The Cacao Marketing Chain in Ecuador: Analysis of Chain Constraints to the Development of Markets for High-Quality Cacao

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Abstract

Worldwide demand for high-quality chocolate is growing, presenting vast potential to Ecuador, which is responsible for nearly half of the world’s supply of high-quality cacao. Despite its vast potential, however, Ecuador is not fulfilling its potential as a producer of high quality cacao, in fact, cacao quality is declining. Ecuador’s failure to fulfill its potential carries implications for the world production of high quality cacao, for domestic economic development, and for small farmer incomes and rural development. Ninety percent of Ecuador’s cacao farmers are small farmers (with less than 10 hectares), and the majority of them produce the high-quality variety. This paper analyzes the constraints that impede the development of markets for high quality cacao in Ecuador. The analysis takes as its starting point a consideration of how the Ecuadorian cacao market could be expected to perform if it fulfilled the assumptions underlying a perfectly competitive market, and then decomposes these assumptions to draw hypotheses that can be tested to determine which factors might be causing the observed market failures.

Keywords: cocoa, small farmers, market, marketing chain, Ecuador, quality, cacao

1. Introduction and Problem Statement

'The food of the gods', as cacao was called 500 years ago when the Spanish came upon it in South America, remains a precious commodity in the world. As news of chocolate’s health benefits has spread and gourmet interest has piqued, demand for cacao, particularly of the highest quality, has likewise expanded. This trend is of particular interest to Ecuador, which is responsible for approximately half of the world’s production of high quality cacao, though only the seventh largest producer of cacao overall (FAOSTAT). Cacao was Ecuador’s most important agricultural product and an emblem for the country until the 1930s when the Witches Broom (Crinipellis perniciosa) disease killed the majority of the plantations. Today, cacao continues to play a crucial role in Ecuador’s economy, contributing to foreign exchange earnings as well as the livelihood of approximately 90,000 cacao farmers, most of whom are small and resource poor. Nevertheless, the economic role of cacao in Ecuador is marginal compared to its potential, and the need to increase the quality and productivity of the country’s cacao sector is broadly appreciated.

There are two broad categories of cacao beans in the world market. One, referred to throughout this paper as “high-quality” cacao is a differentiated product, known among chocolate specialists as “fine cacao.” This cacao often comes from indigenous varieties, such as those which predominate in Ecuador’s cacao sector. The second, referred to throughout this paper as “commodity” cacao, is a standardized but not quality-differentiated product, and tends to come from modern varieties which are developed for high yield, low cost, and other attributes at the expense of the unique quality attributes
which are in demand among differentiated cacao consumers (ICCO, 2003). Although Ecuador is responsible for only 3% of the world production of cacao (WCF and FAOSTAT), Ecuador is the largest producer of high-quality cacao, accounting for more than 50% of world production (Rosero 2002). Currently, high-quality cacao constitutes only 4% of world cacao production, having declined from approximately 50% at the beginning of this century (ICCO, 2003).

According to a large producer and some exporters, high-quality cacao (known as Nacional or Arriba in Ecuador) accounts for 95% of Ecuador’s cacao exports, and receives a premium of 20 to 30% over the New York Stock Exchange cacao price. This premium for Ecuadorian cacao is attributable to a worldwide increase in demand for high-quality cacao due to publicity about its health attributes, particularly its high antioxidant content (ICCO, 2005). Indeed, a new trend has begun to emerge in cocoa consumption: the consumer demand for a differentiated cocoa product, and a higher quality chocolate, i.e. usually people want darker chocolate with a higher cocoa content (Menter 2005). For example, Europe is considered to be a fine chocolate consumer and it has increased its cocoa consumption by 21% from 1995 to 2005 (ICCO, 2007). Also, according to an exporter and a NGO, the appreciation of the unique qualities of Ecuador’s cacao has increased, particularly of the Nacional variety.

It is important to mention that Ecuador also produces specialty cacao such as organic, Fair Trade, and Rain Forest Alliance. Although these markets exist, they represent only a small part of the country’s production and are not the subject of the paper.

Ecuador is not fulfilling its potential as a producer of high quality cacao, and as a result is forgoing the contribution it could be making to domestic economic development and improving the livelihood of the small farmers. The question arises, then, as to why poor cacao farmers are not responding to the incentive implicit in high world prices for high-quality cacao. This paper addresses this question through an analysis of Ecuador’s cacao markets and the constraints to its development. The paper proceeds as follows: The next section outlines a conceptual framework for the analytical approach taken in examining the failure for Ecuador’s cacao market to develop, and hypotheses are proposed. Then, further detail on the empirical context of Ecuador’s cacao market is presented and an overview of the research methods is given. Finally, the results of hypothesis testing are presented and discussed and conclusions are offered.

2. Background: Structure and Organization of Ecuador’s Cacao Market

2.1. Production Characteristics

Ecuador is geographically divided in three regions: coastal plain, inter-Andean central highlands, and Amazonian jungle lowlands as it can be observed in Figure 1.
Cacao production is primarily concentrated in the coastal-plain region with 85% of the country total production. The three most important provinces are Guayas, Los Ríos, and Manabí which together account for 72% of total cacao production (INEC, 2006) (see Figure 2).

There are between 80,000 and 100,000 cacao farmers in Ecuador\(^1\). Two representatives from different NGOs mentioned that 90% to 95% of them are categorized as small farmers (with less than 10 hectares) and the majority of them produce the *Nacional* variety. They also indicated that these small farmers produce from 75% to 95% of Ecuador’s cacao (figures vary depending on source).

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\(^1\) 58,466 according to the national agricultural census in 2000, but 80,000 currently according an exporter, and 100,000 according to an NGO.
An NGO representative and ANECACAO (2006) indicated that common crop management practices used by small farmers include pruning for disease control (mostly Monilia and Witches Broom), initial development, plantation maintenance and plant recovery; fertilization, irrigation, and replacement of old trees.

Farmers can increase their yields and enhance the quality of their product by following those crop management practices and by undertaking post-harvest practices such as fermentation and drying. Practices such as fermentation and drying involve relatively simple technologies and specific but easily mastered techniques. For example, fermentation, which must be completed before drying, can be adequately performed using wooden boxes that are ventilated, drained, and protected from rain and wind. Likewise, drying can take place on a clean, protected concrete or wooden surface. In reality, however, inadequate and highly variable post-harvest management practices are the norm. For example, when one travels Ecuador’s roads in the cacao producing regions, it is very common to see cacao being dried over the pavement on the side of the road with no protection from pollution by cars, animals, and people who might be passing through. Likewise, many farmers are simply unaware of the need to ferment cacao before drying it, and simply dry it without any fermentation which has direct implications for quality. In addition to the pre- and post-harvest management practices that farmers can use, there is also a clear preference for Nacional variety cacao which is considered to have a superior quality and which is the subject of worldwide demand for high-quality cacao. According to a NGO there is room for both the hybrid and the fine varieties in the world market, segregation of them is key to improving the quality reputation and competitiveness of Ecuador’s cacao sector.

In Ecuador, numerous practices at the farm level and along the marketing chain mean that the overall nature of cacao quality is declining. In addition to the practices outlined above, intermediaries typically mix cacao purchased from different farms, with
no thought to maintaining separate cacao of different varieties, levels of fermentation, moisture, or contaminants.

3.2. Structure of marketing chain

There are numerous stages of cacao movement and transactions along the marketing chain. In order to understand better the market level constraints it is useful to comprehend the market structure.

Two different marketing channels can be generalized, one traditional, the other specialized. As shown in Figure 3, the specialized chain has fewer intermediate steps than the traditional chain.

Large cacao growers are usually able to by-pass intermediaries and sell directly to exporters or to wholesale intermediaries. However, smallholder cacao growers are usually subject to the full marketing chain (Collinson and Leon, 2000). That is, they can sell at the farm-gate or they can travel to the nearest town or city to sell to the local intermediary. In general, farmers prefer to carry their cacao to the buyer than to wait for the buyer to come to their farm, because a) they get a better price, for example, according to an exporter the intermediaries that go and buy directly from the field pay $6 to $8 less per quintile than the intermediaries in the nearest town, and b) in the majority of the cases few intermediaries are willing to go to the farms and to be exposed to the expense as well as risk of crime on Ecuador’s isolated roads. In general, buying in the field is not common, except in some very isolated areas and in some places where there is inadequate sun to dry the cacao, so the intermediaries go to the field to buy fresh cacao (without any fermentation or drying). Most farmers (70% according to the farmer survey), however, sell cacao to local intermediaries who are located in nearby community centers or towns.

With respect to the quantities and qualities traded, intermediaries collect different quantities of cacao and do not differentiate price on the base of quality. In fact, the intermediaries’ main aim is to acquire sufficient volume (Nelson and Galvez, 2000).
3.3. Cacao Price Determination

Export prices are determined according to the New York stock market, and fluctuate with it. At the time of field research, however, there was high domestic competition for cacao due to insufficient production to fulfill export demand, and the domestic price was 5% to 6% over the New York stock market as buyers competed for available supplies (representative from an export and processing company).

Farmers receive approximately 20% of the New York Stock Exchange price, and, according to one exporter, receive the highest overall prices paid to cacao farmers worldwide.

4. Conceptual Framework

In a perfectly competitive market environment, the market clears when the marginal costs of production equal consumers’ marginal utility, or willingness to pay, for
a product. An increase in demand, then, would raise the price above the marginal cost of production, and stimulate an increase in production by farmers until the point where their increased costs again equal consumers’ willingness to pay. Thus, the question implicit in the observation that the increase in demand for high-quality chocolate has not stimulated a supply response by farmers is: what violation(s) of the assumptions underlying the perfectly competitive market impede this reaction?

Here, the assumptions underlying the perfectly competitive market are outlined, and evidence from the literature on agriculture market development in general, and Ecuador’s cacao market in particular, is drawn to generate hypotheses for empirical testing.

Let us suppose that cacao farmers are facing a perfectly competitive cacao market. That means, assuming homogeneous products and factors of production and perfect information, that there are no barriers to market entry or exit, perfect mobility of resources, and perfect information. The perfectly competitive market also assumes a given distribution of resource ownership and well-defined property rights, absence of market externalities, and institutions that are considered fixed (or ignored). In addition, the decision agent is considered to act rationally in pursuit of his/her goal that is to maximize profits or utility, and it has perfect knowledge of technical production relationships and input and product price relationships.

Possible explanations for the lack of productive investment in the development of the cacao market can be found at both individual-level and market-level. For example:

a) although small farmers are utility maximizers they may not be profit maximizers, for example, because of a highly risky environment;

b) even if small farmers are profit maximizers, cacao may not be the best investment choice, for example, because of high investment requirements in crop management, post-harvest practices, etc. or simply the availability of relatively more profitable enterprises;

c) even if cacao production were a highly profitable investment choice, there might be constraints on the investment sides such as limited access to inputs, human capital, financial capital, etc.; and

d) even if the assumptions of profit maximizing farmers with unconstrained access to investment resources were true, there may be impediments to the realization of profit potential, due to market failures or market level constraints.

From the survey data on average 44% of the household income comes from cacao. Therefore, we assume that cacao farmers are profit maximizers and that cacao is a highly profitable investment choice. Thus, production of high quality cacao might be impeded 1) at the farm level due to constraints on the investment side such as limited access to inputs, human capital, financial capital, etc. (that is, the assumption of free
mobility of resources underlying a perfectly competitive market is violated); and/or 2) at the market level due to market failures that result in the inefficient allocation of resources and impede the realization of profit premiums for high-quality cacao production (Eatwell et al 1987). Examples of market failures are market power, transaction costs, and institutional constraints. The intent of this paper is to analyze possible market level constraints to market development, and develop and test hypotheses about the presence of these constraints through the field research.

4.1. Market power

Market power is the ability to influence prices, incomes and other results in particular markets. It is a result of one’s large market share and/or product differentiation (Jaffee and Morton, 1995). It implies high levels of industry concentration, economies of scale, and significant degrees of product differentiation. However, these characteristics do not automatically imply market inefficiency. For example, over the past years many industries have experienced significant industrialization and consolidation, but these changes and trends could have spawned more efficient firms even as markets became more concentrated (Hatirli et al 2006). Indeed, Persaud and Tweeten (2002) mentioned that agribusiness markets are imperfectly competitive, but cost efficiencies resulting from greater concentration exceed losses from market power distortions, causing a net improvement in economic welfare. However, these benefits of efficiency gains are passed to consumers rather than to farmers. Farmers will reap normal profits if farm resources adjust. Economic theory predicts that farmers will operate further down on their supply curve—lower commodity prices and quantities—than they would when facing a perfectly competitive agribusiness sector.

Existing research on cacao markets in Ecuador points to intermediaries as holders of market power who extract rents from farmers by exercising market power. This market power is argued to have two underpinnings: a) spheres of influence in the market and exclusive rights to buy in specific areas, b) farmers’ dependency on intermediaries for credit to get through the low season and fund crop production activities, which is argued to obligate farmers to sell to those intermediaries who extended credit, thus subjecting them to non-competitive market conditions (Nelson and Galvez, 2000). In the cases of credit provision from the intermediary and when the farmer sells to the same intermediary that provided the loan this influences the price negotiation and farmers have less bargaining power than the ones that do not have any commitment. Despite observational and anecdotal indications of market power, no explicit effort is known to have been made to evaluate these arguments.

Hypothesis 1: Market power constrains the transmission of price incentives to farmers, particularly with respect to incentives to produce high-quality cacao.

Hypothesis 1.1: Intermediaries are able to exert market power due to the existence of spheres of influence that grant them exclusive buying rights in specific geographic areas.
Hypothesis 1.2: Intermediaries are able to exert market power because farmers are obligated to sell to them to pay back credit that they accepted from them.

4.2. Transaction costs

Transaction costs include ex ante costs of determining whether an exchange is advantageous, cost of carrying out the exchange such as finding buyers or sellers and cost of transportation, and, where applicable, ex post costs of ensuring that all requirements of the exchange were met (Scott, 1995). Transaction costs are present every time that there is a trade or a marketing transaction. The theory of transaction costs economics assumes that some agents might behave opportunistically, which implies that contracts must consider safeguards, when possible, or introduce monitoring costs. It also assumes that the impossibility of building complete contracts is a result of the limited capacity of agents to anticipate all the possible outcomes or the future alternative status of complex systems. This concept recognizes that economic behavior of agents is intended to be rational, but that they can only attain this intention partially (Zylbersztajn, 1996). Transaction costs also imply imperfect knowledge of market opportunities, prices, buyers, quality grades and standards, among others. Together with information asymmetry\(^2\), these factors increase the cost of information. When transaction costs are large, total costs (the combined sum of production and transaction costs) can exceed total revenue, resulting in “market failure” which means that firms forgo investments that would otherwise be profitable.

In Ecuador’s cacao market, indications of transaction costs reported in the literature include information asymmetry, by where transaction transparency was negatively affected as a result of the practices that many intermediaries employ when trading their product, thus, extracting price premiums by impeding qualification of high-quality cacao and consequently denying premiums to farmers (Nelson and Galvez, 2000). For example, scales often understate the true weight of cacao sacks, and discounts for high moisture and extraneous matter are often higher than they should be (Collinson and Leon, 2000).

**Hypothesis 2**: transaction costs, specifically transaction transparency, constrain the transmission of price incentives to farmers, particularly with respect to incentives to produce high-quality cacao.

**Hypothesis 2.1**: there is a lack of objective methods/tools for quality testing, therefore, the intermediary takes advantage of the farmer by under-qualifying cacao measures.

**Hypothesis 2.2**: there is a lack of information about market conditions including prices.

\(^2\) Information asymmetry exists when one party to a transaction has more or better information than the other party.
4.3. Institutional constraints

According to North (1991, p. 97), “institutions are the humanly devised constraints that structure political, economic, and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct) and formal rules (constitutions, laws, property rights). Throughout history, institutions have been devised by human beings to create order and reduce uncertainty in exchange.” From the transactions cost perspective, institutions reduce transaction and production costs of exchange (North, 1991). Institutions that are key to the functioning of markets include the legal system, the organizational environment, political institutions, and cultural norms (Zylbersztjan, 1996).

In the Ecuadorian context, as already mentioned as part of transaction costs intermediaries impede the qualification of high-quality cacao and consequently deny premiums to farmers (Nelson and Galvez, 2000). This can represent a lack of institutions because of a the lack of adequate grades and standards and/or a lack of enforcement of those grades and standards. In general, grades and standards that are related to quality attributes of the products include metrics such as weight and measures, and esthetics such as appearance, color, cleanliness, and uniformity (Bawden et al 2001).

Then the absence or weakness of institutions implies in the Ecuadorian context: a) a lack of rules or inadequate grades and standards, and b) lack of enforcement of those rules throughout the marketing chain.

*Hypothesis 3:* There is a lack of institutions that impede the transmission of price incentives to farmers, particularly with respect to incentives to produce high-quality cacao.

*Hypothesis 3.1:* There is a lack of adequate rules, including grades and standards throughout the marketing chain that affect quality incentives transmission.

*Hypothesis 3.2:* There is a lack of monitoring of grades and standards throughout the marketing chain.

5. Methods and Data

The research was approached through a subsector analysis. A subsector is an economic unit of analysis specific to a particular commodity or commodity group. It encompasses a meaningful grouping of economic activities linked horizontally and vertically by market relationships (Morris in Scott 1995). Subsector analysis involves the study of relations in the production, marketing, distribution, and consumption of a commodity (Loveridge in Scott 1995). According to Staatz (1997, p: 2) subsector analysis is “a way of viewing a vertical slice within food systems matrix. In other words, the subsector approach examines how production and distribution activities for a commodity are organized within the economy and asks how the productivity of those
activities can be increased either through improved technologies or better institutions and policies to coordinate the various stages of production and distribution.”

The subsector approach can be particularly useful for the study of agricultural marketing issues because it ensures that problem diagnosis is undertaken in a comprehensive, system-wide context (Morris in Scott 1995). Subsector analysis is particularly useful to identify system dynamics, linkages, and overall problems. Once armed with a system-wide perspective, an analyst is more likely to formulate policy prescriptions that are both realistic and workable (Loveridge in Scott 1995).

The field research in Ecuador was guided by a subsector analysis approach which sought to a) describe and understanding the functioning of the subsector structure, b) analyze the reasons that gave rise to that structure, and c) analysis of the implications of the structure for the economic performance of the cacao subsector in Ecuador.

Methods commonly used in subsector analysis include rapid reconnaissance techniques which, according to Holtzman (1986), give a broad and preliminary overview of the organization, operation, and performance of a food system, and are intended to identify system constraints and opportunities. Specific methods utilized included identification of key participants in the marketing chain, in depth semi-structured interviews applied to key participants all along the marketing chain, and a farmer survey.

The analysis was carried out in Ecuador from May to August 2006 and included a total of 38 interviews conducted with 46 people including farmers, intermediaries, as well as representatives of producers’ associations, NGOs, and the government. Evidence was also drawn from the preliminary analysis of a survey of the production and marketing practices of 327 cacao farmers that was carried out during the field research period.

6. Results and Discussion3

The market level constraints that impede the development of markets for high quality cacao supported several, but not all, of the hypotheses that were proposed.

6.1. Market Power

Is there a concentration of market power in Ecuador’s cacao marketing chain that impedes the development of the market? To answer this question the following hypothesis and attendance sub-hypotheses were tested:

*Hypothesis 1.1:* Intermediaries are able to exert market power due to the existence of spheres of influence that grant them exclusive buying rights in specific geographic areas.

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3 The name and enterprise/organization of the interviewees will be withheld for confidentiality purposes.
Hypothesis 1.2: Intermediaries are able to exert market power because farmers are obligated to sell to them to pay back credit that they accepted from them.

The subsector analysis fails to support the two arguments (sub-hypotheses) regarding the hypothesis that market power inhibits farmers’ incentives to invest in high-quality cacao.

The analysis suggested that along the marketing chain there are market power issues among intermediaries. Even though the major producing areas have numerous choices for marketing (intermediaries), the more isolated areas have few marketing choices, which are determined by spheres of influence due to economies of scope/network economies leading to “natural” monopoly, i.e. high fixed costs of establishing and collecting cacao among many small, dispersed farmers, each of which has relatively low volume per pickup. There are initial indications that going to the farms to pick up cacao plays a minimal role. So, the farmers commonly bring their harvest to the intermediaries, and often, to the same intermediary, with whom they create informal relations, but no obligation. Therefore, 1) farmers do have alternative markets bringing cacao to some near town, and 2) any significant price difference between the farm-gate and the local market is a risk and service premium charged by intermediaries, because when they travel to pick-up cacao at the farm-gate they face risk of theft. Therefore no support was found for hypothesis 1.1.

Credit is key to farmers in financing production and low-season, however, its offering by intermediaries is not widespread and it is decreasing due to default by farmers. Indeed, there are perceptions among intermediaries of a cultural shift between generations in which farmers are lacking more commitment. Here is relevant to note that there is no entity that lends money to small farmers in Ecuador. Hence, even though an obligation is intended, the farmers do not feel obliged because they still sell elsewhere even when they have taken credit. Therefore, hypothesis 1.2 does not hold.

6.2. Transaction Costs

Are transaction costs, specifically transaction transparency, an impediment to the transmission of price incentives to farmers, particularly with respect to incentives to produce high-quality cacao?

Hypothesis 2.1: there is a lack of objective methods/tools for quality testing, therefore, the intermediary takes advantage of the farmer by under-qualifying cacao measures.

Hypothesis 2.2: there is a lack of information about market conditions including prices.

The field research supported the sub-hypotheses that there is a lack of objective methods/tools for quality testing, therefore, the intermediary takes advantage of the farmer by under-qualifying cacao measures, and that there is a lack of information about market conditions including prices.
There is a lack of transparency in determining quality at all levels of the marketing chain, for example, at the export level it can be stated that the world and the National Exporters’ Association (ANECACAO) standards, guided by the Normalization Ecuadorian Institute (INEN) standards, are based on physical attributes such as variety, humidity, seed’s weight, level of fermentation, fungus, and defects. However, according to an exporter, there are no devices for measuring some of those attributes, for example, humidity can only be measured with apparatus if it is lower that 10% to 15%, and usually farmers sell their cacao with that humidity percentage or more.

Likewise, along the conventional marketing chain, there is a lack of premiums that reflects differentiated (high quality) attributes sought on the world market (UNOCACE and FEDECADE—Second Level Producers’ Associations). Transactions are based on weight, humidity, impurities and defects, including diseases, determined by the buyer experience and “eyeball” quality standards. Indeed, there is an extraction of price premiums by intermediaries through impeding the qualification of high quality cacao and consequently denying premiums to farmers. Therefore, at the farmers’ level, there is no reward for investing in quality and post-harvest activities, thus blending—with respect to varieties, fermentation, humidity, and diseases—takes place. It is important to mention that there is some level of sorting at export or wholesale intermediary stages (the local intermediaries only dry the cacao that they buy), but it is inadequate to “create” quality, if quality has not been created and maintained already since the farmer level, for example, if the farmer has not given an adequate fermentation process, then it is impossible to recover that afterwards!

At the farmer’s level there is a lack of incentives to produce high quality influenced by lack of information about prices (Cacao National Exporters’ Association). Indeed, there is no price differentiation for quality produced in the conventional marketing chain, which is defined according to the Normalization Ecuadorian Institute (INEN) (detailed below), caused by lack of transparency at the intermediary level. So, there are no price incentives to produce high quality within the conventional marketing chain. The only price differentiation that exists is at the exporter’s level. They are the ones that receive the world market premium and they are responsible for sorting quality.

There is also a lack of information about markets, and quality grades and standards, all of these causes information asymmetry. For instance, the farmer thinks that if they do not accept the deal that the intermediaries, usually in the nearest town, offer—which usually includes a lot of discount (20% approximately) for humidity, impurities, defects, including diseases, and at times, fermentation—, then they will not be able to sell their cacao harvest anywhere else, which generally is not the case. The lack of information with respect to quality standards is reflected in the fact that usually the farmers do not know exactly the quality of the cacao that they are selling, for example,

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4 It means an association of producers’ associations. UNOCACE it is formed by 745 members organized in 12 associations. They export Organic cocoa to France since 2002. FEDECADE it is constituted by 556 active members organized in 10 associations. It exports cocoa with Rainforest Alliance, Fair Trade, and Organic certifications since 2000 to Germany, the United States, and Italy.
percentage of humidity, level of fermentation, percentage of diseases, etc., so they do not have the tools/information to discuss the price with sound arguments with buyers. The lack of information about prices is also critical, because they usually only know the prices that the intermediaries are paying in the nearest town. In addition, there is a lack of understanding of how markets work that means the role in the larger market context, since the creation of value begins (or ends) at farm level.

6.3. Institutional Constraints

Does the lack or weakness of institutions supporting the market constrain the incentives to produce high-quality cacao?

Hypothesis 3.1: There is a lack of adequate rules, including grades and standards throughout the marketing chain that affect quality incentives transmission.

Hypothesis 3.2: There is a lack of monitoring of grades and standards throughout the marketing chain.

The subsector analysis results supported the sub-hypotheses of weak institutions constraining the incentives to invest in high-quality cacao.

The differentiated world market for cacao (high-quality vs. commodity), is not reflected in INEN standards. In other words, there are niche markets that care about organoleptic attributes such as aromas and flavors which are subjectively determined, and special production i.e. organic, fair trade, etc. However, at the national level those attributes are not considered, for instance, according to a large producer and exporter, only 3 or 4 exporters, who are responsible for approximately 7% of Ecuadorian cacao exporters and approximately 15% of Ecuadorian cacao trade, know how to taste cacao. These attributes determine differences on sales value. In addition, another attribute that is not included in the norms is that each location has its own characteristics—aromas and flavors, but there is a generalized ignorance in this aspect. That is why an exporter is trying to change this situation and it is working on a laboratory for tasting, with external advice, in order to create a flavor profile of the Ecuadorian cacao. Also, the marketing representative of an exporter and processing company mentioned that after buying cacao, they analyze it in laboratories where they know the different flavors and aromas that characterize each producing area.

Ecuador has no national policy that promotes the production of high quality cacao. For instance, there is no monitoring system at the national level that enforces the homogenization of cacao quality or the segregation of different qualities. In fact, one of the interviewees mentioned that there are enterprises in Ecuador that are selling the hybrid variety as if it were the fine variety cacao beans, and that there are no regulations with respect to this matter. In fact, although there was a law decree issued by the government on this subject more than a year ago, no action has been taken on the matter.
This lack of monitoring system is transmitted along the marketing chain until it reaches the farmer. An exception to this rule, according to two NGOs is the case of farmers’ associations, through which from 10-15% of cacao farmers market. However, some NGOs are promoting farmers’ organization, for example, CORPEI, ACDI-VOCA, and Conservación y Desarrollo, among others. There are certain quality requirements that the organized farmers must achieve, for example, certain number of fermentation days, of drying days, but it is more common to observe that the cooperatives require the cacao to be marketed fresh, i.e. without fermentation, nor drying, in order to achieve certain homogeneity in the post-harvest processes, for example, the Fortaleza del Valle\(^5\) second level producers’ association receives only fresh cacao. Then, the reader might ask, why are not all farmers marketing fresh cacao? The reasons are 1) price, since fresh cacao is paid at less price than the dried one, 2) additional costs such as transportation (more volume, heavier, etc.) and time, since the cacao should be marketed immediately after harvest, and 3) lack of availability of organizations to buy fresh cacao.

There is a monitoring system for cacao quality at the export level. As it was mentioned before exporters are the ones that have to face the cost of sorting quality, so in order to reduce this cost, some of them have specific grades and standards for their suppliers. For example, Nestle has specific quality requirements\(^6\) for the cacao it purchases, provides training to their suppliers to help them achieve their quality standards, and pays a premium of approximately 2% to those suppliers who comply with their requirements.

7. Conclusion

There are incentives at the country level for high quality production, but those incentives are not transmitted upstream along the marketing chain, thus not reaching the small farmer. Market constraints explain the impediment of the development of markets for high quality cacao. The subsector analysis failed to support the hypotheses that intermediaries are able to exert market power due to: 1) the existence of spheres of influence that grant them exclusive buying rights in specific geographic areas and 2) farmers’ credit obligations. Constraints related to transaction costs exist such as transaction transparency that causes an impediment to the transmission of price incentives to farmers, particularly with respect to incentives to produce high-quality cacao. Also, there is a lack of objective methods/tools for quality testing, therefore, the intermediary takes advantage of the farmer by under-qualifying cacao measures. Also, institutional constraints were found such as a lack of adequate grades and standards and monitoring of those grades and standards throughout the marketing chain.

\(^5\) Fortaleza del Valle is a second level producer association located in the province of Manabí and constituted by 417 members. It was formed approximately in January 2006 and just did (last week of May 2006) its first Organic export to Switzerland.

\(^6\) Nestle requirements: cacao with maximum of 15% of humidity, no blends with cacao that has fungus diseases (for example, Monilia—Monilia roreri—), no smoke contamination (this problem appears sometimes when the cacao is dried using certain fuels), no less that 70% of fermentation, usage of cabulla or fique (American Agave) bags of 150 pounds made without mineral oils, and they require traceability but only from the supplier level (consider that 85% of their suppliers are intermediaries).
Since there is a deficit in the world cacao production plus the increasing trend in the demand for high quality cacao, Ecuador must exploit its potential as a high quality producer by surmounting the market level constraints that impede the Ecuadorian marketing chain development. For example, there is a necessity of coordinated and sustainable technology transfer and training provision at the farmers’ level with respect to crop management and post-harvest practices.

The incentive of price recognition is fundamental to promote high quality production from the farmer level. But, this incentive must be transmitted through every level of the marketing chain. It has been demonstrated by some of the farmers’ associations that it is possible to skip the intermediaries and sell directly to an exporter or export directly, getting much better prices, thus creating incentives to produce high quality cacao. Even though, it has also been demonstrated that farmers need external support— technical training and financial aid—to do that.

It is relevant to note that the role of the intermediary in the marketing chain is important; since they fill the lack of credit market for small cacao growers and they are the ones that buy cacao in very isolated areas where for the farmer is very difficult to carry their production to the nearest town.

In the future the national standards to approve the cacao exports (INEN norms) should be modified to include not only physical characteristics of the product such as grade of humidity, fermentation, absence of diseases, etc., but organoleptic (aromas and flavors), location, and specialty cacao attributes. Although this is a premature recommendation since there is no consistent application of grades and standards for physical attributes in addition to the minimal technology available to enable measurement of those attributes along the marketing chain. If grades and standards are applied consistently for those attributes, then the INEN norms may be modified, therefore exporters will be more demanding with respect to quality with the wholesalers which will transmit these requirements to the local intermediaries, and finally to the farmers. In order to apply those grades and standards consistently, Ecuador requires an entity to certify the quality grading process at all levels of the marketing chain, especially at the intermediary level, including quality segregation as part of its main objectives. That, combined with training to farmers with respect to the quality grading issues, will certainly improve the overall cacao quality and the small farmers’ bargaining power, thus the price they receive for their product.

In addition, Ecuador would be better off if every agent involved in the marketing chain collaborates, in the sense that everyone should move towards a common objective as a country, cooperating within and between levels in the chain. For example, a flavor profile of Ecuadorian cacao must be developed soon in order to promote Ecuadorian chocolate from different locations and to develop a denomination of origin certification and brand for Ecuadorian cacao, which ought to be achieved soon in order to fulfill the world demand.
Further research is needed to explore not only market level constraints, but farmer level constraints such as limited access to high quality production infrastructure, for instance, limited access to inputs, human capital, financial capital, etc. Furthermore, additional research is required to explore the determinants that affect the farmer’s market channel choice.
8. References


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