowments						
Livestock assets index	-.034	.031		.026	.029	
Household assets index	-.016	.100		.104	.060	*
Machinery assets index	.258	.146	*	-.038	.087	
Production						
Total land (ha)	-.070	.087		.013	.053	
Total trees (no)	0005	.000		-0005	.000	**
Coffee trees (no)	-0005	.000		0005	.000	
Coffee harvest (kg)	.000	.000	*	0005	.000	*
Cooperative						
Performance cooperative	-.033	.071		.255	.082	***
Satisfaction performance	.235	.062	***	.209	.062	***
Constant	4.127	.670	***	2.638	.471	***
F-test	3.332		***	5.801		***
Adjusted R^2	.229			.393		
Durbin-Watson	2.071			1.957		

Note: *significant at 10%; **significant at 5%; ***significant at 1%; ns = not significant.

Weak and strong cooperative have different predictors for institutional trust. Most important variables for trust in the weak cooperatives are gender (negative), household employment (negative), machinery assets, coffee harvest and satisfaction with the performance. Most significant is the positive relation with satisfaction: more satisfaction with the performance of the cooperative goes along with more institutional trust. This production function estimates 23% of the trust level measured. This Adjusted R2 is 39% in the strong cooperatives which is quite high. Gender, age and education, household head, household assets, total number of trees and coffee harvest are important variables for trust in the strong cooperatives. With regard to the relation with the cooperative, perception of the performance and satisfaction with that performance have a strong and positive significant relation with institutional trust in both situations.

5.2 Willingness to invest and Ethiopian cooperatives

This paragraph starts with the results of preferences for consumption or investments. The latter is afterwards divided into preferences for individual or collective investments.

Consumption or investments

The first question with regard to willingness to invest is whether farm members are willing to invest or prefer to spend their money on consumption. Most farmers (72%) of the total sample chose not to spend their money on investments in case of windfall profits. Priority is given instead to house improvements and education of children. To the open question how farmers would make long-term investments in case they would be able to make investments, only 31%

of the farmers answered that they would make long-term investments like starting a business or investing in agriculture. In addition to the open questions, several statements were formulated to further investigate the willingness to invest and answers to these question are somehow different for only 12% agrees with the statement “I will not make any investment because you never know what will happen” and with “ It’s better to enjoy what you have right now”. Data show that there are no differences in willingness to invest between members of weak and of strong cooperatives.

Regression confirms that the performance of the cooperative and the level of trust do not have a significant direct influence on the choice whether to invest or to consume. There is, however, a significant relation with the variable risk and willingness to invest. This is consistent with theories which state that when future returns are uncertain, risk-averse decision makers will favor projects with shorter payback periods and will be less willing to invest in projects with long-term benefits (Bluffstone and Yesuf 2008).

It can be the case that the farmers acknowledge the importance of making investments in escaping poverty but are actually facing a lot of constraints in doing so. Farmer members interviewed argued that many members indeed acknowledge the importance of investments: to grow/develop, to have an income (7x) and to “Stay alive”. As another respondent said: “Who lacks to invest, lacks food” or “This country can only develop/grow by working and investing.” Reasons given for not investing in practice were a narrow-mind, ignorance and lack of knowledge, laziness and fear of risks.

Individual or collective investments

The second question of investments is about the preference for individual or collective investments in case members are willing to invest. Data show that most farmers give priority to individual investments (house improvements, education of children) while only 5% gives priority to collective investments (community and cooperative). The preference for individual investments is confirmed (93% agrees) in the statement: “Whatever happens, you should first invest in your family”. There are – contrary to the expectation - no differences in results between weak and strong cooperatives.

Regression shows that just a few variables (notably household size, machinery assets and risk attitude) have a significant influence on willingness to invest collectively (Ajusted Rsquare = 17%). Interestingly, there is no significant relation between the performance of the cooperative and willingness to invest collectively. There was no significant relation between trust and the choice to consume or invest. But what about the relation between trust and collective investments? Data show a significant and positive relation between trust and with collective investments. Interviewees confirmed (10x) the relation between willingness to invest and trust. A quote: “The refusal of working together is due to lack of trust”. It’s not only about trust in each other but also trust in the investment itself. Trust that the investment in for example a school building will benefit them.

Although there is a preference for individual investments, farmers acknowledge the importance of investing in the community as 90% agrees with the statement that “It’s worth investing in the community because it will perform better then”. The fact that farmers acknowledge the importance of collective investments also appeared from the interviews. All mention the importance of investments and the role community members play. Actual

practice of community investments is, however, bounded by lack of education, initiative and finances.

It appears that members of weak and strong cooperative have more or less the same (un)willingness to invest. What about members' engagement with their cooperative?

5.3 Engagement in Ethiopian cooperatives

Members of the cooperative can be engaged with their cooperative in different ways. Engagement with the cooperative is thus operationalized with four concepts: (1) loyalty, (2) participation, (3) commitment and (4) financial investment. Data with regard to engagement is gathered via the survey, interviews and the VCM game. The VCM game confirms the survey results while interviewees gave more insights into these behavioral dynamics. It appears that members of strong performing cooperatives are significantly more engaged with their cooperative.

Table 5. Engagement cooperative

Variables	N		Mean		St. dev.		Sig.
	Weak	Strong	Weak	Strong	Weak	Strong	
I would never sell to another party (1=never)	119	113	0.35	0.88	0.48	0.32	***
I would sell to another party (for 4.5-6 Birr)	77	13	4.76	5.73	4.18	3.88	***
Sales to cooperative (2), Mixed (1), Outside (0)	119	113	0.96	1.47	0.46	0.50	***
Index statements '*I would sell more if*' (1-5)	119	112	4.16	4.17	0.53	0.42	
Index statements '*I would participate more if*' (1-5)	119	113	3.84	3.96	0.52	0.48	*
Index statements *'Commitment cooperative'* (1-5)	119	113	3.63	3.89	0.57	0.49	***
New variable *'Engagement cooperative'* (1-5)[77]	119	113	3.85	3.97	0.53	0.48	*

Note: *significant at 10%; **significant at 5%; ***significant at 1; ns = not significant.

Loyalty

It appears that 27% sells their crop only to the cooperative, while 66% sells to both the cooperative and other parties and that 7% only sells to other parties. Members of strong cooperative sell their coffee significantly more often to their cooperative than members of weak cooperatives. Another question with regard to loyalty refers to at what price members decide to sell their coffee to another party. A percentage of 61% states never to sell to another party no matter what price is offered by other buyers. There is a significant difference between members of strong and weak cooperatives; 89% of the strong ones will never sell to other parties compared to 35% of the weak performing ones. Also the turning point, the amount where a farmer decides to sell to another party, differs significantly per cooperative. Members of a weak cooperative turn to another party at a mean amount of 4.7 Birr (per kg) where this is 5.7 Birr in the strong cooperatives.

With regard to the statements "I would sell more of my coffee crop to the cooperative if…" most farmers show their willingness to sell more of their crop under several conditions as shows the mean value of 4.2 (on a range of 1 to 5) of the index of these statements (see: table 5.1, row 4). Three conditions are especially important as most farmers (90%) would sell more of their crop if the Board operated less corruptly, if payments were made immediate, and if

[77] Index of the different variables loyalty, participation, commitment, investment and dividend division.

there were more dividend payments. There are no significant differences with regard to these statements between members of strong and weak cooperatives. In the interviews farmers were asked about their loyalty to the cooperative and reasons for selling coffee to the cooperative or to other parties. One of the questions was why farmers still sell their coffee to their cooperative when the performance is very weak and when there is no dividend payment. Four interviewees said that the cooperative can only grow if members supply their coffee and that they have hope for dividend payments and better performance. As one farmer said: "It's not about the money, I want my coop to develop.".

Participation

Participation can be practiced by attending the General Assembly and by voting for board and committee members. At this moment, 72% of the farmers always attend the General Assembly and 17% sometimes. It appears that there are differences in attendance for members of strong cooperatives attend the Assembly significantly more often. Almost all members participate in voting (86%) and there are no differences between weak and strong cooperatives.

In addition to the previous questions about participation, several statements were asked with regard to participation: "I would participate if…" (table 5.1 row 5). The mean of the index of these statements is 3.9 for the whole sample. Only 1.3% says never to participate more. Particularly important is the statement "I would participate more in the cooperative if they take my opinion seriously" to which 91% agrees. The results of the index of these statements show that members of the strong cooperatives exhibit significantly higher scores on participation in the cooperative.

Most interviewees of both weak and strong cooperatives argue that participation in the cooperative is very important and necessary. People need a strong cooperative and a cooperative needs the participation and commitment of its' members to become strong. Development of the cooperative means development of the members. Although members of weak and strong cooperatives agree with this thought, there are significant differences in the actual participation of members. Members often do not see the possibility to participate more, due to personal constraints (no possibility to cultivate more coffee trees or low understanding of cooperative organization) or to organizational constraints (e.g. not informed and invited for general assembly or voting). Several interviewees of Dongora Kabado cooperative, for example, face constraints from the board to participate more. One farmer of Dongora is not willing to participate more "because it is not possible to bring change on my own opinion". This statement shows the different atmosphere between weak and strong cooperatives for one farmer of a strong cooperative said "This strong cooperative is the result of participation of all members".

Commitment

Commitment is another way of engagement with the cooperative. Several statements measure members' commitment. The mean of the index is 3.8 and 85% of all respondents state to be very committed to their cooperative. Most farmers (97%) intend to continue the relationship with the cooperative and 34% might leave the cooperative when better opportunities elsewhere appear. Data show significant differences in commitment between members of strong and weak cooperatives. The reasons mentioned most for being committed

to the cooperative is ownership and membership of that cooperative. Members are also committed because the cooperative helps them and they consider that the development of the cooperative leads to personal growth. Reasons for low/no commitment are: no understanding/knowledge of responsibility, no trust in organization and board and no benefits. The differences in commitment between members of weak and strong cooperatives appear from two quotes about leaving the cooperative. One interviewee of a strong cooperative said: "I won't leave until I die for the cooperative is my home and it benefits me". Another member, of a weak cooperative, stated it this way: "It doesn't matter to be member or not, it doesn't bring any benefit either to leave the cooperative, so why leaving then".

Financial investment

Four statements were asked to measure willingness to invest in the cooperative (table 8.6*).*

Table 6. Investment in cooperative

Variable	N		Mean		St. dev.		Sig
Investment Cooperative	**Weak**	**Strong**	**Weak**	**Strong**	**Weak**	**Strong**	
The cooperative can only develop when all members invest in it.	119	113	4.25	4.26	0.627	0.609	
I would never invest in the cooperative because it won't benefit me.	119	113	2.50	2.00	1.073	0.791	***
Dividend should be divided among the members of the cooperative.	119	113	4.28	4.33	0.610	0.589	
Dividend should be re-invested in the cooperative.	119	113	4.40	3.99	0.587	0.750	***

Note: *significant at 10%; **significant at 5%; ***significant at 1; ns = not significant

Almost all members (96%) of both types cooperative agree with the statement that the cooperative can only develop when all members invest in it. There is, however, a significant difference between members of weak and strong cooperatives in answers to the statement "I would never invest in the cooperative because it won't benefit me". There is also a significant difference in answers to the statement if dividend should be re-invested in the cooperative. Members of weak cooperative more often agree with this statement which seems contradictory to answers of other questions and statements. Interviews revealed that farmer members argue that dividend should be divided among the members to motivate them to supply their coffee and to stimulate them to plant more coffee whenever possible. Other reasons (5x) for division of dividend among the members is to increase their trust in the cooperatives' organization and the board members and to increase the feeling of ownership. Reasons for a re-investment of dividend in the cooperative are to strengthen and develop the cooperative (6x), to be able to purchase red cherries (3x) and to be able to provide services (like transportation) to the members. The significance between members of weak and strong cooperatives could be explained in this way. The weak cooperatives need, among others, financial input, to develop for their performance is very low and not to the satisfaction of the members. One interviewee used the phrase "One finger cannot wash the single face" to explain that every member must invest in the cooperative by using dividend for development cooperative. Strong cooperatives operate already very well, so there is a lower need for financial inputs like re-investment of dividend.

VCM Game

Results of the VCM game show significant differences in behavior between members of strong and weak cooperatives. The mean amount sent to the cooperative in weak cooperatives is 2.30 Birr compared to an amount of 3.30 in strong cooperatives. The VCM game confirms the survey results that register that members of strong cooperatives are more willing to invest in the cooperative and are more engaged to their cooperative compared to members of weak cooperatives.

Table 7. VCM Game

Variable VCM Game (in Birr)	N		Mean		St. dev.		Sig.
	Weak	Strong	Weak	Strong	Weak	Strong	
Amount sent to cooperative	64	64	2.30	3.30	1.268	2.068	***
Amount total in cooperative	64	64	36.75	52.75	5.583	16.90	***
Amount individual member	64	64	4.00	5.50	0.000	0.508	***
Total amount game	64	64	11.88	12.78	1.040	1.128	***

Note: *significant at 10%; **significant at 5%; ***significant at 1.

To summarize most important findings: it appears that all members acknowledge the importance engagement with their cooperative. Actual differences in engagement appear, however, as members of strong cooperative are significantly more engaged with their cooperative compared to members of weak cooperatives. Farmer members of strong cooperatives have higher scores on loyalty, participation, commitment and invest financially more in the cooperative.

What determines engagement?

As appeared from the descriptives, engagement with the cooperative has been operationalized with 10 different variables. Regressions are calculated for each variable where the independents variables (18) are entered into the model which are trust, perception of and satisfaction with the cooperative, individual and household characteristics, wealth indicators and assets. Here, the model (see table xx) is given for three variables which are regarded as the most important indicators for engagement: (1) loyalty, (2) participation & commitment and (3) cooperative investments.

T-tests showed already significant differences in *loyalty* between members of weak and strong cooperatives and regression here show again the positive relation between performance of the cooperative and loyalty. If members are positive about the performance of their cooperative, they tend to be more loyal. A strong cooperative offers benefits (like dividend, the premium, a fair price) and thus rewards members' loyalty. Results show that perception, institutional trust and risk are of significant importance for loyalty with the cooperative. Trust is also an important predictor for loyalty. If members have more institutional trust, they are more loyal to their cooperative. It appeared from the interviews that members even sell their coffee to the cooperative without receiving immediate payment (on credit), when there is a high level of trust. Loyalty is also influenced by risk: a risk taking attitude positively influences members' loyalty. This means that loyalty to the cooperative has a risk dimension for these farmers. This can be explained with the same example just mentioned. Selling the coffee crop to the cooperative without receiving an immediate payment, is taking a risk: it might be that the cooperative will never pay (the whole amount) for the coffee purchased.

Table 8 Regressions loyalty, participation & commitment and investing in cooperative

Variables	Loyalty[78]			Participation & commitment[79]			Collective Investment[80]		
	Coeff	SE	Sig.	Coeff	SE	Sig.	Coeff	SE	Sig.
Individual & hh char.									
Gender	.108	.103		.082	.028	**	2.524	1.238	**
Age head	.005	.005		.001	.001		-.054	.033	
Education head	.002	.015		-.001	.004		.088	.072	
Household size	.001	.019		.011	.005	**	.195	.144	
Household age	.004	.009		.001	.002		.110	.066	
Household employm.	-.180	.303		-.181	.084	**	2.898	2.138	
Assets									
Household	.070	.047		.0005	.013		.250	.264	
Livestock	-.001	.019		.000	.005		.313	.162	*
Machinery	.026	.071		-.011	.019		-.666	.371	*
Wealth									
Total income	.0006	.000		-0007	.000		.000	.000	
Total land	-.004	.043		-.002	.012		-.060	.023	**
Cooperative									
Perception	.160	.041	***	-.014	.011		.165	.240	
Satisfaction	.044	.051		.033	.014	**	.066	.327	
Trust									
General	.040	.110		-.057	.030	*	-.551	.787	
Social	-.043	.048		.000	.000		-.035	.403	
Institutional	.153	.076	**	.234	.065	***	.071	.469	
Time horizon	-.002	.001		.000	.000		.003	.007	
Risk attitude	.130	.057	**	.065	.015	***	-.131	.295	
Constant	-1.208	.479	**	0.666	.134	**	-3.76	3.440	
Adjusted R^2	.344			.306			0.334		
F-test	4.729		***	4.133		***	1.975		*
Durbin-Watson	2.053			2.147			2.316		

Note: *significant at 10%; **significant at %; ***significant at 1%, ns = not significant.

Institutional trust and risk are of importance for *participation & commitment* and show a positive relation. T-tests showed significant differences in the level of participation and commitment between members of weak and strong cooperative. Members of strong cooperatives have significantly higher scores. Something interesting occurs here. The regression shows a positive and significant relation between performance and participation & commitment as long as *institutional trust* is not taken into account. When controlled for with institutional trust, relation between performance and participation & commitment is not significant anymore This means that institutional trust is of great importance in members' participation & commitment with their cooperative. Trust is even more important than cooperative performance!

For the *VCM game*, some other factors are of importance as well. Gender, land and assets have a strong relation with the collective investment in the cooperative. Women and

[78] Loyalty: sells never to other party (1=agree, 0=disagree) .

[79] Index of both variables

[80] VCM Game: amount out of 10 Birr sent to cooperative account.

members with more livestock gave significantly more money to the cooperative account. Land and machinery assets are negative related to the amount sent.

Data reveals that less risk-aversion, a longer time-horizon and a higher income do not necessarily lead to more engagement with the cooperative (as presumed in the theoretical framework). The only positive and significant relation exists between risk-attitude an engagement. It appears that less risk-averse members are more engaged with their cooperative.

It can be concluded that institutional trust is of importance for loyalty, participation & commitment. Perception of the performance has a strong and positive relation with loyalty, but this relation is not significant anymore when controlled for with institutional trust. Another strong relation exists between risk attitude and engagement as well as with loyalty. Income and time-horizon are not of significant influence. Regressions show that these relations are more or less the same for both the weak and strong cooperatives.

6. Conclusions

Because of the importance of cooperatives in development and the role coffee plays in the economy of Ethiopia, this research focused on the agricultural coffee cooperative in rural Ethiopia. The research aims to: (1) understand the role played by cooperative organizations in influencing behavioral relations with regard to trust and willingness to invest and (2) to get insight in the horizontal cooperative action mechanisms in the context of weak and strong performing cooperatives. Conclusions are based on results from farmers' surveys, games and interviews conducted among members of two strong and two weak performing cooperatives of the Sidama Coffee Farmers cooperative Union in Southern Ethiopia.

6.1 Main outcomes

This research reveals positive relations between the performance of the cooperative, engagement and the level of trust of the members. It is not possible to express causalities in relations for the limited scope of this research. It can be stated, however, that the performance of the cooperative, engagement and trust reinforce each other in a positive way. Further longitudinal research is recommended to reveal which relation is more powerful.

1) Farmer members from strong cooperatives have higher level of social and institutional trust than farmer members from weak cooperatives.
2) A better performing cooperative leads to higher levels of trust.
3) There is more engagement with the cooperative among members of strong performing cooperatives.
4) More trust leads to more engagement with the cooperative and to more collective investments.
5) Less risk-aversion lead to more willingness to invest and to more engagement with the cooperative.

Very important finding is the influence of the performance of the cooperative on trust. It appears that a better-performing cooperative exhibit more trust. This is an important influence because trust in turn, has a strong and positive relation with the engagement of

members with their cooperative and with members' loyalty. It appears that the relation between trust and engagement is even of greater significance than the relation between performance and engagement. T-tests show significant differences in the level of cooperative engagement between members of weak and strong cooperative: farmer members of strong cooperatives are significant more engaged. The regression shows a positive and significant relation between performance and engagement as long as institutional trust is not taken as an independent variable. When relations with engagement are controlled for with institutional trust, performance and engagement do not show a significant relation. This means that institutional trust is of great importance in members' engagement with their cooperative.

Another interesting relation is found between the level of trust and members' willingness to invest collectively. Collective investments exist by collective action of individuals and data show a strong and positive relation between trust and collective investment willingness. People are motivated to work together if they trust each other[81]. Interesting. Further research is necessary to find a plausible explanation for this relation. It could be argued that members' of strong performing cooperatives do not feel an individual responsibility for collective investments. The strong cooperatives in this research are active in community development and all members interviewed argue that the cooperative must indeed invest in the community. Some members even want the dividend to be spent on development activities in the community. It can the case that if the cooperative successfully invests in the community, individual members of that cooperative are less willing to do so.

These outcomes confirm theories of for example Six (2007) who states that when individuals are placed in a relational context where trust is involved, trust and collective action mutually reinforce each other. Interpersonal trust-building is a reciprocal process in which both parties are involved in building trust interactively. Six relates trust to collective action which is confirmed in this research, because trust is related both to willingness to invest collectively and to collective engagement with the cooperative.

The idea that there is more willingness to invest among farmer members of strongly performing cooperatives must be rejected. This hypothetical relation was based on different theories. Lee (2005) states for example that institutions, like an agricultural cooperative, do play an important role in reinforcing the willingness to invest of poor farmers. Many smallholder farmers in vulnerable areas continue to face complex challenges in adoption and adaptation of resource management and conservation strategies. Improved market access that raises the returns to land and labor is often the driving force for adoption of new practices in agriculture. Market linkages, access to credit and availability of pro-poor options for

[81] Theories of Zak & Knack (2001) also confirm that trust is positively associated with investment and growth. Investment sufficient for positive growth is facilitated by trust between economic agents. With their equilibrium growth model it becomes clear that low trust environments reduce the rate of investment. As Arrow (1972, 357) puts it, "Virtually every commercial transaction has within it some element of trust, [. . .] It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence."

beneficial conservation, are critical factors in stimulating livelihoods and willingness to invest (Okello, Reddy and Shiferaw 2009). An agricultural cooperative is an organization which consists of collective action to reach a common goal. In this situation of collective action by the community-members, the cooperative may further enhance and supplement individual production and investment possibilities. Benefits from these investments should outweigh the added costs (Lee 2005). Statements in qualitative results confirm these theories. According to the farmers interviewed there is a strong relation between the performance of the cooperative and members' willingness to invest. A strong cooperative can for example enable people to make investments with credit services and training about investments. A strong cooperative reduces uncertainties by offering stable prices, the guarantee of an honest purchaser and by paying dividend. In addition, a strong cooperative is the example that investments can be rewarding and which motivates members to also invest outside the cooperative. There is however a contradiction between stated and actual behavior for the relation between a strong performance and willingness to invest is not confirmed with the quantitative data of this research. Findings here are more consistent with theories of Holden and Shiferaw (2002) who state that Ethiopian farm households' planning horizons are short, discount rates are high, and their estimated willingness-to-pay for future productivity increases is very low.

Factors which can influence willing to invest are, among others, the attitude towards risk, the time preference and composition and level of income. Research results show the importance of risk in peoples' willingness to invest confirming several existing theories: a risk-taking attitude has a positive relation with engagement and loyalty and with willingness to invest. It appears that farmers which are less risk averse are more engaged with their cooperative and are more willing to invest. This means that cooperative engagement and loyalty have a risk dimension for the members: rewards of engagement and loyalty are not automatically guaranteed. This can be caused by negative experiences in the past. Cooperatives did not always have success and they were more political instruments than farmer organizations in the past. In addition to this, cooperatives of the same districts show very different performances, where one cooperative is very strong and successful, the cooperative in the neighbourhood shows the opposite. The other two important variables in this research, time-horizon and income-composition, do not show significant relations with engagement or willingness to invest. It does not make a difference whether members have a short or long time horizon in their level of engagement of their willingness to invest. Members in this research do not show significant differences in the composition of their income which can explain there is no relation.

6.2 Implications for policy and practice

This research confirms substantial part of the literature suggesting that agricultural cooperatives are not always successful business organizations. Results show the importance of a strong performing cooperative influencing members' engagement, level of trust and willingness to invest collectively. Trust is of key importance in engagement with the cooperative and in collective investments. Based on the data and results of this study a two-track policy which focuses on the performance of the cooperative and the level of trust is recommended. Of importance is to strengthen the cooperatives' organizational structure to

improve its performance. It appears that several exogenous factors strongly influence the performance of a cooperative. Often uneducated board and committee members are elected to rule the organization and there are no exchange experiences and learning processes between weak and strong cooperatives. Due to the strong decentralization structure of cooperatives' organizations in Ethiopia with all kind of layers and levels, responsibilities are unclear and data is not consistent. Based on these outcomes and information of the interviews, suggestion therefore is a more central coordination with direct communication between the Union and the Primary Cooperatives. It appeared in the interviews that members have trust in the Union and they are positive towards a more significant role of the Union in the cooperatives' organization. This research shows that the performance of a cooperative has a strong relation with members' loyalty to and trust in that cooperative; ingredients which are in turn of significant influence for the existence and success of cooperatives. Six (2007) mentioned already this downward and upward spiraling process of trust and feedbacks. Cooperatives are regarded as autonomous and democratically ruled organizations and should not be (as in the past) a political instrument. Challenge is to create a well-balanced strategy to strengthen the cooperative organizational structure while preserving the autonomous character.

Besides attention for the organizational structure, attention is necessary for the significant role of trust which of course are related to each other. One indicator of a well-organized structure is for example a regularly and stable information provision to the members which can in turn positively influence the level of trust. Information and transparency are important to increase the level of trust. One member distrusted the board for example because the Fair Trade premium was not divided among the members individually. This member did not know that, according to Fair Trade regulations, the premium should be invested in collective goods for the whole community. Attention must thus be paid to the endogenous role of trust of members in their cooperative (board and organization) and amongst cooperative members.

Underlying results confirm the proposition of Mistzal (1996) that internal coordination and resource allocation in cooperatives are primarily determined by the quality of interpersonal relations between its members. So improvement of the quality of interpersonal relations is necessary to increase the level of cooperative engagement and collective investments. The better is the personal relationship that the members develop with each other and with management, the more flexible and smooth will be the processes of communication, coordination, and collective decision making. This will lead to stronger organisations and agri-business development for many farmers, donors and governments consider agricultural cooperatives to be a fundamental pillar of their rural development policy.

Annex I

Variables	Weak cooperative		Strong cooperative		t-test
	Mean	SD	Mean	SD	Sig.
Household characteristics					
Family size (no)	7.34	2.323	7.96	2.411	**

Family average age (yrs)	23.74	6.686	21.57	7.887	***
Age household head (yrs)	52.45	13.468	46.29	12.88	***
Education household head (yrs)	3.78	3.484	4.34	3.178	
Employment ratio household	0.2542	0.15037	0.2668	0.1572	
Assets Endowments					
Assets index Livestock[82]	2.7765	2.5702	2.8023	1.8275	
Assets index Machinery/equipm/transport[83]	0.67	0.525	0.82	0.577	*
Assets index Household goods[84]	1.0353	0.841	1.6442	0.969	***
Land/production					
Total land owned (hec)	1.0593	0.8564	1.7121	4.6976	
Land for coffee trees (hec)	0.4363	0.9479	0.42032	2.78382	
Total trees (no)	2638.55	3865.2	3083.70	3464.98	
Total coffee trees (no	988.70	1599.5	1224.16	1369.98	
Young trees (no)	188.71	506.91	310.43	403.059	**
Fruit bearing trees (no)	712.02	946.37	898.68	1181.074	
Coffee harvest in 2009 (red cherry)	1135.57	1515.860	1376.73	1716.422	
Coffee harvest (dry) in 2009 per hec.	0.25	2.750	221.19	1038.059	**
Consumption coffee (red cherry+dry) 2009	86.42	97.309	94.12	124.863	
Coffee sales in 2009 (red cherry kg)	820.08	1194.470	1084.07	1378.540	
Coffee sales in 2009 (dry coffee kg)	222.35	549.034	184.16	903.997	
Expenditures					
Household expenditures	413.898	317.59	634.431	547.764	***
Production expenditures	94.801	238.05	113.785	149.279	
Total expenditures	4382.87	3649.9	6773.58	6007.89	***
Total expenditures/adult[85]	1678.647	1366.4	2589.10	2717.192	**
Farm income per adult	1125.45	1495.43	2995.12	11851.91	*
Income					
Farm income per hectare	3002.423	3004.490	5640.51	11319.01	**
Non-farm income per adult	106.02	361.097	484.79	1356.345	**
Self-employment per adult	188.84	489.841	301.71	944.055	
Assistance per adult	140.11	404.599	120.345	439.628	
Total income per adult	1570.47	1611.015	3920.94	12189.57	**
Total income per hectare	4742.113	4327.545	8131.74	12643.84	**
Cooperative					
Coffee sales to cooperative in 2009	648.76	1141.406	1408.68	4781.341	*
Sales to cooperative (2), mixed (1), outside (0)	0.96	0.460	1.47	0.501	***
Sales cooperative (1), sales outside (0)	0.87	0.335	1.00	0.000	***
Membership cooperative (yrs)	24.78	11.120	24.73	10.802	
Attendance General Assembly	0.81	0.394	0.91	0.285	**
Participation voting board members	0.84	0.368	0.88	0.320	ns
Additional shares from cooperative	0.27	0.445	0.47	0.501	***

[82] Tropical livestock index (Jahnke 1982): Cows 0.7, Oxen 1.0, Goats 0.15, Sheep 0.15, Chicken 0.02, Donkey 0.5, Mule/horse 0.75.
[83] Index: Bicycle 1.0, Donkey Cart 0.6, Plough 0.4, Wheel barrow 0.3, Plough parts 0.1, Hoe 0.1, Pitch fork 0.02, Hammer 0.02, Spade 0.02, Sickle 0.01.
[84] Index: Fridge 1.0, Television 0.9, Radio 0.7, Telephone 0.6, Wrestwatch 0.5, Bed 0.3.
[85] Index of Calorific Requirements by Age and Gender for East Africa (Collier 1990).

References

Alesina, A and E. La Ferrara. 2002. Who trust others? *Journal of Public Economics* 85: 207-234.

Anteneh Woubie, A. 2009. Coffee marketing cooperatives in supply chain: analysis of performance and their impacts on member farmers in Ethiopia. A PhD Thesis Research Proposal Draft. Nijmegen: Radboud University.

Arrow, K. 1972. Gifts and Exchanges. *Philosophy and Public Affairs* I: 343-362.

Assefa, T. and J. Dorsey. 2005. Evaluation of Agricultural Cooperatives in Ethiopia (ACE) Program Activities for USAID/Ethiopia. Washington D.C., The Mitchell Group.

Assefa, T. 2005. 'Revitalizing market-oriented agricultural cooperatives in Ethiopia.' ACDI/VOCA case study conducted in cooperation with USAID's cooperatives Development Program.

Baarda, D.B., M.P.M de Goede en J. Teunisssen. 1998. *Kwalitatief onderzoek. Praktische handleiding voor het o opzetten en uitvoeren van kwalitatief onderzoek,* chap. 9. Houten: Stenfert Kroese.

Barrett, C. 2005. Rural Poverty Dynamics: Development Policy Implications. *Agricultural Economics* 32: 45-60.

Bellemare, Ch. and S. Kröger. 2007. On representative social capital. *European Economic Review* 51: 183–202.

Bernard, H.R. 2006. Research methods in Anthropology; Qualitative and Quantitative Approaches. Oxford: AltaMira Press.

Bernard, T. and D.J. Spielman. 2008. *Mobilizing Rural Institutions for Sustainable Livelihoods and Equitable Development: A Case Study of Agricultural Marketing and Smallholder Cooperatives in Ethiopia*, International Food Policy Research Institute, Addis Ababa.

Bernard, T. and D.J. Spielman. 2009. Reaching the rural poor through rural producer organizations? A study of agricultural marketing cooperatives in Ethiopia. *Food Policy* 34: 60–69.

Binswanger, H.P. 1980. Attitudes towards risk: experimental measurement in rural India. *American Journal of Agricultural Economics* 62 (3): 395-407.

Blokland, K. and C. Gouet. 2007. Peer to peer farmer support for economic development. In *Producer organizations and market chain*, ed.Giel Ton, Jos Bijman and Joost Oorthuizen, 71-90. Wageningen: Wageningen Academic Publishers.

Bluffstone, R. and Yesuf, M. 2008. Wealth and Time Preference in Rural Ethiopia. *Environment for Development* Discussion Paper Series June 2008.

Borgen, S.O. 2004. Rethinking incentive problems in cooperative organizations. *Journal of Socio-Economics* 33: 383–393.

Cardenas, J.C. and J. Carpenter. 2008. Behavioural Development Economics: lessons from the field labs in the developing world. *Journal of Development Studies* 44(3): 311-338. Central Intelligence Agency (CIA) 2009. CIA World Factbook 2009. https://www.cia.gov/library/publications/the-world-factbook/ (accessed May 20, 2010).

Central Statistical Agency of Ethiopia National Statistics (CSA) 2006. Population Statistics. 2006. http://www.csa.gov.et/surveys/National%20statistics/national%20statistics%202005/Population.pdf (accessed June 12, 2010).

Collier P., S. Radwan and S. Wangwe. 1986. *Labour and Poverty in Rural Tanzania: Umajaa and Rural Development in the United Republic of Tanzania*. Oxford, Clarendon Press.

Dakhli, M. and De Clercq, D. 2004. Human capital, social capital and innovation: a multicountry study. *Entrepreneurship & Regional Development* 16: 107–128.

Ellis, F. 1993. *Peasant Economics: Farm Households and Agrarian Development.* 2nd ed. Cambridge, Cambridge University Press

Fafchamps, M. 1999. *Rural Povery, Risk and Development.* Center for the Study of African Economies. Oxford, Oxford University.

Federal Cooperative Commission, 2004. *Cooperatives Marketing Information System and Networking Study. Final Requirement Report,* Addis Ababa.

FDRE (Federal Democratic Republic of Ethiopia), 2005. Plan for Accelerated and Sustained Development to End Poverty. Addis Ababa.

Flick, U. 2007. "Triangulation of qualitative and quantitative research", Chapter 7 (pp. 91-107) in "*Managing Quality in Qualitative Research*".

Fort, R, R. Ruben, G. Zúñiga-Arias. 2009. Measuring the impact of fair trade on development. *Development in Practice* 19 (6): 777-788.

Francesconi, G.N. 2008. *Cooperation for Competition Linking Ethiopian Farmers to Markets.* Wageningen:

University of Wageningen Academic Publishers.
Gambetta, D. 2000. 'Can we trust trust?', in Diego Gambetta (ed), *Trust: Making and Breaking Cooperative Relations,* Oxford, UK: University of Oxford, Department of Sociology, electronic edition, 213–237.
Granovetter, M. 1985. Economic Action and Social Structure: The Problem of Embeddedness. *American Sociology* 91(3): 481-510.
Harrison, G.W. and J. List. 2004. Field experiments. *Journal of Economic Literature* 42(2): 1009-1055.
Heras Muñoz, J. 2009. Social capital within coffee cooperatives in Ethiopia. A comparative study on the influence of SC on the governance of coffee cooperatives. Masterthesis. Nijmegen: Radboud University.
Hellin, J. M., L. Farmer and M. Meijer. 2006. 'Organization, Collective Action And Market Access in Meso-America'. Paper presented at the Research Workshop on Collective Action and Market Access for Smallholders, Cali, Colombia.
Holden, S.T., B. Shiferaw and M. Wik. 1998. Poverty, credit constraints, and time preferences: Of relevance for environmental policy?. *Environment and Development Economics* 3: 105-130.
Holden, S.T., and B. Shiferaw. 2002. Poverty and Land Degradation: Peasants' Willingness to Pay to Sustain Land Productivity. In C.B. Barrett, F. Place, and A.A. Aboud, eds. *Natural Resources Management in African Agriculture: Understanding and Improving Current Practices*. Wallingford, UK: CABI Publishing: 91–102.
Holden, S., B. Shiferaw and J. Pender. 2004. Non-farm income, household welfare and sustainable land management in the less favored area in the Ethiopian highlands. *Food Policy* 29: 369–392.
Holland J. and J. Campbell. 2005. *Methods in Development Research: Combining Qualitative and Quantitative Approaches*. University of Wales Swansea, Wales, United Kingdom.
Hutwicz, L. 1972. On informationally decentralized systems, in: C.B. McGuire and Roy Radner, eds., Decision and organization, 2nd edn. Minneapolis. University of Minnesota Press: 297-336.
International Labour Organization 2002. Promotion of Cooperatives Recommendation 2002. Recommendation 193, www.ilo.org.
International Organization for Migration (IOM) International Organization for Migration, Addis Ababa, Ethiopia. http://www.iom.int/jahia/Jahia/activities/africa-and- middle-east/east-africa/ethiopia. (Accessed November 5, 2009).
Jahnke, H.E. 1982. *Livestock Production Systems in Livestock Development in Tropical Africa.* Kiel, FRG: Kieler Wissenschaftsverlag Vauk.
James Jr., H.S. and M.E. Sykuta. 2005. Property rights and organizational characteristics of producer-owned firms and organizational trust. *Annals of Public and Cooperative Economics* 76(4): 545–580.
Knack, S. and P. Keefer. 1997. Does social capital have an economic payoff? A cross-country investigation. *The Quarterly Journal of Economics* 112: 1251–1288.
Lee, D. R. 2005. Agricultural Sustainability and technology adoption in developing countries: Issues and policies for developing countries. *American Journal of Agricultural Economics* 87: 1325–1334.
Mikkelsen, B. 2005. *Methods for Development Work and Research. A new guide for practitioners.* Londen: Sage.
Misztal, B. 1996. *Trust in modern societies*. Cambridge, Polity Press. Cambridge.
Murphy, J.T. 2002. Networks, Trust and Innovation in Tanzania's Manufacturing Sector. *World Development* 30 (4): 591-616.
Murphree, M. 1993. Communal Land Wildlife Resources and Rural District Council Revenues. CASS, University of Zimbabwe, Harare.
Newton, K. 2001. Trust, Social Capital, Civil Society and Democracy. *International Political Science Review* 22 (2): 201-214.
Novkovic, S. 2008. Defining the co-operative difference. *Journal of Socio-Economics* 37 (6): 2168-2177
Paldam M. and G. Tinggaard Svendsen. 2000. An essay on social capital: looking for the fire behind the smoke. *European Journal of Political Economy* 16: 339–366.
PHCE (Population and Housing Census of Ethiopia: Results for Southern Nations, Nationalities and Peoples' Region). 1994. http://www.csa.gov.et/surveys/Population%20and%20Housing%20Census%201994/survey0/data/docs%5Creport%5CStatistical_Report %5Ck07%5Ck07_partI.pdf (accessed June 10, 2010).
Putnam, R. 1993. *Making democracies work: civic traditions in modern Italy*.

Princeton: Princeton University Press.
Ofcansky, T.P. 1993. 'National Security'. In *Ethiopia: A Country Study*, ed. T.P. Ofcansky and Laverle Berry, 300-301. Washington DC, Library of Congress.
Olson, M. 1971. The Logic of Collective Action. Harvard University Press. Harvard.
Olson, W. 2004. Triangulation in Social Research: Qualitative and Quantitative Methods Can Really Be Mixed. *Developments in Sociology*, ed. M. Holborn 1-30. Omskirk: Causeway Press.
Ostrom, E. 2003. How Types of Goods and Property Rights jointly affect Collective Action. *Journal of Theoretical Politics* 15 (3): 239-270.
Oxfam 2008. A Consultancy Reports on Ethiopian Coffee Marketing Cooperatives.Addis Ababa, Ethiopia.
Poate, C.D. and P.F. Daplyn. 1993. *Data for Agragrian Development*. Cambridge, Cambridge University Press.
Pratt, B. and P. Loizos. 2003. *Choosing Research Methods: Data Collection for Development Workers*. Oxford: Oxfam.
Reardon T, E. Crawford and V. Kelly. 1994. Links between Nonfarm Income and Farm Investment in African Households: Adding the Capital Market Perspective. *American Journal of Agricultural Economics* 76 (5): 1172-1176.
Ruben. R., M. Slingerland and H. Nijhoff. 2006. Agro-food chains and networks for development*,* Issues, approaches and strategies. In *The agro-food chains and networks for development,* ed. R. Ruben, M. Slingerland and H. Nijhoff*,* chap. 1. Wageningen: University of Wageningen Academic Publishers.
Ruben, R., L. de Clercx, D. Cepeda and T. de Hoop. 2008. Fair Trade impact of banana production in El Guabo Association, Ecuador: a production function analysis. In *The impact of Fair Trade,* ed. R. Ruben, 155-166. Wageningen: Wageningen Academic Publishers.
Schechter, L. 2007. Traditional trust measurement and the risk confound: an experiment in rural Paraguay. *Journal of Economic Behavior & Organization* 62(2): 272-292.
Sexton, R. J. and J. Iskow. 1988. Factors Critical to the Success or Failure of Emerging Agricultural Cooperatives: Department of Agricultural economics, University of California, Davis, Giannini Foundation Information Series No. 88-3.
Shiferaw, B.A., E.J. Okello and R.V. Reddy. 2009. Adoption and adaptation of natural resource management innovations in smallholder agriculture: reflections on key lessons and best practices. *Environment, Development and Sustainability* 11 (3): 601–619.
Six, F.E. 2007. Building interpersonal trust within organizations: a relational signalling Perspective. *Manage Governance* 11: 285–309.
Spradley, J. P. 1980. *Participant observation,* chap. 7. New York: Holt, Rinehart and Winston.
Sutter, M. and M.G. Kocher. 2007. Trust and trustworthiness across different age groups. *Games and Economic Behavior* 59: 364–382.
Teddlie, C. and F. Yu. 2007. Mixed Methods Sampling, A Typology with Examples. *Journal Mixed Methods Research* 1(1): 77-100.
United Nations Development Program 2008 (UNDP). Human Development Index 2008. http://hdrstats.undp.org/en/countries/data_sheets/cty_ds_ETH.html (accessed December 12, 2009)
Uslaner, E. M. 2002. *The moral foundations of trust*. New York: Cambridge University Press.
Valentinov, V. 2004. Toward a social capital theory of cooperative organisation. *Journal of Cooperative Studies* 37 (3): 5-20.
Williamson, O.E. 1996. *The Mechanisms of Governance*. Oxford: Oxford University Press.
Wolday A. and E. Gebre-Medihen. 2003. An Analysis of the Structure, Conduct, and Performance of the Ethiopian Grain Markets. Addis Ababa, Ethiopia.
World Bank 2005. Ethiopia Well-Being and Poverty in Ethiopia The Role of Agriculture and Agency. Washington DC, USA.
World Bank Development Report 2008: Agriculture for Development. http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTWDRS/EXTWDR2008/0,,menuPK:2795178~pagePK:64167702~piPK:64167676~theSitePK:2795143,00.html (accessed June 15, 2010)
Yin, R.K. 2003. Case study research. Design and Methods. 3rd ed. Sage Publications.