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**Upgrading and the Value Chain Analysis:
The Case of Small-scale Coffee Farmers in Honduras**

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Abstract

The body of literature and research related to the value chain analysis has increased in recent years. These studies examine trade and production networks at an international level. Up to now, there is little evidence of the opportunities for developing countries to integrate into the world market with agricultural products. However, the export of value-added and differentiated agricultural products opens possibilities for development and poverty reduction. There is evidence that small producers and exporters in developing countries can insert themselves successfully in agricultural value chains. Small-scale producers, in their interaction with local processors or exporters and international retailers, have the possibility to acquire new skills and knowledge. The type of trust relationship and power dependence among the actors can determine how information flows and how firms upgrade. On the other hand, the implementation and compliance with standards provides opportunities for learning and acquiring skills and knowledge. The case of small-scale coffee farmers in Honduras illustrates this point. There are over 70,000 coffee producers in Honduras, most of which grow coffee on farms of less than 10 hectares of land. One of the challenges coffee producers have faced in the last 15 years has been the falling prices in the international market. Local institutions and producers' cooperatives have created programs to help small-scale coffee farmers adapt to the changes in the global marketplace and assist them in increasing their competitiveness. These initiatives include the implementation of quality standards, the identification of direct buyers to ensure higher profits, and the certification of origin. The aim of this paper is to analyze the impact of these initiatives by studying how small-scale coffee farmers have upgraded their production and processes in order to increase their competitiveness and profits.

Introduction

The markets for agricultural goods have transformed rapidly in the last decade. Globalization, trade liberalization and economic growth in newly industrialized countries have changed lifestyles and consumer demands. These changes in consumer behavior present opportunities for agricultural goods from developing countries. In industrialized countries, there is an increased, year-round demand for variety, quality, and niche products such as organic foods. Over the last 15 years the demand for specialty coffee has increased. Developing countries once relied on undifferentiated coffee exports, but nowadays the real gains are in specialty, organic or free trade coffee, in other words, in a differentiated product. Competition is strong and in order for producers to integrate themselves in these chains, certain criteria must be met. Buyers in developed countries increasingly coordinate and monitor suppliers, in part because of the buyer's trust in the supplier, but also to coordinate cost issues along the chain. Thus, a supplier must

respond with competence to perform the tasks required. Suppliers that are not considered competent require either more supervision through standards or they are at risk of losing a contract. There is evidence that small producers can thrive in the global economy, but only if they are highly competent.

The aim of this study was to analyze how small coffee farmers were integrating themselves in the value chain. Are there possibilities in the differentiated coffee market? Were coffee farmers producing for differentiated markets more likely to comply with standards and engage in upgrading activities than farmers producing undifferentiated coffee? Was the interaction with the other actors in the chain, namely the buyers, influence how they were upgrading? What type of contractual and trust relationship did the sample have with the buyers? These were some of the relevant questions in this study.

Actors and Interactions in the Coffee Chain

In order to have a better understanding of where the small coffee farmers stand in the global value chain, it is important to analyze who the actors are and what their interactions are like. The actors participating in the coffee chain are the farmers, the local and regional intermediaries (i.e. middlemen), exporting firms, associations or cooperatives and, at an international level, the importers or coffee traders and the toasters. According to IHCAFE¹ (2005), there are about 70,000 coffee producers in Honduras. It is estimated that over 85% of the coffee farmers in Honduras grow coffee in areas of 5 ha or less. About 13% of the coffee farms have been established in up to 35 ha, and the rest, about 1% of the total national production is grown in large farms or “fincas”. In terms of productivity (kg/ha), the national average varies between 120 to 350 kg of coffee per hectare.

The intermediaries make up the second link in the chain and within this link there are also different categories. The smaller intermediaries trade less than 230,000 kg of coffee a year. Those trading up to 920,000 kg a year are considered medium-sized intermediaries. Finally, those trading more than 920,000 kg, in other words, over 20,000 bags of coffee are large intermediaries and they usually sell directly to the exporters, managing their own logistics channel. The small and medium-sized intermediaries work in most cases for the larger ones and must meet the rules and requirements set by them. The large intermediaries maintain a good network of information (i.e. prices, premiums, and volumes traded locally and internationally) are therefore, they have the power to set the prices leaving the smaller producers little room for negotiation. It is estimated that there are a total of 3,000 intermediaries nationwide.

There are 44 exporting firms in Honduras (IHCAFE, 2005). Most of them are located in San Pedro Sula but they usually have agents or representatives working in the coffee-producing areas. The largest companies have collection centers, fully equipped with silos and warehouses, strategically located in towns in the coffee-producing regions. Their goal is to eliminate the middlemen and manage the distribution channel themselves to make the operation more efficient. Many exporters claim that they pay producers a higher price for their coffee than the middlemen do.

Finally, in the national market, another participant in the coffee chain is the toaster. The toasting companies are focused on the local market and rarely export. They manage brand names widely recognized by Honduran consumers. These toasters have their own distribution channels and marketing strategies. They buy almost invariably from the exporting firms and have little contact to the small farmers.

¹ Instituto Hondureño del Café. Informe de Cierre, Cosecha 2004 - 2005.

A total of 3,126,830 bags² of Honduran coffee were exported in 2005, bringing in US\$326,274,898 to the national economy. Germany is the most important market for Honduran coffee, followed by the United States, where 35% and 17% of the coffee production was sold, respectively. Belgium is another important market, representing 15% of the sales, followed by Korea (7%), the Netherlands (6%), Japan (4%), Italy (4%), France (4%), Canada (3%) and Spain (3%). Coffee is usually sold to coffee traders, although some of the production goes directly to the toasters. Very few farmers sell directly to the coffee traders or toasters.

Figure 1 illustrates the interactions among the actors in the coffee chain. In the Honduran coffee production, the exporters play a central role, as they coordinate operations in the local chain. Power asymmetry is central in this particular chain. The exporters have access to market information and thus power, whereas the farmers passively accept the prices and trade conditions set by the intermediaries and exporters. Although the exporting firms coordinate activities that directly influence the farmers, they seldom have direct contact with them. Only 17% of the coffee traded nationwide is bought directly from the farmers and 6% from cooperatives or unions. Exporters buy 77% of the production from intermediaries. Despite the fact that there are over 40 coffee exporters nationwide, over 50% of the production is being traded by only 4 exporting firms.

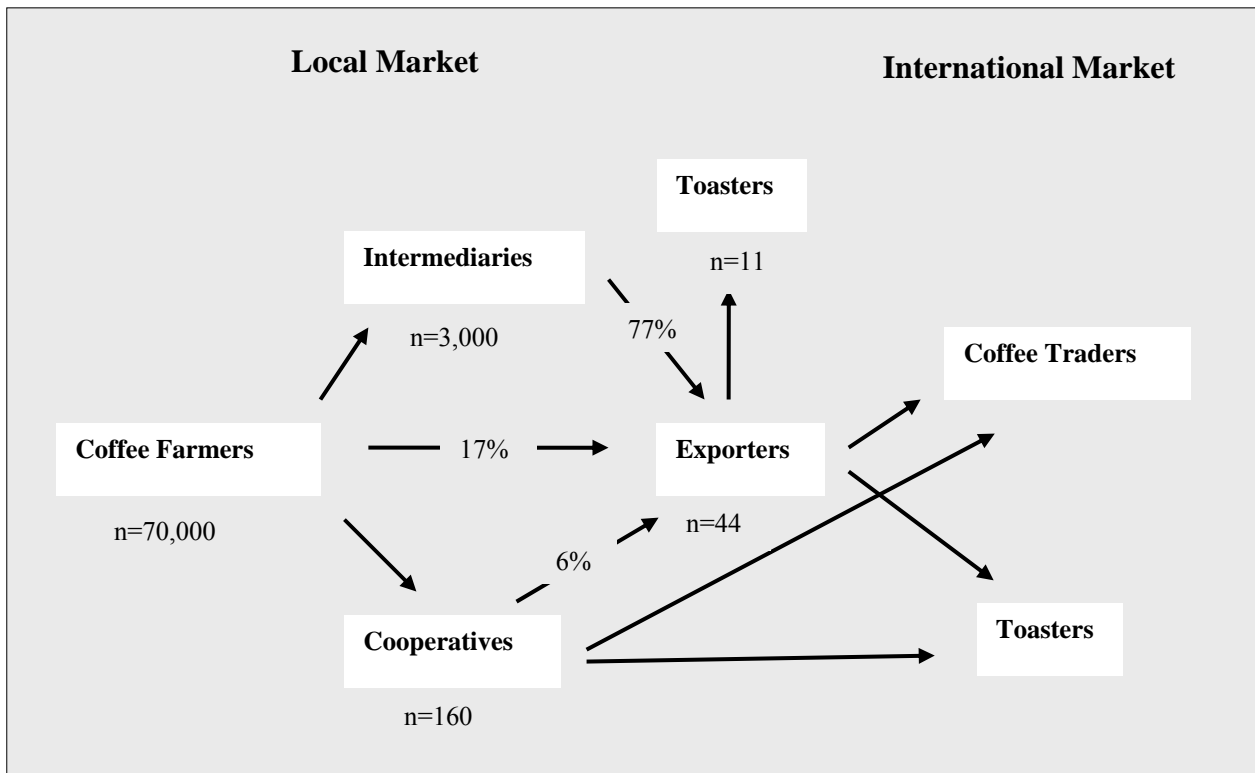


Figure 1: Actors and Interactions in the Honduran Coffee Chain

Integrating Small Farmers in Differentiated Coffee Markets

Empirical evidence suggests that producing coffee for differentiated markets can be a strategy for small producers to gain a higher proportion of the total income generated in the coffee chain (Ponte, 2001; Fitter and Kaplinskiy, 2001). In the case of Honduran coffee growers, the price paid for specialty coffee can be up to twice as much as the price paid for regular coffee. Nevertheless, these markets represent only 2% of the total coffee exports from Honduras. NGOs

² Bags contain 46 kg of coffee beans.

and the Honduran Coffee Institute (IHCAFE) have been promoting production for differentiated markets mainly because of the direct benefits for small farmers. Some of the programs (i.e. Eco-Friendly, Organic, Organic Fair Trade and Fair Trade) reward farmers for their quality by paying a higher price per bag. Other programs such as Q Coffee Trade provide an electronic marketplace for higher quality coffee where auctions take place. All Q Coffees have gone through an evaluation process by licensed Q graders and meet the minimum requirement of 80 or more points, using industry accepted standards. The challenge small farmers participating in this program face is that coffees must be stored in parchment at the declared mill or warehouse until a transaction is finalized. The sellers are required to meet standards for transparency, traceability, and consistency.

The Cup of Excellence is another initiative that positively impacts small-scale coffee farmers. It is a competition that rewards high-quality coffee producers and by now is well-known among coffee farmers in Honduras. Since the first competition, in which a small farmer (i.e. less than 5 ha of land) won, the Cup of Excellence has attracted both small and some large-scale farmers from different regions in the country. With the support of IHCAFE, 360 producers were able to participate in the 2006 competition. An expert group of national and international cuppers select the best coffee produced in that particular year. The final winners are awarded a prize and their coffee is sold to the highest bidder during an internet auction. The prices paid in this auction have exceeded \$200 a bag, which is more than 3 times what a small farmer would in the local market (Table 1).

Table 1: Production of Coffee for Differentiated Markets

Type of Coffee	Volume (46 kg bags)	% of Total Production	Price (US\$)	Price per bag (US\$)
Eco-Friendly	29,623.50	45.8	3,067,513.43	103.55
Organic Fair Trade	14,157.00	21.89	1,974,193.65	139.45
Organic	13,566.37	20.98	1,782,485.35	131.39
Fair Trade	4,848.50	7.50	610,571.61	125.93
Cup of Excellence	1,197.00	1.85	260,946.00	218.00
Q Coffee Trade	862.50	1.33	119,654.63	138.73
Specialty, Gourmet	422.01	0.65	50,451.30	119.55
Total	64,676.88	100	7,865,815.95	121.62

Source: IHCAFE, 2005

These targeted incentives by IHCAFE and NGOs to integrate small farmers in the differentiated coffee markets have proven to be worthwhile, as some farmers have been able to get a better price for the coffee they produce. Although it's still only a fraction of the total coffee production, the changing consumption patterns worldwide indicate that this sector has growth potential. Consumers are increasingly demanding specialty and gourmet coffee, as well as fair trade coffee. In the United States alone, the certified fair trade coffee imports grew 75% from 1999 to 2004³.

Opportunities for Upgrading?

In order to analyze how small coffee farmers were complying with standards and upgrading as a result of their interaction with other actors in the chain, an investigation was conducted in the western part of Honduras, where most of the coffee production is concentrated. The sample was randomly taken the department of Santa Barbara, where 16% of the coffee farmers in Honduras are located. Atima was the community where the sample was randomly selected. A structured questionnaire was the instrument used to collect the data. Furthermore, managers of six exporting firms located mostly in San Pedro Sula were interviewed to collect primary data. Secondary data

³ Specialty Coffee Association of America, 2004.

was collected by interviewing experts from the IHCAFE. Qualitative and quantitative criteria were used to determine the trust relationships between the actors, their upgrading possibilities and compliance with standards. Other variables analyzed were the availability of information, investments in R&D and type of contractual relationship.

Out of the sample taken, 78% of those interviewed were small farmers, or belonged to the first link in the coffee value chain. The exporters, defined as the third link in the chain after the intermediaries, made up 15% of the sample. The other cases were producers' associations or cooperatives. On average, the small farmers had almost 17 ha of land and produced 325 bags of coffee a year. Nevertheless, it's important to highlight the fact that over 55% of the producers had less than 10 employees and over 75% of them had less than 10 ha of land. On the other hand, the exporters sold about 238,000 bags of coffee worth over US\$25,000,000 a year. The cooperatives in this region sold on average US\$1,800,000 (Table 2).

Table 2: Characteristics of sample

Chain Link	Indicator	Mean	N
Producer	No. Employees	27	32
	Total Sales (US\$)	30,686	
	Area (ha)	16.48	
	Volume (46kg bags)	325	
Exporter	No. Employees	159	6
	Total Sales (US\$)	25,297,081	
	Area (ha)	-	
	Volume (46kg bags)	238,000	
Cooperative	No. Employees	220	3
	Total Sales (US\$)	1,800,000	
	Area (ha)	-	
	Volume (46kg bags)	17,666.67	

Despite the small size of some of the producers interviewed in terms of output, 56% said they had implemented standards (Table 3). Out of the producers for the differentiated coffee market, over 60% of the firms interviewed had implemented standards, whereas only 32% of the normal coffee producers had implemented standards. The most common standards sought were origin, fair trade, environmental and quality. All of the exporters interviewed had implemented standards and the retailers as well. Most exporters have engaged in upgrading activities in the past 5 years. The most common practice among the exporters is to improve or upgrade their processes. When asked what type of process upgrading activities they did, they affirmed it was in post-harvest management and control of humidity. Likewise, most producers are involved in process upgrading, in both types of chains, improving field practices as well as post-harvest humidity control.

Table 3: Upgrading and Implementation of Standards

Chain Link	Upgrading Activities			Implementation of Standards	N
	Product	Process	Functional		
Producer	14 (44%)	29 (91%)	6 (19%)	18 (56%)	32
Exporter	3 (50%)	6 (100%)	5 (83%)	6 (100%)	6
Cooperative	3 (100%)	2 (67%)	2 (67%)	3 (100%)	3
Type of Chain					
Differentiated Coffee	13 (68%)	19 (100%)	11 (58%)	18 (95%)	19
Normal Coffee	7 (32%)	20 (91%)	1 (4.5%)	11 (50%)	22

A correlation analysis to test the relationship between variables was conducted. The predictor variables tested were investment in R&D, the type of contractual relationship, the years in a

business relationship with the buyer, investment in marketing, investment in training, trust, availability of information, upgrading (product, process, functional) and the implementation of standards (Table 4). The outcome or dependent variable was total sales. From the analysis, it appears that investment in R&D will positively affect the sales. In other words, with every increment in the investment in R&D, the total sales are expected to be greater as well. Those farmers who have been in a longer business relationship with the buyers can expect to have larger sales. The effect of trust is positively correlated to the total sales, and this effect is large. Therefore, coffee farmers benefit from a high-trust relationship with the buyers. The investment in marketing and has no significance and the investment in training has a positive effect on the total sales. The availability of information about market prices, quality requirements and demand has a positive effect on the sales a coffee farmer can expect. The type of upgrading activities the farmers engaged in had varied effects. It appears that process upgrading is not significantly correlated to the total sales. On the other hand, functional upgrading is positively correlated to the total sales and this effect is large. Product upgrading has a small effect but is positively correlated to the total sales. Finally, the implementation of standards has a large effect on the sales. Those producers that are certified and have implemented standards can expect to have larger sales.

Table 4: Correlation Analysis

	Pearson's r	Spearman's r_s	Point-biserial r_{bp}	Effect
Investment R&D		0.457**		Medium
Contractual Relationship		0.766**		Large
Years in Business Relationship	0.602**			Large
Investment in Marketing		0.220		Not Significant
Investment in Training		0.315*		Medium
Trust Buyer		0.670**		Large
Availability of Information		0.683**		Large
Product Upgrading			0.326*	Small
Process Upgrading			0.251	Not Significant
Functional Upgrading			0.639**	Large
Implementation Standards			0.522**	Large

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

One of the initial research questions was if the type of trust relationship the producers had with the other actors in the chain, namely the buyers, influences their upgrading activities. A Chi-Square test was used to test the hypothesis of no association between type of coffee producers (regular or differentiated coffee), and the predictor variables standards, trust, type of contractual relationship, availability of information, and upgrading. Trust is significantly associated to the type of chain. Likewise, there is a significant relationship between the type of chain and the contractual relationship. Differentiated coffee chains appear to have more binding contracts than regular coffee chains. Finally, there was a significant association between upgrading activities (product) and the type of coffee chain.

Table 5: Chi-Square Test of Significance

	Type of Coffee Chain
Trust	15.725**
Contractual Relationship	13.618**
Product Upgrading	5.467*
Process Upgrading	ns
Functional Upgrading	ns

* $p \leq 0.05$

** $p \leq 0.01$

Conclusion

As Humphrey (2004) pointed out, learning and the acquisition of technological capabilities can be stimulated through involvement in global value chains but there is no guaranteed path to upgrading as a result of this involvement. In this study, most producers had already engaged in some type of upgrading activity, be it product upgrading or functional upgrading. Most farmers were improving their production processes by controlling humidity and having an overall improved post-harvest management. Most of the producers were aware of the importance of standards and those producing for differentiated coffee markets had to comply with standards. From the present study, one can conclude that although there has been some type of improvement (i.e. upgrading, implementation of standards) resulting from interacting in the coffee value chain, it is still unclear whether there is a sustained, long-term gain. For those producing coffee for differentiated markets, there seems to be a chance of gain. These markets pay up to twice as much per bag of coffee. Furthermore, through internet auctions and direct buys, the role of intermediaries is smaller and this guarantees that a higher price will be paid to the producers.

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