Discussion Paper No. 2/2010

Certification as an upgrading strategy for small-scale farmers and their cooperatives: A value chain analysis for Nicaraguan coffee

Anna Kiemen, Tina Beuchelt

Forschung zur Entwicklungsökonomie und -politik
Research in Development Economics and Policy

Universität Hohenheim
Institut für Agrar- und Sozialökonomie in den Tropen und Subtropen
Department of Agricultural Economics and Social Sciences in the Tropics and Subtropics

Tropenzentrum
Centre for Agriculture in the Tropics and Subtropics

Anna Kiemen[1] and Tina Beuchelt[2]:

Certification as an upgrading strategy for small-scale farmers and their cooperatives: A value chain analysis for Nicaraguan coffee.

Department of Agricultural Economics and Social Sciences in the Tropics and Subtropics (Ed.), Forschung zur Entwicklungsökonomie und -politik – Research in Development Economics and Policy, Discussion Paper No. 2/2010.

ISSN 1439-4952

Printed in Germany.
Druck: F. u. T. Müllerbader GmbH
Forststr. 18, 70794 Filderstadt, Germany

VERLAG ULRICH E. GRAUER
Hohenzollernstr.12, 70178 Stuttgart, Germany
Tel.: +49 (0)711 4704309, Fax: +49 (0)711 2485219
Internet: http://www.grauer.de/, E-mail: grauer@grauer.de

[1] Anna Kiemen – Graduate in Agricultural Economics, Institute for Food and Resource Economics, University of Bonn, anna.kiemen@gmail.com
[2] Tina Beuchelt - Research Associate, Department of Agricultural Economics and Social Sciences in the Tropics and Subtropics (490a), University of Hohenheim, t.beuchelt@uni-hohenheim.de

Department of Agricultural Economics and Social Sciences in the Tropics and Subtropics

- **Chair: Rural Development Theory and Policy (490a)**
- **Chair: International Agricultural Trade and Food Security (490b)**
- **Chair: Farming and Rural Systems (490c)**
- **Chair: Land Use Economics in the Tropics and Subtropics (490d)**

Centre for Agriculture in the Tropics and Subtropics

Discussion papers in this series are intended to stimulate discussion among researchers, practitioners and policy makers. The papers mostly reflect work in progress. **This paper has been reviewed by Thomas Oberthür (International Plant Nutrition Institut - IPNI) and Paul-Theodor Schütz (Gesellschaft für Technische Zusammenarbeit - GTZ) whom we thank for their comments.**

Table of Contents

List of Tables

List of Figures

Abstract

For many small producers in developing countries coffee is a major income source. However, the coffee market is characterized by high price volatility and increased power concentration among buyers in consuming countries. Due to the very low international coffee prices during the recent coffee crisis and an increased demand among consumers for healthy and ethical products as well as for high quality, interest in standards and certification has increased substantially in coffee producing and consuming countries. Responding to the demand for differentiated products and accessing these new and potentially more profitable markets is especially challenging for poor small-scale farmers in developing countries. Although certification schemes and standards are widely applied and promoted, little research has been conducted identifying the complete value chains for certified coffee, their structure and gross income shares among the different chain actors.

The framework for this study is based on the value chain concept. The research analyses selected conventional and Fairtrade value chains in terms of prices paid at different levels, information flows among chain actors, governance structures and upgrading strategies. The focus is on Nicaragua's small-scale coffee producers, organised in cooperatives, and their upgrading strategies with special attention paid to organic and Fairtrade certification. Qualitative interviews have been conducted with all relevant chain actors.

Results show that the structure of the value chain has a major influence on the benefits for individual farmers and their involvement in upgrading strategies. Although higher prices are paid to producers for organic-Fairtrade coffee than for conventional or conventional-Fairtrade coffee, the producers' share on the final retail price is substantially lower in the certified chains than in the conventional chain. Producers face limited bargaining power on the quality premiums paid by buyers in consuming countries. The paper emphasizes the need for transparency and appropriate chain management to improve small-scale farmers' integration in value chain upgrading activities. An enhanced knowledge transfer among chain actors could increase farmers' understanding of differentiated markets and provide them with information on the coffee attributes sought by consumers. Being able to meet consumer expectations on attributes and quality standards could empower farmers with greater bargaining power and enable them to demand adequately higher prices. Simultaneously, business skills and management capacity need to be enhanced especially at the level of producers and leaders of grassroot cooperatives, but also at second order cooperatives' staff.

Keywords: small-scale producers, Nicaragua, organic and Fairtrade coffee, value chain analysis

Certification as an upgrading strategy for small-scale farmers and their cooperatives: A value chain analysis for Nicaraguan coffee

Anna Kiemen, Tina Beuchelt

1 Introduction

Second only to oil, coffee is the most traded legal commodity globally (PONTE 2002a). It is produced in more than 50 developing countries and involves millions of small-scale farmers as well as large-scale plantation owners (LEWIN, ET AL. 2004, DAVIRON AND PONTE 2005). However, coffee prices are unstable and fluctuate from year to year (CASHIN, ET AL. 2002). In the past two decades, world coffee markets have been affected by the collapse of the International Coffee Agreement (ICA)[3] in 1989, the entrance of new coffee producers from Asia, Brazil's growing supply, and increased market liberalisation. These developments led to an oversupply of coffee in 2000/2001 and resulted in declining world coffee prices, which remained below production costs for several years. As a consequence of this coffee crisis, the coffee quality produced actually decreased despite increasing demand for high quality and gourmet coffee marketing in consuming countries (DAVIRON AND PONTE 2005). In order to overcome low coffee prices, many coffee producing countries have increased participation in certification schemes and now invest in so-called differentiated products. These market niches are based on standards for production and processing related to environmental and socio-economic criteria, as well as ensuring high quality coffee (PONTE 2002b). The differentiation from mainstream coffee responds to the increasing consumer demand for sustainable, healthy and ethical products (DAVIRON AND PONTE 2005, PONTE 2002a, LEWIN, ET AL. 2004, RENARD 2005, YOUNG AND HOBBS 2002).

Crucial for accessing markets and participating successfully in differentiated coffee chains are the existing power structures and availability of information especially regarding the position and requirements of traders and roasters who manage final product and market information (TALBOT 2002, NEILSON 2008, ALTENBURG 2006). Chain actors seek to improve their competitive and strategic position in the chain by applying so-called upgrading strategies (KAPLINSKY AND MORRIS 2001, GIBBON 2003, GEREFFI 1999). One of these upgrading strategies is entering in differentiated markets such as organic or Fairtrade market channels.

Differentiated markets can offer higher prices for producers and subsequent chain actors through their price premiums above the market price (BACON 2005, DAVIRON AND PONTE 2005, LEWIN, ET AL. 2004, WOLLNI AND ZELLER 2007). Especially for poor small-scale farmers, certification schemes and the focus on high quality are increasingly seen by governments, NGOs and donors as a possible way to reduce poverty at farm level (UTTING-CHAMORRO 2005, BACON 2005). Differentiated markets are assumed to add more value to coffee at the producers' level but not much data is available to confirm this assumption. To date there are hardly any studies that investigate the complete certified value chain. The studies of CIMS (2004) and DAVIRON AND PONTE (2005) have identified in their analysis of different value chains that absolute prices paid to producers are likely to be higher for high quality and for certified coffees such as organic and Fairtrade. Yet, the producers' price share of the final retail price is lower for these coffees than for conventional low to medium range quality coffees. The same applies to chains for conventional and Fairtrade instant coffee (MENDOZA 2002).

[3] The ICA was an international agreement between importing and exporting member states that regulated coffee trade through a quota system in order to maintain stable prices (DAVIRON AND PONTE 2005).

However, while differentiated coffees enable chain actors in the roasting and retail levels to create economic rents[4], coffee producers do not benefit at the same scale. The major bottleneck in conventional markets is the producers' inability to generate extra value to the physical product of coffee (DAVIRON AND PONTE 2005, PONTE 2002b). In the conventional coffee markets the farmer's share of the final retail price is the lowest, in sharp contrast to the substantially higher shares at the final retail value for roasting and retail level (DAVIRON AND PONTE 2005, FITTER AND KAPLINSKY 2001, TALBOT 1997). There are two main explanations for this. First, the increased concentration of actors at the import and roasting levels allows them to exercise power. Second, roasters and retailers can add symbolic and in-service quality[5] to the coffee at the consumer level leading to higher prices and thus higher share (DAVIRON AND PONTE 2005, FITTER AND KAPLINSKY 2001).

This research looks specifically at the organic and Fairtrade certification as it is the most well known and longest existing standard for coffee. Fairtrade was one of the earliest movements among the sustainable initiatives resulting from alternative trade organizations (ATO) trading directly with producers (PONTE 2002b). The Fairtrade Labelling Organizations International (FLO) sets standards for the production and trade of Fairtrade coffee by assuring a minimum price, plus a premium for social investments, and requiring buyers to pre-pay for their coffee. Additionally, basic environmental requirements as well as democratic decision-making within the producer organizations are required for FLO Fairtrade certification. Fairtrade aims at increasing transparency in the coffee value chain to the benefit of small-scale coffee farmers (FLO 2009). Transparency is realized through a strong coordination between roasters, traders and farmers as well as a shortening of the value chain (TAYLOR 2005, RAYNOLDS 2009, RENARD 2005). Currently, markets for conventional-Fairtrade coffee are stagnating, but double certification with organic brings new market opportunities and entails the major demand for Fairtrade coffee (GIOVANNUCCI AND VILLALOBOS 2007). Organic farming and thus organic coffee production has no internationally agreed definition; the different standards depend on the importing country and certification. General principles are no synthetic inputs (e.g. no synthetic pesticides, herbicides, chemical fertilizer) and maintenance of soil fertility. It is a holistic approach which aims at a sustainable resource use (IFOAM 2006).

The objective of this study is to describe conventional and certified coffee value chains in Nicaragua and to identify relationships between actors, prices and information flows along the chain. The focus is on small-scale coffee producers, organized in cooperatives, who undertake upgrading strategies through investing in organic and Fairtrade certification. Three research questions are explored. First, what is the structure of the certified and conventional value chains in terms of actor constellation, prices, and information flows? Second, which governance structures can be identified and what is the influence on transparency in the chains? Third, what is the effect of investing in organic/Fairtrade certification on prices paid at production level and the producers' share at final retail price? The theoretical framework is based on the value chain concept according to KAPLINSKY AND MORRIS (2001) with a focus on governance structure and upgrading strategies.

This paper is structured as follows: chapter 2 describes the value chain approach for coffee; chapter 3 gives an introduction to the methodology used for the empirical research and chapter 4 presents the results in regard to the structure of the investigated value chains, the governance within the chains, and the impact of upgrading through certification in terms of

4 According to a study by CIMS (2004) up to 60% of the final retail value is captured by importers and 50% at retail level in the European specialty market, whereas in the mainstream segment importers capture between 30-40% and roasters around 30% (CIMS, 2004).

5 Symbolic quality means that physical product quality is upgraded by other than inherent quality values but to values that are linked to the production condition, both in environmental and social terms, as well to regional reputation and gourmet product features through e.g. roasting and branding (PONTE 2002b).

income. Finally, conclusions are drawn and recommendations for policy and research are formulated.

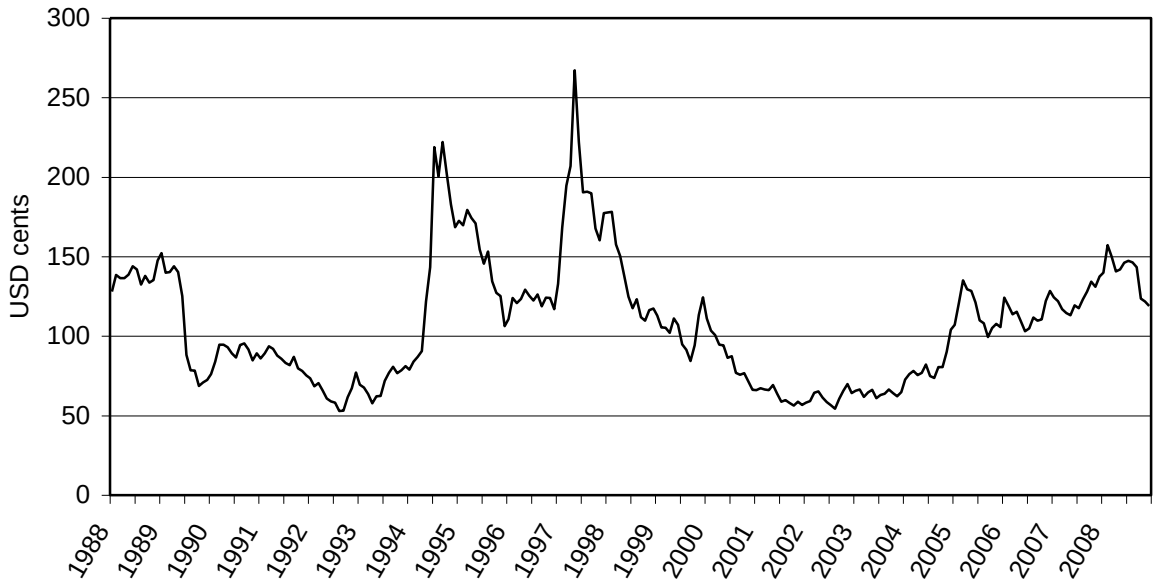
2 The coffee sector and its linkage to the value chain approach

In this section, we first describe the conventional and differentiated coffee market on a global scale. The coffee value chain is then presented followed by a detailed description of governance issues and upgrading strategies in the coffee value chain.

The international coffee market

The international coffee market of the last 50 years can be described by two major periods. The first was determined by the International Coffee Agreement - ICA (1962 – 1989) and represented a regulated market system with decision power on export quantities and prices in the producing country (DAVIRON AND PONTE 2005, PONTE 2002a, GRIBAT 2007). Income shares in the producing countries had been around 20 percent of total income generated in the chain and prices were relatively stable (DAVIRON AND PONTE 2005, TALBOT 1997). The system failed, among other reasons, because of increased volumes traded by non-members, free-riding problems with quotas, restrictive negotiation on quotas due to high transaction costs and changing market actors' interests towards trade with non-members (DAVIRON AND PONTE 2005, PONTE 2002a, GRIBAT 2007). Due to weak institutions in coffee producing countries, in the post-ICA period producer organisations emerged in order to fill the organizational gap (PIROTTE, ET AL. 2006). On the other side of the coffee value chain, retailers and international traders were able to increase their power due to growing concentration at roaster and retail level as well as quantities and prices set within the market and without market intervention (DAVIRON AND PONTE 2005). The post-ICA period has been characterized by fluctuating international market price for coffee (Figure 1) as well as declining income shares for producers on the final retail price

Figure 1: ICO coffee prices- monthly averages 'Other Mild Arabicas'



Source: ICO- Composite Indicator Price

In the last 10 to 15 years so called differentiated coffee markets have emerged as in response to changing consumption patterns in consuming countries induced by increased ethical and health awareness as well as an increased quality demand (LEWIN, ET AL., 2004, RENARD 2005).

According to LEWIN, ET AL. (2004, p.105) "differentiated coffees markets are linked to the origin of coffee in combination with explicitly defined process and product standards and/or a superior taste". Various certification schemes are included in this categorization within differentiated markets. In contrast to the conventional market and the trading of bulk commodities with price being the determinant for traded quantities, differentiated markets are characterized by limited market access and involve other regulation mechanisms than price. Participation in differentiated markets requires specific investments to meet certification and quality standards. In return, price premiums can be gained because of limited market size and added value, which may lead to increased income margins for chain actors who participate in those markets (LEWIN, ET AL. 2004). In that respect, standards are not only technical verification systems, but also strategic instruments (PONTE 2002b).
The differentiation of the commodity 'coffee' basically refers to the creation of distinct tastes or cups: distinct growing conditions with both ethical and environmental concerns, the preparation of the coffee as well as specific geographic origins. Certification schemes in the coffee sector are related to environmental factors, which are targeted by organic, bird-friendly, shade-grown certification, to social criteria like Fairtrade or to a combination of both in the cases of UTZ Certified, Rainforest Alliance and Starbucks CAFE Practices. The latter is also defining inherent coffee quality (PONTE 2002b, PONTE AND GIBBON 2005, MAY, ET AL. 2004, DAVIRON AND PONTE 2005, LEWIN, ET AL. 2004).
Projections for the different coffee markets for 2007/08 show that in comparison to a maximal growth rate in conventional coffee markets of 1.5–2.0%, certified markets in the US have predicted growth rates of 15.5% for Fairtrade, 12.5% for organic and 17% for double certified organic-Fairtrade coffees (GIOVANNUCCI AND VILLALOBOS 2007)[6]. Increasingly, large multinational firms are participating in certified markets, mainly as niche market products in their portfolio (COFFEE COALITION 2006, RAYNOLDS 2009, GIOVANNUCCI, ET AL. 2008). Projections for the premiums of these coffees indicate that prices for organic product will decrease in the future as more suppliers enter the markets leading to an increase in world supply. Moreover, recovering world market prices are expected to lead to lower price differences for organic and Fairtrade coffees over conventional coffees (KILIAN, ET AL. 2006, PONTE 2002a, PONTE 2002b).

The value chain approach

Following the definition from KAPLINSKY AND MORRIS (2001), a value chain is the interlinkage of activities and actors that realize the various steps from primary production of raw material to the manufacturing, branding and retailing of a consumer-ready product (KAPLINSKY AND MORRIS 2001). The coffee value chain can be structured in two parts according to the location where activities take place (Figure 2). The first is located in the coffee producing countries and contains the steps of coffee production and primary processing. Depending on the study, the share on the final retail price varies between 4% and 16% at the production level and between 8% and 37% at export level (TALBOT 1997, FITTER AND KAPLINSKY 2001, CIMS 2004). In Nicaragua, small-scale coffee farmers undertake activities from planting to harvest and, in most cases, complete the first processing of the coffee cherries through depulping and pre-drying. After that, the coffee is sold as parchment coffee to intermediaries or directly to a cooperative or an exporter for further processing to dry parchment and finally exportable green coffee. The second part of the coffee value chain is in the coffee consuming countries where different actors are in charge of importing the coffee. Some actors only import coffee and then sell it to roasters, while others roast, grind and package it themselves. The import and trade activity adds up to a value of between 9%

[6] Over a three year period from 2004-2006 globally an anverage growth rate of 1-2% per year for conventional coffee was estimated by Giovannucci et al. (2008). Organic coffee was estimated to have been grown at a rate of 13-17% and Fairtrade coffee at 46%.

and 49% of the final retail price, whereas the roasting value share is between 43% and 75%. Coffee is sold to retail as roasted beans or ground coffee. The major value adding is realized within the branding and retailing (DAVIRON AND PONTE 2005).

Figure 2: Simplified structure of the coffee value chain

* percentage of final retail value (data from TALBOT 1997, FITTER AND KAPLINSKY 2001, CIMS 2004)
Source: own illustration.

Governance

Conducting a value chain analysis is useful for identifying the business environment because commodities are not only produced and traded physically through certain input-output relations, but they are furthermore embedded in complex inter-organizational environments defined through all actors participating in the value adding processes (KAPLINSKY and MORRIS 2001). Value chains are organized according to power structures, formal and informal rules. This implies that not all actors participate equally in the determination of the core product characteristics and related value adding, but that some chain actors set the basic requirements to others by defining the product quality, quantity as well as terms of production and delivery of the product. Governance refers to the institutional basis of the value chain regarding power structures and leadership of chain actors (GEREFFI 1994, GEREFFI, ET AL. 2003, HUMPHREY AND SCHMITZ 2001) and is defined as a coordination of economic activity through non-market elements, like standards, bargaining power and regulations (GEREFFI, ET AL. 2003). The ability to govern over chain actors is often determined by intangible assets, such as marketing, branding, and access to information (KAPLINSKY 2000).

The embedded governance structure determines the business environment of governing and governed actors in the chain. The cooperation and strategic behaviour of chain actors plays a crucial function when determining individuals' scope of action. Especially the consideration of the positions of every chain node combined with the connection to other chain levels enables chain wide implementation of 'strategic value chain models'. Chain actors are no longer seen as single points of intervention independently from their trade partners but are taken into account as integrated entities into the whole process of production and marketing.

Agricultural markets are subject to substantial changes in regard to concentration processes at buyers' level (TALBOT 2002, PONTE 2002a, RAIKES, ET AL. 2000, GIBBON 2001). Over the last number of decades, agricultural commodity markets changed from producer- to buyer-driven chains that are regulated by actors in consuming countries (PONTE 2002a, GIBBON 2001). For producers in developing countries - such as the coffee farmers in Nicaragua - the type of governance determines their potential market access as well as the availability of information and technology. Added value, which is created through social and environmental standards as well as gourmet quality, enables chain actors in the consuming countries to gain economic rents. Coffee producers are facing increasing demand regarding the physical quality of their coffee but are also required to provide other values to their product by investing in certification schemes (PONTE 2002a, RENARD 2005, YOUNG AND HOBBS 2002).

In the coffee value chains different governance types or levels of integration among chain actors can be identified. Market-based governance structures are found in chains that are characterized by high competition. In these chains coffee is traded as a bulk commodity with price as the determining factor for trade and often replaceable by origin and producer. Markets can be characterized as internally governed or fully integrated chains when standards and direct relationships between trading partners are of great importance and price is only one determinant of the trading activity. Gourmet quality coffee markets demand these kind of close connection between the individual producer and the buyer. Hybrid structures use the

characteristics of both trading patterns (compare WILLIAMSON 1979, VERHAEGEN, 2001). Certified coffees are considered hybrid structures because pure market mechanisms are not sufficient to determine standards and quality; these chains are not likely to be internally integrated as this is the case for gourmet coffees. In general, the difference between the governance types are based on applied standards and related price premiums, transparency, trust and reputation. Market governance shows the lowest levels of transparency, need for trust and reputation because the traded product is a bulk commodity of homogenous character. The more product and process standards are involved, the more coordinated forms of governance occur because supplier and buyer need to communicate other information than only prices. This implies a need of greater transparency. Reputation and trust become more important in order to justify price premiums paid for the specific standards or qualities.

Upgrading

Chain actors in a value chain have to be competitive against others at their chain position and also beyond that. For increasing competitiveness, there are different strategies of upgrading in regard to the possibilities for actors within their chain and related to competitors in other chains (KAPLINSKY AND MORRIS 2001). Upgrading activities are supported but also constrained by the underlying chain set-up.

Product differentiation becomes increasingly important to gain competitive advantage. Moving from commodity production to defined products demands institutional changes in the value chains. Therefore, the concept of upgrading is a company's strategy against the innovative activities of competitors. The background for enabling different upgrading strategies is determined by services provided by chain actors and information flows (LAVEN 2005, GEREFFI 1999). According to KAPLINSKY AND MORRIS (2001) there are four different types of upgrading: process, product, functional and chain upgrading.

- **Process upgrading** relates to increased efficiencies in the production process. In the case of coffee production, these are improved yields or processing of the coffee cherries and beans.
- **Product upgrading** implies a new product definition. Investing in distinct quality profiles is one example of product upgrading in the coffee sector. Since the marketing of certified coffee implies a different product type sold in niche markets, organic and Fairtrade coffee can also be included in this category (compare GIBBON 2003).
- **Functional upgrading** enhances the competitive situation of a chain actor by "changing the mix of activities within the firm [...] or moving the locus of activities to different links in the value chain" (KAPLINSKY AND MORRIS 2001, p.38). This can be realized through outsourcing activities or adding new activities to the portfolio. For example, a cooperative starts to process the coffee in its own dry mill, undertakes the roasting process or sells to the local market.
- **Chain upgrading** refers to moving to a new chain due to potentially higher profitability. Farmers who diversify their income by producing cocoa or cash crops as well as a cooperative that invests in a tourism program are examples.

Other upgrading strategies, notably certification, are discussed in section four.

3 Methodology

The field research was conducted in three important coffee producing departments in northern Nicaragua. While Nicaragua is not one of the main coffee producers in the world market[7], its coffee sector is one of the most important export sectors at national level with a 25% share of

7 Nicaragua has an export share of only 1-1.8% of exportable coffee among all supplying countries (ICO-Historical Statistics).

total exports (IICA 2004, VARANGIS, ET AL. 2003). Furthermore, Nicaragua's coffee production is characterized by small-scale farms.
Data collection took place in 2007 and 2008 in the provinces of Matagalpa, Madriz and Nueva Segovia. The regions are mountainous areas with coffee growing at altitudes between 750m a.s.l. and 1,300m a.s.l. The Matagalpa region produces 33% of Nicaragua's coffee and the Madriz/Nueva Segovia areas produce 13% (IICA 2004).
Qualitative research methods were chosen. Semi-structured interviews, capturing qualitative as well as some quantitative data, were conducted with cooperatively organized coffee producers, cooperative staff, a coffee exporter as well as German and American importers and roasters. Information was gathered on prices, information flows, position of actors in the chain, and types of relationships between actors. Three value chain models were looked at in depth. A conventional value chain served as control group against which the certified chains were compared.
Individual interviews were conducted with 34 small-scale coffee producers in 22 communities, as well as 7 presidents of grassroots cooperatives and 5 cooperative staff members of the second order and the conventional cooperatives. Of the 34 producers, 3 farmers belonged to a conventional cooperative. The others were members of so-called grassroots cooperatives which are organized in two different Fairtrade certified cooperatives being responsible for the coffee export. Of these certified cooperatives, 17 conventional and 14 organic farmers were interviewed. The farmers have been selected according to three criteria: I) gender, II) certification, i.e. organic or conventional, and III) distance from their farm to the respective cooperative office. Also, three focus group workshops investigating further the local value chain have been realized with groups of 9, 10 and 12 farmers and cooperative staff in each of first or second level cooperatives. At the producers level information was gathered on the producers' activity within the chain, their coffee production and sales including received prices, the relationship to their chain partners and the kind of information they receive from other chain actors related to their product. The cooperative staff was interviewed on the cooperative activity in the chain, the coffee purchase and sales including prices paid to producers and received for the exported coffee, the relationship towards producers, buyers and other organizations, the communication through the chain and currently applied as well as possible future strategies.
The exporter, roaster and importers were asked to complete a semi-structured questionnaire which was sent by email to one person per company being in charge of the trade. All of the interviewed buying companies purchase from the cooperatives and are Fairtrade certified but differ in their chain function and company structure. Not all buyers of the cooperatives could be interviewed, so only selected value chains were investigated in depth. The coffee buyers were asked questions in relation to their trade activities with the chosen cooperatives and producers. They have been mainly interviewed on the purchase and sales of this coffee, on their relationship with the producers, the cooperatives and as well on the transparency on production and trade related information. A major limitation to the value chain analysis was that information on costs in production and trade was not accessible at importers and roaster levels. Therefore, the given shares of producers' prices on final retail price do not reflect the costs occurred within the chain.

4 Results and discussion

In the following, results are presented based on the qualitative and quantitative data on three different models of coffee value chains. In the first part, the structure of the value chains is presented regarding actors, prices paid and services that are provided among chain actors. Subsequent to this, the relationships between chain actors, the availability of information as well as the governance structures are analyzed before, in a final step, the participation in certified markets as an upgrading strategy is discussed. The price share that farmers receive

from the final retail value is analyzed in conventional and Fairtrade chains. Finally, the presented value chain models are compared in regard to their success and areas for improvement.

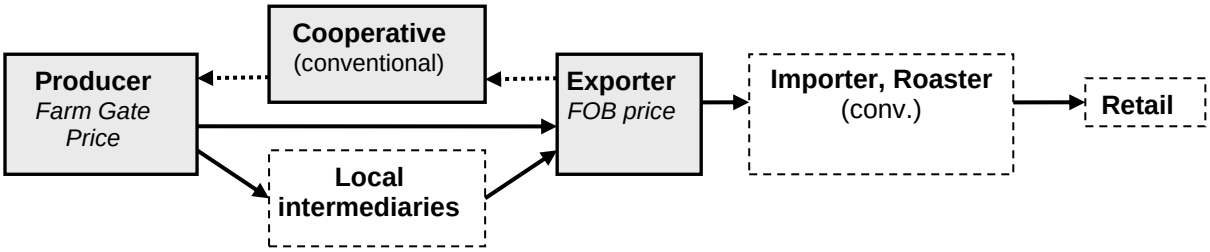
4.1 Structure of the conventional and certified coffee value chain models

The value chain for conventional coffee is described first. The value chain models based on Fairtrade and organic-Fairtrade certification are compared against the conventional chain model. While between the two certified chain models differences exist regarding their structure, both Fairtrade certified second order cooperatives sell, among others, to the same importers and roasters.

4.1.1 The model of the conventional coffee value chain

Around three hundred producers are organized in the conventional cooperative which is a multifunctional cooperative with a strategic alliance with an exporter. The exporter provides credit and pre-financing of harvest to the cooperative for the contracted coffee quantity that will be delivered by the cooperative's members. Based on this credit, the cooperative can provide credit and pre-finance their members' harvest. At harvest time, producers deliver their coffee to the exporter and receive payment from their cooperative. Through decoupling coffee delivery from payment, the cooperative maintains the guarantee that their credits are paid back as debts are deducted on payday. The cooperative provides further production-related or commercial credits to its members, and also group credits or credits with a payback period of two years. The cooperative does not procure coffee and is not involved in processing or storage of the coffee. Farmers also sell their coffee to local intermediaries who either sell to another intermediary or sell directly to an exporter. Since farmers deliver the majority of their coffee directly to the exporter who then sells further to an importer or directly to a roaster, the value chain is very short. As the coffee was mixed with other coffee at the exporting company and sold in bulk, no direct links to chain actors in importing countries could be identified. However, the exporter indicated that the actors in the conventional coffee market are in general large importing and roasting companies. Producers are paid a local price, which is determined by the ICE Futures coffee price and the average regional coffee quality. The exporter is paid a FOB[8] price. Figure 3 shows the structure of the value chains in regard to the function of its chain actors.

Figure 3: **Structure of the conventional coffee value chain**



Source: Own data, 2008

4.1.2 Certified value chain –model A

One of the certified models is based on a second order cooperative composed of 6 grassroot cooperatives with a total of around 400 members (see Figure 4). All producers have certified

[8] FOB stands for 'Free on Board' and this price includes all costs for processing, transport, storage and export clearing until the coffee is ready for shippment.

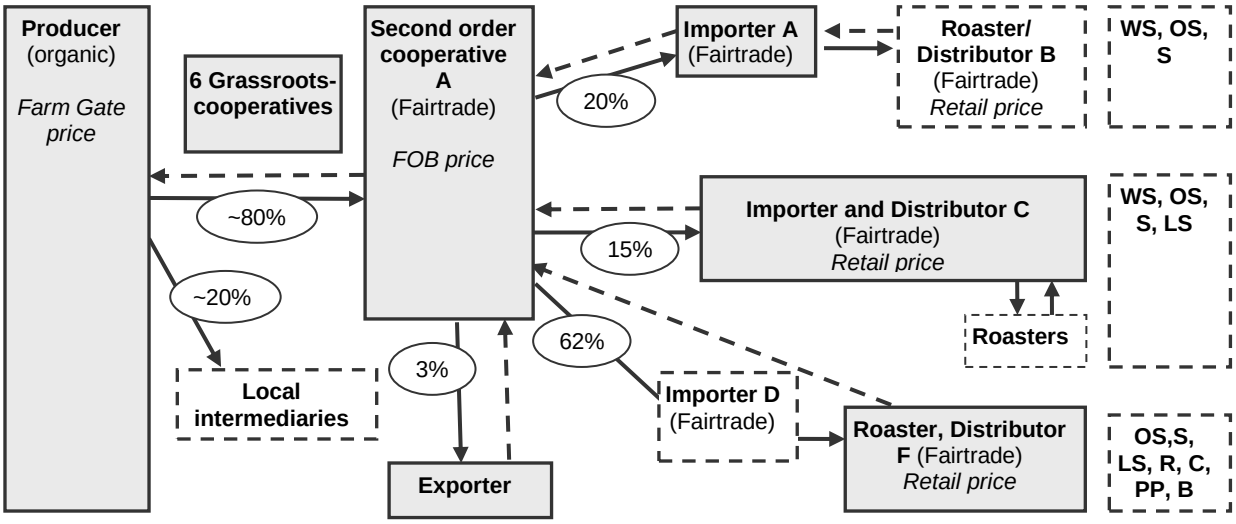
organic coffee, some are in the 3-year transition period of being organic certified. The producers are members of grassroots cooperatives, but receive major support directly from the Fairtrade certified second order cooperative. The grassroots cooperatives' main responsibility to date is representing the producers' interests in regard to the use of the Fairtrade premium for social investments. All representative members in the grassroots cooperatives are producers themselves and live in the communities. They are major contact persons for the second order cooperative staff and undertake organizational work. Moreover, they are community spokespersons for the producers' needs and requests. The second order cooperative owns a dry processing mill with a cupping laboratory for quality check; thus processes the members' coffee as well as cups samples of each member to identify the individual quality.

Only the coffee in transition is sold to a national exporter at a price equivalent to the Fairtrade minimum price or higher. The organic-Fairtrade coffee is sold to two German importers and one in the US. The American importer sells to a roasting company, which has a contract with the cooperative but needs the importer for the importing logistics. The roaster sells the coffee to supermarkets, restaurants, universities, convenience stores, offices, bakeries, and coffee shops or on the internet.[9] The remaining two importers buy and sell 100% of their products as Fairtrade. One imports and labels the coffee while subcontracting the roasting process; the other imports and sells the coffee to affiliates who roast and label the coffee under their own brands. The coffee is sold in so-called one-world shops, organic food stores and supermarkets, to individual large-scale consumers, and on the internet. Fairtrade buyers pay a FOB price (depending on the ICE Futures C-Price), plus the organic and Fairtrade premium (for the production year 2007/08 0.15USD/lb for organic and 0.10USD/lb Fairtrade premium) and a negotiated quality premium to the cooperative. In 2008, only the roasting company in the US paid a premium for quality of ~0.10USD/lb.

Producers receive up to 50% of the estimated coffee price in advance as a credit for the production year. At harvest time, producers can choose to either receive an immediate payment upon coffee delivery to the cooperative or they can decide to wait for final payment in April or May when the cooperative has finished coffee sales and their accounting. The cooperative receives the buyer's payment a couple of weeks later. Premiums for quality are distributed to the grassroots cooperative, but not according to individual producers' quality results.

[9] This is summarized as 'retail'.

Figure 4: Structure of the certified value chain –model A



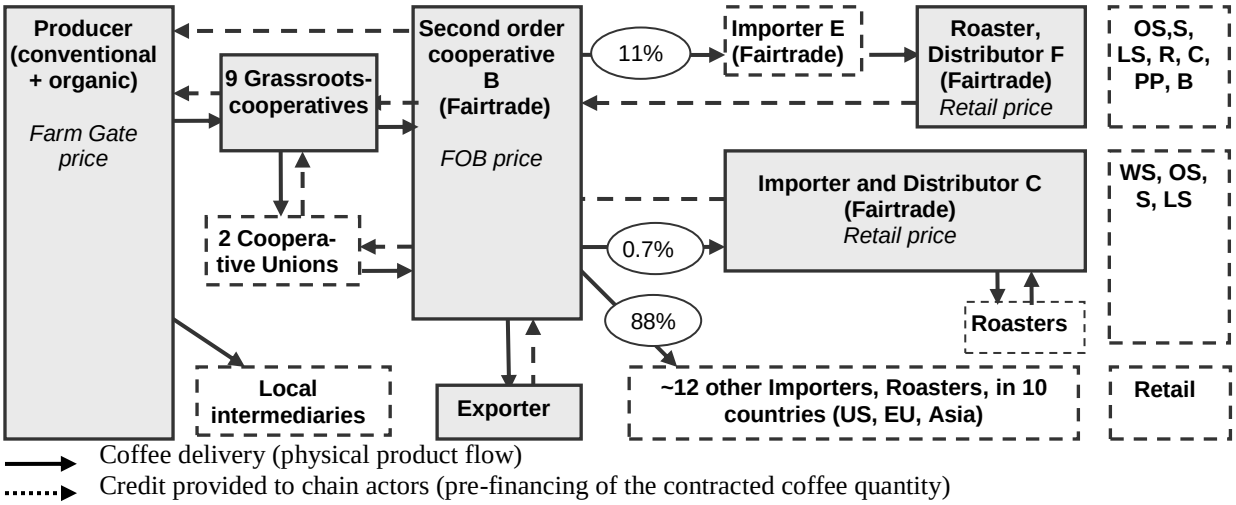
Coffee delivery (physical product flow)
Credit provided to chain actors (pre-financing of the contracted coffee quantity)

Retail: *WS Worldshops, OS Organic Stores, S Supermarkets, LS Large Scale Customer, R Restaurants, C Convenience stores, PP Private and Public Institutions (such as Universities and Offices), B Bakery and Coffee Shops*
Source: Own data, 2008

4.1.3 Certified value chain –model B

In the second certified chain model, the Fairtrade certified second order cooperative is the head organization of 11 grassroot cooperatives and 2 cooperative unions which have 12 further affiliated grassroots cooperatives (Figure 5). Altogether, more than 2000 coffee producers are members united in the second order cooperative. In contrast to the certified model A, some of the grassroots cooperatives support farmers directly with pre-financing and the coffee procurement in their respective local community. Farmers can be pre-financed for up to 50% of the estimated coffee quantity to be delivered to the cooperative. The second order cooperative, however, is the only institution processing and cupping the coffee as they own a dry mill and export licence. In this chain model, only 40% of the coffee quantity is produced according to organic standards, the remaining coffee is produced conventionally or at less than 5% under the certification of UTZ certified. Despite certification, only 41% of the coffee is sold as Fairtrade. Not even all organic coffee can be marketed as such; only 28% of the total coffee is sold as organic-Fairtrade. Producers are paid local prices at the daily rate which varies according to the ICE Futures C- price. Some producers may be eligible for a premium for organic coffee of approximately 0.15USD/lb, although there have not been payments on quality the last two years. The cooperative is paid a C-price plus premiums depending on the chain they sell to and since coffee is sold to a dozen buyers, only selected certified chains have been investigated representing 11.7% of total coffee exports. They were chosen because they were same buyers than in the Fairtrade cooperative A.

Figure 5: Structure of the Fairtrade certified coffee value chain – model B



Retail: *WS Worldshops, OS Organic Stores, S Supermarkets, LS Large Scale Customer, R Restaurants, C Convenience stores, PP Private and Public Institutions (such as Universities and Offices), B Bakery and Coffee Shops*
Source: Own data, 2008

4.2 Comparative analysis of the three different value chain models

In the following the above described chain models are compared in regard to the type of actors, the services provided, the governance structure and the resulting level of transparency.

4.2.1 The actors in the three value chains models

In the conventional model, the number of actors beyond the farm level is limited to very few: the cooperative as credit and service provider, the exporter and an importer and roaster. Certified chain models are more complex. Certified model A has a similar number of producers as the conventional model, but also exports and thus trades with diverse importers and roasters in the consuming countries. Compared to the other two chains, certified model B is even more complex both in the producing and the consuming country. First order cooperatives and cooperative unions are primary contacts for the producers because they are in charge of the pre-financing of the harvest and training. In the other chains this is still directly handled by the second order cooperative and the conventional cooperative respectively. Also the buyers in model B are different, varying from a conventional exporter, to alternative trade organizations, specialized intermediate traders and specialty roasters.
The distribution channels in the consuming countries are quite different between the small buyers in Germany and the larger importers and roasting company in the US. Although the Fairtrade market is promoting direct contact between the producer and the buyer, a shortening of the value chain is not observed as there are not many intermediate traders between producers and exporters when cooperatives offer marketing services. Likewise, the certified chain of model A and B tends to be longer in Germany than the conventional chain or in the US. Our own observation is that certified value chain models in producing countries may be shorted due to the elimination of intermediaries when there are no conventional cooperatives offering similar services. Depending on the importing country, certified chains in consuming countries can also become enlarged, like the value chain ending in Germany shows. In certified chains, usually several actors in the consuming countries are involved in purchase, processing and distribution of the coffee.

4.2.2 Services provided among chain actors

Between the conventional and certified models, there are differences but also similarities regarding the services provided and the sales channels. All producers sell their coffee to cooperatives which provide financial and technical assistance to their members – but at varying degrees. In all three chain models producers receive pre-financing from the cooperative. The conventional cooperative finances its business through credit from external financial institutions and a significant share from the exporter. Pre-financing of harvest in the certified models is provided by the buyers in the consuming countries and also through external financing institutions. Apart from the financial service at the production level, extension service and group training are provided by all three cooperatives to support producers in their production and harvest management. Yet, the relation of technicians to farmers and frequency of personal field visits varies between the three models.

Apart from coffee production related services, the conventional and one certified cooperative (model B) cooperatives offer extension regarding the promotion and training of growing food crops for subsistence – mainly in combination with a governmental program called – "zero hunger". In the certified chains, social investments are realized in some of the communities through the use of the social premium gained from Fairtrade sales. In certified model B support is given through few scholarships and a program on Ecotourism enables some producers to diversify their income from their coffee farms. To a small degree, buyers in the consuming countries support the cooperative with specific projects. In the certified model A, one of the brand holders of importer B financially supports the cooperative members in strengthening the position of women both in regard to their financial and their social situation. In the certified model B, the roaster F started a project to reduce poverty and hunger among the small coffee producers. This project is coordinated together with other local and international organizations. Importer E provides the cooperative with a monthly bulletin on the coffee market developments.

Although there is commitment from the buyers' side, these efforts still only reach part of the producers' communities due to tight financial resources and the cooperatives' management. The service quality is partly dependent on the person in charge of it. In some regions organic trainings decreased in the certified model B because of the extension worker's personal disinterest in this production process. The same applies to the cooperative's ecotourism program. As soon as the person who initially developed the project was no longer in charge, support to the participating producers decreased.

4.2.3 Governance in the business models

The coffee value chain is determined by increasing buyer power (DAVIRON AND PONTE, 2005). This holds true for the conventional cooperative which has no bargaining power on prices even at cooperative level: the exporter sets the price as the only buyer of the cooperative's coffee. Nevertheless, due to the high trust relationship between the cooperative and the exporter, other incentives are provided that differ from the conventional market mechanism. The exporter supports the cooperative with credit, investment in a high quality and certification strategy and provides stable pre-financing conditions.

In the certified models precise quality profiles are defined and quality is monitored by the buyers. Although roasters and importers in the Fairtrade chains demand a defined quality and capture respective premiums in retail markets, cooperatives also participate to a certain degree in the price bargaining process on quality premiums. Some buyers assist cooperatives to improve their market position and gain access to differentiated markets. Therefore, importers and roasters in consuming countries do support lower chain actors by e.g. sharing knowledge of the coffee market or consumption patterns, yet, only at a limited degree. Consequently, the Fairtrade cooperatives have greater bargaining positions than the conventional cooperative due to direct and long-term relations with partners in consuming countries. The safeguard

mechanisms of the Fairtrade minimum price as well as defined premiums for organic coffee assure at least a starting point for price negotiations. The market mechanism where price is the only determinant for trade is replaced by hybrid governance structures with differentiated products based on standards and closer relationships among chain actors.
The producers' position in price negotiation and product definition is not better in the certified models than in the conventional chain as it is either the exporter in the conventional chain or the cooperatives in the certified chains which determine the final payment to the producers. Thus, producers in the Fairtrade chains are price takers like the conventional producers.
And there are differences in power structures and transparency among the two certified chain models. In certified model A, there is a high trust relationship between the individual producer and the cooperative staff. In certified model B, producers and presidents of grassroots cooperatives stated that they are not satisfied with the relationship and do not trust their second order cooperative and/or cooperative union management. Major arguments were brought forward in terms of intransparency regarding production management and marketing relevant information. Information flows and transparency in the chains are therefore discussed in the following section.

4.2.4 Information flows and level of transparency

The position of producers in the value chains is influenced by the information flows and established communication means as well as the level of transparency.

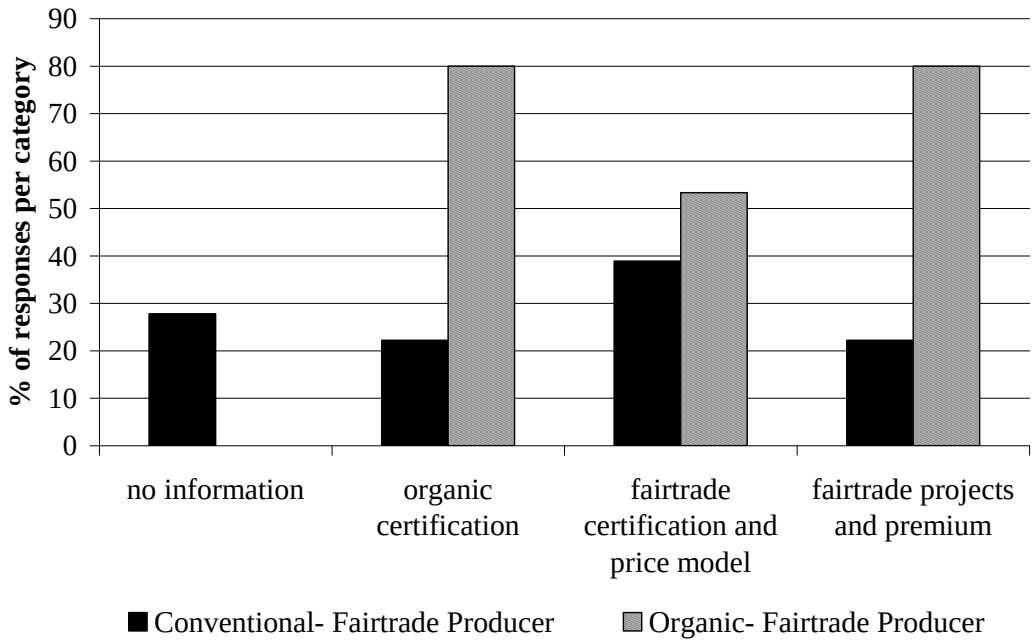
Information flows and communication means
In the conventional model, producers are in contact with staff from the cooperative through farm-based technical support, training, and visits in the cooperative office for credit facilitation. The cooperative management is in frequent communication with the exporter regarding production and credits. However, for conventional coffee almost no information on the chain regarding prices, product attributes, origins and destinations is released to the consumers or to the producers. The product is traded as a bulk commodity without differentiating on origin.
In the certified models, information on the product, the production process and pricing is communicated in the annual general assembly, in monthly group meetings and monthly on-farm visits. Additionally, monthly meetings are organized by the grassroot cooperatives to facilitate dialogue between the second order cooperative management and producers on issues arising at production level and within the second order cooperative. The quality and frequency of information flows varies strongly among the two investigated models. In the certified model A there are good information flows. This may be related to the small size of the cooperative with only 400 members. The communication problems in certified model B may be due to its large number of members (2000). This size increases communication logistics, raises transaction costs and thus hinder communication flows. Also the varying structures of the cooperatives may explain the differing information flows. In certified model A, the manager of the second order cooperative is in direct contact with most of the producers and strives to maintain personal relationships with members. In model B, direct contacts and personal visits on the farm are generally realized through the extension workers. The existence of cooperative unions with the second level cooperative implies another institution involved which affects information flows.
Between the cooperatives and the buyers, information on production, coffee quality, producers' needs and consumers' demand is communicated through personal visits, email and also, in a few cases, through phone calls. Information to consumers about coffee production and its origin is provided via the certification label, brand reputation and publicity. In the following section the communication and information flows to farmers in regard to chain

relevant information like standards, price information, and coffee quality are presented more in detail for comparison between the conventional and certified chain models.

Information flow and knowledge about certification

For conventional coffee, certification standards do not play a role. Within the certified models, the organic certified farmers are better informed about standards and the value chain than the conventional producers (Figure 6). The interviewed Fairtrade certified farmers have little knowledge about the Fairtrade certification, whereas their knowledge of standards for organic certification is better. In most cases, the social projects realized by the Fairtrade premium are obvious to the producers while the functioning of Fairtrade, the standards and the minimum price remain unclear. This knowledge gap was also found among presidents of the grassroots cooperatives where a better understanding of Fairtrade was expected. Some presidents are very well informed on the structure of Fairtrade certification while others do not know that minimum prices are paid. In the certified model B, the knowledge on Fairtrade is very weak, which may relate to the weaknesses in the communication process. Only some of the grassroots cooperatives directly participate in decisions about the use of the Fairtrade premium, while for other grassroot cooperatives, the second order cooperative in model B decides and administers the funds.

Figure 6: Producers' knowledge on certification



Source: Own data, 2008.

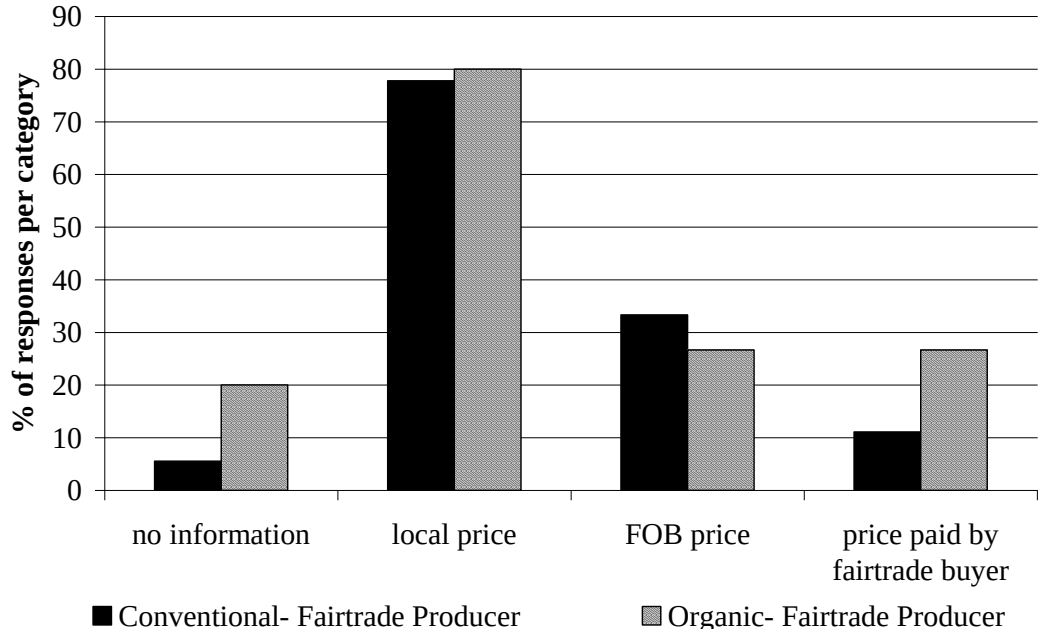
Transparency of prices

Transparency of coffee prices paid at different chain levels is deficient in all chains (Figure 7). Only the second order cooperatives in the Fairtrade chains and the exporter in the conventional chain have information on prices paid to producers. Few producers in the certified models know the individual buyers' (FOB) price paid for the exported coffee, whereas the local price paid to producers for the ongoing production year is known by the majority of producers in both certified and conventional models[10]. Information on costs and income margins at export level is not available for producers or importers. Information related

[10] Producers rarely kept track on prices paid to them in past production years and most did not even remember prices from the previous year.

to the profit margins of different actors in the consuming countries is not made available to anybody else.

Figure 7: Producers' knowledge on prices



Source: Own data, 2008.

Information flow regarding coffee quality

In the conventional cooperative, no information is provided on coffee quality since no individual cupping is realized by the exporter or the cooperative. Between the Fairtrade cooperatives and the buyers, coffee quality is intensively communicated; however, very little information is available to the farmers. In the certified models, producers receive an average quality result over the coffee sold by their grassroot cooperative. Producers can access their individual cupping results only in Fairtrade cooperative A, although the cooperative B possesses an even bigger and better equipped cupping laboratory. The distance to the cooperative office or town determines also the likelihood of farmers informing themselves on their coffee's quality, either in the cooperative's cupping laboratory or in external institutions.

4.3 Applied upgrading strategies in the different value chain models

Different upgrading activities have already been implemented in the investigated coffee chains. The effect of upgrading in certification is discussed next, followed by an overview of other applied upgrading strategies.

4.3.1 Upgrading through certification

One of the most important reasons for producers and cooperatives to participate in certified markets is the promise of a higher coffee price. The coffee prices paid at all levels in the chain as well as the resulting gross income shares for producers and cooperatives (the exporter for the conventional chain model) are presented in Table 1.

Producers do not automatically receive higher prices just for being a member of a Fairtrade cooperative. As Table 1 shows, the conventional producers in Fairtrade cooperative B received an even lower price (US$0.94/lb) than their non-certified colleagues in the conventional model. The farmers indicated that in the last two years they did not receive a final payment by their cooperative and were only paid the local market price. Double certification, organic-Fairtrade, is also no guarantee for better prices. According to Fairtrade

standards, an organic premium of US$0.15 must be paid in addition to the market price[11], but as the farm-gate price in cooperative B shows, there is only a small difference to the conventional price. The cooperative stated that it was not able to distribute a premium due to missing gains from export. Since the cooperative only sells 40% of the coffee to Fairtrade markets and cannot market all organic coffee as organic, prices are lower as they are averaged across the whole coffee quantity sold. The reason for these low market shares are not exactly clear and may result from lack of access to certified markets, low cooperative management skills or low quality. As the cooperative is big and well-known, the lack of access to certified markets may relate to an increasing supply of certified coffee on the world market (KILIAN 2006).

In the conventional chain, farmers receive a much higher share of the final retail price in the US and Germany, 24.83% and 34.3% respectively, than farmers in the certified models. In the certified models, Fairtrade- conventional producers receive a share of 8.24% and organic-Fairtrade producers a share of 9.47-15.47%. These shares are similar to a case study for coffee from Latin America (CIMS 2004) showing a tendency that producers of specialty and certified coffees capture lower shares of final retail prices[12] than average quality producers. Yet, the high shares on retail prices of conventional producers found in our study are surprising.

Table 1: Prices in the different coffee value chains for harvest 2007/08

	Farm gate price in US$/lb*	%-age on retail level price	FOB Price in US$/lb*	%-age on retail level price	Retail level price in US$/lb**
Conventional					
Cooperative, Exporter, Retail Germany	1.07	24.83	1.31	30.39	4.31
Cooperative, Exporter, Retail US***	1.07	34.30	1.31	41.99	3.12
Fairtrade – Conventional					
Cooperative B, Importer E, Roaster F - USA	0.94	8.24	1.58	13.85	11.41
Fairtrade – Organic					
Cooperative B, Importer E, Roaster F - USA	1.08	9.47	1.84	16.13	11.41
Cooperative B, Importer + Distributor C - Germany	1.08	10.27	1.84	17.49	10.52
Cooperative A, Importer D, Roaster F - USA	1.31	11.48	1.87	-16.39	11.41
Cooperative A, Importer + Distributor C – Germany	1.31	12.45	1.78	16.92	10.52
Cooperative A, Importer A, Distributor B- Germany	1.31	15.47	1.78	21.02	8.47

Note: *Converted to green exportable coffee. **Green coffee equivalent price. Conversion factor for roasted/green coffee=0.84. VAT included. ***Retail price in the US was based on the year 2007 and adjusted for 2008 with the consumer price index for roasted coffee according to the Bureau of Labor Statistics, 2010, http://www.bls.gov/cpi/cpid08av.pdf (accessed 16 April 2010).

[11] This premium of US$0.15/lb is paid to the cooperative and transferred to the producers. From July 2008 onwards, the fairtrade minimum price for washed Arabica conventional coffee has been 1.25US$/lb (FOB), the organic differential rose from US$0.15/lb to US$0.20/lb and the social premium of US$0.10/lb.

[12] Income shares for average conventional coffee have been 12%, for Fairtrade specialty quality 9.5%, for Fairtrade conventional standard quality 12%; for organic-Fairtrade specialty coffee 7 - 12.5%, and for organic-Fairtrade certified standard quality 16% (CIMS 2004).

Source: based on the interviews 2008; data on conventional retail price (2007) from ICO- Retail Prices for Roasted Coffee.

We have two assumptions to explain the large differences in shares of the farm gate prices on final retail prices between the three value chains. First, as conventional coffee is traded in bulk, economies of scale in export and processing can be used. Efficient marketing structures at distribution and retail level in consuming countries may lower transaction costs and thus positively influence the price share. These economies of scale and efficient marketing structures are not likely to be reached in the alternative trading and retail models of one-world shops and organic food stores. Fairtrade importers, especially in Germany, handle relatively small amounts of coffee from many different sources which increases transaction costs. Second, the 2007/08 production year has been characterized by good world market coffee prices. Without a better quality, the price benefit of Fairtrade exists only in those periods when market prices drop below the minimum price. When organic and Fairtrade producers are paid a price similar to the local price[13], they start selling increasingly to local intermediaries who do not require the stringent quality as their cooperatives. Competition in periods of good international prices is very high for the Fairtrade certified cooperatives.

4.3.2 Further upgrading activities

Apart from certification, cooperatives apply also other upgrading strategies (Table 2). The conventional model provides only few upgrading activities, both at producers' and cooperative level. The activities focus mainly on agricultural production. In the certified models, additional strategies are pursued.

Table 2: Applied upgrading strategies in the three coffee value chain models

	Conventional Model	**Certified Model A**	**Certified Model B**
Producers' strategies			
Product upgrade	-	-	-
Process upgrade	- Improved coffee production, harvest, post-harvest processing	- Improved coffee production, harvest, post-harvest processing - Organic production	- Improved coffee production, harvest, post-harvest processing - Organic production
Functional upgrade	-	-	-
Chain upgrade	- Diversified agricultural production - Non-farm income sources	- Diversified agricultural production - Non-farm income sources	- Diversified agricultural production - Non-farm income sources - Ecotourism
Cooperatives' strategies			
Product upgrade	- Production credits - *Quality project is planned*	- Distinct quality profiles - Niche market product through certification	- Distinct quality profiles - Niche market product through certification - Own brand (Nicaraguan market)
Process upgrade	- *Certification is planned*	- Dry processing facilities	- Dry processing facilities
Functional upgrade	-	- Cupping laboratory - Own mill for dry processing	- Cupping laboratory - Own mill for dry processing
Chain upgrade	- Commercial credits	-	- Ecotourism

Source: own illustration based on interviews 2008.

[13] The local price is the ICE Futures market price as reference price minus costs for processing and export and furthermore substracting the margin for the exporter and intermediaries.

In both Fairtrade cooperatives investments in **product upgrading** are realized with the organic and Fairtrade certification by selling products to niche markets. Also the conventional cooperative intends to invest in product upgrading by entering in certified markets. The Fairtrade cooperatives additionally intend to upgrade their coffee by improving quality as Fairtrade buyers have demanded a higher quality in recent years. The Fairtrade cooperatives consider upgrading in quality as one of the major targets for the upcoming production cycles. Yet producers do not see the benefits in dedicating time, work and money in quality coffee production without a clearly available monetary incentive for quality that compensate for the extra efforts. This conflicts buyers' interests who only pay higher prices upon receiving high quality.

Investing in **process upgrading** at farm level is undertaken by all three cooperatives through training, extension service and also the sale of equipment to the farmers. In both Fairtrade cooperatives further attention is paid to the improvement of organic yields because yields in both cooperatives are very low. However, organic farmers in certified model B increasingly change back to conventional production due to low yields and missing gains from production. The Fairtrade cooperatives have improved their dry mill facilities and increased processing capacities to also process coffee from non-members to generate extra income.

The Fairtrade cooperatives have also recently invested in **functional upgrading** by establishing cupping laboratories and training staff on cupping. The ability to identify the produced quality in the cupping laboratories has increased the bargaining power on quality premiums with buyers. Another functional upgrading is realized by the Fairtrade cooperative B through roasting small amounts of their coffee and selling it under their own label to the local market. However, only 0.7% of total green coffee volumes are dedicated to this activity.

Chain upgrading is applied in the Fairtrade cooperative B through an ecotourism program where selected coffee producing members participate. Farmers' children are educated as tourist guides and participating farmers are supported financially with long term credits to invest in the tourist accommodations. The tourism program is severely limited by low demand as some farmers live far away and are difficult to reach. Additionally, in all three cooperatives crop diversification is targeted as part of a governmental program focusing on food security. In some communities crop diversification is implemented to diversify income especially in lower altitudes. Production of cocoa, beans and grains is a valuable option to add income for the families in lower altitudes. Local projects for generating income for women from rearing livestock and chicken are also implemented in that specific grassroots cooperative.

5 Conclusion

The presented research explores the structure of conventional and certified models of coffee value chains, based on small-scale producers and their cooperatives in Nicaragua. The conventional model shows a close relationship between the cooperative and buyer (exporter). This creates a stable credit and market environment that is based on trust and good will. Producers benefit through receiving larger credits but their farm-gate prices are not affected. Fairtrade certified cooperatives have invested in upgrading strategies apart from certification, including different functional upgrades through investing in a dry mill, cupping laboratory and export license. The comparison between the two different certified models shows that more than functional upgrading matters for the producer. Chain model A provides a better integrative approach for small coffee producers. As producers are in close relationships with the cooperative management and staff, they have developed a successful export market strategy where they are able to sell all their coffee as organic-Fairtrade coffee. Exports of the certified model B are much more diversified than in the model A, but the benefits of this strategy and of the certifications are so far fairly invisible to the producers. Despite being a larger and better equipped second level cooperative, the share of certified coffee sold in certified markets is very limited.

In all chain models, farmers have little knowledge on prices paid at different levels in the chain. Also, their knowledge on the required standards on production processes and coffee quality is limited. Extension workers focus on training the cooperative members on production issues, rather than increasing farmer's knowledge on coffee marketing. The latter may increase transparency. Enhancing information flows can be facilitated when second-level cooperatives strengthen the capacity of their grassroot cooperatives.

At the import level for certified coffee, more intermediate traders, subcontracted roasters and distributors are found in the value chain than that for conventional coffee. This applies especially to the German certified coffee market whereas the US market is closer to the conventional chain. The benefits of certification as an upgrading strategy at producers' level vary between the investigated certified models in terms of prices and premiums received, information communicated and involvement in further upgrading strategies. Price shares in regard to the final retail price are substantially lower in all certified chains when compared to the conventional chain. Upgrading through certification does lead to higher prices paid at farm level, but the amount paid to farmers in the certified chains depends on the chain structure, cooperative management and the total volume sold to certified markets. Cooperatives seem to have limited bargaining power on the quality premiums paid by buyers apart from the required Fairtrade and organic premium. The low share of FOB-price to the final retail price suggests that the value adding through differentiation is mainly performed by roasters and brand holders of certified coffee. Information on cost structures and identification of conventional chain actors however needs to be included for a complete explanation on the identity of margins at each chain level.

Producers and cooperatives need to determine a concrete marketing strategy that reflects their specific product characteristics. In regard to quality remuneration at production level, the knowledge transfer and transparency on final product characteristics is important in order to let producers understand and potentially create these values within their part of the value chain. Currently this seems to be more feasible in the certified models due to established cupping laboratory and the stated interest of Fairtrade buyers to pay a quality premium as well as direct relationships to importers and roasters. Specific investments on quality production should be remunerated at farm level by paying individual premiums to farmers for their quality product. For distinct groups of farmers producing a very high quality, the establishment of closer relationships with buyers might be a promising strategy as well. Evidence from models applied in the gourmet coffee market show that this provides good incentives for farmers to improve their situation by investing in high quality. However, systems of direct trading with very small producer groups or individual producers are extremely costly and often not feasible in larger cooperative structures. More research is needed in order to combine high quality market needs with cooperatively organized production and marketing.

References

Altenburg, T., 2006. Governance Patterns in Value Chains and their Development Impact. *The European Journal of Development Research* 18 (4): pp. 498-521.

Bacon, C., 2005. Confronting the coffee crisis: can fair trade, organic and specialty coffees reduce small- scale farmer vulnerability in northern Nicaragua? *World Development* 33 (3): pp. 497-511.

Cashin, P., C. J. McDermott, and A. Scott (2002). Booms and slumps in world commodity prices. *Journal of Development Economics* 69 (1): pp. 277-296.

CIMS, 2004. Precios y Premios de Cafe Sostenible en America Latina, EEUU y Europa. Centro de Inteligencia sobre Mercados Sostenibles, Costa Rica, August 2004.

Coffee Coalition, 2006. Coffee Barometer 2006- certified coffee in the Netherlands. Dutch Coffee Coalition, Netherlands, 2006.

Daviron, B. and Ponte, S., 2005. The Coffee Paradox- global markets, commodity trade and the elusive promise of development. Zed Books, London and New York, 2005.

Fitter and Kaplinsky, 2001. Who gains from product rents as the coffee market becomes more differentiated? A value chain analysis. *IDS Bulletin* 32 (3): pp. 69-81.

FLO, 2009. Generic Fairtrade Trade Standards. Version 15.08.2009. Fairtrade Labelling Organisations International, Bonn.

Gereffi, G., 1994. The Organization of Buyer-Driven Global Commodity Chains: How U.S. Retailers Shape Overseas Production Networks, in G. Gereffi and M. Korzeniewicz (eds), Commodity Chains and Global Capitalism,Westport: Praeger, pp. 95–122.

Gereffi, G., 1999. International trade and industrial upgrading in the apparel commodity chain. *Journal of International Economics* 48 (1): pp. 37-70.

Gereffi, G., Humphrey, J., and Sturgeon, T., 2005. The Governance of Global Value Chains. *Review of International Political Economy* 12 (1): pp. 78-104.

Gibbon, P., 2001. Upgrading primary production: a global commodity chain approach. *World Development* 29(2): pp. 345-363.

Gibbon, P., 2003. Commodities, Donors, Value-Chain Analyis and Upgrading. Danish Institut for International Studies, Copenhagen, November 2003.

Giovannucci, D. and Villalobos, A.; 2007. The state of organic coffee: 2007 US update. CIMS, Costa Rica, 2007.

Giovannucci, D., Liu, P. and Byers, A., 2008. Adding Value: Certified Coffee Trade in North America. In: Pascal Liu (Ed.), Value-adding Standards in the North American Food Market – Trade Opportunities in Certified Products for Developing Countries. FAO, Rome.

Gribat, M., 2007. Kaffeehandel und Terminmärkte- Grundlagen, Instrumente, Praxis. VDM Verlag Dr. Müller e.K., Saarbrücken, 2006.

Humphrey, J. and Schmitz, H., 2001. Governance in Global Value Chains. *IDS Bulletin* 32 (3): pp. 60-68.

ICO- Historical Statistics: supply data of exporting countries 1977-2008, http://www.ico.org/new_historical.asp (accessed 14.04.2010).

ICO- Composite Indicator Price: monthly averages "Other Mild Arabicas" 1988-2008, http://www.ico.org/new_historical.asp (accessed 14.04.2010).

ICO- Retail Prices for Roasted Coffee: annual average in current terms 2007, http://www.ico.org/new_historical.asp (accessed 14.04.2010).

IICA, 2004. Cadena agroindustrial- Cafe. Instituto Interamericano de Cooperacion para la Agricultura, Magfor, IICA, Nicaragua, 2004.

IIED, 2005. From bean to cup: how consumer choice impacts upon coffee producers and the environment. International Institut for Environment and Development- Consumers International, London, December 2005.

IFOAM, 2006. Organic agriculture and rural development. International Federation of Organic Agriculture Movements (IFOAM), http://www.ifoam.org/organic_facts/politics/pdfs/Rural_Development_Leaflet.pdf (accessed 20.07.2006)

INTRACEN, 2008. The Coffee Guide. International Trade Centre, UNCTAD and WTO. Online Coffee market and trade bibliography. http://www.intracen.org/thecoffeeguide/welcome.htm (accessed 22.07.2009).

Kaplinsky, R., 2000. Globalisation and Unequalisation: what can be learned from value-chain analysis? *Journal fo Development Studies* 37 (2): pp. 117-146.

Kaplinsky, R. and Morris, M., 2001. A Handbook for Value Chain Research. Prepared for IDRC, 2004.

Kaplinsky, R. and Fitter, R., 2004. Technology and Globalisation: who gains when commodities are de-commodified? International Journal Technology and Globalisation 1 (1): pp. 5-28.

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* 59: pp. 320-330.

Laven, A.C., 2005. Relating cluster and value chain theory to upgrading of primary commodities: the cocoa chain in Ghana. Amidst University of Amsterdam, December, 2005.

Lewin, B., Giovannucci, D., Varangis, P., 2004. Coffee Markets: new paradigms in global supply and demand. Agricultural and Rural Development Discussion Paper 3. The World Bank, Washington, March 2004.

May, P.H., Mascarenhas, G.C.C., Potts, J.; 2004. Sustainable Coffee Trade: the role of coffee contracts. United Nations Conference on Trade and Development and the International Institut for Sustainable Development. Winnipeg, March 2004.

Mendoza, R., 2002. La paradoja del café: el gran negocio mundial y la peor crisis campesina. Instituto de Investigación y Desarollo Nitlapán-UCA, Managua.

Muradian, R. and Pelupessy, W., 2005. Governing the Coffee Chain: The Role of Voluntary Regulatory Systems. *World Development* 33 (12): pp. 2029-2044.

Neilson, J., 2008. Global Private Regulation and Value-Chain Restructuring in Indonesian Coffee Systems. *World Development* 36 (9): pp. 1607-1622.

Pirotte, G., Pleyers, G. and Poncelet, M., 2006. Fair-trade coffee in Nicaragua and Tanzania: a comparison. *Development in Practice* 16 (5): pp. 441-451.

Ponte, S., 2002a. The 'Latte Revolution'? Regulation, Markets and Consumption in the Global Coffee Chain. *World Development* 30 (7): pp. 1099-1122.

Ponte, S., 2002b. Standards, Trade and Equity: Lessons from the Specialty Coffee Industry. CDR Working Paper. Centre for Development Research, Copenhagen, November 2002.

Ponte, S. and Gibbon, P., 2005. Quality standards, conventions and the governance of global value chains. *Economy and Society* 4 (1): pp. 1-31.

Raikes, P., Jensen, M. and Ponte, S., 2000. Global commodity chain analysis and the french filière approach: comparison and critique. *Economy and Society* 29 (3): pp. 390-417.

Raynolds, L., 2009. Mainstreaming Fair Trade Coffee: From Partnership to Traceability. *World Development* 37 (6): pp. 1083-1093.

Renard, M.-C., 2005. Quality certification, regulation and power in fair trade. *Journal of Rural Studies* 21: pp. 419-431.

Talbot, J.M., 1997. Where Does Your Coffee Dollar Go?: The Division of Income and Surplus Along the Coffee Commodity Chain. *Studies in Comparative International Development* 32(1): pp. 56-91.

Talbot, J.M., 2002. Tropical commodity chains, forward integration strategies and international inequality: coffee, cocoa and tea. *Review of International Political Economy* 9 (4): pp. 701-734.

Taylor, P.L., 2005. In the Market But Not of It: Fair Trade coffee and Forest Stewarship Council Certification as Market- Based Social Change. *World Development* 33 (1): pp. 129-147.

Utting-Chamorro, K., 2005. Does fair trade make a difference? The case of small coffee producers in Nicaragua. *Development in Practice* 15 (3,4): pp. 548-599.

Varangis, P., Siegel, P., Giovannucci, D. and Lewin, B., 2003. Dealing with the Coffee Crisis in Central America- Impacts and Strategies. Policy Research Working Paper. The World Bank Development Research Group Rural Development, Washington, March 2003.

Verhaegen, I., 2001. Hybrid governance structures for the production and supply of quality farm products: a transaction cost perspective. Universiteit Gent, 2001.

Williamson, O.E., 1979. Transaction Cost economics: the governance of contractual relations. *The Journal of Law and Economics* 22 (2): pp. 233-261.

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

Young, L.M and Hobbs, J.E., 2002. Vertical Linkages in Agri-Food Supply Chains: Changing Roles for Producers, Commodity Groups and Government Policy. *Review of Agricultural Economics* 24 (2): pp. 428-441.

Recent Discussion Papers

No. 01/1999 Heidhues, F. and G. Schrieder, *Rural Financial Market Development.*

No. 02/1999 Heidhues, F., C. Karege, B. Schaefer and G. Schrieder, *The Social Dimension of Policy Reforms.*

No. 03/1999 Heidhues, F., W. Erhardt, A. Gronski and G. Schrieder, *The Social Dimension of Policy Reforms and World Bank Case Studies.*

No. 04/1999 Erhardt, W., *Credit for Poor and Low-Income Entrepreneurs in Urban and Rural Northern Thailand.*

No. 05/1999 Senahoun, J., F. Heidhues and D. Deybe, *Structural Adjustment Programs and Soil Erosion: A Bio-Economic Modelling Approach for Northern Benin.*

No. 06/1999 Kyi, T. and M. von Oppen, *An Economic Analysis of Technical Efficiency of Rice Farmers at the Delta Region in Myanmar.*

No. 07/1999 Schrieder, G., J. Munz, and R. Jehle, *Rural Regional Development in Transition Economies: Country Case Romania.*

No. 08/1999 Hartwich, F. and T. Kyi, *Measuring Efficiency in Agricultural Research: Strength and Limitations of Data Envelopment Analysis (DEA).*

No. 09/1999 Hartwich, F., *Weighting of Agricultural Research Results: Strength and Limitations of the Analytic Hierarchy Process.*

No. 01/2000 Neubert, D., *Poverty Alleviation as Intervention in Complex and Dynamic Social Fields.*

No. 02/2000 Neef, A., C. Sangkapitux and K. Kirchmann, *Does Land Tenure Security Enhance Sustainable Land Management? - Evidence from Mountainous Regions of Thailand and Vietnam.*

No. 03/2000 Breitschopf, B. and G. Schrieder, *The Development of the Rural Nonfarm Sector in Transition Economies – Implication of Capital Intensity on Labor Productivity and Employment.*

No. 04/2000 Erhardt, W., *Urban Bias in Reverse: Have Urban Small Enterprises Been Neglected by Policy Makers and Bankers in Thailand?*

No. 05/2000 Senahoun, J., F. Heidhues and D. Deybe, *Impact of Agricultural Policy and Food Security: An Agricultural Sector Modelling Approach for Benin.*

No. 06/2000 Heidhues, F., *Globalisierung, Einkommensverteilung und ländliche Regionalentwicklung in Entwicklungsländern.*

No. 07/2000 Heidhues, F., *The Future of World, National and Household Food Security.*

No. 08/2000 Buchenrieder, G. (née Schrieder) and I. Theesfeld, *Improving Bankability of Small Farmers in Northern Vietnam.*

No. 09/2000 Dufhues, T.B., *Economic Appraisal of Sugarcane Production in Peasant Households in the Son La Province, Northern Vietnam.*

No. 10/2000 Heuft, A. and G. Buchenrieder (née Schrieder), *Decentralisation in Peru's Agricultural Policy: A Critical Review from 1993 to 1998.*

No. 01/2001 Knüpfer, J., *Landnutzungsentscheidungen ethnischer Minderheiten im Kontext der institutionellen Rahmenbedingungen Nordthailands.*

No. 02/2001 Daude, S., *WTO and Food Security: Strategies for Developing Countries.*

No. 03/2001 Knüpfer, J. and G. Buchenrieder, *Rural Poverty Alleviation Through Non-farm Income in Transition Economies.*

No. 04/2001 Dufhues, T., P.T.M. Dung, H.T. Hanh, and G. Buchenrieder, *Fuzzy Information Policy of the Vietnam Bank for the Poor in Lending to and Targeting of the Poor in Northern Vietnam.*

No. 01/2002 Brüntrup, M. and F. Heidhues, *Subsistence Agriculture in Development: Its Role in Processes of Structural Change.*

No. 02/2002 Alker, D. and F. Heidhues, *Farmers' Rights and Intellectual Property Rights – Reconciling Conflicting Concepts.*

No. 03/2002 Buchenrieder, G., J. Knüpfer and F. Heidhues, *A Cross-Country Comparison of Non-farm Rural Employment in the Balkans.*

No. 04/2002 Knüpfer, J., S. Xhema und G. Buchenrieder, *Armutsreduzierung durch Einkommens-diversifizierung - Eine Studie im ländlichen Kosovo.*

No. 01/2003 Dufhues, T., G. Buchenrieder, F. Heidhues and Pham Thi My Dung, *Towards demand-driven financial services in Northern Vietnam: A participatory analysis of customer preferences.*

No. 02/2003 Geppert, M. and T. Dufhues, *Visualizing rural financial market research in Northern Vietnam through pictures.*

No. 01/2004 Nguyen Manh Hai and F. Heidhues, *Comparative advantage of Vietnam's rice sector under different liberalisation scenarios – A Policy Analysis Matrix (PAM) study*

No. 02/2004 Breisinger, C. and F. Heidhues, *Regional Development Perspectives in Vietnam – Insights from a 2002 Provincial Social Accounting Matrix (SAM)*

No. 03/2004 Basu, A.K. and M. Qaim, *On the Distribution and Adoption of Genetically Modified Seeds in Developing Countries*

No. 04/2004 Fischer, I., *Media Supported Communication in Agricultural Extension and Participatory Rural Development in Northern Thailand*

No. 05/2004 Dufhues, T., U. Lemke and I. Fischer, *Constraints and Potential of Livestock Insurance Schemes – A Case Study from Vietnam*

No. 06/2004 Neef, A. and D. Neubert, *Assessing Participation in Agricultural Research Projects: An Analytical Framework*

No. 01/2005 Dufhues, T. and Buchenrieder, G., *Outreach of credit institutes and households' access constraints to formal credit in Northern Vietnam*

No. 02/2005 Houssou, N. and F. Heidhues, *Debt position of developing countries and new initiatives for debt reduction – A panel data fixed effects estimation of the impacts of the HIPC Initiatives*

No. 01/2006 Piotrowski, S. and X. Jia, *Land property, tenure security and credit access: a historical perspective of change processes in China*

No. 02/2006 Friederichsen, R., *Agricultural Sciences in Upland Northern Vietnam: Situating Research in a Dynamic Environment*.

No. 03/2006 Hönicke, M., O. Ecker, M. Qaim, and K. Weinberger, *Vitamin A and iron consumption and the role of indigenous vegetables: A household level analysis in the Philippines.*

No. 04/2006 Stein, A.J., M. Qaim, J.V. Meenakshi, P. Nestel, H.P.S. Sachdev and Z.A. Bhutta, *Potential Impacts of Iron Biofortification in India*

No. 05/2006 Stein, A.J., H.P.S. Sachdev and M. Qaim, *Can genetic engineering for the poor pay off? An ex-ante evaluation of Golden Rice in India*

No. 01/2008 Alcaraz V., G. and M. Zeller, *Use of household food insecurity scales for assessing poverty in Bangladesh and Uganda*

No. 02/2008 Seeberg-Elverfeldt, C., S. Schwarze and M. Zeller, *Payment for Environmental Services – Incentives through Carbon Sequestration Compensation for Cocoa-based Agroforestry-Systems in Central Sulawesi, Indonesia*

No. 03/2008 Saint-Macary, C., A. Keil, M. Zeller, F. Heidhues and Pham Thi My Dung, *Land titling policy and soil conservation in the Uplands of Northern Vietnam*

No. 04/2008 Keil, A., C. Saint-Macary and M. Zeller, *Maize boom in the uplands of Northern Vietnam: What are the socio-economic and environmental implications?*

No. 05/2008 Fischer, I. and G. Buchenrieder, *Insurance preferences of smallholders: Results from an Adaptive Conjoint Analysis in Northern Vietnam*

No. 06/2008 Zeller, M., T. Beuchelt, I. Fischer and F. Heidhues, *Linkages between poverty and sustainable agricultural and rural development in the uplands of Southeast Asia*

No. 01/2009 Houssou, N., Zeller, M., *Targeting the poor and smallholder farmers: Empirical evidence from Malawi*

No. 02/2009 Demeke, A., Zeller, M., *Using panel data to estimate the effect of rainfall shocks on smallholders food security and vulnerability in rural Ethiopia*

No. 01/2010 Balgah, A.R., Buchenrieder, G., *Targeting of and outreach to the poor by rural development nonprofit organizations in Cameroon*

No. 02/2010 Kiemen, A., Beuchelt, T., *Certification as an upgrading strategy for small-scale farmers and their cooperatives: A value chain analysis for Nicaraguan coffee*