ADAPTATION TO CHANGES IN THE COFFEE VALUE CHAIN AND THE PRICE OF COFFEE AMONG COFFEE PRODUCERS IN TWO VILLAGES IN KILIMANJARO, TANZANIA

David Gongwe MHANDO (1)
Tobias HALLER (2)
Gimbage MBEYALE (1)
Eva LUDI (3)

(1) *Sokoine University of Agriculture, Morogoro, Tanzania*
(2) *Institute of Social Anthropology, University of Bern, Switzerland*
(3) *Overseas Development Institute, London, UK*

ABSTRACT Market liberalization in Tanzania has eroded the monopoly of the cooperative unions by allowing private coffee buyers (PCBs) to compete with them on equal footing. Similarly, farmers groups and primary societies are now allowed to sell coffee at auction. Thus, farmers have various options for selling their coffee. Similarly, the coffee industry has experienced large fluctuations in prices and stagnation in production. How do farmers react to these changes? Can and do farmers profit from different market conditions and sell to different traders at the lower end of the value chain, or do they remain with cooperatives or farmers groups? This study was conducted in Mruwia and Mshiri villages in Moshi Rural district. Whereas Mshiri village remains attached to the Kilimanjaro Native Cooperative Union (KNCU), Mruwia has detached from this organization and sells coffee independently. The sample (103) was randomly selected from the coffee farmers in the two villages. Data were collected through surveys, focus group discussions (FGDs), and socio-anthropological methods (participant-observation, biographies, and thematic interviews). Results indicate that the selection of whom to sell coffee depends largely on farmers' dependence on coffee and prices, other benefits accrued, and whether the initial costs are covered by buyers. Additionally, most respondents did not sell coffee to PCBs. Thus, prices, the institutional infrastructure, and the structure of local communities were important when making decisions about how and with whom to trade.

Key Words: Tanzania; Coffee; Liberalization; Cooperatives; KNCU; Diversification.

INTRODUCTION

Although Tanzania is not a major coffee producer (0.7% of the world market), coffee had been the largest export crop and one of the top sources of general export earnings, having only recently been overtaken by tourism and mining (Ashley et al., 2001; URT, 2012). In terms of production, 95% of coffee is produced by smallholder farmers. Tanzania produces both mild Arabica (2/3) and Robusta (1/3); the former is produced in the Ruvuma, Mbeya, Arusha, and Kilimanjaro regions, and the latter is produced primarily in the Kagera region. A fundamental market change occurred in the coffee sector when the coffee trading system was opened up in the 1990s, reducing state control and allowing private coffee buyers (PCBs) to compete on equal footing with cooperative unions (Temu, 1999; Mhando & Itani, 2007; Mhando, 2012). Following the liberalization of the coffee market, coffee trading has not been restricted to only the Tanzania Coffee Board (TCB) and the cooperative unions. Independent primary societies, PCBs, and farmers' groups can now also buy or collect coffee from farmers and sell it through auctions (Mhando & Itani, 2008). Although it has been argued that the producers' share of the export price has risen, there is no evidence of an increasing trend in coffee production. There are two reasons for this situation: 1) farmers are used to constant fluctuations in coffee prices and, thus, do not trust the coffee market; and 2) farmers prefer to expand their livelihood base by investing in different income-generating activities rather than expanding coffee production given their experience that if they expand production, they earn less income. Thus, the volume of coffee production in Tanzania has remained at an average of 50,000 tons annually for several decades (Baffes, 2003; TCB, 2012). Currently, high-quality coffee (classes 1–5) can be exported directly without passing through the TCB auction.

Developments in national coffee markets and changes in the behavior of coffee producers should be viewed in the context of the dramatic flactuation in world coffee prices, especially from 1998 to 2002 (Daviron & Ponte, 2005) as well as from 2003 to 2011 (Mhando, 2012). Fig. 1 shows the trend in coffee prices between 1997/98 and 2011/12. It should be noted that farm gate prices decreased and reached their lowest level in the 2001/2002 season. However, they have been increasing since the 2002/03 season: they increased from Tshs. 200.00 in 2002/03 to Tshs. 6,500.00 in 2011/12 (TCB, 2012). At the same time, there has been an increasing demand from consuming countries for specialty, organic, and fair-trade coffee (Ponte 2002b; Promar Consulting, 2011). How do local farmers adapt to

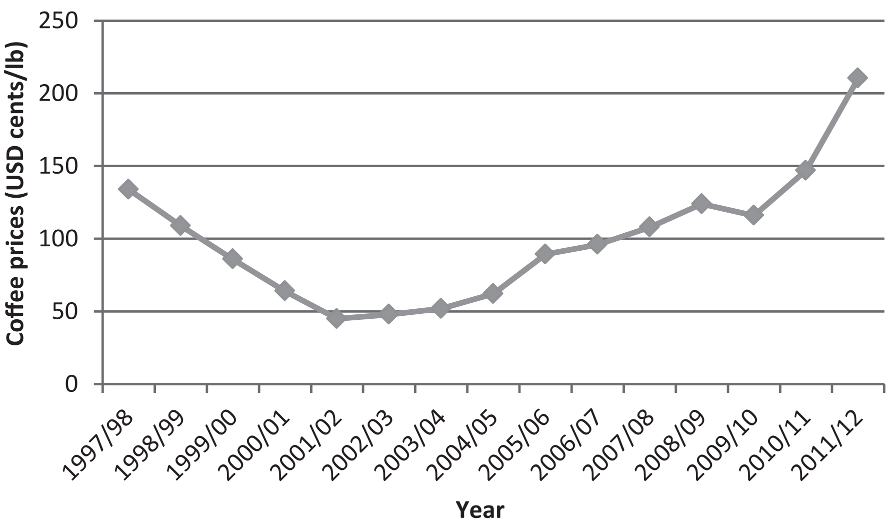

Fig. 1. Trend in World Coffee Prices 1998–2011.
Source: ICO (2013).

these demands and price fluctuations? Can and do farmers profit from different market conditions and sell to different traders at the lower end of the value chain, or do they remain with cooperatives or open up to farmers groups?

We conducted a comparative study in two village settings in the Kilimanjaro region. The first village, Mshiri, is attached to the Kilimanjaro Native Cooperative Union (KNCU), which is the main cooperative union and an agent selling coffee on behalf of affiliated primary societies. The second village, Mruwia, has left the KNCU and opts to sell coffee directly at auction through a group of independent primary societies, which are known as the G-32. It is argued that what matters in the first part of the value chain are prices and the pattern of installments paid to local producers (farmers). However, institutional barriers or incentives that increase or decrease handling costs, transparency, and other benefits accrued by the farmers are just as important. Additionally, it is also argued that access to agricultural inputs, especially chemical fertilizers, pesticides, and herbicides, has had an influence on the incentives for coffee producers to remain in cooperative unions. Differences between the two villages can be explained by the role coffee production plays in the livelihood strategies of rural people and by the alternative roles that are possible as well as by the social and economic benefits associated with membership in a primary society. These factors influence the way people perceive the value chain and therefore act collectively to improve their situation or remain in an existing institutional arrangement. A strong dependence on coffee income and the other social and economic benefits that have accrued from the village primary societies have been identified as the core value-chain differences between the two locations studied. However, it is argued that whereas a classical value-chain analysis emphasizes differences in dependence on coffee, an analysis undertaken from the perspective of the new institutionalist framework can explain why the two villages have developed differently. In addition to prices, institutional options linked to the value chain and related handling costs, the social and economic benefits that have accrued, local power, and ideological dynamics play crucial roles.

I. Coffee Production and Marketing Organizations in Tanzania

Coffee was originally cultivated by missionaries and, later, in the mid-1920s, by smallholder producers (Moore, 1986). Thus, in the 1920s and 1930s, local small-scale production was linked to the cooperative movement involving native cultivators. The first such cooperative was the Kilimanjaro Native Cooperative Union (KNCU), which was established in 1932 with the aim of promoting coffee as a cash crop. Several primary societies at the village or inter-village level served as the foundation of the KNCU (Moore, 1986). After independence was achieved in 1961, the government expanded the cooperative unions with little success, but the primary societies continued to evolve based on their own initiatives. Cooperative unions, such as the KNCU, consisted of many primary societies. However, these cooperative unions conflicted with the Ujamaa policy of villagization and forced resettlement as new villages were founded and old ones restructured. The new village leaders and the leaders of primary societies often had different interests regarding the use of tax money collected from the sale of coffee (Baffes, 2003). However, the coffee-producing areas of the Kilimanjaro region and Mbinga district of the Ruvuma region were an exception as villagization did not occur in their region. During this period coffee was collected by the primary societies, bought by the cooperative unions, and delivered to the processing plants, which were owned collectively by the government and the unions. The coffee was subsequently brought to the auction in Moshi, which was operated by the TCB, where it was sold to exporters (Banturaki, 2000; TCB, 2012).

In 1976, under the Ujamaa policy, primary societies and cooperative unions were dissolved and the authority of village leaders was strengthened, whereas post-harvest functions were delegated to a new marketing board, renamed the Coffee Authority of Tanzania. This structure lasted for only 8 years before the primary societies and cooperative unions were revived by legislation enacted in 1991 that turned cooperatives into private entities owned and operated by its members, who were given full responsibility for the coffee trade, which was the main object of liberalization (Maghimbi, 2002; Baffes, 2003).

1. Coffee marketing before liberalization

State-owned curing plants were responsible for the milling and grading of coffee, which was then delivered to the Coffee Board for auction. The marketing board controlled coffee production through its regulation of the coffee trade. Producers (smallholder farmers) delivered their coffee to the primary societies and received an initial payment based on a previously announced price. After coffee was auctioned and sold, the TCB passed the revenues on to the cooperative unions after deducting its fees. The cooperative unions paid primary societies after deducting the costs for transportation, processing, and the input credits provided to smallholders. Primary societies recovered their costs, mainly management fees and the first installment paid to producers, before remunerating smallholders. The second installment was usually made a few months after the first (Temu, 1999; Ponte, 2002a; Baffes, 2003). This system had positive features as producers received payment immediately upon delivery of their coffee. However, the system suffered from a number of problems as well. First, if the prices realized at the auction were lower than the first installment paid to the producers, the cooperative union suffered a considerable loss. Second, transport costs, which could be substantial, were borne by the cooperative unions. Third, the trading process itself had a number of problems, which made the cooperative unions vulnerable, under conditions of falling prices, to an inability to maintain sufficient financial stability to operate (Baffes, 2003). Historically, cooperatives were expected to act as a buffer to farmers. Regardless of whether world market prices were at their lowest or highest, cooperatives should pay farmers a standardized price. Thus, farmers were not affected by fluctuations in international prices. The liberalization of the coffee market eroded the monopoly of cooperatives in the domestic marketplace, and they were forced to compete on equal footing with PCBs. Furthermore, the government could no longer protect the cooperatives, which consequently had to adjust some of their functions to operate on a commercial basis.

This problem was solved by commercial banks (e.g., the Cooperative and Rural Development Bank Public Limited Company [CRDB PLC], EXIM Bank, and the National Micro Finance Bank [NMB]), which financed the coffee sector. Currently, commercial banks determine the amount to be paid to farmers in the first installment by taking into account the price trends at the TCB auction and the New York Coffee Exchange (for Arabica coffee).

2. Liberalization and its consequences

The domestic coffee market was liberalized in 1994, resulting in reduced state control over coffee processing and marketing operations.(1) The liberalization of the domestic coffee market in Tanzania opened the door for PCBs to invest in the four stages of coffee production: processing cherry beans into parchment coffee, purchasing and selling parchment coffee, curing of parchment coffee, and exporting (Mhando, 2005). Liberalization also allowed PCBs to deal in the domestic coffee-processing trade, which had previously been monopolized by the cooperatives (Cooksey, 2004). Thus, starting in the 1994/95 crop season, PCBs were allowed to purchase coffee from farmers in villages and process it either at their own factories or at factories owned by the government and cooperatives (Temu, 1999). Despite liberalization of the domestic market, the government maintained power over the process. For example, PCBs were still required to apply for a specific license that allowed them to purchase parchment coffee in a specific district every year. All coffee purchased had to pass through the TCB auction, which had been empowered by the Coffee Industry Act of 2001 (No. 23) to auction all the coffee produced in Tanzania, irrespective of whether it was intended for export or for the domestic market.

The government transformed the organization that was responsible for coffee marketing, the Tanzania Coffee Marketing Board (TCMB), which had been in operation since 1984, into the Tanzania Coffee Board (TCB). The new board's role changed from dealing with marketing to monitoring the activities of various organizations in the coffee industry (Ponte, 2002a; TCB, 2012). The TCB is a statutory body established by the Coffee Industry Act of 1993. The functions of the TCB include advising the government on policy and strategies related to the development of the coffee industry, regulating the industry, issuing various licenses and permits, collecting and disseminating coffee statistics, and running a weekly coffee auction (Baffes, 2003; TCB, 2012). Additionally, the TCB is also empowered to compile rules and regulations as well as to regulate the grades and quality of the coffee produced and marketed in Tanzania.

The monitoring functions of the TCB include licensing PCBs and establishing regulations to guide the domestic coffee market (Mhando, 2005; TCB, 2012). For example, PCBs are required to apply for renewal of their licenses every year, to purchase parchment coffee at only specified locations (and not at farm gates), and to reveal their prices to farmers. It should also be noted that PCBs compete on equal footing with cooperative unions, which have no capital base and depend largely loans from the commercial banks that have interest rates of 19–25% per annum (Temu et.al., 2001).

Baffes (2003) noted that, as a result of this situation, cooperative unions faced increasing competition from PCBs, which was expected to result in favorable conditions for Tanzanian coffee producers (Baffes, 2003). He concluded that producer prices did not decrease but instead increased, which conflicts with observations made by other authors (e.g., Ponte 1998; 2002a; Cooksey, 2011), who found clear evidence of decreasing producer prices. Baffes (2003) based his evidence on tax data and further argued that, without the trade reform, producers would have had to endure long delays in payments and would not have received a 60% share of the sales price, as they did after the reform. Cooksey (2011) used the same argument and noted that one result of the liberalization was that agricultural inputs, especially chemical fertilizers, became more expensive, which led to an overall decrease in their use. Debate about decreasing coffee quality and its connections to changes in state policies (e.g., nationalization, revival of cooperatives, and market liberalization) exists. Baffes (2003) argued that high-quality graded coffee actually quantitatively decreased, from 16% in the 1970s to 3% in the 1990s, before the reforms were able to have an impact.

However, Ponte (2002a) found clear evidence for serious declines in the production of high-quality coffee between 1995 and 2000, which he associates with the reform. Baffes (2003) linked negative trends in Tanzanian coffee production to the influence of previous socialist policies. The immediate effect of the liberalization of coffee marketing in Tanzania was the increased share of the domestic market acquired by PCBs at the expense of the cooperative unions (Temu, 1999; Cooksey, 2011). Consequently, PCBs with the upper hand in purchasing coffee were able to determine the prices that they would offer to farmers, which affected the performance of the cooperative unions whose existence depended on the levies collected from farm products. For example, prior to the 1993/94 coffee season, cooperative unions controlled 75% of the coffee market, whereas other government organizations controlled 19%, and the estates accounted for only 6% (Table 1). However, the market share of the cooperative unions had dropped to only 26% in the 1997/98 crop season compared with the 45% share held by vertical integrated exporters and the 22% held by PCBs (Temu, 1999). Cooksey (2011) noted that inadequate preparation by cooperative unions to compete on an equal footing with private buyers and limited capital were among the reasons that cooperative unions lost their dominance of the coffee market. Table 1 shows trends in the domestic coffee market both before and a few years after liberalization.

Although the increased market share held by PCBs and vertically intergraded exporters (Table 1) can be seen as a positive development, a number of negative developments can also be observed. First, taxation of the coffee sector is com-

Table 1. Market shares of participants in the Kilimanjaro area from 1993/94 to 1997/98 (in percentages)

		1993/94	1994/95	1995/96	1996/97	1997/98
1	Vertically integrated exporters	0	12	33	57	45
2	Other private coffee buyers	0	1	8	12	22
3	Cooperatives	75	58	44	22	26
4	Estates	6	8	4	6	7
5	Other government organisations	19	21	11	2	1
	Total	100	1000	100	100	100

Source: TCB (1998).

plicated and includes a levy of 0.75% of the auction price, which goes towards a research fund, and VAT and other taxes used to pay for transportation, processing, insurance, and taxes to the district council. Baffes (2003) argued that, because taxes are passed down the chain, producers bear the biggest burden. Second, the TCB and district councils still issue trade licenses on an annual basis and can revoke them at any time. This has occurred several times since 2000 to increase the market share of the cooperatives and has created uncertainty in the whole coffee sector. Third, Baffes (2003) argued that overall profits in the coffee sector are lower than what they could be potentially. Fourth, the auction in Moshi is mandatory for all exporters, with the exception of farmers who produce coffee of class 5 and below, who are permitted to export directly. Whereas the auction prices are often almost the same as those in New York and London, the fact that the auction is mandatory generates expenses for traders. It is still thought that the TCB and Ministry of Agriculture to retain too much power to regulate the coffee market (Ponte, 2002a; Baffes, 2003; Coles, 2011). Although liberalization of the coffee market in Tanzania has led to increased market opportunities, the coffee market functions in a sub-optimal manner due to the considerable government control that is still exerted. Liberalization of the domestic market has lead to the substantial involvement of multi-national corporations (MNCs), which has increased the risk of dominance by or the monopoly of a few vertically integrated companies. Cooksey (2011) noted that liberalization has failed to bring the expected results given that the prices of agricultural inputs have risen and the net income of farmers has decreased.

3. The problem of a demand-driven market

The extant literature indicates that the coffee market was no longer supply driven after liberalization; instead, it was led by the demand for roasting and ever-increasing quality (Ponte, 2002a: Promar Consulting, 2011; Mmari, 2012). Indeed, international traders have become increasingly involved with coffee-producing countries to control production. Coffee roasters define the minimum quantity and quality requirements for each type of coffee in a blend and thereby set entry barriers for producing countries. A dramatic shift has occurred in who defines rules and sets standards related to coffee production. Prior to liberalization, the coffee-producing countries, through the International Coffee Organisation (ICO), dictated the market via quantity and quality requirements. From an institutional perspective, market relations have replaced the quota systems, and the producing countries are no longer important actors (Ponte, 2002a). Therefore, as the quantity of the coffee produced decreased, which started during the nationalization of coffee plantations in the mid-1970s, the quality of the coffee also began to decrease, especially following the economic crisis in the 1980s, due to lack of government inputs. As a result of trade liberalization, this trend has continued. As Tanzanian coffee is considered to be a substitute for Columbian coffee, it remains very competitive despite its lower quality grading (Mmari, 2012). As a single-origin mild coffee, coffee from the Kilimanjaro region does have the advantage of being able to be sold at a higher price in Japan and Europe (Daviron & Ponte, 2005). Despite the problems caused by the demand and institutional arrangement, coffee of good quality remains marketable. Mmari

(2012) noted the competitive edge of Tanzanian mild Arabica coffee. He also underscored the importance of utilizing institutions that support farmers in production and marketing as well as of capitalizing on the quality and reputation of their coffee to sell it at higher prices and turn it into a profitable venture. However, the withdrawal of the government from the coffee market since liberalization has contributed to the increase in the prices of agricultural inputs as well as to the collapse of extension services, which probably contributed to a decline in quality.

Liberalization has also had a major impact on ownership issues related to coffee: before liberalization, farmers owned coffee through the cooperative unions up to the point of export. They bore the risks related to price fluctuations, but the payment system allowed for a smoothing of this risk due to the operation of guaranteed producer prices. The overall price during a particular year was set, and farmers received the price irrespective of when it was sold during the year (Banturaki, 2000; Ponte, 2002a; Mhando, 2005). Although farmers received a minimal share of the final export price and were often paid late, prices were stable over the course of the year. The pre-liberalization system also provided quality incentives for cooperative societies: the higher the quality and the bigger the beans that cooperatives received, the better the price they could demand and pass on to producers. Increasingly, PCBs operate according to a vertically integrated coffee production and marketing system that includes processing and the domestic trade and, in some cases, also established estate production (Ponte, 2002a). The PCBs control more than 85% of the export market through a network of direct subsidiaries and financial agreements with local companies (Fig. 2).

Although the old quality-control system is formally in place, in reality, the quality is no longer controlled at the producer level and has decreased considerably. Overall, the effects of market liberalization have been positive for farmers; they receive cash on delivery and get paid a higher proportion of the export price than in the pre-liberalization period (see Temu et al., 2001;Winter-Nelson & Temu, 2002; Baffes, 2003). However, agricultural input subsidies are no longer provided, and the quality of coffee has decreased due to poor control mechanisms, the lack of a connection between prices and quality, and the overall lower use of inputs (see Ponte, 2002b; Daviron & Ponte, 2005). In the study villages, PCBs buy coffee on the spot and pay a uniform price, irrespective of quality. Studies conducted in some parts of Tanzania have noted that PCBs pay farmers immediately and do not reward producers for better quality coffee later in the year after the coffee has been sold at auction (Ponte, 2002a; Mhando, 2005; Mhando & Itani, 2007; Cooksey, 2011; Mhando, 2012). However, there are notable exceptions to this rule; for example, PCBs in the Arusha region have rewarded farmers for better quality coffee later in the year after it has been sold at auction.

Quality control has been re-established by buyers only for specialty coffee. At the national level, coffee revenues have decreased because of (i) comparably low quality and (ii) small quantities being produced in the absence of the benefits of economies of scale (Ponte, 2002b). The decreasing national revenues from coffee exports are, in part, the result of increasing market penetration by PCBs, who now control more than 85% of the coffee trade (Fig. 2). The government has made several efforts to re-introduce cooperative unions to re-capture a higher market

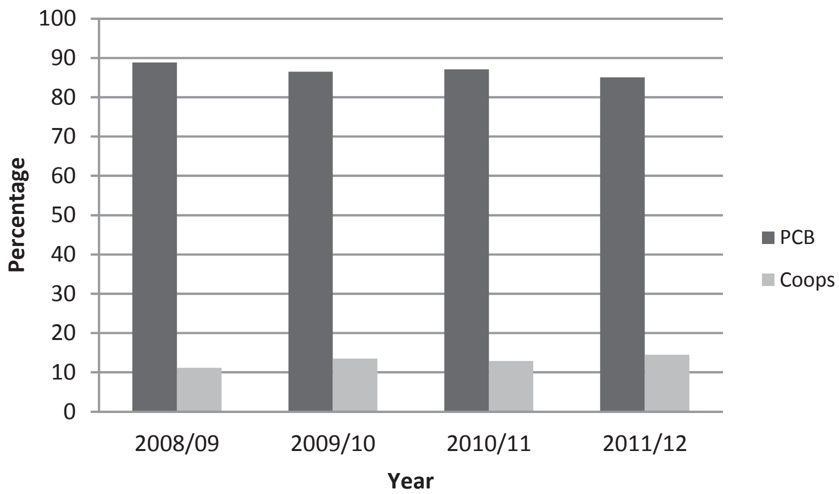

Fig. 2. Shares of coffee sales of PCBs and cooperatives at the TCB auction (in percentages) Source: TCB (2012).

share. Such efforts include licensing farmers' groups and primary societies to sell coffee directly at auction and/or directly exporting high-quality coffee. Daviron & Ponte (2005) noted:

> … attempting to re-empower local interests—such as manipulating licensing rules, encouraging direct selling of coffee at the auction and abroad by independent cooperatives and farmer groups, auction haggling, threats of tightening regulations and a period of re-monopolization of domestic coffee marketing in some regions of the country. (Daviron & Ponte, 2005: 105–106)

II. Changes in Prices

The most important external factor influencing coffee production over the last three decades is the fluctuation of coffee prices, which is also connected with liberalization. There had already been a major change in the price of coffee in 1934–1936 (Moore, 1986:123). However, the price decline during the last three decades has been dramatic and, which has reduced the income of farmers and of the state considerably. As Table 2 indicates, the prices in the mid-1980s were almost twice higher than were those in the period between 1990 and 2003; additionally, coffee exports decreased to 4,000 tons, although this represents a decline of less than 10%. Thus, although the amount of coffee production did not decline significantly during this period, income certainly did.

The price of coffee has been increasing since 2002 due to the increasing demand in the world market caused by fluctuations in coffee production in Brazil. For

Table 2. Coffee prices and amount exported

Year	Average price per pound	Amount of of Tanzanian Coffee Exported
1984–1988	US$1.34	49,600 tons
1990–2003	US$0.63	45,600 tons

Source: Ponte (2002a; 2002b); Davrion & Ponte (2005); Ashley et al. (2002).

example, the unit price (USD per ton) increased from 1,953.1 in 2006 to 2,853.1 and 3,653.9 in 2010 and 2011, respectively (BOT, 2012). Additionally the specialty market, which may provide opportunities for producers at the local level, has not developed further (Promar Consulting, 2011). Increases in price provide an incentive for farmers to produce high-quality coffee, which fetches a high price on the world market. Data indicate that, in the 2012 coffee season, farm gate prices in Tanzania reached Tshs 5,000 per kilogram of parchment coffee, which was the highest price recorded (TCB, 2012). In this highly unstable institutional, political, and economic environment, questions about how farmers react and adapt to these changes arise. In this context, this study investigated the ways in which producers in the commodity market adapted and the benefits accruing to producers in the fair-trade and specialty markets. The fair-trade and specialty coffee markets may be an interesting option for smallholder producers as they are offered better and more stable prices than what they would receive for conventional coffee. Despite the numerous advantages of these small but rewarding specialty markets, a number of issues related to the extent to which producers actually benefit from these new arrangements should be considered.

METHODOLOGY AND THE STUDY AREA

This study was conducted in the Kilimanjaro region of northern Tanzania (Fig. 3). Two villages were selected to compare different trading strategies and their outcomes in the context of attempts to buffer risks and profit from new opportunities. The two villages (Mshiri and Mruwia) were selected to illustrate differences in coffee trading systems. Mshiri village is attached to the KNCU, which has an export license at the Moshi Coffee Auction; only 20% of its produce is fair-trade and specialty coffee for *Cafédirect* in the UK (however, farmers are not aware of either the fair-trade or specialty coffee status). Mshiri village and its primary society are located in Marangu ward, 44 kilometers from Moshi town. Additionally, Mshiri primary society is among the 70 primary societies that have remained with the KNCU. The other village selected (Mruwia) is located 22 kilometers from Moshi town. Mruwia is among the 22 villages whose primary societies have pulled out of the KNCU; its producers sell coffee directly at auction with support from the Kilimanjaro Cooperative Bank (KCB). Field research was undertaken in both village settings. Both primary and secondary data were collected and utilized to achieve the study objectives. Primary data were collected from coffee growers in the study sites, and secondary data were gathered from books, Internet sources and reports. Primary data were collected through household surveys, focus group discussions (FGDs), and interviews with members of the KNCU and cooperative societies, village leaders, elders, and other influential people in the villages. Officials from the KCB, TCB, and Tanzania Coffee Research Institute (TaCRI) were also interviewed. During the study, researchers collected both qualitative and quantitative information using questionnaires, checklists, and interview schedules.

Researchers selected respondents from the village registry book, where simple probability sampling was used to select households that cultivate coffee. Respondents (coffee farmers) were selected randomly from each village; however, during the study we noted that 4% of the sampled households had not received any coffee income for two consecutive seasons despite having coffee plots. In Mruwia, 52 farmers were interviewed, and 51 were interviewed in Mshiri, yielding a total of 103 respondents from the surveyed households in the two villages. Both quantitative and qualitative data were obtained from the 103 respondents. Table 3 summarizes the sample drawn from each village.

Questionnaires were distributed to the 103 respondents to collect data relating to the main activities carried out by family members and their sources of income, coffee-related activities (coffee production and trade), livestock ownership, access to information, and overall self-assessment of the household situation over time.

FGDs were conducted to validate information collected from the household

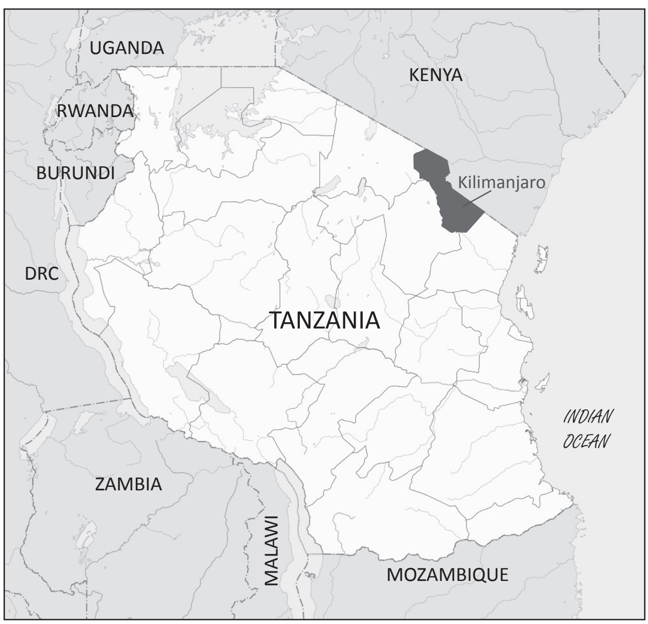

Fig. 3. Map of Tanzania indicating the location of the Kilimanjaro region. Source: SW.Wikipedia.

Table 3. Summary of sampled households in two villages

Village	Number of households	Sampled households	%
Mruwia	643	52	8.1
Mshiri	500	51	10.2
Total	1,143	103	–

survey. FGD participants were picked from among the 103 respondent households based on their knowledge of and experience with coffee-related issues. Additionally, socio-anthropological methods, such as those involving participant-observation, informal interviews, biographies, and thematic interviews, were also employed. Data were analyzed using Statistical Package for Social Science (SPSS).

I. History, Ethnography, and Traditional Institutional Settings

Both study sites were registered as villages in 1972 but have been traditionally inhabited by the Chagga farmers, who are primarily Christians and monogamous. The Chagga are known as one of the most commercially oriented ethnic groups in Tanzania. Historically, the Chagga were organized in chiefdoms based on patrilineal kin and lineage groups that settled on the rugged slopes of Mount Kilimanjaro. Individual territories were separated by natural boundaries such as small rivers and escarpments. These chiefdoms had chiefs (*Mangi*), who were often at war with one another over women, cattle, and the benefits of long-distance trade. Prior to colonial occupation by the Germans in 1886, the Chagga participated in the slave and ivory trade by providing food to passing caravans. They were in contact with Swahili traders from whom they bought clothes and rifles. Land was not scarce at that time and, in 1900, large tracts of unoccupied land could still be found in the area. By 1967, the area was inhabited by nearly 500,000 people, and land reserves had decreased dramatically. Significant changes were introduced with colonial control, pacification, and the appointment of new chiefs, who had more power and were also responsible for collecting taxes, initially for the Germans and later for the British. Political power changed over time, and individuals who were chiefs were able to increase their power but later lost it when paramount chiefs were installed (Moore & Purrit, 1977). All the chiefs profited from tax collection and the payments that had to be made to them. By the end of the 1940s, the chiefs gradually lost their power, and chiefdoms were abolished by the government in the 1960s. Although the TANU party re-organized villages during the implementation of the socialist Ujamaa policy in the 1970s, the villages of the Chagga were not affected. The importance of coffee cultivation, in addition to the strong political and economic positions of the Chagga in Tanzania, is among the reasons for this.

II. Development of the Land Tenure System

Before the introduction of coffee, the Chagga maintained family garden plots and, depending on the quality of their reserve land, grew bananas as a basic staple crop and/or raised cattle. Coffee production and the wealth that went with it, coupled with missionary activities increased production and population, which made the land very valuable (Moore & Purrit, 1977; Moore, 1986). The customary Chagga land tenure system is an adaptation to increasing land scarcity. Individual plots were handed out by chiefs based on usufruct rights, which did not include private property. As land became scarce and therefore more valuable, it was used more intensively. A new type of land tenure system developed in which land was divided into ever smaller plots, which more closely resembled private property. Ideally, a young man was given a plot by his father, usually at the time of marriage. The youngest son inherited his father's plot along with his father's house and the adjacent gardens (Moore & Purrit, 1977). As the Chagga began to produce coffee and suddenly began earning considerable income, money was invested in the education of their sons. Thus, the commercialization of the Chagga economy and the increased access to education since colonial times resulted in a large portion of the Chagga working in urban areas (Moore, 1986; 1991). Today, the average size of households in the rural area inhabited by Chagga is 4–6 people, which is also the average for Tanzania. In most households, children have migrated to towns in search of employment and other economic opportunities. It is common to find households headed by elderly people, land allocated to sons unused, and houses secured (referred to as Christmas houses), with their owners living far away in towns and cities.

III. The Coffee Marketing Chain and Institutional Conditions

After the liberalization of the coffee market in Tanzania, producers were able to sell coffee either to primary societies, PCBs, or farmers' groups. Primary societies are divided into two categories; those who act as agents of cooperative unions (e.g., the Mshiri Primary Society) and those that are independent of cooperative unions (e.g., the Mruwia Primary Society). During the FGDs, respondents revealed that fluctuating coffee prices and the amount of coffee produced in both villages discouraged the establishment of farmers' groups. Thus, in both villages, farmers have two marketing alternatives: selling coffee to a primary society under the KNCU or a primary society under the G-32. With the liberalization of the coffee market, PCBs have become important players in the domestic coffee market. However, data and informal discussions with TCB officials revealed that coffee production in the Kilimanjaro region has stagnated compared with that in other areas of production in Southern Tanzania, such as Mbeya and Ruvuma (Fig. 4). Thus, there has been a shift in production from the Northern zones (the Kilimanjaro and Arusha regions) to Southern zones. Most PCBs prefer to seek coffee purchasing licenses in areas with a high production potential, such as Ruvuma and Mbeya. This partly explains why most of the respondents in the two villages studied sold their coffee to primary societies.

Farmers in the two villages sell most of their coffee through two different channels. What is similar, however, is that in both situations, farmers are unaware of the ultimate destination of their coffee after they sell it to the primary society. Even the 51 farmers from Mshiri who were selling to fair-trade or organic coffee

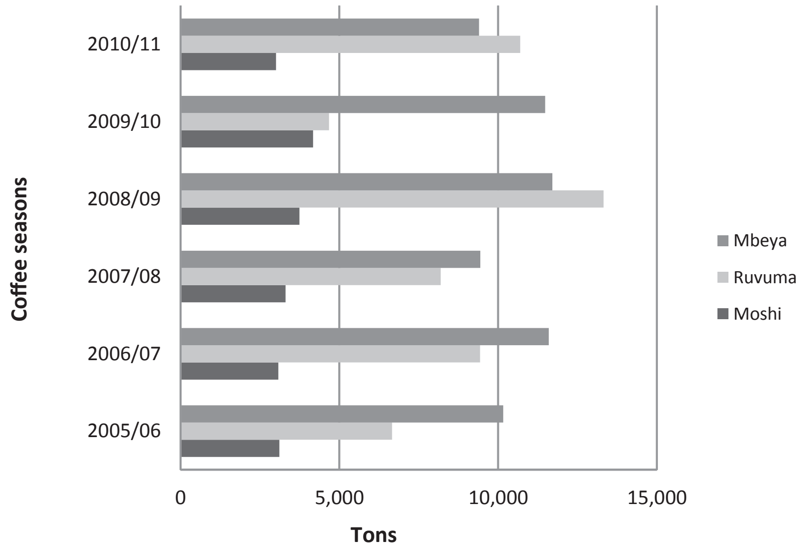

Fig. 4. Trends in Arabica coffee production in the Mbeya and Ruvuma regions, and Moshi district of the Kilimanjaro region, Tanzania.
Source: TCB (2012).

suppliers through the KNCU were unaware of the coffee marketing chain. To assess the different marketing strategies in the two villages, it is necessary to consider the marketing chain and the institutional conditions from an historic perspective. The KNCU has been a very powerful union and has developed, in part, from colonial and local initiatives that have shaped marketing and coffee production in the region. This paper therefore explains the development of the coffee trade since colonial times and highlights how important the KNCU still is. However, it also explains why some farmers have begun using different marketing channels.

Historically, the KNCU developed as an initiative of a colonial administrator, Charles Dundas, and his interpreter, Joseph Merinyo. Both men were very active in promoting coffee, often against the will of the administration and especially against that of white settlers. The number of coffee trees planted increased from 150,000 to 300,000 between 1923 and 1925 as a consequence of both high coffee prices and the effective organization of the market by the KNCU. However, the KNCU has had a very turbulent history characterized by many conflicts related to the way coffee had to be sold and the union's role in the selling of coffee. The reasons for the success of the KNCU include that it paid farmers in several installments, which made income available during the whole year, and that it made additional investments in infrastructure or education, from which people also benefited. Along with paying in installments, the KNCU provided banking on behalf of the farmers (Temu, 1999).

Generally, income from the coffee trade made a significant contribution to the relative wealth of the Chagga compared with that of other regions in modern Tanzania. This is clear from the assets owned by the KNCU, which included a cooperative college, several buildings and coffee plantations (Maghimbi, 2002).

Prior to the 1970s, the KNCU was controlled by local Chagga and was the main agent in the process of coffee marketing that preceded the auction. The Tanzanian government exerted increasing control over the entire chain of coffee production up to the mandatory auction and provided inputs and training for farmers as coffee became a major source of national income (see Ponte, 2002a; Daviron & Ponte, 2005). After the decline of coffee prices and the initiation of basic structural adjustment programs, the coffee market was liberalized in the mid-1990s, which provided PCBs with the possibility of buying coffee and buyers with the possibility of becoming more closely engaged with producers. The auction was, and partly still is, mandatory. In Moshi, however, a large amount of coffee is termed 'captive coffee' because it is bought back by the seller that sold it in the first instance; it is then sold to importers or roasters in Europe, the US, and Japan (Ponte, 2002a).

Liberalization essentially meant that the state would no longer engage in providing inputs and training and that PCBs would be able to buy coffee directly from farmers. Before liberalization, farmers were assured that primary societies and cooperative unions would collect all their coffee, sell it on their behalf, and pay them in installments (Mhando, 2005; Mhando & Itani, 2007). These assurances allowed farmers to continue with coffee production without worrying about production levels or marketing, even when international prices were starting to decline. However, with the liberalization of the coffee market, most of these services were abolished (Cooksey, 2011). The government eliminated subsidies for agricultural inputs and reduced their staffing levels, including extension agents, leaving farmers to cope on their own, with regard to both production and marketing. The 1991 Cooperative Act states that it is not mandatory for farmers to be members of any primary society. This is a change from the 1976 Ujamaa Village Act, according to which farmers and villagers automatically became members of the primary societies in their respective areas. Farmers can therefore sell their coffee through (a) a registered cooperative union such as the KNCU, of which the local primary society is a member; (b) a primary society that cannot be part of a union but has direct links to the auction or co-operates with other primary societies; or (c) PCBs that operate buying stations in the villages. All three options have other institutional implications and other financial outcomes.

Prior to liberalization, coffee farmers profited from subsidized inputs and training, which are no longer provided to the same extent. Only larger cooperative unions, such as the KNCU, are able to provide training, information, and support for farmers as they transition to the production of organic coffee. The major differences among the three marketing channels include the transparency of the process by which coffee prices are set and what is paid. Strategies (a) and (b) provide a smaller initial price compared with the price paid by PCBs, but later installments follow, whereas strategy (c) promises more cash immediately but not necessarily more cash at the end of the year.

Baffes (2003; 2005) discussed the institutional setting and noted specific market barriers relating to the mandatory nature of the coffee auction and the restrictions placed on private market participants and contrasted them with the situation of cooperative unions, such as the KNCU, which are preferred by the government and do not face the same restrictions. Since its inception, the KNCU has been an important organization for economically as well as politically active individuals who have connections within the government. Although the government officially abolished the KNCU structures in the 1970s under the Ujamaa system, they remained in place informally and could be formally reinstated once the policy was no longer in effect (Moore, 1986). After the Ujamaa system ended, the KNCU again played an important role in capturing income from coffee production for the government. Therefore, the government had an interest in controlling the successful coffee trade, which was easier when undertaken through the union rather than by PCBs. Indeed, it has been claimed that state officials do provide special treatment to the cooperative unions by issuing them with special permissions (Baffes, 2003).

At first glance, it would seem that no immediate benefits or reduced handling costs accrue to farmers according to whether they sell to PCBs or to a cooperative union (KNCU) or a primary society because agricultural inputs are not provided under any of these conditions. However, institutional factors and changes in relative prices can explain the similarities and differences between the two villages with regard to their coffee-marketing arrangements. Specifically, Mshiri has a primary society that belongs to the KNCU, through which it sells coffee. On the other hand, Mruwia is a member of an organization of independent primary societies (G-32), which united several primary societies to sell their coffee directly to the TCB auction.

RESULTS FROM THE FIELD SITES

Most households have land in both the highlands (mainly used for coffee, bananas, and settlement) and the lowlands (used for maize cultivation). The farming system used by the Chagga is based on the *kihamba* system. Land in the highland areas is intercropped with bananas, coffee, beans, fruit, and other crops. The Chagga practice intensive cultivation and utilize manure from livestock (cows, goats, chicken, and pigs). Livestock is kept primarily indoors, and the number of animals per household is small, usually one or two cows and a few goats, pigs, and chicken. The scarcity of land for grazing and planting fodder is among the contributors to the limited number of livestock kept in both villages. The population density in the Moshi Rural District is very high (254 people per square kilometer). The mean amount of land owned per household (both in the villages and lowlands) is 1.5 acres in Mshiri village and 2.5 acres in Mruwia village (Table 4).

Bananas remain the staple food of the Chagga in both villages. Almost all households have banana plots, which are intensively intercropped with coffee, yams, and other crops close to their households. Surplus bananas are sold at nearby markets for cash. A special type of banana (*ndizi kijivu*) and finger millet are used to make a local brew (*Mbege*). Maize is cultivated primarily in lowland areas, with only small plots present in mountain areas. Most maize is produced for home consumption, and only 3% of the farmers in both villages sell maize.

I. Coffee Cultivation in the Two Villages

The mean area under coffee plantation is about 1.6 and 1.1 acres per household

Table 4. Land use and coffee production in the two villages

	Mshiri	Mruwia
Average total landholding (acres)	1.5 (standard deviation :1.24)	2.5 (standard deviation 1.7)
Average land area for coffee cultivation (acres)	1.1	1.6
Average coffee production (kg per acre)	59.1	41.7

Source: Survey data.

in Mruwia and Mshiri, respectively. The Chagga cultivate Arabica coffee, which is of high quality and commands a higher price than does Robusta coffee. Cultivation of Arabica coffee is labor-intensive and requires the availability of labor throughout the year. During the study, it was found that most respondents pulped their own coffee at home, using hand-driven pulping machines. Activities involved in the production of Arabica coffee include weeding, pruning, spraying, applying fertilizers, picking, processing, fermenting, and drying. Because coffee cultivation is labor-intensive, the labor provided by family members is usually not sufficient. Indeed, the high demand for labor is among the reasons that coffee plots are located close to the homestead.

Most households still cultivate coffee trees, which they inherited from parents. Maghimbi (2007) observed this trend in the Kilimanjaro region and noted that some of the coffee trees were more than 100 years old. This was confirmed by some of the elder respondents, who verified that they had inherited some of their coffee trees from their parents. However, over the years, farmers planted new trees in the gaps left after old trees died due to pests and diseases. Observations in both villages demonstrated that most farmers have started to grow a recently introduced hybrid coffee cultivar, which is resistant to the notorious coffee berries diseases (CBD) and coffee leaf rust (CLR).

Most respondents in the two villages (84% and 89% in Mruwia and Mshiri, respectively) indicated that they do not use agricultural inputs on their coffee plots, and they offered a variety of reasons for this. First, farmers are discouraged from using inputs by a belief that using inputs increases the incidence of pests and diseases. Respondents went further and asserted that when they stopped using agricultural inputs, the incidence of pests and diseases decreased substantially. However, no scientific evidence supports these claims. Second, farmers claimed that their parents, who used agricultural inputs over the years without wearing protective gear, suffered from diseases such as cancer or TB, which have been associated with exposure to agrichemicals. However, some farmers were willing to start using inputs if they could be obtained for free. Thus, there were mixed opinions among the farmers regarding the use of agricultural inputs.

Historically, agricultural inputs were provided to farmers by the KNCU in the form of loans. As noted earlier, payment for these inputs was made by deducting a certain amount of money after the coffee was sold. Under this system, farmers did not feel that they were paying for agricultural inputs. The liberalization of the coffee market became a turning point for them. The government withdrew subsidies, leaving free market forces to determine prices. The result was an increase in the prices of agricultural inputs with no a significant increase in coffee prices. With the increasing prices of inputs, most farmers, in effect, turned to organic farming. With encouragement from the KNCU, farmers in Mshiri abandoned the use of agricultural inputs, and manure from cattle, cows, and pigs has been used as an alternative to chemical fertilizers.

Historically, alternative income-generation activities have included sunflower cultivation and the selling of bananas. Men were also involved in livestock marketing, and women brewed local beer. Sunflowers are cultivated in the lowland areas around Moshi. The lowland areas are known as *porini* (bush) by the Chagga and have traditionally been used for maize and sunflower cultivation. Sunflowers are sold on the local market, and the demand for this commodity has increased recently because it is used as the raw material for the production of cholesterol-free sunflower oil. Due to this increased demand, sunflower production has become an important source of income. For many years, *mbege* has been a traditional local brew of the Chagga. It is regarded as another source of household income that supplements coffee and is produced primarily by women.

II. Sources of Income for Respondents

The livelihood activities in both villages are farming and livestock keeping. Coffee is the most important cash crop and bananas used to be a staple food. The two crops are cultivated by almost all the households in the study areas. Historically, coffee cultivation has been the most important source of cash income for most households, and coffee was cultivated by almost all households sampled in the study area. It is a perennial crop, and respondents indicated that they receive income from coffee during only one season of the year. Respondents acknowledged that the importance of coffee as a major source of cash income has declined recently, although it remains one of the most dependable sources of cash income in most households, as shown in Fig. 5.

In Mruwia, 65% of respondents indicated that coffee was the most important and 24% indicated that it was second most important source of cash income. This shows that most households still attach importance to coffee production despite problems in the area (e.g., shortages of land, fluctuating prices, and increasing costs of production). In Mshiri, the corresponding values were only 25% and 40%, respectively. This is explained by the fact that most of the respondents (55%) in Mshiri indicated that the sale of bananas is the most important source of household income (Fig. 5). However, this should not obscure the fact that coffee remains an important source of household income. The main income sources of the two villages did not vary significantly and included the selling of agricultural crops (coffee, bananas, and grains) and livestock and, to some extent, remittances from relatives. Tourism is more developed in Marangu East, where Mshiri is located, and villagers, especially young men, benefit from seasonal employment as porters on mountain treks. Livestock keeping is a major part of the livelihood strategy of most villagers. Common livestock include local and crossbred cows, dairy cattle, goats, pigs, chickens and sheep. Cows are kept for manure, which is utilized on both banana and coffee plots because most households cannot afford to purchase

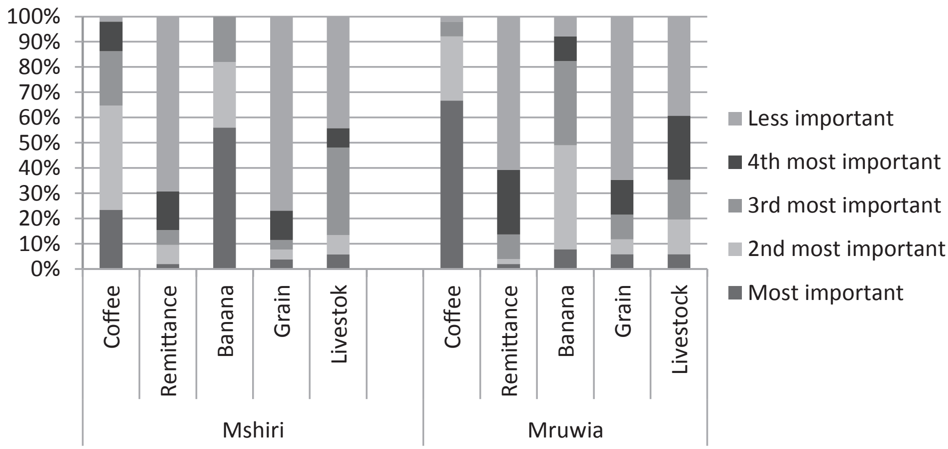

Fig. 5. Relative importance of current main cash income (gross) sources in the two villages (%). Source: Survey data.

industrial fertilizers. Livestock are kept indoors. Most households have an average of two cattle and three goats. Because of the limited grazing land, most households cannot increase the number of livestock they keep.

Manure is also an important source of income: for example, seven tons of manure can be purchased for Tshs. 70,000. However, most respondents indicated that they wanted to reduce the number of livestock they keep because of a shortage of feed and space. The researchers did not find any draught animals in the villages, probably because of the land shortage and the mountainous terrain.

Some households in both Mruwia and Mshiri undertake very intensive livestock farming involving, primarily, milking cows and raising chicken and goats. Fig. 5 shows that about 20% of the respondents in Mruwia and 13% of the respondents in Mshiri said that livestock farming was the first or second most important source of cash income in their household. The decline in coffee production, the increase in the prices of agricultural inputs, and the increase in the costs of production are among the reasons behind the increase in the importance of livestock as an income source. Another source of income is local brewing; *mbege* is a traditional

Table 5. Number of livestock owned in the two villages

	Mruwia (*N*=52)		Mshiri (*N*=51)	
	Mean	Standard deviation	Mean	Standard deviation
Cows	1.6	1.283	2.1	1.301
Sheep	0.4	1.256	0.14	0.566
Goats	1.1	1.733	2.0	1.923
Pigs	0.6	1.224	0.5	1.249
Chickens	2.3	3.203	8.7	15.883

Source: Survey data.

local brew of the Chagga that is produced and marketed primarily by women. It is brewed from a special type of banana (*ndizi kijivu*), finger millet, and water and is regarded as an additional source of household income that supplements the income from the main economic activities of farming and employment. Informal discussions in the study areas revealed that the income from local brewing (*mbege*) is usually controlled by women, used for domestic needs, and inaccessible to men. However, men control the income from coffee and livestock. Thus, the decrease in the income from coffee production has resulted in an intensification of other income-generating activities. The respondents had not yet completely diversified from coffee cultivation and continued this practice while also intensifying other activities, such as keeping livestock and selling of milk, bananas, and local brew.

III. Persistence of Coffee Cultivation

Although coffee prices had been fluctuating from the 1990s to 2001/02 (Fig. 1) the farmers interviewed had not completely abandoned coffee production. Only 4% of all respondents had not generated any income from coffee in the last two seasons, and even they retained their coffee trees. The rest of the respondents in the two villages (98% and 94% in Mruwia and Mshiri, respectively) continued with coffee production because it remained an important source of cash income, especially for elderly people who cannot easily access alternative income sources. Respondents also felt that they could not easily abandon the crop as they had inherited coffee plots from their parents through a customary tenure system (*the Kiamba system*). Thus, despite not benefiting from the present situation and having little coffee to sell, respondents in both villages continued producing coffee in anticipation that the price will increase.

Observations and informal interviews conducted during the study revealed a specific pattern whereby households either continued or abandoned coffee cultivation depending on their ability to support themselves via alternative income sources. Most individuals continuing to cultivate coffee are elderly people who remained in the villages while their children moved to towns/cities for work or women who were left behind to take care of farms and household properties. Those who have stopped cultivating coffee are: 1) young farmers who have small plots and do not harvest enough coffee to sell, 2) employees who have alternative sources of income and do not depend on coffee, and 3) old or disabled individuals who cannot take care of their coffee farms and cannot afford to hire labor. Farmers who want to benefit from the current price increases and have adequate labor at hand have reinvested in coffee production. Respondents (85% in average of both villages) are reviving their plots by replacing old coffee trees and often plant the new hybrid coffee, which is resistant to CBD and CLR. There are numerous reasons for returning to coffee as a cash crop, and data indicate that a very limited amount of agricultural land in either village is available for diversification. Respondents turned to bananas as a supplement to coffee when the income generated by coffee declined. Banana prices fluctuate widely depending on season and size but can reach around Tshs. 5,000–8,000 per bunch (*mkungu*). Thus, respondents have not completely diversified but have instead maintained their coffee plants in

Table 6. Farmers preference for coffee selling

Village	Selling to Cooperative Union (KNCU)	Selling to Independent Primary Society (G-32)	Selling to PCBs
	%	%	%
Mruwia	0	84.6	15.4
Mshiri	94.1	0	5.9

Source: Survey data.

anticipation that prices will increase again. At the same time, they have supplemented the income from coffee with income from other sources such as livestock farming and the cultivation and sale of bananas (Mhando & Mbeyale, 2010).

IV. Similarities between the Two Villages

Most respondents indicated that they did not sell their coffee to PCBs. In Mruwia, 84.6% of the respondents indicated that they were selling to the Mruwia Primary Society, whereas 94.1% of respondents in Mshiri indicated that they were selling to the KNCU through the Mshiri Primary Society (Table 6).

In both villages, institutional reasons as well as price differences were the main contributors to decisions to sell to a particular organization. Farmers believed that operating within the institutional framework of a cooperative union or primary society provided more security and benefits as well as better opportunities for managing and saving money throughout the year. Most respondents (84.6 % in Mruwia and 94.1% in Mshiri) indicated they did not sell coffee to PCBs, which did not support and assist them in coffee production. The situation related to prices is paradoxical in that PCBs initially pay more than the KNCU or the primary societies. However, the KNCU and primary societies pay later installments in cash, and these are determined according to the price fetched at auction. The auction price is based on the price in New York and the grade of the coffee samples received at the auction in Moshi. Even before the liberalization of the coffee market, cooperatives always paid farmers in two or three installments, depending on the auction price. Farmers preferred to be paid in installments rather than in a one-time payment, as is the practice of PCBs, for the following reasons:

1) The initial payment may be less than the price paid by the PCBs, but farmers prefer installments because they receive money throughout the year under this arrangement. Payment in installments provides farmers with a savings scheme and allows them to access money when they need it (e.g., for educating their children, renovating their homes, and holding weddings, funerals, festivals, etc.). Primary societies and cooperative unions act as banks on behalf of farmers in these rural areas who lack banking facilities and face difficulties in budgeting their income (see also Temu, 1999; Ponte, 2000a; Mhando, 2005; 2012)
2) At the end of the year, farmers often receive more in total than they would have received if the crop were sold upfront to a PCB (20–30% more per kilogram of parchment coffee).

V. Specific External Factors Affecting Coffee Production

Both villages have undergone fundamental changes in their land tenure system since colonial times. Previously, the Chagga kept much more livestock than they do today. Keeping livestock became increasingly difficult as more land was diverted to coffee and the density of the populations increased. Land became scarce and commercialized and thus, its value increased compared with that of cattle and bananas. Therefore, the Chagga concentrated on coffee production but then invested the money earned from coffee production in the education of their children, hoping that they would find jobs in the cities and send remittances (Moore, 1986). The current situation reflects this household strategy, with coffee no longer the main focus of the younger generation as they have subsequently migrated to urban centers to search for other sources of income. During the FGDs in both villages, informants stated that most of the farmers who still produce coffee were old people with limited alternatives. This is illustrated by Table 7, which shows that the average age of household heads was 60 years. Individuals in this age group depend on remittances from children to supplement their income from coffee production. Young people prefer to seek employment outside of the village despite both their social obligation to remain and support their parents when they grow older and the considerable incentives parents provide in the form of houses and coffee farms. Informal discussions in Mshiri revealed that young people preferred to act as porters for tourists climbing Mount Kilimanjaro in exchange for a payment of US$100 for 3 days rather than cultivate coffee and deal with the uncertainties related to price and income. Although relationships between children and their parents remain good and remittances are sent to parents, the FGDs revealed that old people could not rely on the help of their children. They tried to reduce their vulnerability by diversifying their income sources as much as possible by, for example, increasing milk production and the sale of bananas, which provide a daily income. Thus, if the elderly population can reduce their dependency on their children, it is likely to trigger local institutional changes in the inheritance system and coffee production.

It is argued that the extent to which old people remaining in the villages (some are retired workers) can depend on other income sources (such as remittances from family) affects their need to produce coffee during periods characterized by price fluctuations. In the past, these individuals did not totally abandon coffee as they

Table 7. Average Age of Household Heads

Name of village	*N*	Minimum age of HH heads	Maximum age of HH heads	Mean	Std. Deviation
Mruwia	52	33	85	60.7	14.0
Mshiri	51	32	98	60.2	13.7

Source: Survey data.

wanted to retain their land titles. They still often produce bananas and coffee in an intercropping system. Bananas and coffee are also buffer-zone crops and are likely to provide a secure income to supplement remittances. Therefore, differences in the villages should be reflected in the average total coffee production in each. Field observations revealed that farmers have not totally abandoned coffee but that, for some farmers, coffee cultivation has become a part-time job. Many respondents (84.6 % in Mruwia and 92.2% in Mshiri) retained their coffee trees in anticipation of the price of coffee increasing and then returning to coffee production. In this regard, they cited the example of what happened between 2001/02 and 2011/12. In 1999/2000, the price was only Tshs 350 per kg, but it increased to Tshs. 2,000 in 2007/08 and to Tshs. 5,000 in 2011/12. In addition to these changes, it was also noted that cattle prices have been increasing compared with coffee prices and that, as coffee prices have declined, some farmers have begun to engage in intensive livestock breeding. The same trend was noted by Ikegami (2011). As prices for specific animal products (milk, eggs, and even manure) have increased relative to that of coffee and as these are able to provide a daily income, many farmers have developed strategies to capitalize on these changes. This also explains why more larger animals are kept in Mshiri than in Mruwia. In Mruwia, coffee is still considered an important cash source, whereas in Mshiri, which is close to the gate of Mount Kilimanjaro National Park, there is less dependency on coffee, and its production has become a part-time activity as other economic options have been pursued. One institutional change is also relevant in this regard. The formalization of property rights eliminated the previous requirement to own a coffee farm to secure land rights. In the past, farmers sometimes retained coffee plants despite their poor economic return because they secured land tenure. Thus, new land-ownership rights have led to more individual freedom to pursue economic strategies based on decisions related to income.

VI. Different Village Strategies

Respondents in both villages sell their coffee via primary societies, which then deliver it to either KNCU or G-32. During the FGDs, some respondents could not cite changes in the coffee market because they had always sold their coffee to primary societies. The data also showed that the village leaders made the decision about whether to sell to the KNCU or G-32. Discussions with officials of the Department of Cooperative Development in Moshi District revealed that despite their withdrawal from the KNCU, independent primary societies (e.g., G-32) remain *bona fide* members of the KNCU although they do not sell coffee or perform any business with the main cooperative union. Thus, the primary difference between the two villages related to coffee marketing.

As noted above, the basic difference between the two villages relates to coffee marketing strategies. Respondents from Mshiri sold their coffee via the KNCU, and those from Mruwia sold their coffee via the G-32. There are a number of reasons for these differences in the organization of trade, including differences in each village's dependence on coffee as well as in the importance of local leaders and social networks. The KNCU has always been more than just another cooperative union and has attracted powerful individuals, government representatives, and traders (see Moore & Puritt, 1977; Moore, 1986; 1991). Power struggles within and outside the KNCU, along with accusations of corruption and the misuse of power, have been common. Since the 1990s, serious issues regarding the misuse of funds have been raised. During FGDs, respondents noted that since 1994 and, increasingly, in 1995 and 1996, there were debates at major meetings regarding the possible misuse of KNCU funds. Some debts had accrued through advances by the KCB for crop purchases. The Union tried to recover these by deducting a small amount from payments to farmers for coffee. More serious accusations of corruption were raised in 2000 when a sum of US$700,000 that was to be used as initial capital went missing, and many questions remained unanswered at annual meetings. Independent primary societies left the KNCU because of inefficiency in the union services, especially crop financing advancements that were not made on time, large deductions due to the high cost of running the union, and lack of transparency regarding the management of the union and some of its societies (e.g., Lyamungo Primary Society). Most banks have refused to offer loans to KNCU and, instead, have encouraged primary societies to take out loans and sell coffee independently. Fortunately, these concerns arose at the time when the TCB changed some of its regulations and began allowing farmers' groups and primary societies to sell coffee directly at auction without going through the unions (Mhando, 2012). This was a turning point that motivated some of the primary societies to break away from the KNCU. Despite detaching from the union, the primary societies that form G-32 have never ceased to be members of the KNCU. They remain official members and participate in the annual general meetings but lack voting power. A primary society gains voting power only by selling coffee via the KNCU.

One established marketing manager left the KNCU to create an organization focused on coffee marketing and started a campaign to induce primary societies to leave the KNCU and sell coffee directly at auction. The KNCU was accused not only of corruption but also of charging too much for services such as transport, thus reducing the amount paid to farmers. Supported by the former KNCU marketing manager, the first primary societies left the union in 2002, which also became possible due to new legislation allowing farmers the freedom to sell coffee to whomever they wanted. Thus, farmers realized that if they could sell coffee via primary societies and gain more, there was no reason to remain attached to the cooperative unions, which were bureaucratic, unreliable, and corrupt. Cooperative unions were supposed to support farmers during coffee production and marketing, but their inability to loan agricultural inputs made farmers question why they should sell their coffee to the unions when they could gain more through farmers' groups and independent primary societies. The former KNCU manager became a coffee agent and acted as the link among the independent primary societies, curing plants, and the auction. As noted earlier, the KCB no longer wanted to deal with the KNCU, which was highly indebted. Thus, because the law allowed primary societies to collect coffee from farmers and market it directly at auction, the KCB opted to support them. In 2008, 32 primary societies, almost 30% of all the primary societies that had been attached to the KNCU before 2000, left the KNCU. The Mruwia Primary Society joined the breakaway group of 32 in 2005, whereas the Mshiri Primary Society remains with the KNCU. The KNCU itself has also tried to adapt to the new situation in the coffee market, including by responding to the demand for organic and fair-trade products. The union launched an initiative to motivate farmers to stop using agro-chemicals and to produce organic coffee. This was easily accepted by farmers who could no longer afford to purchase agricultural inputs, who had also been discouraged from using such inputs due to their unreliability. However, farmers were not aware of the opportunities offered by the organic market or that the KNCU had established links with the UK fair-trade coffee network, *Cafédirect*.

VII. Reasons for Choosing Different Marketing Channels

Why did the Mshiri Primary Society decide to sell coffee through the KNCU while the Mruwia Primary Society opted for direct marketing? One of the obvious reasons was that the new independent primary societies were able to pay more to their members than farmers received by remaining within the KNCU. Whereas the KNCU (Mshiri Primary Society) would pay farmers Tshs. 1,400.00 per kg for AA parchment coffee, the independent Mruwia Primary Society could pay Tshs. 1,800.00 (Table 8).

The payment mechanisms adopted by the Mruwia Primary Society may also have been a contributing factor. Farmers bringing coffee to the Mruwia Primary Society received a receipt, and the amount bought was controlled and recorded in an additional record book. At Mruwia Primary Society, farmers were paid the initial payment the same day they delivered the coffee, and other installments followed within 2–3 months.

In Mshiri, the KNCU paid only three installments, which were often lower (total Tshs. 1,400) than those paid by the Mruwia Primary Society. Although some farmers in Mshiri may work hard and produce high-quality coffee that attracts higher prices, payment through the KNCU was made equally to all farmers in 62 primary societies, regardless of the quality of the coffee and the time at which the farmers delivered their coffee.

Thus, farmers who sold through the Mruwia Primary Society were in a better position because they were paid according the quality of their product and the timeliness of its delivery. One of the main reasons that the Mruwia Primary Society left the KNCU was the continual reduction in the price the farmers

Table 8. Payment installments for coffee in Mruwia 2006/07

Instalments	Amount paid in Tshs.	When paid
1	1,000.00	Immediately (July)
2	300.00	September
3	200.00	December
4	200.00	April
5	100.00	June
	Total: 1,800.00	

Source: Mruwia Primary Society, June 2007.

received. Other reasons included the perception of paying too much for services and overhead costs, such as transport and the various administration fees and taxes that the KNCU imposed. Independent primary societies have organized their own transportation, including a local lorry, which has resulted in a saving of Tshs 150,000 on the price the KNCU was charging. Additionally, farmers believed that the general costs of operating the KNCU (including the different taxes, salaries, insurance fees, etc.) were often deducted in a non-transparent way, leading them to believe that they have been paying more than they should. Thus, by organizing their own independent production and marketing organization, Mruwia has managed to reduce some of the "operating costs" mentioned above, which they had to pay direcly when using the KNCU, and has thereby increased the income from each kilogram of coffee produced. According to farmers using the independent Mruwia Primary Society, the KNCU previously offered the advantage of providing chemicals and training, but this was lost in the course of market liberalization. Thus, the KNCU was seen as having higher operational costs than independent organizations. Price differences and the institutional aspects (the transparency of new institutions) are incentives for farmers to leave the KNCU.

However, although these same arguments could also convince farmers from Mshiri to leave the KNCU and join an independent primary society, this has not happened. Indeed, the two villages differed regarding the importance of coffee and benefits other than from the higher price per kilogram. During the FGDs, respondents indicated that the KNCU is an established organization, a status that garnered respect from most of the Chagga. Much of the development experienced by the Chagga can be attributed to coffee cultivation, which was initiated by the KNCU. Even before independence, the KNCU offered scholarships and built secondary schools (e.g., Lyamungo in Moshi) (Maghimbi, 2002). In 2012, the KNCU offered 500 scholarships so that orphans from various villages could receive a secondary education (KNCU, 2012). Additionally, the KNCU has built a cooperative college, which offers education for cooperative officers and members (Maghimbi, 2002). The cooperative college has subsequently been upgraded to Moshi University College of Cooperative and Business Studies (MUCCOBs). Coffee production and marketing is very dynamic as demands change over time. The KNCU offers training in business skills as well as capacity building training to help the leaders of primary societies engage productively in the coffee business. The KNCU also offers extension services to its members, including those related to agronomical practices, certification for fair-trade and organic coffee, as well as quality improvement, by providing washing stations for coffee processing. Although a national health insurance scheme was initiated in Tanzania several years ago, most villagers have limited access to it. Having realized the importance of retaining productive members, the KNCU initiated its own health insurance scheme in 2011 to cater to its members. The KNCU and its members (farmers' households) each contribute Tshs. 10,000 annually, and a donor organization contributes an additional Tshs. 20,000 (KNCU, 2012).

Thus, the Chagga have historically enjoyed a positive relationship with the KNCU, which is the only cooperative union in Tanzania that has not been nationalized. With its properties, including a hotel, shopping mall with offices and shops spaces for rent, several other buildings, and four coffee estates, located at the center of Moshi, the KNCU has continued to elicit a sense of pride from the Chagga with respect to both its political and social operation. The farmers believe that the KNCU was a stable and helpful organization that they cannot easily abandon.

CONCLUSIONS

Farmers in Mruwia are more dependent on coffee than are those in Mshiri. Claims of corruption and mismanagement of funds by the KNCU leadership are the main reasons that farmers from Mruwia left the KNCU and formed an alternative organization focused on coffee production and marketing. Although the additional income from selling coffee outside the KNCU is not substantial, it can be decisive for farmers dependent on coffee income.

However, if dependence on coffee income is weak, the additional costs of setting up an independent marketing organization become too high. The cost of the independence deriving from the establishment of new organizational and institutional arrangements may be higher than the gains for those in Mshiri. Such behavior has been recognized by the new institutionalist school (see North, 1990; Ensminger, 1992; Acheson, 2002). Individuals must see a need for change and try to anticipate the gains accruing from change to engage in efforts to effect such change. As Ensminger indicated, external and internal factors shape the changes leading to alterations in relative prices. At the local level, it is important to discuss how institutional change and organizations are linked to bargaining power and ideology. External forces have again increased the value of coffee compared with what it had been in the previous 5–10 years. Although prices have increased since 2002/03, it is not certain if they will increase further or stabilize at this higher level, as price fluctuations have been the norm in the past. Direct economic changes (coffee prices) as well as a stronger dependence on coffee have rendered some individuals more vulnerable to changes in the trade network. This is one of the reasons that Mruwia left the union: the higher prices paid by the primary society mattered to the farmers who depended more on coffee.

However, the higher prices were not the only reason for this move, as the leaders of the Mruwia Primary Society were also dissatisfied with the KNCU. They saw the potential of coffee and used their power and influence to motivate farmers to establish their own independent societies. From an ideological perspective, they claimed that the KNCU was corrupt and took too large a share of the coffee income. Some leaders detached their primary societies from the KNCU and organized another marketing organization. These powerful dissidents were at the heart of the new structure and have been able to persuade farmers to set up organizations that are independent of the KNCU. These new leaders also have connections to the individuals who originally initiated the change and have attempted to profit from this (by personal networking).

Farmers have accepted this new form of organization because they have realized that they gain from the new institutional setting. The new institutional setting, characterized by independent primary societies, was also attractive because benefits were passed on to farmers not only in the form of better payments but also in the form of investment in the social and economic infrastructure. For example, Mruwia invested in establishing a Savings and Credit Cooperative Society (SACCOS) and a bakery. Furthermore, no major obligations are attached to the independent societies.

However, there is currently no mechanism for preventing non-members from benefiting from these services. Indeed, everybody can profit from the better prices the primary society offers, but individuals take on no obligations in return. It was determined that the selection of the trade network by the Chagga villages studied was based on the benefits accrued (higher prices per kilogram as well as other fringe benefits). The coffee prices, extension and social services, political influence, and historical reputation of an organization contributed to decisions about whether to adhere to the older trading system or develop a new one.

The KNCU is an an important symbol among the Chagga that they cannot easily abandon. This explains why more than 66% of the primary societies that established the KNCU still sell their coffee through it. Furthermore, other non-economic benefits, such as social capital (e.g., SACCOS) and the provision of health insurance, are important to members of the KNCU. Thus, decisions about how and with whom to trade were based not only on prices but also on the institutional setting, the additional benefits offered, and the structure of each local community. Leaders of primary societies cannot decide where to sell their coffee without the consent of their members, who are coffee farmers. Thus, despite the challenges associated with coffee production and marketing, respondents have neither stopped cultivating this crop nor expanded its production; rather, they have expanded the basis of their livelihood to include other income sources available in their areas while maintaining their coffee trees in the anticipation that one day the price of this commodity will increase.

ACKNOWLEDGMENTS This study was carried out within the framework of the Transversal Package Project (TPP) "Coffee Value Chains—The Political Economy of Coffee: Global Markets, Local Production: Options for Sustainable Development," led by Dr. Eva Ludi (Overseas Development Institute, London, UK), as part of the NCCR North-South programme. The authors are grateful for and acknowledge the financial support provided by the National Centre of Competence in Research (NCCR) North-South, Research Partnerships for Mitigating Syndromes of Global Change, co-funded by the Swiss National Science Foundation (SNSF) and the Swiss Agency for Development and Cooperation (SDC).

The first author of this article is great indebted to The Government of Japan through Japanese Society for Promotion of Science (JSPS) for offering him a Post Doctorate Research Fellowship which enabled him to complete this paper. Gratitude to his employer, Sokoine University of Agriculture, Morogoro, Tanzania for granting him a sabbatical leave to pursue a Post Doctoral Fellowship at the Graduate School of Asian and African Area Studies, Kyoto University, Japan.

NOTES

(1) This refers to the payments done in instalments. Input markets were opened to private traders, allowing PCBs to buy coffee and to establish their own processing plants, in 1995.

REFERENCES

Acheson, J. 2002. Transaction cost economics: Accomplishments, problems and possibilities. In (J. Ensminger, ed.) *Theory in Economic Anthropology*, pp. 27–58. Alta Mira Press, Walcut Creek, CA.

Ashley, C. & S. Maxwell, eds. 2001. *Special Issue: Rethinking Rural Development. Development Policy Review*, 19(4): 395–425.

Baffes, J. 2003. *Tanzanian's Coffee Sector Constraints and Challenges at Global Environment*. World Bank African region working paper series 56. World Bank, Washington, D.C.

——— 2005. The cotton problem. *World Bank Research Observer*, 20(1): 109–144.

Banturaki, J. 2000. *Cooperatives and Poverty Alleviation*. TEMA Publishers, Dar Es Salaam.

BOT, 2012. *Quarterly Economic Bulletin*. Online. http://www.bot-tz.org/publications/Quarterly Economic Bulletins/QEB_Dec_2011.pdf (Accessed May 25, 2012).

Coles, C. 2011. *Kilimanjaro and Orama Coffee Value Chain Case Studies: Producer Benefits from Fair Trade and Free Markets Channels*. NCCR North-South Dialogue No. 34.

Cooksey, B. 2003. Marketing reforms? The rise and fall of agricultural liberalisation in Tanzania. *Development Policy Review*, 21(91): 67–91.

——— 2011. Marketing Reform? The rise and fall of agricultural liberalisation in Tanzania. *Development Policy Review*, 29 (suppl.1): 57–81.

Daviron, B. & S. Ponte 2005. *The Coffee Paradox: Global Markets, Commodity Trade and Elusive Promise of Development*. Zed Books, London.

Ensminger, J. 1992. *Making a Market: The Institutional Transformation of an African Society*. Cambridge University press, New York.

ICO, 2013. *Coffee Prices-Historical Data*. Online. http://www.ico.org/historical (Accessed January 10, 2013).

Ikegami, K. 2011. New actors in the livestock sectors in Kilimanjaro region. *African Study Monographs, Supplementary Issue*, No. 42: 79–100.

KNCU, 2012. *Annual Report*. Moshi, Tanzania.

Maghimbi, S. 2002.Abolition of peasants cooperatives and crisis in rural economy in Tanzania. In (G. Fostser & S. Maghimbi, eds.) *Tanzania Peasantry Economy in Crisis*. pp. 81–100. Grower Publishing Company Limited, Avebury, England.

——— 2007. Recent changes in crop patterns in the Kilimanjaro region of Tanzania. The Decline of coffee and the rise of maize and rice. *African Study Monographs, Supplementary Issue*, No. 35: 73–83.

Mhando, D.G. 2005. *Farmers Coping Strategies with the Changes of Coffee Marketing Systems after Economic Liberalisation: The Case of Mbinga District, Tanzania*. PhD thesis, Kyoto University, Japan.

——— 2012. *Coffee Trap: An Assessment of Potential Poverty Risk for Coffee Farmers in Mbinga District, Tanzania*. LAP LAMBERT Academic Publishing GmbH & Co., KG. Saarbrucken, Germany.

Mhando, D.G. & J. Itani 2007. Farmers' coping strategies to a change in coffee market after economic liberalisation: The case of Mbinga district, Tanzania. *African Study Monographs, Supplementary Issue*, No. 36: 39–58.

——— 2008. Post economic liberalisation coping strategies after introduction of one licensing system in Tanzania: A case of the Matengo coffee growers in Mbinga district. *Journal of Population Studies and Development*, 14(1&2): 41–58.

Mhando, D.G. & G. Mbeyale 2010. *An Analysis of the Coffee Value Chain in the Kilimanjaro Region, Tanzania*. NCCR North-South Dialogue, No. 27.

Mmari, D. 2012. *Institutional Innovations and Competitiveness of Smallholders in Tanzania*. PhD thesis, ISS, the Netherlands.

Moore, S.F. 1986. *Social Facts and Fabrications: Customary Law on Kilimanjaro, 1880–1980*. Cambridge University press, Cambridge.

——— 1991. From giving and lending to selling property transactions reflecting historical changes on Kilimanjaro. In (K. Mann & R. Roberts, eds.) *Law in Colonial Africa*, pp. 108–127. Heinemann Educational Books, Portsmouth.

Moore, S.F & P. Puritt 1977. *The Chagga and Meru of Tanzania*. International African Institute, London.

North, D. 1990. *Institutions, Institutional Change, and Economic Performance*. Cambridge University Press, Cambridge.

Ponte, S. 1998. Fast crops, fast cash: Market liberalization and rural livelihoods in Songea and Morogoro districts, Tanzania. *Canadian Journal of African Studies*, 32(2): 316–348.

——— 2002a. *Farmers and Markets in Tanzania.* Mkuki na Nyota Publishers, Dar Es Salaam.

——— 2002b. The 'Latte Revolution'? Regulation, markets and consumption in the global coffee chain. *World Development*, 30(7): 1099–1122.

Promar Consulting 2011. *High Value Agriculture Study: The African Coffee Industry and Japan Trade and Aid –Supporting the Tanzanian and Ethiopian Coffee Industries and Their Export Promotion*. Promar Consulting, Tokyo.

SW.Wikipedia. *Map of Tanzania Indicating the Location of the Kilimanjaro Region*. Online. http://sw.wikipedia.org (Accessed January 12, 2013).

TCB 2012. *Miaka 50 ya Uhuru wa Tanzania na Mapinduzi ya Kilimo cha Kahawa, Moshi, Tanzania*.

Temu, A.A. 1999. *Empirical Evidence of Change in the Coffee Market after Liberalisation. A Case of Northern Tanzania*. PhD thesis, Urbana University.

Temu, A.A., A. Winter-Nelson & P. Garcia 2001. Market liberalisation, vertical integration and price behaviour in Tanzania's coffee auction. *Development Policy Review*, 19(2): 205–222.

URT 2002. *Coffee Industry Act*. Government Printer, Dar Es Salaam.

——— 2012. *Macro Economic Policy Framework for Five Year Development Plan/Budget 2012/13–2015/16*. Ministry of Finance, Government Printer, Dar Es Salaam.

Winter–Nelson, A. & A. Temu. 2002. Institutional adjustment and transaction costs: Product and inputs markets in the Tanzanian coffee system. *World Development*, 30(4): 561–574.

——— Accepted *February 18, 2013*

Corresponding Author's Name and Address: David Gongwe MHANDO, *Sokoine University of Agriculture, Morogoro, TANZANIA*

E-mail: david_mhando [at] yahoo.com