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Alternative trade initiatives and income predictability: Theory and evidence from the coffee sector

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July 2007

Published by the International Institute for Sustainable Development

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Tackling Commodity Price Volatility

This paper is published as part of a larger project, sponsored by the Norwegian Government, on policy options to tackle the problem of commodity price volatility. More research and papers can be found at http://www.iisd.org/markets/policy/price.asp.

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1. Introduction

Commodities have long been recognized as one of the most accessible sources of income for the rural poor across the developing world and, as such, a fundamental stepping stone to long term economic growth and development. Systemic price volatility and declining terms of trade in international commodity markets over the course of the last 100 years, however, have left the economic benefits promised by commodity production far out of reach for many, if not most, rural developing country commodity producers.

In recognition of the many challenges facing commodity-dependent producers due to mismatches between supply and demand, a wide variety of mechanisms at both the national and international levels have been implemented as a means of improving the terms of trade and overall predictability of commodity markets. At the international level, such mechanisms have taken the form of buffer stocks, quotas and compensatory finance schemes which were typically negotiated through International Commodity Agreements (ICAs) following the adoption of Chapter VI of the Havana Charter.[1] At the national level, efforts have focussed on the use of buffer stocks, buffer funds, marketing boards and variable tariff schemes as either a complement to, or in lieu of, international initiatives.[2]

While the history of such initiatives suggests that they have not been entirely unsuccessful at reaching their objectives of price retention and stabilization,[3] they have nevertheless been subject to a plethora of political and practical challenges. The high financial costs associated with maintaining buffer stocks and the technical complexity associated with enforcing quotas and free riding by non-member countries across the schemes all contributed to a steady decline in the ability and willingness of countries to maintain market management systems at the global level throughout the 1980s. For those systems which do still exist, particularly at the national level, deepening trade liberalization and structural adjustment policies represent a persistent threat to their continued operation, leaving their survival over the longer term largely in question.

From a sustainable development perspective, the supply-management approaches embodied by the ICAs have fallen short on at least two counts. First, the focus of ICAs on the management of the macro-economic attributes of the market without the appropriate incentives or structures for managing the *micro-economic decisions of individual actors* left such agreements persistently vulnerable to management inefficiency and ineffectiveness. Second, the more or less exclusive preoccupation of supply-management schemes with the objectives of price maintenance and price stabilization left them ill-

[1] Although agreements between producer countries alone date back to the beginning of the century, the negotiation of the Havana Charter in 1945 provided the first international recognition of the legitimacy of International Commodity Agreements as tools for economic development and paved the way for the first joint producer-consumer country agreements. Although the Havana Charter itself was never adopted, the legitimacy of ICAs was reiterated in ECOSOC Resolution 30 (IV) of March 1947, which called upon governments to accept the Chapter VI provisions concerning ICAs as guidelines for future agreements.
[2] Examples of national buffer stock systems were found in Bangladesh, India, Indonesia, Mexico, Philippines and South Korea; national buffer funds in Cote d'Ivoire, Papua New Guinea and South Korea; national marketing boards in most of Africa, Ecuador; India and Malaysia; and national variable tariff schemes in Chile, Malaysia and Venezuela.
[3] See Stefano Ponte "The 'Latte Revolution?' Regulation, Markets and Consumption in the Global Coffee Chain," *World Development.* Vol. 30(7):1099–1122.

equipped to deal with the larger social, economic and environmental risks which provide the foundation for producer income and sustainable livelihoods more generally.[4]

Perhaps not surprisingly, as international supply management arrangements have increasingly fallen out of favour, growing attention has been given to alternative approaches aimed at helping producers manage *risk* rather than markets themselves. Producer-targeted hedging facilities and tied financing provide two increasingly popular approaches for enabling producers to stabilize revenue in the context of volatile markets.[5] A third example, which forms the subject of this paper, is the use of "private voluntary sustainability standards" denoted by labelling and certification initiatives such as Fair Trade, Organic and Rainforest Alliance.[6]

Private voluntary sustainability standards such as those listed above are defined by their specification, monitoring and enforcement of "sustainable" production and trading practices along international supply chains and typically are linked to some form of identification (logo, label or certificate) in the market. The potential for using such initiatives to manage price volatility is evidenced by the stipulation of minimum price levels within the Fair Trade system *as part of the criteria* upon which compliance with the standard is determined. However, even cases where no explicit "management" of prices is undertaken by a system's standards, prices, revenues and markets more generally are not indifferent to the presence and implementation of such initiatives. An obvious question from a price stabilization perspective is "what," exactly, are the expected and actual impacts on price stability for producers involved in such systems. To date, there is little theoretical or empirical analysis to shed light on what the price impacts of such initiatives might be.

Moreover, from a sustainable development or sustainable livelihoods perspective, supply chain instruments have the potential to impact producer well-being far beyond impacts on prices *per se*. Supply chain instruments, through the diverse social, economic and environmental criteria they specify, have the potential to reduce risk across a whole range of farmer activities, thereby setting a foundation for improved stability not just in price or revenue, but in income itself. Ultimately, it is this under-stated, and under-rated, feature of private voluntary sustainability standards, namely their potential impacts on *income stability*, which arguably offers the greatest promise in promoting stability in farmer livelihoods and opportunities for sustainable development.

Below, following a brief review of the main elements of key private voluntary sustainability standards presently operating in the coffee sector, we consider the theoretical links between such instruments and the various aspects of income stabilization (including price) in the coffee sector. This is followed by a cursory review of

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[4] It is worth noting that "the conservation of natural resources" was cited as a legitimate basis for convening ICA's under Chapter VI of the Havana Charter. Until recently however, most ICA's had little to nothing in the way of substantive commitments for the preservation of the environment. The 2006 International Tropical Timber Agreement offers a leading edge example of an agreement which goes beyond the mere economic vision of commodity management, (see http://untreaty.un.org/English/notpubl/XIX_46_english.pdf).

[5] The World Bank's Commodity Risk Management Group has played a leading role in the piloting and expansion of producer access to private risk-management instruments, (see http://www.itf-commrisk.org).

[6] The actual list of applicable private voluntary sustainability standards operational within the coffee sector is much longer than the three initiatives listed here. While the growth of international multi-stakeholder-led initiatives in the coffee sector may have reached its apex, there is currently a rapid expansion of company-specific and national private-standards systems.

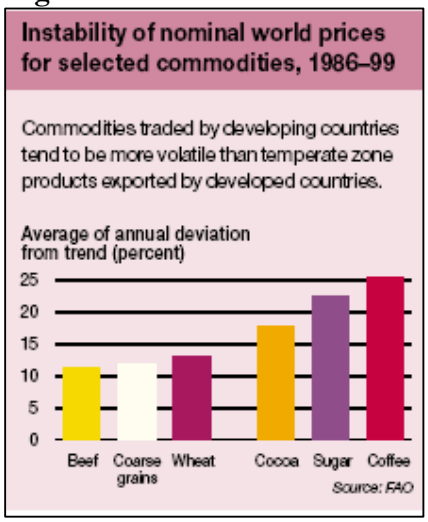
empirical evidence related to the application of such initiatives. We begin first, however, with a brief overview of the general history of, and responses to, price volatility in the coffee sector.

2. Addressing volatility in the coffee sector

Coffee is the second most important commodity in terms of volume and value traded in international markets.[7] Global Annual production which is undertaken in more than 70 countries around the world, varies between 110 million and 130 million bags per annum. OXFAM estimates that approximately 25 million people around the world depend directly on coffee for their livelihoods and that 70 per cent of producers are small-scale (<5 hectares).[8]

International coffee prices are also among the most volatile of all commodities, with an average of more than 20 per cent deviation from the market trend at any given time **(see Figure 1)**.[9] The first notable example of international cooperation aimed at market stabilization in the coffee sector came through the implementation of the 1940 Inter-American Coffee Agreement (IACA), a commodity agreement between Latin American coffee producing nations. The IACA succeeded in doubling coffee prices within a year, a result which quickly stimulated the interest of consuming countries in securing "fair" prices for consumers and the eventual negotiation of the first producer/consumer International Coffee Agreement in 1962.[10] The principal objective of the first ICA, and all ensuing versions of the agreement, was generating "fair and remunerative" prices.

Figure 1

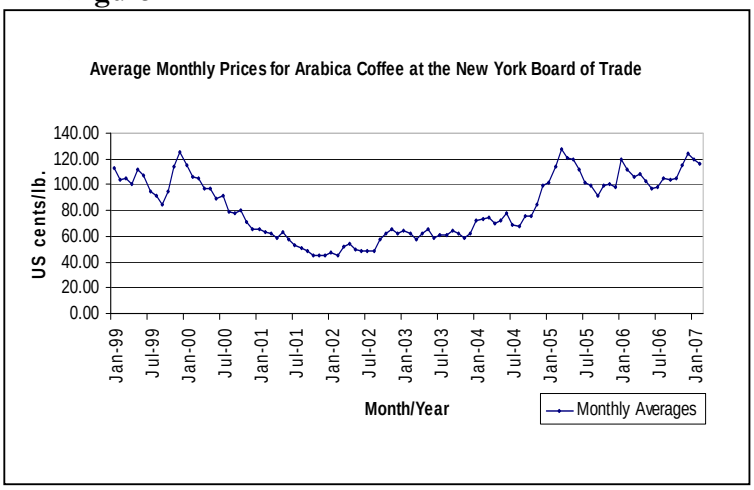


Under the initial ICA, (and subsequent agreements until 1989), a target price (or a price band) for coffee was set, and export quotas were allocated to each producer. When the indicator price calculated by the International Coffee Organization (ICO) rose over the set price, quotas were relaxed; when it fell below the set price, quotas were tightened. When an extremely high rise in coffee prices took place (as in 1975–77), quotas were abandoned until prices fell down within the recommended band. Following a period of high production in the mid-1980s, the ICO faced growing pressures to relax the quota system due to bulging stocks around the world. By 1989, these economic pressures, combined with growing political pressures, led to the removal of all economic clauses (e.g., quotas) within the agreement. The failure of the 1989 agreement led to a massive glut on the market as countries from around the world released their stockpiled coffee. Since this period the ICA, reflecting a more generalized trend across other commodity agreements, has refrained from specifying quotas or buffer stocks, relying instead on

[7] Actual ranking of coffee among other commodities in terms of value is subject to change depending on current price levels.
[8] OXFAM GB, 2001, *The Coffee Market: A Background Study*.
[9] Source, FAO, 2004, "The State of Agricultural Commodity Markets 2004," available at: http://www.fao.org/docrep/007/y5419e/y5419e04.htm.
[10] See Raffaelli, Marcelo, 1995, *Rise and Demise of Commodity Agreements*. Cambridge: Woodhead Publishing.

information exchange and strategic policy development as the principal basis of international cooperation.[11]

Figure 2



Since the removal of the economic clauses, international coffee prices have exhibited increased volatility, **(see Figure 2)**. While this is in part due to the elimination of economic clauses within the ICO, changing speculative and climatic forces have also contributed to increased price volatility within the sector. While cycles of boom and bust continue to pervade the coffee market, the past 25 years have been witness to the massive growth of the specialty coffee sector. With growth rates of approximately 20 per cent per annum over the past decade, the specialty sector is quickly moving from a niche market to the mainstream. The growth of the specialty sector holds the potential to radically change how the coffee sector does business, how stakeholders interact and how the market performs. In addition to the widely observed opportunities for upgrading provided by the specialty sector, the highly differentiated character of the market has the potential to operate as a significant damper on price volatility. Although purchases of specialty coffees are often referenced to world market prices established on futures markets, there is a growing trend to establish fixed price levels at outright prices based on unique product characteristics. When outright price contracts are combined with long term contracts, the contractual relationship can play a significant role in stabilizing prices, notwithstanding actual market trends. Perhaps even more important is the growing trend towards direct trading relationships that has accompanied the development of the specialty sector.[12] More direct relationships and competition based on refined quality characteristics is leading to a de-commodification of the sector which promises to reduce volatility over the longer term.

Private voluntary sustainability standards have, to date, formed a subset of the specialty sector by integrating non-physical quality attributes to the basket of "quality characteristics" defining products on the market. Standards-based initiatives have been present in the coffee sector since the late 1980s. Although initiatives such as Fair Trade, Organic and Rainforest Alliance secured only minimal market shares in their initial years, growth in markets for "sustainable" coffees such as these has increased even faster than the specialty coffee sector itself, with common annual growth rates of 30 to 50 per cent. At present, it is estimated that approximately 2 per cent of global coffee sales are currently labelled or certified as complying with one or another standards-based

[11] Symbolic of this trend was the US`s recent insistence on abandoning price control measures from the range of activities to be explored by the International Coffee Organization as a condition of the US`s rejoining of the ICO in 2005.

[12] Cooperative Coffees is a coalition of coffee roasters serving the specialty sector who have banded together to help develop direct trading relationships with producers. See www.coopcoffees.com.

sustainability initiative.[13] To date, the growth of such initiatives has relied heavily on their ability to piggy-back on specialty markets, however there is a growing trend to integrate such systems within conventional markets as well.[14] As we shall see below, how these initiatives build on the new markets will determine the eventual opportunities available to producers through private voluntary sustainability standards. Below we examine the basic features of key initiatives in the sector.

[13] Total certified coffee sales registered through FLO, RA, Utz Kapeh and IFOAM are estimated to be slightly over 2.5 million bags per annum. Daniele Giovannucci, personal communication, March 2007.
[14] The 4Cs, Utz Kapeh and Rainforest Alliance are each explicitly targeting conventional markets.

3. Overview of common private voluntary sustainability standards

Since the 1980s, and partly in response to the difficulties associated with market management approaches, there has been a rapid growth in the development and implementation of standards-based coffee marketing initiatives. Although each different initiative revolves around its own unique set of "sustainability criteria," virtually all initiatives currently in operation overtly claim to promote "sustainable development" within the coffee sector based on improving the social, economic and environmental conditions of coffee workers, producers and communities. As a critical component of sustainable livelihoods, income stability should, presumably, provide an important indicator regarding the effectiveness of such initiatives to provide for sustainable development more generally. As the presence of such initiatives increases, so too does the importance of assessing their potential impacts upon key SD indicators such as income stability. Below we consider the specific criteria associated with some of the more popular initiatives as a basis for further analysis of the potential income impacts of such initiatives.

3.1 Fair Trade

Among the various initiatives available to coffee producers, the Fair Trade system provides the most obvious link between income stability and supply chain instruments by including explicit price-related conditions directly within its set of criteria for compliance. Fair Trade, as a criteria-based supply chain instrument, owes its beginnings to a number of relief-oriented, trade-based development projects implemented by SELFHELP and OXFAM during the 1940s and 1950s. In the 1960s these initiatives gave rise to the Alternative Trade Movement, which specifically aimed at providing producers with increased returns from trade by offering them direct and equitable trading relationships with Northern retailers. Although the ATO movement had some successes, it was challenged by an inability to enter more conventional markets.

In an effort to extend the benefits of alternative trade to a larger group of producers, the first Fair Trade certification system was established under the name Max Havelaar in 1988 in Holland.[15] Within three years, Max Havelaar had secured a 2 per cent market share and numerous other Fair Trade certification systems had been established across Europe. Coffee served as the flagship product for all of the national certification initiatives. In 1997, 17 national Fair Trade certification initiatives came together to form "Fair Trade Labelling Organizations International" (FLO) in order to establish harmonized standards, monitoring and enforcement. Since its initial establishment, FLO has spun off an independent certification unit to prevent conflicts of interest in the accreditation and certification process. Under FLO's administration, certification has expanded from coffee to include a variety of other commodities including fresh fruit, cocoa and chocolate, coffee, cotton products, sugar and confectionery, tea, fruit juice, yogurt, herbs and spices, honey, nuts, snacks, preserves and spreads, rice and quinoa, flowers and cosmetics, sports balls, and wine and beer**.** [16]

The basic elements of the Fair Trade standards for coffee include:

[15] It is no coincidence that the establishment of Max Havelaar coincided with the failure of the 1988 International Coffee Agreement and corresponding fall in coffee prices.
[16] The range of Fair Trade products is in continual expansion.

- roasters must pay a volume-based licensee fee;
- buyers must pay US$1.26 per lb for washed Arabica (US$1.11 per lb for Robusta);
- buyers must pay a social premium of $.05 per lb when market prices are over the minimum;
- buyers must provide pre-financing at affordable rates for up to 60 per cent of the purchase (if requested by producers);
- producer cooperatives must invest a portion of the Fair Trade premium in community development projects;
- producers must be smallholder members of a democratically-operated cooperative;
- producers must make commitments to the conservation of environmental integrity; and
- producers must comply with basic International Labour Organization (ILO) conventions.[17]

Although Fair Trade coffee has reached saturation in some European markets with a share of 2 to 3 per cent,[18] the global market share for Fair Trade coffee continues to grow at 25–30 per cent per annum.[19] In 2006, Fair Trade coffee sales totalled approximately 1 million bags. At present, the North American market accounts for approximately half of all global Fair Trade coffee sales, and with 45 per cent per annum growth (2005–2006), it is largely responsible for the growth of Fair Trade coffee sales globally.[20]

3.2 Organic coffee

Although Organic certification is principally identified with requirements to abstain from the use of synthetic chemicals, its origins come from an interest in improving soil quality and health through holistic soil care, which predates the use of synthetic chemicals. With the development of synthetic inputs, Organic agriculture grew into a system prohibiting the use of such inputs as a means of ensuring soil health. More recently, Organic has been perceived and promoted as both an "environmental" and a "health" labelling system. As a reflection of the growing expectations upon Organic claims, standards around the world have also expanded beyond their original soil fertility focus.

While Organic standards are still developed and managed on a national (and sometimes sub-national) basis, the International Federation of Organic Agriculture Movements (IFOAM) has been leading the path towards convergence at the international level since

[17] The FLO coffee standard requires that producer organizations and member farmers comply with ILO conventions 29, 105, 111, 138, 182 (Forced Labour and Child Labour), 87, 98 (Freedom of Association and Collective Bargaining), 100, 110 (Conditions of Employment) and 155 (Health and Safety).
[18] Market shares for Fair Trade coffee in Germany and Denmark have levelled of at 1 per cent. In the Netherlands, the birthplace of fair trade labelling they have levelled off at around 3 per cent of market share. See EFTA Facts and Figures 2006 available at http://www.european-fair-trade-association.org/Efta/ff.php.
[19] Statistics provided by Fair Trade Labelling Organizations International available at http://www.fairtrade.net/figures.html.
[20] Giovannucci, Daniele, 2007, "The State of Sustainable Coffee in North America: Update 2007," unpublished.

its formation in 1972. Toward this end, IFOAM has been publishing its own "basic" standards since 1985, with the first IFOAM coffee standard being produced in 1995.

The basic elements of the IFOAM criteria require producers to:

- implement a farm plan, including separation of non-organic production and the safeguarding of uncultivated land to serve as natural habitat;
- not use genetically modified seeds or plant stock;
- maintain soil fertility through natural means such as ground cover, leguminous "companion plants," composting and natural supplements if necessary;
- control pests and weeds through preventative maintenance and mechanical control (e.g., insect traps, manual weeding) or by naturally derived substances and without the use of synthetic herbicides, fungicides, and insecticides;
- take measures to conserve water and soil at all stages of production; and
- abide by basic ILO conventions.

IFOAM standards also require that processors, roasters and retailers selling Organic coffee:

- not use chemical extraction processes (e.g., chemical decaffeination) is not allowed;
- ensure product separation and other procedures to prevent contamination by non-organic material; and
- have policies to minimize packaging.

The market for Organic products, like that for other eco-labelled products, has been experiencing rapid growth over the past two decades. Since its formation, IFOAM has grown from an initial membership of five certification agencies to more than 750 today. However unlike most other eco-labels, the perceived link between heath benefits and the Organic label has led to market shares of 30 to 50 per cent for selected products in the European market. In the context of coffee, Organic markets have also been growing rapidly but have not reached the same market share of other Organic products.

Globally, the market share for Organic coffee has been growing at double digit rates over the last decade and now accounts for the largest sales volume among the various forms of certified "sustainable" coffee, with approximately 1.1 million bags sold globally in 2006. As with Fair Trade, growth in U.S. markets is currently the largest source of sales growth in Organic coffee sales at present.[21]

3.3 Rainforest Alliance

The Rainforest Alliance was founded in 1987 with a mission of "protecting ecosystems and the people and wildlife that depend on them by transforming land-use practices, business practices and consumer behaviour." Since its initial launch, the Rainforest Alliance has developed a number of voluntary certification initiatives ranging from eco-tourism to forestry and agriculture. Rainforest's agricultural standards are developed and

[21]Giovannucci, *Ibid.* Much of the growth of the Organic market is linked to growth in the U.S. market for Fair Trade coffee, which is often double-certified as organic as well.

screened under the guidance of the Sustainable Agriculture Network—a network of NGOs based in Central and South America, of which RA is also the secretariat.

Originally branded as the "Eco-OK" label (now "Rainforest Alliance certified"), Rainforest coffee criteria were first implemented in 1996 in Guatemala. Eco-OK is distinguished from other sustainability standards by its original emphasis on protecting against the rapid loss of habitat and biodiversity through deforestation in tropical forest settings. Based on the source and urgency of the problem, Eco-OK placed a high priority on larger farms in its initial applications. Today, Rainforest Criteria have been developed to serve the three pillars of sustainable development, but Rainforest nevertheless remains the only system to require shade cover as part of its conditions. Although a complex and detailed set of criteria, some of the basic elements of the Rainforest system include:

- producers must maintain or establish a canopy of mixed native trees in those regions where coffee has traditionally been cultivated beneath cultivated shade trees;
- the productive part of the farm must include at least 10 species of native trees, with at least one representative of each species per *manzana* (1.7 acres);
- the density of shade tree species must be at least 70 trees per hectare (2.4 acres);
- in the productive part of the farm, an average of at least 40 per cent of the ground should be shaded;
- at least 70 per cent of the trees in the productive part of the farm must be evergreens (nondeciduous);
- the epiphytes on shade trees should be conserved;
- at least 20 per cent of the shade trees should be emergent species. If the farm does not qualify, the producer must begin a reforestation program emphasizing emergent species so that in the medium term, 20 per cent of the farm's shade trees are emergents of 15 or more meters height;
- pruning is restricted during the dry season, and regular pruning must leave at least 50 per cent of the fruits and flowers; and
- producers must comply with basic ILO conventions

After a slower start in the coffee sector, the Rainforest Alliance has taken off over the course of the past few years, due largely to several major joint marketing/sourcing agreements with multi-national roasters and retailers. Over the past four years, Rainforest Alliance coffee sales have been growing by approximately 100 per cent per annum and, in 2006, sold nearly 200,000 bags (most of which was sold in the North American market).[22]

3.4 Utz Kapeh

Utz Kapeh, meaning "good cup of coffee" in Mayan, was initially established in 1997 as a foundation under the Ahold Group to promote producer well-being in Ahold's coffee supply chain.[23] While under Ahold, Utz Kapeh adapted the EUREPGAP standards to meet the needs of the coffee sector, adding, in part, more explicit criteria on social and economic requirements for producers. In 2002, Utz Kapeh was rolled out as an independent certification initiative with head offices in Amsterdam. Utz Kapeh's goals

[22] Giovannucci, *Ibid.*

[23] The Ahold Group is one of the world's largest retail chains, with operations throughout Europe.

are to guarantee access to basic social services, consumer and worker health and to provide assistance in implementing these standards. Utz Kapeh refers to its coffee as "responsible," denoting a philosophy of transparency and basic human rights, while distinguishing itself from Fair Trade. In its early form, Utz Kapeh had a policy of recommending premiums to its buyers which, although voluntary on a contract-by-contract basis, were considered obligatory over the longer term. Since then, the recommended premium has been replaced with a real-time market-database, which allows producers to see the selling price of similar coffee. Some of the key elements of the Utz Kapeh certification system include:

- producers must respect basic ILO standards;
- producers must separate and store chemicals;
- producers must adopt chemical reducing systems;
- producers must ensure that their coffee is traceable;
- producers must have a map and minimal record keeping on the field;
- they cannot use products which are banned in the U.S., European or Japanese markets; and
- producers must have appropriate water and farm management plans.

Utz Kapeh has been able to benefit from the significant investment in the system by Ahold, one of Europe's largest retailers. With Ahold's strong support, Utz volumes have grown rapidly over the past four years, from 25 million to 80 million pounds. Between 2005 and 2006, Utz Kapeh sales grew 25 per cent. Most of Utz Kapeh's market growth and retail presence has been through European markets, while production has been dominated by larger estates in the producing countries.

The history of Utz Kapeh points towards a growing trend among industry players towards the development of personalized standards systems which are customized to specific supply chains and needs. Since the development of Utz Kapeh, a number of other initiatives have either taken their start from or been wholly managed by companies or industry associations:

- Common Code for the Coffee Community (4Cs)

  Initiated as a public-private partnership between GTZ and the German Coffee Association, the 4Cs was designed to provide a baseline responsibility standard for the mainstream coffee industry. Although only formally established in 2007 as an independent association, the 4Cs hopes to have 25 per cent of the world's coffee as 4C compliant within five years.

- Starbucks Café Practices

  This initiative was started by Starbucks in an effort to develop a system of sustainable practice which was wholly integrated within the corporate business plan and decision-making structure. Starbucks hopes to have 50 per cent of its coffee as Café Practices-compliant within five years.

- The Sustainable Agriculture Initiative (SAI) Platform Indicators

  The SAI Platform is a relatively new collaboration between major food processors and traders, which aims to share learning and establish industry benchmarks for sustainable production in agriculture. Toward this end, the SAI Platform developed a set of Sustainability Indicators for the coffee sector in 2005. While there is no intention to roll the indicators out as a labelling system, it may play a significant role in informing corporate approaches to supply chain sustainability within the sector.

- Neumann Coffee Group Sustainability Index

  A set of comprehensive sustainability indicators developed by the Neumman Coffee Group, the Neumann Index seeks to meet market demands for sustainability performance. The Index is not currently marketed to consumers under a label but is used as a tool for monitoring sustainability impacts on partner farming operations.

- Nespresso AAA Sustainable Quality Program

  Developed by Nespresso in collaboration with the Rainforest Alliance in 2005, this collaboration looks to serve the growing demand for sustainability standards in the sector. The standards are largely modelled on the Rainforest Alliance standards, but are designed expressly for integration within the Nespresso supply chains.

In our analysis below, we focus on Utz Kapeh as an example of an "industry-oriented" initiative (principally because data on Utz is the most complete and accessible), however it is important to understand Utz as part of a larger trend towards the standardization of mainstream markets based on some level of sustainable development requirements and corresponding supply-chain cooperation. Ultimately, it is this trend towards widespread adoption of standards-based supply chains which suggests the potential importance of such initiatives as instruments for improving the sustainability of producer livelihoods across the sector on a widespread basis.

4. Income stabilization and private voluntary sustainability standards: Theoretical perspectives

Sustainable and stable livelihoods can only be built upon sustainable and stable incomes. Income is the basis with which producers may ultimately gain the capacity to acquire savings and make additional income generating investments. Starting from this basic proposition, the promotion of sustainable livelihoods must begin with an analysis of the sources and constraints upon income generation. A theoretical analysis of the potential role of private voluntary sustainability standards in improving or stabilizing producer income thus begins with the formal statement of producer income.

Producer income can be expressed accordingly:

$$Y_s = ((P_S \text{ X } Q_S)\text{-}C_S)$$

with:

Y = Farm income
P = Achieved coffee price
Q = Production volume
C = Production cost
Index ***S*** Sustainable coffee production

Drawing from this basic equation, it is evident that the main determinants of income level and stability will be the various factors which contribute to the price, cost and quantity of production. Below we consider the theoretical impacts expected of these different variables based on existing sustainability standards operating in the coffee sector.

4.1 Price

Most national and international efforts for stabilizing producer livelihoods have focused on stabilizing prices by managing supply and demand or, alternatively, by adjusting financing costs based on changes in price levels. In order to situate sustainability standards within the context of traditional "price-oriented" discussions on revenue stabilization, an analysis of the theoretical impacts on overall prices and price volatility more specifically is needed.

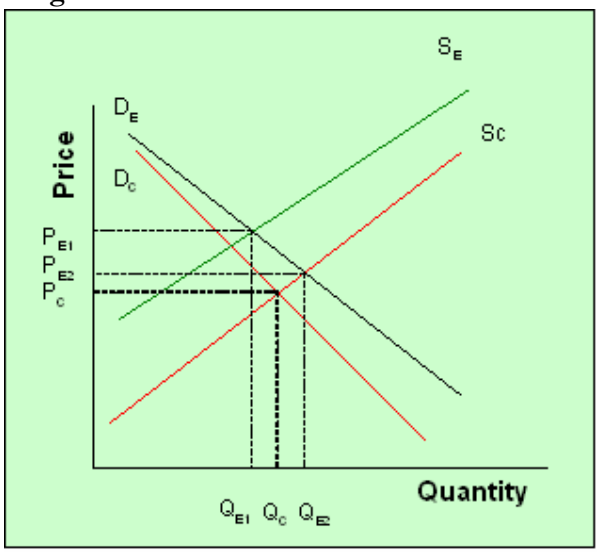
Based on our description of the various initiatives being used in the coffee sector, it is clear that the actual impacts which one or another initiative has on producer income will depend crucially on the specific criteria and practices set under any given system. For our purposes, it is useful to distinguish between initiatives which have minimum price requirements (e.g., Fair Trade) and those which do not, since these pose very different implications for producer pricing (and eco-labelling more generally). Since Fair Trade is the only supply chain initiative with explicit price requirements, we conduct our analysis below based first on a general eco-labelling model and then on the Fair Trade model.

4.1.1 Eco-label pricing behaviour

As a general category, eco-labelled products can be defined as any product which uses SD-related criteria described on the packaging (using a logo or other identifier) as a basis for competitiveness on the market. Although the performance of eco-label products can depend on a wide variety of factors, it is assumed that the initial costs of production in adopting eco-label practices are more costly than conventional practices and that, as a result, some degree of premium is required to stimulate the adoption of such practices. Working from this assumption, the supply and demand curves for sustainable and conventional coffee markets can be depicted as in **Figure 3 below.**

Figure 3 provides a description of an eco-label product operating in a niche market in comparison with the conventional market for the same product. S_C and D_C represent the supply and demand curves for conventional coffee while S_E and D_E represent the supply and demand curves for eco-labelled coffee, (assuming increases in costs of production to make the transition to eco-labelled production). Price P_C represents the price under normal market conditions of conventionally produced coffee, and price P_{E1} represents the standard explanation of eco-labelled coffee operating in a niche market parallel to the conventional market.

Figure 3



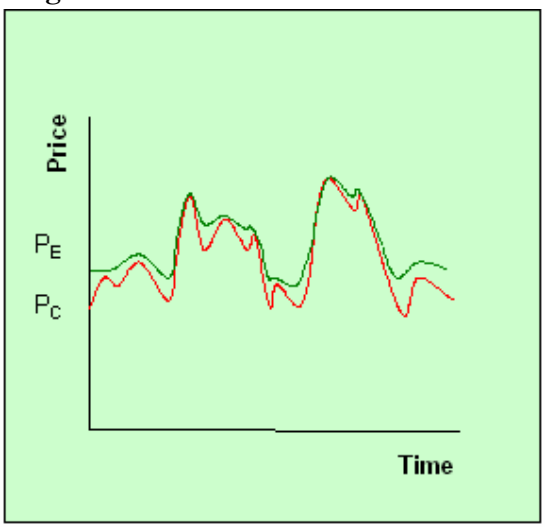
Where the compliance costs associated with producing the eco-labelled product are the same as conventional production costs (or where compliance costs are compensated by new efficiencies), the supply curve remains the same and a premium is generated for eco-labelled products higher on the supply curve S_C (at price P_{E2}). In this case, a premium only exists for eco-labelled products for the time that it takes for other players to adopt the eco-labelling practices, with the equilibrium price eventually falling back to P_C in the long run. When compliance costs associated with the eco-label are higher than conventional production costs, then a premium will exist, in equilibrium, for the eco-labelled product at price P_{E1}.

The diagram thus suggests two distinct ways in which premiums may be generated for eco-labelled products depending upon whether or not compliance costs associated with entering the eco-labelled markets are higher than or the same as convention production costs. One of the difficulties in determining what the "actual" pricing behaviour of eco-labelled goods will be in any given case relates to uncertainties as to whether the premiums generated are simply due to temporary bottlenecks in supply (as per P_{E2}) or due to the different supply function associated with eco-labelled production (P_{E1}).

Following the (standard) assumption, however, that eco-labelled production is more costly overall,[24] one can expect both the supply and demand curves to be different (S_E and D_E respectively) for eco-labelled products. Importantly, both supply and demand elasticities for eco-labelled products will be higher than they are for their counterpart products. This is to say that consumers and producers will more readily switch in or out of eco-labelled markets based on changes in price, than will producers and consumers operating in conventional markets. Higher elasticities in supply and demand are due to the presence and ready availability of the "conventional" product as a substitute for the eco-labelled version. Although the transition to eco-labelled production is likely to require infra-structural investments, the nature and size of these investments is considerably less than the investments for establishing production in the first place, making it more feasible for supply to respond to changes in demand for eco-products. Similarly, eco-consumers, having the option of products matching all of the physical characteristics of their preferred eco-products through their conventional counterparts, are more ready to switch back to conventional products than they would be willing to give up consumption altogether (which explains the absence of elasticity in conventional demand).

The higher elasticities associated with eco-labelled products is reflected in price formation through reduced volatility (as compared with conventional products). As such, where premiums exist for eco-labelled products, one expects the size of the premiums to expand and contract inversely to price movements for conventional products (designating the movement of eco-consumers to conventional substitutes at high price levels). **Figure 4** depicts the expected relative volatility between prices for eco-labelled products and those for conventional products.

Figure 4



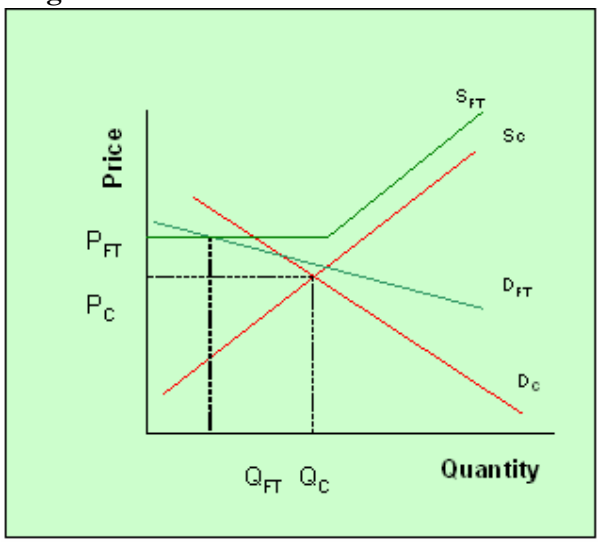
[24] Sedjo, Roger A. and Stephen K. Swallow, 1999, *Eco-Labeling and the Price Premium Discussion.* Paper 00–04, Resources for the Future.

Since the dampening effect which eco-labels have on price variations is dependent upon the availability of conventional substitutes, price variability for eco-labelled products can be expected to approach conventional levels as eco-labelled products move from niche markets to the mainstream market. In the extreme case, where all—or most—products on the market carry an eco-label, price variability, *ceteris paribus*, can be expected to be more or less identical to that found in conventional markets.[25]

4.1.2 Fair Trade pricing behaviour

Although the Fair Trade system outlines many of the same criteria as the more traditional eco-label systems, it is fundamentally distinguished by its requirements relating to prices paid to producer cooperatives. Indeed, the Fair Trade system is the only system to date which explicitly attempts to address the issues of price level and volatility *through* obligatory supply chain criteria.

Figure 5



As noted above, buyers wishing to sell their product as "fair trade" must agree to pay a minimum price of US$1.26 per lb (for washed Arabica) when world prices are below the minimum and an additional "social premium" of US$0.05 per lb when prices are above the minimum.[26] The impact of the Fair Trade pricing system on Fair Trade producers who sell 100 per cent of their coffee to Fair Trade markets is quite straightforward. **Figure 5** describes the situation for Fair Trade producers subject to a market equilibrium which is below the Fair Trade price. S_{FT} and D_{FT} represent the Fair Trade supply and demand curves respectively, the particularity of the Fair Trade system being the fact that its supply curve is "fixed" by the Fair Trade criteria themselves.

The price received for Fair Trade under such conditions is higher than that established by the conventional market (P_C). Moreover, as long as the market price remains below P_{FT}, producers serving the Fair Trade market continue to receive the minimum price. **Figure 6** indicates the price trend for Fair Trade in comparison to corresponding trends in the conventional market.

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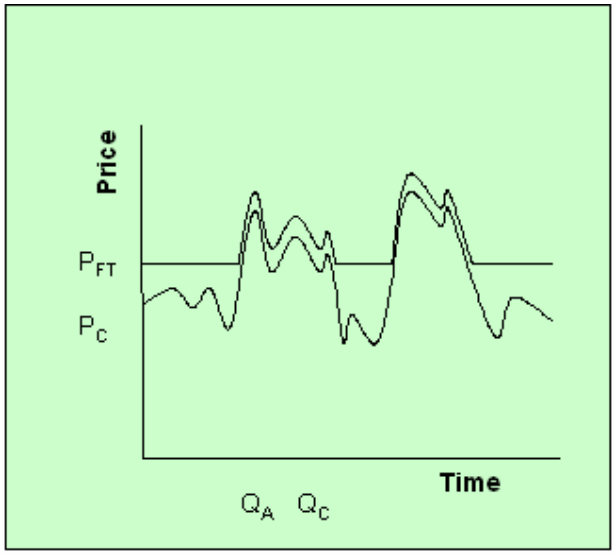
[25] Note the exception, discussed below with respect to the case of the specialty coffee sector, where the "entire" market is defined in terms of the variety of niche markets. In the case where the market is highly differentiated, or "de-commodified," multiple niche markets have the potential to provide a generalized stabilizing effect on prices.

[26] Although the price requirements are paid directly to producer-owned cooperatives (rather than producers directly), and the cooperatives are obliged to invest a portion of their earnings towards the provision of social services (not accounted for in actual income levels), some of the premium is ultimately passed on to producers. For the purposes of our coverage of the theoretical impacts of Fair Trade, we shall limit our overview to impacts on prices received by producer cooperatives (rather than producers themselves). In **Section 5** below, we consider the difference between prices received by cooperatives and prices received by producers themselves under the fair trade system based on empirical data.

Figure 6



While the Fair Trade system is quite simple with respect to its initial impacts on producers selling through Fair Trade supply chains, the relationship between Fair Trade and conventional markets limits the ability of any given cooperative, not to mention any given producer, to actually take full advantage of the evident benefits provided by the Fair Trade scheme. On the one hand, notwithstanding large market growth over the past two decades, markets for Fair Trade coffee still remain under 1 per cent of total world market. As a result, any given cooperative will be obliged normally to sell a large portion, if not the majority, of its coffee through conventional channels.[27] Where this is the case, one expects the actual result on producer cooperative "total income" to be a generalized dampening of price volatility similar to that of traditional eco-labels. All other things being equal though, the degree of dampening in volatility for any given cooperative serving Fair Trade markets can be expected to be higher than that experienced by a non-price eco-label initiative, due to the combined fixed pricing and other eco-label criteria present under Fair Trade.

4.1.3 Expected impacts of eco-labelling on price volatility for conventional markets

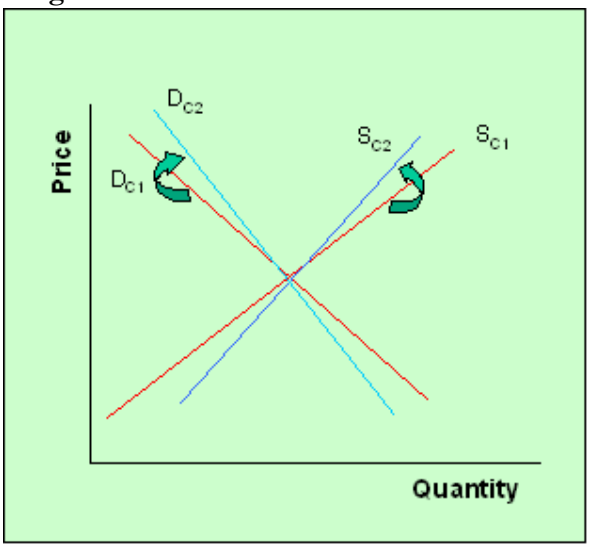
Most research on the impacts of eco-labels and other certification initiatives concentrate on the direct impacts of such initiatives on producers and producer cooperatives. Since eco-labels operate within international markets which include both conventional and eco-labelled products, marginal changes generated by eco-label markets will invariably produce marginal changes in conventional markets as well. As the number and depth of eco-labels grow, the indirect impacts of such initiatives can become non-negligible and are therefore worth considering explicitly.

The presence of different eco-label markets for coffee effectively increase the variety of choices available to a farmer. Rather than being forced to supply a non-descript "conventional" market governed strictly by the New York "C," the introduction of eco-label markets gives producers the opportunity to enter into markets which both present alternate opportunities, but also alternate responsibilities. Similarly, consumers have increased choice in the types of coffees they may purchase. The increased options for conventional consumers and conventional producers make it easier (e.g., less costly) to

[27] On average, approximately 25 per cent of total Fair Trade "eligible" coffee is actually sold to Fair Trade markets (at Fair Trade prices). This is, of course, not specific to Fair Trade. Cooperatives serving other eco-labelling systems will also likely have to sell the majority of their coffee to conventional markets.

exit "conventional" markets.[28] The net impact of having more options increases the supply and demand elasticity for conventional products which, in turn, reduces overall volatility. The impact of eco-labelling on conventional market supply and demand curves is represented graphically in **Figure 7** below, where S_{C1} and D_{C1} represent the supply and demand curves for conventional coffee prior to the introduction of eco-labels on the market and S_{C2} and D_{C2} represent the supply and demand curves for conventional coffee after the introduction of eco-labels onto the market.

Figure 7



The expected impact of the presence of eco-labelled coffee will only hold, of course, to the extent that such markets remain distinct from conventional markets. It is also worth noting that the dampening effect of eco-labels can be expected to increase in proportion to the number of eco-label options available to producers and consumers. The result depicted in **Figure 7** is, in fact, a representation of the net impact of market differentiation more generally. The growth of specialty markets based on quality and geographic origin, to the extent that the markets are well-defined, also has the potential to reduce overall volatility for conventional markets by increasing the choices of different markets available to producers and consumers.

4.1.4 Empirical evidence of impacts of eco-labelling and Fair Trade on price volatility

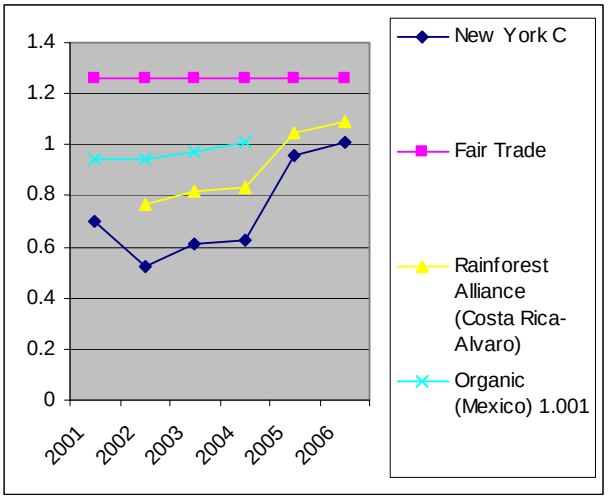
To date, research on the impacts of certification and labelling schemes on coffee producers has been restricted to anecdotal, country-specific and label-specific studies. Only a small handful of studies consider more than a single certification or labelling system at a time, and no generalized studies have yet been undertaken at the global level.[29] In those studies which do exist, it appears that none have explicitly analyzed the

[28] For example, in cases where conventional markets are not serving the needs of producers in the absence of the eco-label markets, their choice is simply to exit coffee. Where eco-label option exists, they may find continued coffee production desirable for the eco-market.

[29] A short list of academic impact assessment studies includes: Ronchi, Lorainne, 2002, "The Impact of Fair Trade on Producers and their Organizations;" Giovannucci, Daniele, 2005, "Organic Agriculture for Poverty Reduction in Asia," IFAD, Rome; Parrott, Nicholas, 2004, "Sound Depths: The Seen and Unseen Dimensions of Organic Farming in the South and their Implications for Organic Research;" Tallontire, Anne, 2001, "Challenges Facing Fair Trade: Which Way Now?" Natural Resources Institute; Boot, Willem, Christopher Wunderlich and Armando Barta, 2002, "The Impact of Ecolabels of Coffee in Mexico;" Collinson, Chris and Marcelo Leon, 2000, "Economic Viability of Ethical Cocoa Trading in Ecuador," Report 2519. Natural Resource Institute, University of Greenwich, U.K.; Calo, Muriel and Tim Wise, 2005, "Revaluing Peasant Coffee Production: Organic and Fair Trade Markets in Mexico," Global Development and Environment Institute, Tufts University; Bacon, Christopher, 2005, "Confronting the Coffee Crisis: Can Fair Trade, Organic and Specialty Coffees Reduce Small-Scale Farmer Vulnerability in Northern Nicaragua?" *World Development.* Vol. 33(3):497–511; Consumer International, 2005, "From Bean to Cup:

impact of one or another initiative on price volatility over time. The effort to compile data on the impacts of such initiatives on price volatility is therefore challenged by a general lack of primary data. Since the compilation of such primary data is beyond the scope of this general overview, we were obliged to limit our empirical verification of the expected impacts to a series of interviews with a limited number of cooperatives and/or farms, working with non-standardized data. **Figure 8** provides indicative data based on interviews with cooperatives and farms based in Latin America selling coffee to certified markets. The data on prices received through our interviews provide a very general validation of the expected results with respect to certified coffees operating in a niche market—namely, adjustments in the premium size for "sustainable" coffees inverse to the price adjustments for conventional coffees on the international market.

Figure 8



The prices recorded in **Figure 8** are Free on Board (FOB) prices and do not necessarily reflect the prices received by producers themselves. Where coffee is sold directly by a producer to the international market, such as in the case of a larger estate, the FOB price will be the same as the price received by the producer. However, in the case where producers sell to a cooperative, the cooperative will take a portion of the FOB price to pay for its own administration and handling, as well as for the provision of additional community services (as required, for example, in the case of Fair Trade). For producers selling to cooperatives, premiums received by some labels, such as Fair Trade, are spread across the full range of coffees produced and therefore amount to a reduced per pound premium on coffee sold to the cooperative. **Table 1** provides an example of the difference between Farm Gate prices and international prices in Nicaragua during the 2000–2001 season, when New York C prices averaged US$0.70 a pound.[30]

Table 1

Where did you sell the coffee?	Price paid per pound of green coffee	How long until you were fully paid?	How many farmers sold to each market?
Cooperative-direct to roaster	US$1.09 (0.04)/lb	33 (6.1) days	11
Cooperative-Fair Trade	US$0.84 (0.07)/lb	41 (86.6) days	36
Cooperative-organic	US$0.63 (0.11)/lb	73 (78.4) days	61
Cooperative-conventional	US$0.41 (0.04)/lb	46 (62.9) days	84
Agro-export company	US$0.39 (0.04)/lb	24 (50.3) days	51
Local middleman	US$0.37 (0.04)/lb	9 (27.3) days	72

How Consumer Choice Impacts upon Coffee Producers and the Environment," London: Consumer International and IIED.

[30] Source: Bacon, Christopher, "Can Fair Trade, Organic, and Specialty Coffees Reduce Small-Scale Farmer Vulnerability in Northern Nicaragua?"

The actual impacts of certification on producer prices depend heavily upon the proportion of coffee sold through one or another certification scheme. Where, as in the present context, any given producer cooperative will typically sell only a small proportion of its total production to one or another labelled market, the total price stabilizing impact of participation in that label at the farmer level can be reduced to near insignificance.[31] When dealing with a cooperative, the premiums from different certification schemes are often blended together in a final price to the producer, which can make it still more difficult to determine impacts associated with one or another standard specifically.

4.1.5 Other pricing issues

Commodity producers can, usually, earn higher prices through improvements in the consistency and quality of their product. In the case of coffee, the rapid growth of the specialty market over the past decade-and-a-half has improved the opportunities for increasing revenues through improvements in product quality in a manner which is exceptional among commodities more generally. However the basic principle, namely that higher quality has the potential to earn higher prices, holds across commodity sectors. In addition to the more direct impacts which eco-labels or Fair Trade might have on price through the specific markets they generate, sustainability-oriented initiatives, being fundamentally based on the implementation of intentional and structured management systems, have the potential to generate improvements in product quality as well, as part and parcel to fulfilling the basic criteria of the system. The influence on quality can have impacts on overall income. Beyond the general impact of improved management, specific criteria within one or another system may have direct impacts on quality as well; while a reduced use of chemicals may lead to reductions in quality, other environmentally preferable practices may have positive impacts on quality. **Box 1** describes one way in which the environmental requirement of "shade cover" (included as part of the Rainforest Alliance criteria) can lead to quality improvements in coffee production.

Box 1: Shade Coffee as a Vehicle for Improved Quality

A recent report by Vaast *et al.* (2006) notes that the production of coffee under shade cover slows down the ripening process in much the same way that increasing altitude does.[32] The same study estimates that the transition from sun to shade production has the effect of a 200m–300m rise in elevation in terms of overall quality by providing a:

- lengthier ripening process (four to six weeks longer than non-shade grown coffee);
- larger bean size;
- higher caffeine and fat content; and
- reduced acidity.

To the extent that a given supply chain initiative specifies that coffee be grown under shade cover, the initiative can have a direct impact on the quality output for the farm as well. The implementation of an intentional management system, itself the basis of most initiatives, can provide a foundation for improving quality through proper care techniques more generally as well.

[31] It is estimated that only about 30 per cent of the total "Fair Trade eligible" coffee is actually sold *as* Fair Trade coffee. See *Ibid.*

[32] Vaast, Phillipe *et al.*, 2006, *Shade: A Key Factor for Coffee Sustainability and Quality* (CATIE).

In the case of the coffee sector more generally, where a large and growing specialty market exists, the movement towards higher quality products has the potential to generate significantly higher and more stable (in a manner analogous to eco-labelled products) prices for producers. The fact that specialty-based differentiation rests on differences of physical quality, provides a stronger foundation for securing premiums since the market is defined by consumer-verifiable and consumer-sensible attributes (which is not the case with respect to eco-labelled products). The fact that specialty qualities are usually linked to specific geographic locations makes it possible to differentiate indefinitely.

4.2 Cost of production

Changes in production practices will inevitably have impacts on the cost of production. Indeed, the existence of premiums in the eco-label sector is explained in part by the recognition (by the market) of the increased costs of production associated with production for eco-label markets. More specifically, over the course of applying practices to enable compliance with an eco-labelling or Fair Trade supply chain initiative, producers will be faced with three different types of additional costs: transition costs, certification costs and maintenance costs.

Transition costs are the fixed costs associated with infrastructural investments required to enable eligibility to one or another system. Investments in the appropriate monitoring and accounting infrastructure, the construction of chemical storage sheds or the posting of appropriate signage on farms are all examples of costs associated with the transition to compliance. Some systems, like Fair Trade, also have one-time start-up fees associated with entry into the system.

Certification costs are variable costs associated with meeting the specific reporting requirements associated with a specific system. They are built upon the premise that new markets can be created based on improved information flow along the supply chain. In particular, by linking information on the sustainability impacts of production practices to physical products, an otherwise conventional product can access an "eco" market. As such, the entire supply chain must make additional investments in tracking, monitoring and reporting. Typically any given system will require a producer to demonstrate compliance through a series of professionally conducted audits. For most certification systems, an annual inspection is required which will typically cost between $250 and $500. Depending on the system, the inspection may be performed at the level of the producer organization or at the level of the individual farmer. In addition to regular audits, such systems often require supplying producers to pay an annual fee and/or a volume-based "certification fee." **Table 2** outlines the expected certification costs associated with four key initiatives serving the coffee sector.[33]

[33] Sources: Consumers International, 2006, *From Bean to Cup*; CIMS, 2005, *Prices and Premiums for Certified Coffees*; FLO Web site—http://www.fairtrade.net.

Table 2

	Fair Trade	Rainforest Alliance	Organic	Utz Kapeh
Inspection Costs		$250–$500 for annual inspection	$500–$1000 for two annual inspections	$250–$500 for annual inspection
Volume-based Certification Fees	$.015 per lb	$.075 per hectare	$.05 per lb	
Annual Fees	$500 per annum		$500 per annum	

Maintenance costs refer to variable costs associated with the ongoing maintenance of the production system according to the specified requirements of the supply chain initiative. Examples of maintenance costs include the additional labour costs required to manage the system and other material inputs required to allow system-compliant production practices.

Any estimate of the total cost of production with respect to any given system will depend heavily upon the requirements of the system itself, the geographic and infrastructural characteristics of the site of production and the geo-political context within which production occurs. Notwithstanding this basic caveat, as a general rule the costs associated with compliance with one or another initiative are largely fixed and therefore in decline over time. The main variable input subject to volatility and change is that associated with labour in dealing with weather and pest-related variations. As such, the associated cost structure should have either a neutral or dampening effect on the overall stability of costs.[34]

4.3 Productivity and other non-price related factors

While price is broadly recognized as one of the most important determinants of producer income level and volatility, yield and productivity are not far behind. **Table 3** below provides a summary of the perceived importance of different risks on income based on surveys of coffee farmers operating in the Dominican Republic compiled by the World Bank-led International Taskforce on Commodity Risk Management. It lists the risks faced by coffee producing households in the Dominican Republic, with the per cent reporting the given source of risk as very important.[35]

[34] There is virtually no primary data on the "costs" associated with the transition to one or another sustainability system. A recent study produced by IISD and EDE under the Sustainable Coffee Partnership found costs to vary between US$100 and $150 per hectare to transition to sustainable production systems. See EDE, IISD, forthcoming, *Identifying and Closing the "GAPS" in Sustainable Coffee Production: Findings from Case Studies in Three Coffee Producing Countries*. The Committee on Sustainability Assessment (COSA) project, also under the Sustainable Coffee Partnership has begun a multi-year, global effort to measure the costs and benefits associated with sustainable production systems in the coffee sector at the global level. See http://www.iisd.org/pdf/2007/cosa.pdf for more info.

[35] International Taskforce on Commodity Risk Management, 2002, "Dominican Republic: Price Risk Management for Coffee and Cocoa," Commodity Risk Management Group, World Bank, Washington DC.

Table 3

Risks	Holding State		
	< 5 ha.	**5-10 ha.**	**> 10 ha.**
Weather-related yield risk	46.5	60.9	49.1
Disease-related yield risk	64.1	67.1	62.5
Price risk	73.2	82.9	81.2
Yield risk in other crops	35.2	46.3	35.7
Loss of employment	30.3	28.1	33.9
Illness	56.3	70.7	60.7
Lack of credit	64.1	78.1	72.3

Although such qualitative measures provide little insight into actual relative impacts on income, the above list provides an indication of some of the other principle factors contributing to income risk and, as such, an additional basis for analyzing the impacts on overall income and income stability.

The implementation of the specific production practices associated with private voluntary sustainability standards relies heavily upon the implementation of improved supply chain governance and management systems. At the site of production, producers are typically required to develop farm management plans and improved financial accounts. Moreover, each specific initiative, depending upon its social, economic or environmental priorities, sets forth a number of production-specific criteria, each of which impact costs or yields and therefore income. Whether those impacts are positive or negative will depend upon the nature of the criteria associated with the system. For example, reduced chemical intervention can expose producers to a higher level of pest-based (negative) impacts on yield. A report by the FAO concludes that production in organic systems tend to decrease by about 20 per cent following the initial transition from a conventional farming system, but that within a few years production returns to near pre-organic levels.[36] Meanwhile, research on the effect of shade on coffee plantations, as per Rainforest Alliance standards, suggests "permanent" reductions of up to 20 per cent from "sun" growing conditions.[37] Improved farm management techniques, however, can counter such reductions through improved efficiencies and risk management. **Table 4** outlines some of the more explicit ways in which sustainability standards and the criteria they specify might be expected to impact producer yields and other income-related factors, looking at the non-price related determinants of income.

[36] FAO, 2002, *Organic Agriculture, Environment and Food Security*.
[37] Vaast. Phillipe *et al.*, 2005, *Shade: A Key Factor for Coffee Sustainability and Quality*.

Table 4

Criteria or Characteristic	Path of Potential Impact	Possible Impacts[38]	Applicable Standards
Improved Farm Management	Pest Resistance	Improved	All
	Weather Resistance	Improved	All
	Market Resiliency/Access to Credit	Improved	All
	Overall Output	Improved	All
Shade Coverage	Weather Resistance	Improved	Rainforest Alliance
	Overall Output	Reduced	Rainforest Alliance
Terracing	Weather Resistance	Improved	Rainforest Alliance, Organic
	Overall Output	Improved	Rainforest Alliance, Organic
Improved Market Information	Market Resiliency/ Access to Credit	Improved	All
Improved Working Conditions	Overall Output	Improved	All
Reduced Chemical Usage	Weather Resistance	Decreased	Rainforest Alliance, Organic, Utz Kapeh
	Pest Resistance	Decreased	Rainforest Alliance, Organic, Utz Kapeh
Limitations on Deforestation of Primary Forest	Weather Resistance	Increased	Rainforest Alliance
	Overall Output	Decreased	Rainforest Alliance
Pre-financing	Market Resiliency/Access to Credit	Increased	Fair Trade

From an income *volatility* perspective, the impact of standards will also depend upon the methods employed. Reduced access to chemical inputs, as per Organic and Rainforest standards, might leave farmers more exposed to extreme weather conditions, however as a general rule, the implementation of *intentional* management systems arguably provides farmers with a better capacity to identify and protect against impending risk. This should, in principle, result in reduced risk profiles for producers. However, at present there is little primary data documenting such impacts. This represents a core area where further research is needed.

[38] The actual impacts will vary considerably based on the actual system being applied and the particular farm to which the system is applied.

5. Conclusion

Price volatility has demonstrated a pernicious persistence over the course of the past century, often in spite of efforts to counter the principal causes of such volatility through the management of supply and demand on world markets. More recently, in conjunction with the declining interest and confidence in the use of market management mechanisms, there has be a growing interest in the use of targeted instruments to enable *individual producers* to either insure against or prepare for ongoing market volatility and risk. While many such mechanisms continue to emphasize the importance of managing price-related risk, there is also a growing interest in managing other factors related to "income" risk more generally.

Within this context, private voluntary sustainability standards can offer a viable "private" instrument for helping producers manage income volatility in a variety of different ways. As initiatives operating in a niche market, producers serving "sustainable coffee markets" can expect to receive premiums over conventional prices, the size of which varies inversely to shifts in conventional prices. The result, validated anecdotally by cooperative-level experience, is reduced price volatility through participation in an eco-label program. Participation in the Fair Trade scheme, in particular, automatically provides improved price stability due to the minimum price stipulated in the standards of the system itself. The stabilizing impacts of either Fair Trade or another sustainability label on actual producer (farm gate) prices is (currently) significantly reduced, due to the fact that typically only a small percentage of total coffee produced is actually sold through one or another labelling system. The price stabilizing impacts of production for Fair Trade markets increase as the global market for Fair Trade products grow. On the other hand, the price stabilizing impacts of production for standards-based markets without specific minimum price criteria, can be expected to decrease as the size of the global labelled market grows (e.g., becomes mainstream).

Since sustainability standards generally improve farm practices and management systems, the adoption of standards-based practices can play a role in helping producers move from highly commodified conventional markets to higher value specialty markets. To the extent that this is the case, standards can be a springboard to the more stable business and pricing relationships associated with specialty markets. In a more direct manner, the adoption of improved management and farming practices have positive impacts on preparation for, and management of, weather, pest and health-related risks. Although the degree of impact of sustainability initiatives on such variables remains relatively undocumented and thus highly speculative, these impacts have the potential to far outlive and outweigh any specific impacts on price associated with premiums. More field level and primary research on the productivity and cost impacts of standards compliance is necessary to determine the full potential of standards based systems in reducing income risk.

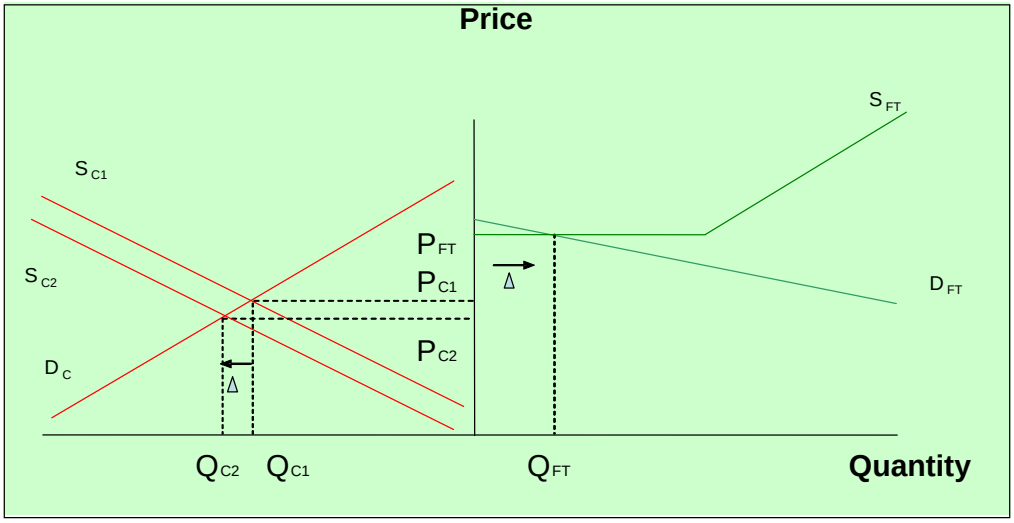
While the empirical data on the impacts of such initiatives remains scarce at present, our analysis demonstrates the clear potential of the income stabilizing impacts of standards-based initiatives. Given the ongoing context where market volatility continues to represent one of the most significant threats to commodity producers, a strong case can be made for making targeted investments in gathering the requisite information to verify the theoretical and anecdotal evidence compiled to date. Only on the basis of a more robust empirical foundation can policy-makers and other supply chain actors hope to use

such instruments as strategic instruments for helping producers manage the ever-present risks associated with production for commodity markets.

Annex: Impact of Fair Trade pricing scheme on conventional prices

Figure 10 illustrates the supply curves for conventional production and for Fair Trade production with a fixed minimum price. In the figure, the left hand and right hand portions of the graph represent the conventional and Fair Trade supply curves respectively.

Figure 10



Given the preferred market conditions facing producers on the Fair Trade registry, a natural market response among such producers will be to expand production to take advantage of Fair Trade markets and conventional markets simultaneously. To the extent that the supply of Fair Trade coffee is lumpy, due to the fact that *only* producers on the Fair Trade registry can supply to Fair Trade markets, increases in production by Fair Trade producers will lead to an increase in global aggregate production. In fact, the Fair Trade price subsidizes increased production for conventional markets, leading to a reduced supply curve in conventional markets and, ultimately, reduced price P_{C2}.

Finally, as mentioned above, the requirement that cooperatives invest a portion of the Fair Trade premiums they receive in community infrastructure results in reduced percentages of the Fair Trade price being passed on to producers.

The contribution of Fair Trade to improving the situation of producers on the whole depends largely upon the degree to which any one of the "theoretical" impacts is carried out in the real world—a factor which itself can be expected to depend considerably on the actual market shares of Fair Trade coffee being sold at any given time.

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