

The structural changes in the Mexican coffee sector: effects on the transaction costs

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Abstract

This paper analyses the structural changes which have been present since the economic clauses of the International Coffee Agreements have no longer been in effect. It studies the elements that modified the coffee policy over time. It also investigates the main characteristics of the entire coffee sector during and after government control of the sector. Specifically, it considers the prices, government expenditure in the coffee industry, partners' participation and their organisation, and the performance of the coffee industry. We use data collected from several bureaus, institutions, libraries, and field surveys done with the main parties involved in the Mexican coffee sector. Data coming from the national coffee census updated in 2008 was used to figure out some characteristics of the coffee supply chain. The overall results indicate that the main causes for the structural changes have been the adjustment in the Mexican economic policy and the alignment to international agreements in coffee. We found that the coffee margins were higher during the time of the quota system than in the relatively free coffee market currently in place.

Keywords: Market structure. Institutional changes. Organisation.

1. Introduction

The structures that have been in place in the Mexican coffee sector in the last two decades account for the participation of government representatives, firms, farmers, and other agents directly involved in this industry. Among them, most influential in the decision making have been the government and firms. Now, the question is whether the institutional arrangements that have been in place since the end of the nineteen eighties have been able to fill the gaps caused by the decreasing government participation in the coffee supply chain.

The structural changes in the organization of the Mexican coffee sector took place within a broader national context of reform due to the liberalization of the economy. The process of liberalization started with the accession to the General Agreement on Tariffs and Trade in the middle of the nineteen eighties. As part of this procedure, the agricultural sector was unprotected subsequent to the closure of several governmental instances. Another influential step in liberalizing the Mexican economy was when the Mexican state signed the *North American Free Trade Agreement* (NAFTA) in 1992 (Thorvald Niels, 2004).

In addition, there was a flight of capital out of Mexico and the country experienced a very steep devaluation of the Mexican peso during the first three months of 1994, as a result of the reduced trust in the government economy. This ended with a tremendous financial crisis in the economy. Because of this crisis, the interest rates rose to 90% in that year. Those things together led to the closure of many small- and middle- sized enterprises; the Mexican government also had to expend a lot of money to rescue the banks from the bankruptcy. After some years of instability in the economy during the nineteen nineties, Mexico has experienced a stable inflation and exchange rates in the last sixteen years (Avalos-Sartorio, 2006a, OECD, 2011).

This paper is organized as follows: Section 2 describes the relevance of the Mexican coffee sector; Section 3 presents a description of the liberalization process of the Mexican economy; Section 4 presents a picture of the structure and organization of the coffee sector; Section 5 describes the institutional arrangement that was in operation under the quota system; in Section 6, we will describe the structure of the Mexican coffee sector from 1993 to 2004; Section 7 focuses on the actual organization of the Mexican coffee industry; and section 8 contains some concluding remarks.

2. Relevance of coffee in Mexico

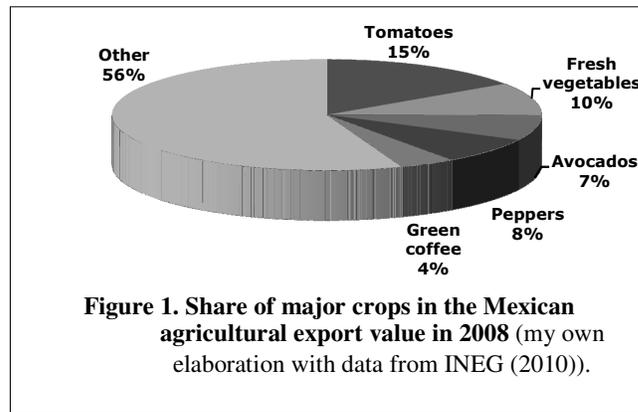
Coffee is the main export product for many developing nations, and at the international level, coffee represents the second most tradable commodity after petroleum. The production of coffee worldwide was 116.7 million quintals in 1989-90 and 167.98 million quintals in the 2008-09 harvesting season. This represents a 44% increase in 20 years (ICO, 2009); twice more than the demand for the same period (IDEA, 2006). It is estimated that over 125 million people worldwide depend on coffee for their livelihood; coffee produces an income for millions of small growers and their families. The economies of some countries

are highly dependent on coffee as a source of national income and export earnings (Fuzhi, 2007).

Coffee has been farmed in Mexico for more than two centuries. This crop was originally introduced to Mexico in the late eighteenth century and was initially grown in large plantations. However, at the start of the nineteenth century, it gradually became a crop of smaller farms. Currently coffee is farmed in 12 of the 32 states of Mexico, five of which are major coffee producers (Chiapas, Oaxaca, Veracruz, Puebla and Guerrero). According to the Coffee Census database, updated in 2008, coffee is produced in a total of 541 municipalities. Considering the geographic and environmental characteristics of the locations where this crop is being farmed in Mexico, the total land cultivated can be grouped into two coffee-producing areas: the Pacific Ocean region and the Gulf of Mexico region. The former accounts for 75% and the latter for 25% of the total coffee production in this country (Pérez Grovas *et al.*, 2001).

This commodity has been Mexico's most important source of agricultural export revenue for many decades. It is fifth in terms of geographic area cultivated (after corn, beans, wheat and sorghum). Coffee was one of Mexico's major agricultural exports in the middle of the nineteen eighties; it accounted for 35% of the total agricultural output at that time (Wehbe *et al.*, 2005). This crop was also the third major source of foreign revenue, surpassed only by petroleum and automobiles, and represented 3% of the total exports and 25% of the total agricultural exports in the nineteen nineties (Villaseñor, 2004). It brought in \$413 million of foreign exchange annually in the nineteen nineties and \$230 million annually during the past decade (Banco de México, 2010). It is estimated that coffee was fifth in terms of the shared value of the total agricultural exports after tomatoes, fresh vegetables, avocados and peppers in 2008 (see Figure 1).

The government intervention in the coffee sector was formally institutionalized in the nineteen forties. Yet, the strongest government participation started with the establishment of the Mexican Coffee Institute (INMECAFE) in 1958. Through this institute's efforts with regard to distributing coffee technology and credit provision and extension, coffee became an economically viable activity for smaller landowning farmers in Mexico in the nineteen eighties (Eakin *et al.*, 2006).



The economic relevance of the agricultural sector and coffee production in Mexico has decreased in the last decades. Its agricultural sector's contribution to the GDP was 4.97% in 1989, after which it fell to 3.67% in 1997 and to 3.40% in 2007 (INEGI, 2010). Similarly, the share of coffee value in the Mexican GDP was 0.25% in 1989, after which it fell to 0.20% in 1997 and to 0.08% in 2006 (Banco de México, 2010). In particular, it was reported that the percentage of coffee's contribution to agricultural exports was 3.64% in 2008 (see Table 1) (Banco de México, 2010, Pieterse and Silvis, 1988). Although coffee's relative economic importance has declined, it still remains the country's largest single export crop and a significant source of foreign income (Calo and Wise, 2005, Pérez Grovas *et al.*, 2001).

Table 1. Value of exported coffee within Mexico's total and agricultural exports.

Year	Total export	Agriculture export	Coffee export	% coffee in total export	% coffee in the agricultural export
2001	158,779	4,446	243.91	0.15	5.49
2002	161,046	4,214	186.44	0.12	4.42
2003	164,766	5,035	182.70	0.11	3.63
2004	187,998	5,683	205.75	0.11	3.62
2005	214,233	6,008	235.98	0.11	3.93
2006	249,925	6,853	264.60	0.11	3.86
2007	271,875	7,435	305.60	0.11	4.11
2008	291,342	7,916	288.20	0.10	3.64

Nota: Value in million dollars.

Source: My own elaboration with data from Banco de México (2010).

Even when Mexico's position as one of the major producer countries has decreased in recent years, it continues to be an important supplier in the world market. Mexico was the fourth-highest producing country in the 1988-89 harvesting season; however, in the 1998-99 harvesting season, it fell to the position of sixth-highest coffee producer. According to information included in Table 2, these changes have occurred not only because Mexico has

reduced its total production, but also because other countries such as Vietnam, Ethiopia and Indonesia have increased their production.

Table 2. Coffee production by major producing countries (in thousands of quintals).

Country	1988-89		1998-99		2008-09	
	Quantity	%	Quantity	%	Quantity	%
Brazil	29,919	26	47,949	34	59,990	36
Vietnam	1,357	1	9,091	6	20,870	12
Colombia	13,752	12	14,393	10	13,696	8
Indonesia	8,830	8	9,633	7	11,267	7
Ethiopia	3,522	3	3,580	3	8,000	5
Mexico	7,827	7	6,262	4	6,065	4
Total	116,684	100	141,056	100	167,987	100

Source: My own elaboration with information from ICO (2009).

Some of the main indicators of coffee production have changed in the last twenty years. The land planted with coffee orchard was reduced by 9.3% from 1989 to 2008. The production was reduced as well with 23% between during those years (see Table 3). These changes are presented as a result of the reduced maintenance of the coffee plantations and the low incentive to invest in coffee orchards. In fact, 93.7% of the coffee farmers owned less than five hectares of coffee orchard in 1989, while 1.9% of the coffee farmers owned 10 or more hectares of coffee orchard in the same year. This means there were many small-scale and few large-scale coffee growers.

Table 3. Shifts of some indicators of the Mexican coffee sector from 1989 to 2008.

Indicator	1989	2008	% shift
Number of farmers	276,655	493,497	78.38
Land with coffee (ha)	743,482	674,132	-9.33
Total production (Qq)	7,509,110	5,774,159	-23.10
Average hectares per farmer	2.69	1.37	-49.17
Average yield (Qq/ha)	10.10	8.57	-15.19

Source: My own elaboration with data from INMECAFE (1990) and SIAP (2010).

Coffee growers farm their orchards in two basic ways: under the shade of trees and out in the open. Of the total of 776,870 coffee plots in Mexico, 99.8% are under the shade of trees and 0.2% are in the open (SIAP, 2008). Shaded crops such as coffee are important because they generate wood masses, which protect the native fauna; this type of plantations also has a beneficial influence on the water cycle, in conserving environmental conditions, and on the

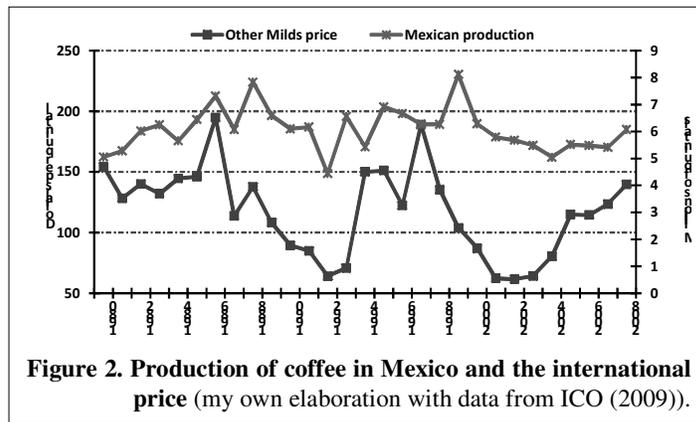
landscape (Marban-Mendoza, 2009). Beside the economic importance, environmental conservation is one of the most important benefits of coffee production in Mexico.

According to the Coffee Census database updated in July 2008, there were around 500,000 Mexican coffee growers, which mean that the same number of families depends to a certain degree on coffee cultivation for their sustenance. Together, growers and their relatives (1,053,713 people) who were reported as working in coffee production activities came to a total of 1,547,210 people directly involved in this crop. Considering the additional people employed in harvesting, processing, and marketing coffee, in Mexico at least three million people depend on coffee for their living. In the largest major coffee-producing states, coffee provides employment to about 50% of the working population of the rural areas (Pérez Grovas *et al.*, 2001).

Coffee also has importance in Mexico for its relation to the type of population that works within this sector. Many coffee growers' mother tongue is not Spanish; this means that many coffee growers are indigenous people. Indeed, according to the most recent Coffee Census, 39.7% of the total of Mexican coffee growers speaks an indigenous tongue as their primary language.

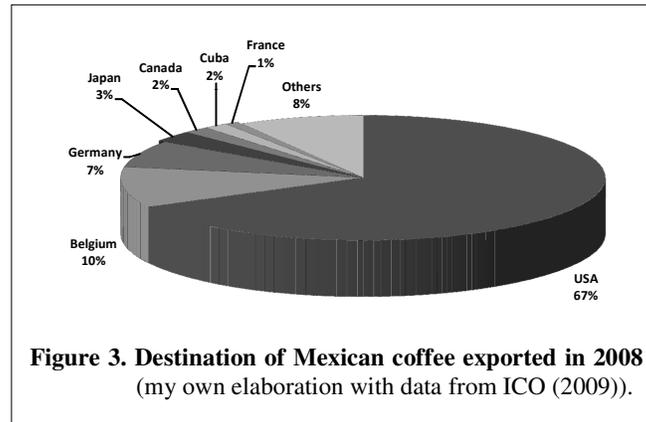
Coffee is concentrated in some of Mexico's poorest regions. The major coffee-producing areas are mountainous, have poor communication and limited public services. Around 84% of the communities in which coffee is a primary agricultural activity have high or very high poverty rates. Furthermore, 60% of the Mexican coffee growers lives in extreme poverty, and more than half belong to one of Mexico's 52 ethnic groups (Avalos-Sartorio, 2006a, Pérez Grovas *et al.*, 2001).

The total coffee production has been diminishing in the last years. Figure 2 shows a total production in Mexico of 4.5 million quintals in 1980. The biggest amount produced under the quota system was reached in 1989, which was higher than 7.8 million quintals. Thereafter, production declined until it reached its lowest level of 4.4 million quintals in 1992. After that, a recovery in the total production was registered, reaching 8.1 million quintals in 1999 and 6 million quintals in 2008. In part, these changes have been positively associated with the development of the international price (Other Milds price).

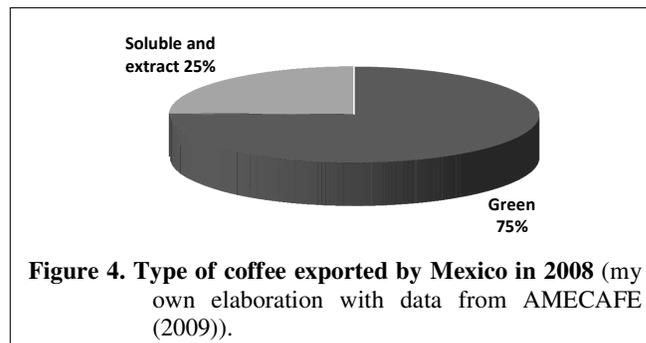


Coffee prices have been recovering since 2004. The Other Milds price was \$80.47 per quintal in 2004 and \$139.78 per quintal in 2008 (see Figure 2). Similarly, the rural coffee price has shown a tendency to rise in recent years; it was \$35.82 per quintal in 2004 and \$89.41 per quintal in 2008. Thus, the differences in those prices were \$44.65 per quintal in 2004 and \$50.37 per quintal in 2008.

Mexican coffee's final destination has changed during the last thirty years. During the nineteen eighties and nineties, most of the coffee was exported while a smaller quantity was reserved for the internal market. The domestic market share of coffee was of 38.8% of the total production in 1980 and 47.3% of the total production in 2008. The lowest domestic market share was registered in 1999, at 18.5% of the total production, while the biggest share was registered in 2008, at 47.3% of the total production. The export markets for Mexican coffee have also shifted in recent years. For several years, the United States of America has been the primary export destination. This country received approximately 80% of the Mexican coffee exports during the nineteen nineties, but 67% of the exports in 2008. The next largest markets in that year were Belgium and Germany (see Figure 3).



However, in recent years, increasing quantities were also sent to Japan, Canada, Cuba and France. Approximately 75% of the coffee exported from Mexico is green coffee, and 25% is soluble and extracted; roasted and ground coffee do not figure in the export statistics (see Figure 4).



During the last decade, the world's coffee economy has undergone deep structural changes resulting from an amendment in the international agreement to commercialize coffee. This process put an end to domestic control in several producing and exporting countries. Some of these changes are the shift in stock control from producer to consumer countries, the increasing concentration of processing and exporting activities in the hands of a few transnational companies, and the creation of new producing regions with a higher potential and lower production costs (FAO, 2007). Moreover, according to a recent ICO estimation, the total supply of and demand for coffee in the world has been placed around 125 million quintals and the price is about \$125 per quintal of green washed Arabic coffee (ICO, 2009).

3. Liberalization of the Mexican economy

At the beginning of the second half of the last century, the agro-alimentary sector in Mexico was subjected to strong protection, which ended in the nineteen eighties. Thus, agriculture, allied services, production, processing, and marketing inputs and outputs were subjected to government regulations. At that time, certain crops which were part of the basic Mexican diet were regulated and maintained by the state institutions, which provided a system of government subsidies on which they depended. This kind of policy also removed the actors' incentive for long-term investing and to look for ways and means of improving their competitiveness and sustainability. At the end of the nineteen eighties, the Mexican government began to withdraw from the agricultural sector and moved toward liberalizing the economy. This was done by providing fewer services to the sector and by allowing the private sector to fill this gap.

In the latter half of the nineteen eighties, the Mexican government began to liberalize the economy. The decision to change from a rigidly controlled economy to a more flexible one was made to comply with recommendations coming from international institutions such as the International Monetary Fund (IMF) and the World Bank (WB). Consequently, governmental organizations linked to the agricultural sector were closed down, although a number of them have been restructured during the last two decades. In summary, the Mexican shift from a more controlled to a free market economy was in line with the overall tendency in world policy; by doing so, the Mexican government reduced their role not only in the rural sector but also in the economy as a whole, making room for private actors (Burger, 2011).

Two major processes were keys in the liberalization of the Mexican economy. The first was becoming a signatory of the General Agreement on Tariffs and Trade (GATT) in 1986 and the second was the arrangement of the *North American Free Trade Agreement* (NAFTA) in 1994. After becoming a member of the GATT, Mexico abolished its import pricing policies in 1987. These liberalization measures also had an influence on many other policies. Thus, privatization and a restoration of several governmental instances took place at the beginning of the nineteen nineties; industries such as steel, sugar, banking, and communication were included in this process.

Another step in the market liberalization was the reform of land tenure legislation, which was carried out in 1992. Article 27 of the Mexican Constitution was modified in order

to give property rights to the owners of “ejidal” and communal land. This modification brought an end to land distribution in Mexico and started the creation of a land market without restrictions on the type of ownership. One of the goals of this reform was to capitalize agricultural activities by giving agricultural producers access to private credit. As a result, ejidal and communal tenants are now able to use land ownership as collateral in the official banking system (Díaz Copado, 2005).

Privatizing the most prominent institutions throughout the entire Mexican agricultural sector meant the end of market restrictions. As mentors of the liberalization had been advocating, this process in the coffee sector signified the end of reserve formation and the end of a minimum price for producers (FAO, 2007). The decision to liberalize and the manner in which the liberalization process was implemented were the typical outcome of a mixture of domestic political pressures, financial imperatives and donor conditions (Gilbert *et al.*, 1999).

As a result of the liberalization and privatization of the Mexican economy, several changes have presented themselves in the price definition and marketing of products. In their turn, these changes have modified both the number of times and the way in which partners in supply chains have been intervening. Those modifications have influenced the structural and institutional changes seceded in the Mexican coffee sector.

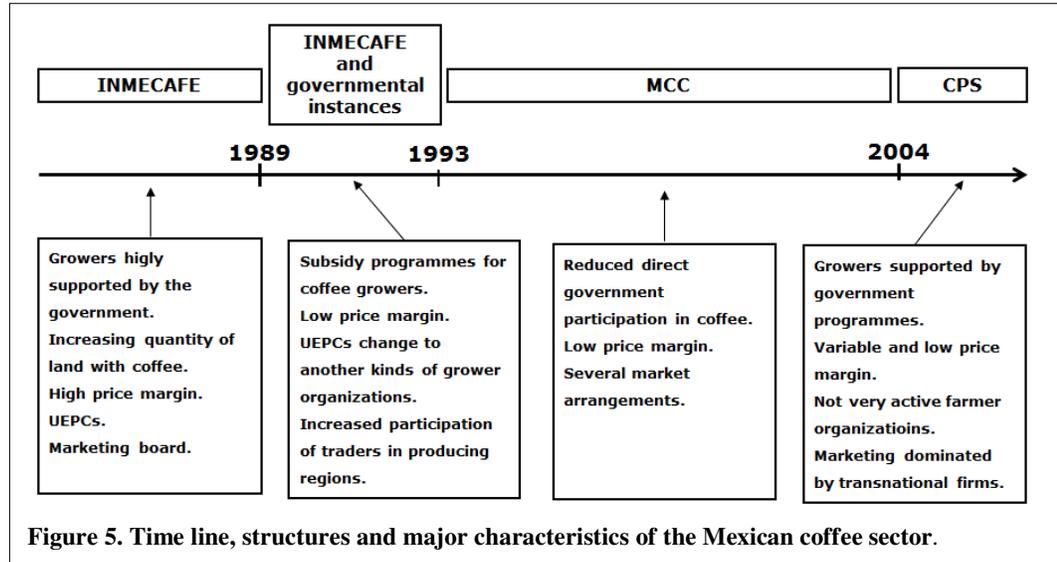
Coffee production generally takes place in isolated areas in undeveloped countries, where the public services are poor and the standards of living and educational levels are low. Under those conditions, coffee farmers only have the option of selling their product to those intermediaries who operate locally. As mentioned before, the liberalization of the market has not always created a competitive environment; under these conditions, a number of processing and exporting companies are normally taking much advantage in comparison to growers and small-scale intermediaries and processors. This in part is a result of the fact that the high costs of processing and exporting creates barriers to entry and difficulties for small-scale processors to remain the owner of their business. In addition to the poor communication in the coffee-producing regions, small- and medium-scale coffee farmers do not have transport facilities to search for better prices in the coffee market further downstream of the chain. As some authors have argued (Milford, 2004, Renard, 1999) an oligopolistic environment has been established in the main producing areas of Mexico.

4. Structure and Organization of the Coffee Sector

The coffee supply chain in particular requires the participation of many economic agents (see Figure 1). To better function, these agents need good social and political conditions, which allow them to have optimal market arrangements (Martínez Morales, 1996). Some institutions operating in the Mexican coffee sector are coffee farmer organizations, intermediaries, governments (at the federal, regional and municipal level), the coffee market, the input market, the extension market, the land market, the training market, the technical assistance market, the labour market, the land rental market, universities, research centres, the Coffee Product System (at the federal and regional level), and the formal and informal credit markets. All of these instances and institutions can be grouped into private, public, governmental or rural institutions. As Fafchamps (2004) has said, one important characteristic of the market institutions is that any improvement demands adaptation in the legal environment, to help intermediaries develop better exchange processes.

Following reforms since the nineteen eighties in Mexico, the government's role in agricultural markets (including coffee) has changed substantially. As Avalos-Sartorio (2006a) stated, policymakers expected during the nineteen eighties that the move to a market-based agricultural economy would bring efficiency by better linking domestic and international prices. For this reason, it was expected that the liberalization would benefit producers and consumers by increasing the producer prices and reducing the consumer prices.

The organization of an industry describes the way in which actions undertaken inside the economic system are divided between partners. Some agents engage in many different activities, while others engage in few. Depending on their economic capacity and their interest, some agents are large and others are small; some agents are working in only one area of the supply chain, whereas others are working in many stages of the supply chain. What we expect to understand from studying this kind of organization is how the industry was organized in the past, how it is organized now, what the main differences and benefits are in each kind of organization, which forces caused the changes to happen behind each one, and how these forces have changed over time (Coase, 1988). We will analyse each of the structures (see Figure 5) prevailing in recent years in the Mexican coffee sector, by looking at the influence of the institutional environment on the reduction of transaction costs, on the redressing of missing markets, on building social capital, on managing risk and enabling collective action.



Apart from associations of various types and non-profit organizations, which in some cases are firms, there are also a number of governmental instances that assume some economic role, and many of these roles are of great importance. As Coase (1988) has stated, these kinds of agents should be part of the institutions dealing with industrial organizations, so it is very important to describe the economic activities undertaken by any governmental instances and/or associations. Also, an explanation of the type and combination of activities developed by private and public agencies is very important when analysing the structure of the supply chain.

Many agents are involved in the coffee sector. Some of the most important participants in the coffee supply chain are ministries and national government organizations, federal and state councils, private associations, research and extension institutes and centres, non-governmental organizations (NGOs), government instances (at the federal, regional and municipal level), business organizations (processors and exporters), grassroots grower organizations and farmer cooperatives. Other private agents participate indirectly in the coffee sector as well by providing services such as credit, transport and technical assistance.

Between the nineteen fifties and the nineteen eighties, intervention in commodity markets relied on the stabilization of prices and export earnings by implementing multilateral agreements. This type of policy was addressed between 1954 and 1989 in a number of International Commodity Agreements (ICAs). These agreements applied to five products: sugar, cocoa, coffee, rubber and tin (Newman, 2009). As has been mentioned by some authors (Calo and Wise, 2005), in the case of coffee, subsequent attempts by producing countries to

control the international market were made in 1993 and 2000, but were unsuccessful. Thus, since 1989, the ICAs have not incorporated economic clauses to regulate the international coffee market.

The coffee sector in Mexico was regulated by the INMECAFE until 1989 (see Figure 5). As part of its closeness to the main government institution participating in coffee, the transfer of INMECAFE's assets to farming organizations and its functions to other governmental instances to better service the coffee sector started in 1989. Under the ICAs, the institute coordinated all programmes and activities focused on the coffee sector; the institute also coordinated the agents (producers, producer cooperatives, processors, roasters and exporters) involved in the supply chain. Now the number of participants working in coffee is larger on the upstream of supply chain than it was during the quota era; on the other hand, a lower number of partners is observed in the downstream side of the supply chain at the national level than it was in the former structure. According to CMC (2005) and AMECAFE (2009), 440 intermediaries were registered in 2005 and 1,035 in 2009. Indeed, many of them are working in the upstream side and few of them in the downstream side of the coffee supply chain.

One group of participants in the coffee supply chain are the intermediaries. They can either be individuals or a company integrated by several investors. This group of partners includes local collectors, processors, retailers and exporters. Although it is now permissible for anybody to trade in coffee, in the last six years it has become compulsory for everyone to be registered in the national coffee system, run by the Mexican Coffee Association (AMECAFE). This requirement has been set up to operate the Stabilization of Coffee Pricing Fund (SCPF) and to better organize the coffee sector. According to this process, a registration number is allocated to each intermediary, which allows him or her to bill any coffee supplier. This registration also obliges intermediaries to declare to the Mexican Ministry of Finance any profit they make while transacting coffee.

In recent decades, some growers' organizations have emerged. Many of the producer grassroots organizations and farmer cooperatives have been working to create a balance between processing and exporting companies. Furthermore, some producer cooperatives in Mexico have been playing a crucial role in the development of small farmers and in gaining access to domestic and export markets. The supported cooperatives are more focused on organic and fair-trade coffee. Also, through this participation, these kinds of farmer cooperatives have been granted credit and funding from some international companies and

also receive economic support out of the government budget (Varangis *et al.*, 2003). According to data from a recent National Coffee Census, 11% of all coffee producers are member of a cooperative.

The type of coffee sold by producers varies from region to region. Coffee farmers sell either cherry, parchment, or natural dry coffee; although in some cases, depending on the natural conditions and the farmer's wealth, they may sell a combination of these types of products. When farmers sell cherry coffee, delivery to a processing plant must take place within 24 hours of harvesting, to prevent post-harvest damage and maintain the quality. In addition, to ensure quality, processors have to maintain a widespread distribution of local collectors over the coffee-producing areas. Thus, local collectors purchase cherry coffee during the day and deliver it to the processing plants at night. After the coffee reaches the wet processing plants, it is processed into parchment coffee. Following the chain, parchment coffee can either be stored or sold on to the next stage. A number of wet processing plants have their own dry processing plants; in this way, wet processors can get green coffee before it is roasted. Therefore, the type of coffee sold by farmers depends to some degree on the weather conditions, the farmers' endowment, and the level of support farmers have been receiving.

Coffee can be purchased and processed by farmers' cooperatives. Grower organizations can engage either in humid or dry processing, or both. Their characteristics are mainly the result of their environmental conditions and the volume produced at their particular location. The statistics show that 90% of the total Mexican production undergoes humid processing, whereas the remaining 10% undergoes dry processing procedures (ICO, 1999).

5. The Past Institutional Arrangement

The International Coffee Agreements (ICAs) have been set up by the International Coffee Organization (ICO), the organization that liaises between producing and consuming countries. Until 1989, it imposed export quotas in order to raise the price at which member exporter countries sold coffee to member importing countries; the latter accepted that consumers pay a higher price to benefit coffee growers in developing nations. Importing countries included in these agreements represented approximately 90% of the total coffee import market. Export countries represented over 99% of the total export in the last

agreement, which included the economic clauses (Bohman and Jarvis, 1999). The ICAs, with their economic clauses, became more effective in 1980 when, in addition to the export quotas, the value of stock in producing countries was also included. Thus, importing countries indirectly financed the storage of coffee in producing nations (Calo and Wise, 2005).

The economic clauses of the ICAs established a target price range, which was a weighted average of different types of coffee, and set a global export quota to achieve the desired price. By consensus, each exporting country received a portion of the global export quantity. In the last years of operation of the quota system, the international coffee prices were set from \$1.20–1.40 per pound of green coffee. When prices fell below the target range, the quota were cut in order to reduce the supply at that time and to push the international coffee price up. On the other hand, if prices remained higher than the top price for more than 45 days, exporting countries were allowed to boost the quantity exported until prices went down to the defined level (Bohman and Jarvis, 1999). Even when several problems arose in this system, analysts generally agreed that the system was successful in raising the coffee price for producing countries and stabilizing prices in the world market (Ponte, 2002).

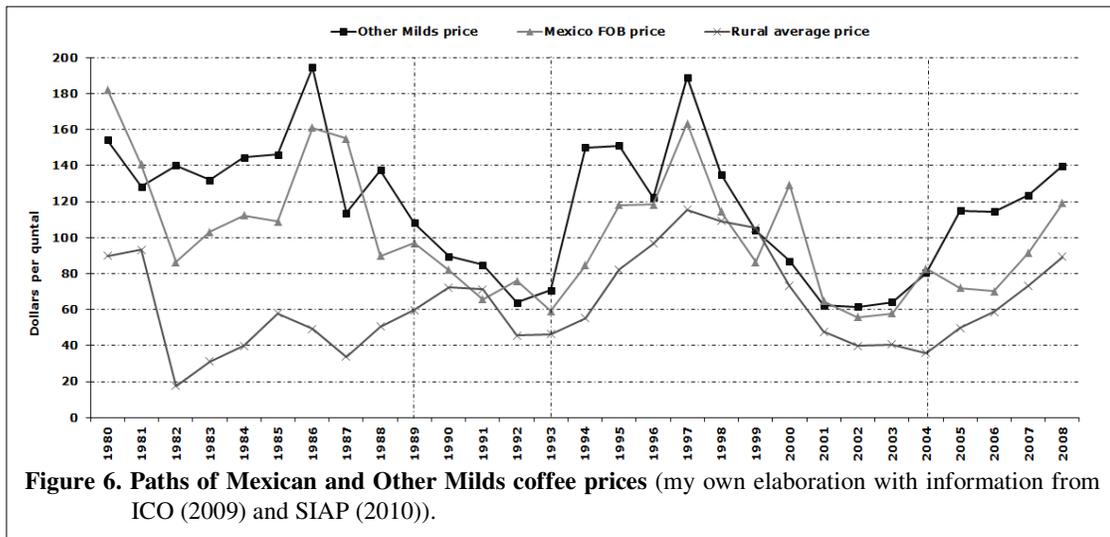
The first ICA was signed in 1962, after which it was renewed at approximately six-year intervals until 1983, when the last one was signed. Negotiations to renew agreements to control the international coffee supply could not take place until July 1989, when the final contract expired. The agreements were not renewed because of competing interests within exporting and importing countries; hence, international control has not been implemented since then (Bohman and Jarvis, 1999).

In the case of Mexico, the INMECAFE was formed in 1958, in preparation for compliance with the economic clauses included in the ICAs. The functions of this institute were researching, planning the coffee development, providing incentives to coffee-producing regions, giving credit to small- and medium-sized coffee growers (those with less than 20 hectares), buying and selling coffee on the domestic and external markets, operating storage facilities, processing coffee, and managing the federal budget allocated to coffee (Martínez Morales, 1996). In addition, in the nineteen eighties, the INMECAFE was given the responsibility to manage the export quotas and other fiscal attributes (FAO, 2007).

Comparing the rural average coffee price with the fob price, in Figure 6 we can see that the differences were relatively large during the nineteen eighties. This means that coffee growers did not directly receive the possible benefits of high fob prices. Who actually received the benefits coming from this difference is a question that needs to be answered. Part

of the difference in those prices was caused by the storage costs spent to manage all the regulations at the domestic level and to cover the administrative procedures demanded by the regulations. Other elements that may explain the margin were the domestic and export tax payments.

According to Díaz (1996), INMECAFE owned 50 humid processing plants and 27 dry processing plants during the 1986-87 harvesting season, which represented 10% of the total processing capacity at that time. A total of 3,517 small-scale buyers, 597 medium-scale buyers, and 108 exporters were registered at the end of nineteen seventies. Nearly 92% of coffee buyer centres were operated by national investors and the rest by external investors (Nolasco, 1985). Even when it had been reported that the purchasing and processing activities of the institute were of very high importance, its processing capacity was not high enough to compete against the private sector (Martínez Morales, 1996).



During the nineteen seventies and eighties, the INMECAFE, as the representative of the government position, was the conciliator of the three major actors participating in the coffee sector: producers, processors and exporters (Martínez Morales, 1996). The institute was responsible for applying and supervising all the regulations coming from the international agreements and the national settings to control the coffee market. The INMECAFE managed to export 40% of the total amount of coffee exported by Mexico in the 1981-82 harvesting season. Thus, it replaced many traditional intermediaries (Akaki and Huacuja, 2006).

Although the amount of land farmed with coffee increased over the quota system period, the number of Mexican coffee growers did not increase during the final decade under the ICA; the number of producers was 276,655 in 1989. In part as a response to the production philosophy associated with the Green Revolution, the total production reached its highest level of close to eight million quintals in the 1988-89 harvesting season. Accordingly, during the nineteen seventies and early eighties, large quantities of INMECAFE resources were allocated to standardizing and increasing the coffee production; the government did that through the diffusion of new coffee varieties produced in INMECAFE nurseries, the introduction of non-native shade species and the promotion of the frequent use of commercial fertilizers (Santoyo Cortés *et al.*, 1994, Wehbe *et al.*, 2005).

A notable increase in private investments occurred as well in the second half of the nineteen seventies. As Martínez (1996) has argued, that increase occurred in response to high international prices and government subsidies granted to the coffee sector. During the controlled period, it was economically acceptable and not restricted to any producer to convert land into coffee orchards. However, later on this led to an overspecialization and economic overdependence on coffee by many producers, producers' families and communities (Marban-Mendoza, 2009). Nevertheless, the highest increases in land cultivated with coffee in the last two decades of the INMECAFE era happened on land without suitable environmental conditions to produce coffee of a good quality (INMECAFE, 1990).

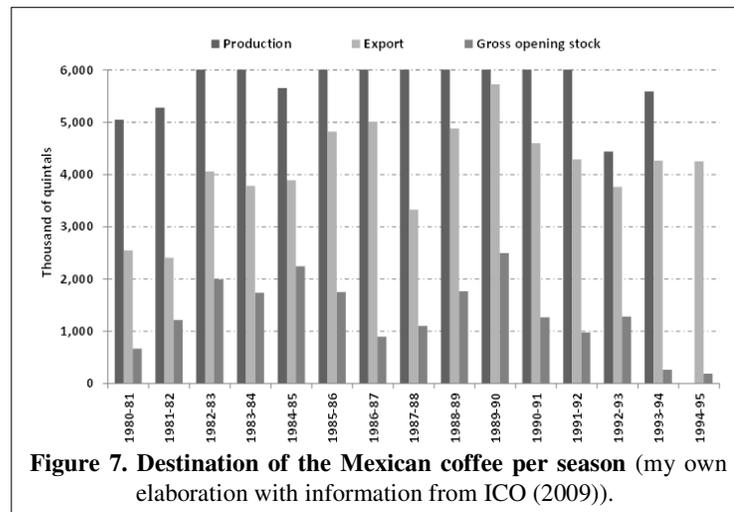
Under the quota system, coffee had to be in storage until exporter firms received authorization from the institute's inspectors to proceed with the exportation of the product. To define the quota assigned to each exporter, a Marketing Committee was formed by representatives of several government institutions: the Bank of External Commerce, the INMECAFE and the producer organizations in place (CMPC, CNC, CNPP), as well as processor and exporter organizations (ANACAFE, CANACINTRA, AMEC, and BECAMEX) (Martínez Morales, 1996).

According to some authors (Giovannucci and Juárez, 2006, Lewis, 2005), INMECAFE regulated the domestic market by instating a minimum coffee price during all harvesting seasons and by buying and processing coffee. The institute's participation as collector and processor was very important. The INMECAFE had 750 centres for purchasing coffee throughout the coffee-producing regions in 1989 (Martínez Morales, 1996).

The technology of coffee production that was promoted during the quota period encouraged some coffee-producing communities to specialize in coffee. Indeed, INMECAFE

was the primary source of coffee research and extension services (Nolasco, 1985). By following the institute's instructions, coffee growers secured credit and other services to produce coffee (Eakin *et al.*, 2006). Hence, this crop was considered one of the best agricultural options for many communities at that time.

The relatively high and stable prices produced a strong expansion in land cultivated with coffee between 1970 and 1989. Additionally, there was a huge domestic promotion of coffee production by the Mexican state (Calo and Wise, 2005); all the services and supports provided by the institute produced enough economic incentive for producers to expand or to start the coffee production that increased the total production (see Figure 7).



As a consequence, the Mexican coffee production grew at a yearly rate of 3.8% from 1970-71 to 1988-89. The same period showed an increase of 2.9% of the total land farmed with coffee (Diaz, 1996). The amount of coffee available in Mexico exceeded the demand in the final years of the quota system; the initial gross stock was 1.7 million quintals in the 1988-89 harvesting season and 2.3 million quintals in the 1989-90 harvesting season.

During the quota period, the government's main effort was devoted to small- and medium-sized coffee growers. It has been reported that over 157,799 producers were technically assisted by INMECAFE during the nineteen eighties; this number represented 85% of the total number of coffee growers existing at that time; these farmers owned 76% of the total land cultivated with coffee in Mexico (Santoyo Cortés *et al.*, 1994, Villaseñor, 2004). Therefore, after the institute stopped functioning, the most affected actors were those

producers who were suddenly exposed to the intermediaries and private service providers (CNOPC, 2007).

After 1989, rather than directly intervening in the coffee market, the Mexican government developed a diverse array of programmes to support the coffee production and to smooth the effects of the coffee crisis (Eakin *et al.*, 2005, Pérez Grovas *et al.*, 2001). The first programme implemented during this period was the Special Programme to Support Coffee Production. This programme was designed to be in operation from 1989 to 1992; it was implemented under the agreement signed between grassroots farmer organizations and the Mexican government. Its main aim was to try to find an immediate solution to the critical situation prevailing in the coffee sector. Through this programme, the government provided credit to those coffee growers who owned more than 10 hectares of coffee orchards and who were able to pay back credit loans. Other support included in this agreement focused on helping farmers with maintenance and harvest costs. Unfortunately, those initiatives were unsuccessful because the production costs exceeded the coffee prices at that time (Avalos-Sartorio, 2006a).

Even through those programmes, the main funding supporting the coffee sector was the National Solidarity Programme (NSP), which started in 1992. Its budget was derived from the National Development Programme (NDP), implemented in Mexico from 1989 to 1994. The NDP's overall aim was to reduce extreme poverty. The NSP targeted indigenous communities and peasants with a low income (Martínez Morales, 1996). Furthermore, at the beginning of the nineteen nineties, the solidarity programmes were the main source of fresh capital for small- and medium-scale coffee growers. This support aimed at providing credit and supporting the harvesting and marketing activities. The total amount used in these initiatives was 6.5 million Mexican pesos in 1990-91, 81.8 million in 1991-92, 140 in 1992-93, and 223 in the 1993-94 harvesting season. Although this programme was designed for refunding, only around 40% of the total amount was given back by producers (Nolasco, 1985).

It is estimated that the total amount the government allocated to support for the coffee sector was \$331.85 million from 1989-90 to 1993-94 – an average of \$66.37 million per season – (Martínez Morales, 1996). This support was given to around 250,000 coffee farmers who had been hit by low coffee prices (Coffee & Cocoa, 1992). Nonetheless, most of the programmes developed from 1989 to 1993 were considered subsidies and not credits (CNOPC, 2007).

With the free domestic coffee market and the Mexican border open, foreign investment in coffee increased. As a result, several companies owned by national investors broke down, and many companies linked to the transnational firms started to work in the upstream of the coffee supply chain. They invested around \$28.9 million in 1989, \$90 million in 1990 and \$209 million in 1994 in processing capacity (UGST, 2006). In consequence, the coffee market started to be dominated by large-scale firms such as AMSA (Atlantic coffee), Becafisa (Volkafe), Far-Man, J. Aron, Rothfos, Mercon, Tardivat, Omnicafe, and Cafés California (Neuman) (Santoyo Cortés *et al.*, 1994). However, because of various difficulties in providing support to coffee producers and the high variation of international coffee prices, some international firms that initially invested in several coffee-producing regions withdrew from the coffee sector (Avalos-Sartorio, 2006b, Santoyo Cortés *et al.*, 1994).

During the quota system era, some intermediary associations were also operating. The Mexican Association of Coffee Exporters (AMEC, by its initials in Spanish) was established in 1949 and incorporated large-scale producers and exporters. The National Association for the Coffee Industry (ANACAFE, by its initials in Spanish) was founded in 1979. These groups of industries emerged with the aim to represent the Mexican coffee firms collectively. The ANACAFE is an association of large-scale producers whose plantations are vertically integrated. They also are processors integrated with farmers and medium- and large-scale collectors (Martínez Morales, 1996).

The coffee export became very concentrated after the dissolution of INMECAFE. From 1989 to 1992, the modifications in the coffee supply chain shifted the advantage to larger international firms. National investors and processors were hampered by their limited access to funds, while international companies had access to vast amounts of funds. Fifteen large-scale companies exported 40% of the total Mexican export, while 89 small-scale enterprises (some of them owned by small-scale producer organizations) exported 15% of the total exported at the beginning of the nineteen nineties (El Café, 1992). Therefore, the industry transformed into an oligopolistic structure headed by a small number of transnational firms.

At the end of the nineteen eighties and the beginning of the nineteen nineties, commercial banks limited credit to those medium- and large-scale coffee farmers who were well known to the bank and who had proven to have sufficient income to classify as low-risk credit applicants. Other possible sources of credit were informal lenders, initial payments from processors, and some credit unions. Aware of this situation, a number of exporters also

gave economic support to some national processors, enabling them to operate their machinery. This was done in exchange for receiving coffee at a low price. Other exporters set up various kinds of associations with national processors to reach the same objective. Thus, collecting, processing and exporting were highly concentrated in the hands of large-scale firms with external funds (Santoyo Cortés *et al.*, 1994).

The INMECAFE organized coffee farmers in UEPCs to facilitate its work. These were groups of at least ten small-scale coffee farmers, who began to work jointly to develop various coffee activities; this organization started in 1973. Through these groups, the institute provided input, technical assistance and partial payment in advance for the coffee (Giovannucci and Juárez, 2006). These economic units were basic to the structure. They had access to the market, which enabled them to reduce transaction costs. At the end of the institute's term there were 3,228 UEPCs, which included 85% of the total number of coffee farmers existing at that time (Renard, 2008).

In addition to the UEPCs, medium- and large-scale coffee growers were integrated in the National Confederation of Rural Producers (CNPR, by its initials in Spanish) and the Mexican Coffee Producers Confederation (CMPC, by its initials in Spanish); the CMPC was constituted in the nineteen fifties. In general, farmers included in the CNPR and CMPC had small businesses. Furthermore, the National Union of Autonomous Regional Peasant Organizations (UNORCA, by its initials in Spanish) was also operating in the nineteen seventies (Martínez Morales, 1996).

During the 1989–1993 period, a transformation of the farmer organizations occurred. Almost all of the UEPCs either disappeared or were transformed into the Solidarity Social Society (SSS, the Spanish acronym), the Rural Production Society (SPR, the Spanish acronym) and other kinds of grower cooperatives. These latter kinds of organizations had a legal right to get credit. Some other economic units were reorganized into the Local Solidarity Committee, which was entitled to funding from the solidarity programmes operated by the Ministry of Development. Unluckily, few of those committees did actually function. Many of these groups were participating in one of the main twelve coffee growers' grassroots organizations existing at the start of the nineteen nineties (Santoyo Cortés *et al.*, 1994). Indeed, around 190,000 of the total of 280,000 growers were participating in one of the grassroots organizations in 1992 (FAO, 2007).

The closeness of INMECAFE and the coffee crisis, which started in 1989, forced the emergence of many grower organizations. In part, this process was initiated by the National

Coordinator of Coffee Organizations (CNOOC, by its initial in Spanish), which represented 54 regional producer organizations with more than 50 producers each in 1990. These cooperatives were marketing around 15% of the national production (Díaz, 1996). CNOOC was a union that included regional autonomous organizations of small coffee producers who cultivated an average of two hectares. It emerged as an independent organization in 1989 (SAGARPA, 2005). The CNOOC represented the interests of the independent coffee sector in negotiations with the government, providing information and coordinating strategies in processing and marketing the product. This organization represented almost 70,000 small-scale coffee producers (about 35% of the national total number) at the beginning of the nineteen nineties (Giovannucci and Juárez, 2006, Pérez Grovas *et al.*, 2001).

The federal government developed a programme to increase the producer cooperatives' participation in the export issue at the end of the nineteen eighties; this programme targeted the advisory leaders, linking producer cooperatives with buyers and promoting contract arrangements (INMECAFE, 1990). One of the difficulties faced in this programme was that small- and medium-scale growers had no information on the global coffee prices and had no knowledge of how domestic prices were set. For this reason, many cooperatives were unsuccessful in this respect.

In response to the end of the economic clauses of the ICAs, the closing of INMECAFE was decided in 1989. During the following three years, public sector intervention in the Mexican coffee sector was limited. Much of the institute's infrastructure was transferred to various UEPCs and other farmer cooperatives (Avalos-Sartorio, 2006b). Various grower groups received warehouses and processing plants at reduced prices, and the majority of these were payable over ten years (Pérez Grovas *et al.*, 2001). It was not easy for small-scale producer organizations to handle the infrastructure they received; the large-scale processing plants required consolidated groups with a high production level besides the necessary capital (SAGARPA, 2005).

The controlling and leading role that INMECAFE had played suddenly ended after 1989. The closure of the institute came as a surprise for many people involved in the coffee industry. The greatest impact this event had was caused by the fact that it occurred during a period of lower coffee prices. Coffee farmers had been accustomed to receiving support from the government through INMECAFE for more than thirty years; thus, they were unprepared to face the new conditions.

The end of the ICAs and the reduction of the institute's activities brought about a number of reactions in the international and domestic coffee markets. As soon as the international agreements to commercialize coffee broke down, an oversupply was presented, and high quantities of coffee were sent onto the international market. This produced a large reduction in coffee prices. Under this condition, the prices also became very volatile (Wehbe *et al.*, 2005). Besides, in a free coffee market, the prices are not only set by the supply and demand but also by an oligopolistic scenery.

6. The Institutional Structure of the Mexican Coffee Sector from 1993 to 2004

As a representative organization of the coffee sector industry, the Mexican Coffee Council (MCC) was created in June 1993, and it was abolished at the beginning of 2004. The major participants in the coffee sector at the national level were part of this council. Members of the council were drawn from the Ministry of Agriculture, the Ministry of the Economy, the Ministry of Social Development, the Ministry of Finance, representatives from the state government of each of the major coffee-producing states, representatives from industry producer organizations (CNC, CAP, CNPR, CNOC and CMPC) and from associations and trade organizations vested in the coffee industry (ANACAFE, AMEC and CANACINTRA) (Pérez Grovas *et al.*, 2001).

The MCC was an autonomous civil association with a legal presence. Additionally, regional councils were created in the main coffee-producing states. Although decentralized from the state governments, governors of producing states took control of those councils through various services and by directly operating programmes. Working with SAGARPA and ASERCA at the state level, these state councils could function in several ways to respond flexibly to the price crisis of 2001–2004, to obtain the needed machinery quickly, and to carry out the coffee market policies (FAO, 2007). Together with the state councils, the MCC formed the primary structure through which all the partners involved in the Mexican coffee industry could discuss and negotiate policies and programmes related to this sector. The MCC represented the coffee industry at the national and international levels until 2004. Under this structure, the federal and state governments and the grassroots organizations were key to the definition of public policy in the coffee sector (Giovannucci and Juárez, 2006, Pérez Grovas *et al.*, 2001).

The MCC emerged as the body to lead production and policies for the coffee industry in Mexico. The MCC's objectives were to design programmes to increase productivity in the coffee sector; to drive the development of technology, to promote the organization of coffee producers, to better position Mexican coffee in the international market, to represent the interests of Mexico at international forums, and to coordinate all parties involved in the Mexican coffee industry (Martínez Morales, 1996). Consequently, the MCC took a counselling role and thus substantially reduced direct government participation in the coffee sector (Giovannucci and Juárez, 2006).

Some of the activities developed by INMECAFE were also carried out by the MCC. The MCC started to be a technical agent in 1996; it means that this council was responsible for the direct operation of the major programmes supporting coffee (FAO, 2007). Nevertheless, this council did not take on several public services that were previously provided by the institute, such as extension, research, and technology transfer. Therefore, from 1993 on, many gaps left by the former structure had been taken over by other public and private institutions (Giovannucci and Juárez, 2006). The MCC was created not only based on government interest, but also based on the ideas and participation of other partners in the supply chain, including producers and exporters (Coffee & Cocoa, 1993).

The gap in technical assistance for growers left by the INMECAFE was not covered by the public and private sectors. In 1998, the Mexican government contracted 539 technicians specialized in coffee to assist coffee farmers who owned less than 10 hectares. This service benefited 131,472 coffee farmers (nearly 50% of the total at that time), but in 2002, these technicians became the subject of a phased privatization. After that, the rules were that coffee farmers had to gradually cover the technicians' salaries, starting with a payment of 25% of the technicians' salary in the first year, 50% in the second year, and so on. The belief was that the coffee farmers receiving these technical services would be earning enough to cover the remuneration. Unluckily, this plan was unsuccessful because many coffee farmers did not earn enough to pay for the service, due to market uncertainty and a low coffee price.

Various government programmes were developed during the MCC period to smooth the difficulties created by the price crisis. After the emergence of the armed movement in Chiapas (which itself was attributed in part to the low coffee prices), the Mexican government announced two programmes to support the coffee sector on 1 January 1994. These programmes were in operation during the harvesting seasons of 1993-94, 1994-95 and 1995-96. One programme provided direct financial support to growers with at least four and up to

ten hectares cultivated with coffee, by giving them 700 Mexican pesos per hectare. The other programme directly supported farmers with more than ten hectares planted with coffee, by giving them a maximum of 4,500 Mexican pesos per producer (Santoyo Cortés *et al.*, 1994).

Other important programmes that were developed from 1994 to 2000 were the Promotion of Coffee Production, Training and Extension, Support for Rural Development, and the Temporary Employment Programme (see Table 4). From 2001 to 2003, still more programmes were developed to support the coffee sector. Among the most important were the Productive Retraining and Coffee Development, Productive Projects, the Stabilization of Coffee Pricing Fund, Catalysing Coffee Production and the Special Support Fund for Investing in Coffee (Akaki and Huacuja, 2006).

The Stabilisation of Coffee Pricing Fund programme provided support to producers to a maximum of \$20 per quintal sold (for less than 20 quintals per hectare) when the international coffee prices dropped to less than \$70 per quintal. The total budget of this programme has not been used entirely because several producers did not meet the requirements established for this initiative (Akaki and Huacuja, 2006). Indeed, in an evaluation done by the FAO (2007), 30% of the interviewed coffee growers affirmed that if this programme had not been in place, they would no longer be producing coffee. In recent years, the amount spent by supporting coffee programmes has been greater than a yearly average of \$100 million.

The concentration of power in the hands of transnational actors created a buyer-driven supply chain in which producers, local traders and governments were marginalized in the decision making regarding coffee (Ponte, 2002). According to some scholars (ICO, 1999, Pérez Grovas *et al.*, 2001), there were 230 coffee exporters working in Mexico during the 1997-98 harvesting season, but 15 transnational companies shared 67% of the total coffee exported by Mexico at that time.

Table 4. The Mexican budget for programmes supporting the coffee sector from 1996 to 2003
 (current millions of dollars).

Programme	1996	1997	1998	1999	2000	2001	2002	2003
Promotion of coffee production	10.61	9.91	11.97	10.57	17.97			
Training and extension	0.69	0.60	1.87	3.99	3.70			
Support for rural development	2.42	1.05	2.67	1.95	4.22			
Temporary employment Programme			8.66	12.47	13.03			
Productive retraining and coffee development								27.13
Fund of investment and capitalization (FINCAS)								1.23
Productive projects (wet and dry processing and others)						12.43		
Promotion of coffee consumption						1.93		10.03
Control of coffee bid						0.54	0.58	0.51
Coffee census							3.53	
Training						6.82		
Stabilization of coffee pricing fund							111.84	81.62
Withdrawal of lower quality of coffee							2.15	0.04
Catalyzing coffee production						30.32		
Special support fund for investing in coffee						38.29		
Total	13.73	11.56	25.18	28.97	38.93	90.33	118.10	120.55

Source: My own elaboration with data from SAGARPA (2009) and Giovannucci and Juárez (2006).

The market was dominated by a few multinational coffee roasters during the MCC era. The most influential transnational companies operating in Mexico were Far-Man, J. Aron, Rotphos, Becafisa, Omnicafe, AMSA, Sara Lee, Nestlé, TIASA and Expogranos (Akaki and Huacuja, 2006, Giovannucci and Juárez, 2006, Pérez Grovas *et al.*, 2001). Those companies exerted considerable control in collecting and marketing coffee in producing regions.

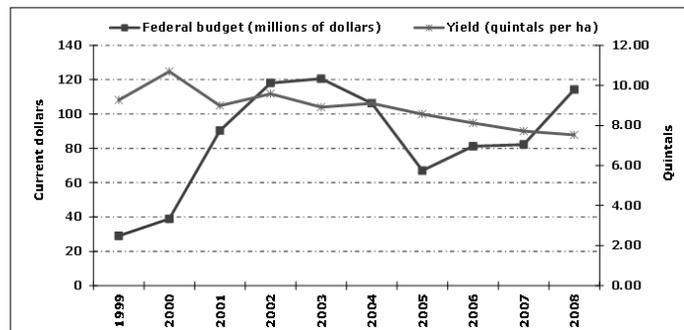


Figure 8. Federal budget allocated to coffee and yield in Mexico (my own elaboration with information from SAGARPA (2009) and SIAP (2010)).

The majority of the dry processing plants had been owned by the ten largest companies since the nineteen nineties. They had control of 63% of the total exports during the nineteen nineties, while 197 smaller enterprises, some of them owned by smallholder and

producer cooperatives, had control of the remaining 37% of the total export (Pérez Grovas *et al.*, 2001, Giovannucci and Juárez, 2006). Thus, the intermediation grew, and the only option that many coffee growers had was to sell their product at the price fixed by the exporters in each producing region (Santoyo Cortés *et al.*, 1994).

Even with the various programmes supporting coffee, there is no clear evidence of a recovering yield and production. The average yield dropped from 10.6 quintals per hectare in 2000 to 7.5 quintals per hectare in 2008 (see Figure 8) (Akaki and Huacuja, 2006, SIAP, 2010). In accordance with the information of SIAP (2010), during the 1993–2003 period, the total production in Mexico was registered as between 5.4 and 8.1 million quintals. The highest level was registered in 1999 and the lowest in 2003.

The primary exporting borders and how coffee was exported changed over the second half of the nineteen nineties. This was in part as a result that many national investors working in the coffee industry disappeared from the market at the end of the nineteen nineties. After that, the most important brokers went into various producing regions and changed the borders they use to export the product (SAGARPA, 2005, Nolasco, 1985).

Table 5. Border from where the Mexican coffee was exported.

Border	1996		2008-09	
	Volume (quintals)	%	Volume (quintals)	%
Veracruz, Veracruz	1,407,620	23.57	2,145,373	59.28
Nuevo Laredo, Tamaulipas	4,207,210	70.44	1,258,562	34.78
Manzanillo, Colima	1,491	0.02	88,098	2.43
Ciudad Hidalgo, Chiapas	8,408	0.14	31,454	0.87
Mexico, D.F.			30,289	0.84
Lázaro Cárdenas, Michoacán			12,070	0.33
Toluca, Estado de México			11,353	0.31
Mazatlán, Sinaloa			10,531	0.29
Mexicali, Baja California Norte	27,034	0.45	10,045	0.28
Tijuana, Baja California Norte	26,546	0.44	6,410	0.18
Subteniente López, Quintana Roo			5,159	0.14
Matamoros, Tamaulipas			3,629	0.10
Salina Cruz, Oaxaca	282,377	4.73	2,663	0.07
Others	11,735	0.20	3,510	0.10
Total	5,972,421	100.00	3,619,148	100.00

Source: My own elaboration with data from SAGARPA (2005) and AMECAFE (2010).

The bulk of the Mexican coffee had been exported through commissioners located on the Nuevo Laredo border. As we can see from Table 5, Nuevo Laredo was the most important border from which coffee was exported in 1996. It accounted for more than 70.4% of the total export in that year. The second most important one was the Veracruz border, from which 23.6% of the total coffee export took place at that time.

7. The Current Institutional Arrangement

Currently, the Coffee Product System (CPS) is the organization in charge of this industry at the national and state level. The CPS has been the IRO in place since 2004. It was created as a result of the Sustainable Rural Development Law, which made it mandatory for primary crops to be thus organized. Although the law was passed in 2001, the CPS was not established until years later. The delay in the CPS's creation was because the Mexican Coffee Council and state Coffee Councils were already operating. The CPS's main goals are to synchronize public policy and coffee programmes with the participation of all the partners of the coffee chain. Additionally, one of its functions is to represent the coffee industry at the national and international level.

The Mexican Coffee Association (AMECAFE, by its initials in Spanish) was created with a direct link to the CPS, providing it with the legal capacity to receive and apply the budget assigned to the coffee sector. The AMECAFE is a non-governmental organization; it is financed with its own resources, which mainly come from one share of the programmes it supervises. This institution is a civil association that operates with representatives of the main partners in the coffee industry (AMECAFE, 2010).

The CPS and AMECAFE have been the direct substitute of the MCC since 2004. They are charged with the implementation of all the legislative and governmental regulations related to coffee. They are also responsible for supervising almost all of the federal programmes that support the coffee sector. Both instances are headed by the same person (AMECAFE, 2010).

The integration of the CPS and AMECAFE led to the configuration of the new institutional framework outlined in the Rural Development Law. With this process, several functions were transferred from the MCC to the CPS/AMECAFE, including the responsibility to act as a technical agent (FAO, 2007). The creation of the CPS at the federal level has also been followed by the creation of a similar structure at the state level. In some cases this has been done by abolishing the existing state council and instituting the CPS in its place, and in other cases by creating the CPS as a collateral body of the former state council.

Since the demise of the INMECAFE, the government has reduced its research and technical assistance in the coffee sector. Currently, one of the main research centres for the Mexican agricultural sector is the INIFAP, but it has conducted few research projects on coffee. Research on coffee has also been done by the ECOSUR, UACH, CP and UNAM.

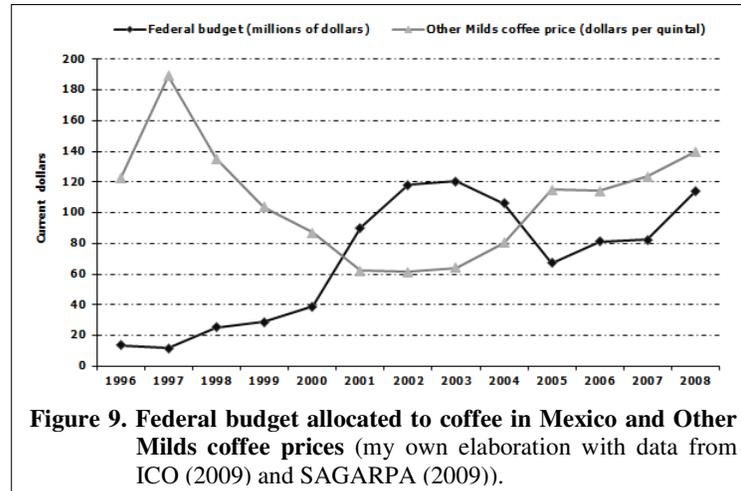
These institutions have provided technical assistance, advice and skills to technical assistants and coffee farmers, but not to the same degree as the INMECAFE. Other gaps in this respect are being covered by the private sector through individual advisors, groups of advisors, NGOs and coffee firms, but few farmers can afford the cost of these services. Even though technical assistance is very important in coffee production, as it is in other crops, only 9.6% of the total number of coffee farmers included in the recent National Coffee Census reported to be receiving some kind of technical assistance. More than two-thirds of them were receiving it from public institutions, and a small number from private sources or a combination of both.

Table 6. The Mexican budget for programmes supporting the coffee sector in the last years (current millions of dollars).

Programme	2004	2005	2006	2007	2008	2009
Productive retraining and coffee development	34.39	38.95	47.26	41.50	46.22	48.80
Fund for investment and capitalization (FINCAS)	1.18	1.23	1.22	4.79	23.29	14.79
Productive projects (wet and dry processing and others)		2.35	10.55	14.10	17.70	9.92
Promotion of coffee consumption	0.78	0.92	1.83	3.66	6.52	4.81
Price coverage		4.97	11.92	6.41	5.59	8.14
Coffee plantations renewal					5.36	16.36
Control of coffee bid	2.90	1.46	6.50	7.65	5.26	2.59
Coffee census			0.78	1.78	2.06	1.85
Training		0.46	0.73	1.92	1.76	2.96
Stabilization of coffee pricing fund	66.95	2.91	0.39	0.39	0.47	0.74
Withdrawal of lower quality of coffee	0.02					
Emerging programmes		13.80				
Total	106.23	67.05	81.19	82.21	114.23	110.95

Source: My own elaboration with data from SAGARPA (2009).

As we can see in Table 6, a large amount of resources was dedicated to the coffee sector at the end of the 2000 decade. Two programmes have been most important in supporting the coffee sector in Mexico in the last few years. One is the Stabilization of Coffee Pricing Fund, started in 2002, and the other is the Productive Retraining and Coffee Development, that started in 2003 (see Table 4). The latter provides direct payment to any coffee producer who is registered in the Coffee Census and who proves that he/she sold coffee in the previous season. The Stabilization of Coffee Pricing Fund has been the mechanism with which the money given to coffee growers when the coffee price was very low could be recovered. To regulate this process, the Recovering Coffee Trust (FIRCAFE, by its initials in Spanish) was established in 2004. Its operation has been the responsibility of AMECAFE since 2007 (FAO, 2007).



There was a negative correlation between the federal budget allocated to coffee and the Other Mild coffee price. It seemed that when the international price went up, the Mexican government felt less pressure to support the coffee sector. Figure 9 shows that during periods of crisis (from 2001 to 2004), the amount of federal funding allocated to support coffee was high. This is an indication that the Mexican government is responding to the coffee growers' need.

According to the CMC (2005), a total of 867 intermediaries (traders and exporters) were registered in 2005. They were located mainly in the major coffee-producing regions in Mexico. Some of these firms were strategically established in different areas than the producing states. In this way, they could easily reach consumers or buyers in either domestic or external markets. Of those intermediaries, 394 were registered as exporters, and 73 were involved in coffee production as well. Similarly, a total of 1,035 coffee intermediaries were registered in 2009, and 92% of them were located in coffee-producing states (AMECAFE, 2009).

Currently, the National Association of the Coffee Industry (ANACAFE) integrates 32 of the most important companies in the Mexican coffee sector; these firms produce soluble, roasted, ground, and decaffeinated coffee. Some members of this association also do humid and dry processing. The firms included in the ANACAFE generally do business through intermediaries located in several coffee-producing regions. The ANACAFE's firms process an average of 4.17 million quintals of coffee annually. This represents 76.2% of the total

Mexican production. These companies are responsible for 100% of the green coffee processed in Mexico to produce soluble coffee, 80% of the roasted and ground coffee, 52% of the total amount of green coffee exported, and 100% of the soluble, roasted, and green decaffeinated coffee exported by Mexico (ANACAFE, 2010). Some of the members of this association are also large-scale, vertically integrated coffee growers, while others are industries integrated with producers and medium- and large-scale collectors placed in various producing regions (Martínez Morales, 1996).

Nowadays, the basic buying price for coffee in every producing area is defined by owners of the large-scale firms who inform commissioners about the rising and lowering of the coffee price. Commissioners are obligated to change their buying price as soon as they receive the information from their buyers or contractors. One important element that is taken into account to set the daily price in producing regions is to be aware of what competitors are doing in the same region. Sometimes, the strategy is to set the price a little higher than the competitors do, to buy a high quantity of coffee or to get other buyers out. But as soon as a buyer is alone in a certain region, he or she can bring down the price indiscriminately (Santoyo Cortés *et al.*, 1994). According to the theory, in this case we will observe opportunistic behaviour that allows competitors to reduce buying prices and to increase their profits.

The number of growers who are included in any of the coffee organizations represents 11% of the total included in the Census database updated in 2008; that percentage accounts for around 68,000 growers. The most important kinds of grower organizations are the Society of Social Solidarity (SSS) and the Working Group. They are mainly interested in improving their production and in adding value to their product. Nevertheless, several organizations have been receiving machinery, equipment and subsidies from the government and NGOs to improve their production, processing and marketing capacities.

Farmer cooperatives and grassroots organizations engage in several activities. These kinds of organizations help producers with negotiating resources from the government budget, connecting and negotiating relations with a number of international agencies, and providing several kinds of services to improve farmers' competitiveness (technical assistance, quality improvement, and building infrastructure to process the product). Hence, in this way producer organizations are filling some gaps caused by the disappearance of the institute.

The processing capacity owned by farmers is limited. As mentioned by Renard (2008), farmer cooperatives owned 12% of the industrial processing capacity in 2007. Through their

cooperatives, coffee growers exported 6% of the total amount of coffee exported by Mexico. Several grower enterprises that used to export disappeared from the market and the majority that succeeded in this regard have been related to fair trade and organic schemes. Yet, according to the National Coffee Census, the most important types of coffee that farmers were selling were parchment (50%) and fresh cherry coffee (27%).

8. Concluding Remarks

Mexico carried out a sudden structural adjustment to the institutions overseeing its coffee sector. The starting point was the collapse of the international coffee agreements to control the coffee supply in 1989. This process caused a break in the services to the coffee industry, the most important of which were financing small-sized and medium-sized coffee growers, providing extension advice, organizing growers, maintaining the infrastructure to process coffee, collecting coffee, marketing coffee, controlling the coffee quality, and keeping a minimum price in every coffee-producing region. The reduction of government participation in the coffee sector led to several gaps, which until now have not been completely covered by other agents already involved in this industry.

As has been mentioned by Avalos-Sartorio (2006a), several services at the community level were and still continue to be inadequate in meeting coffee farmers' needs. Changes in the provision of agricultural extension, research, market information and physical infrastructure (roads) have been taking place since the liberalization of the coffee sector. In recent years, private agencies have provided the majority of services needed in the coffee sector (e.g. firms and informal lenders), non-governmental organizations and some public institutions (e.g. research centres and universities).

Since the beginning of the free market, the financing of small producers first was in the hands of the *Pronasol*, and subsequently has been partially taken up by development and commercial banks as well as by other funding sources such as intermediaries, exporters and informal lenders. The modifications in these services have brought an increase in the production costs that make farmers ask for higher coffee prices. In contrast, under the quota system, coffee producers were well provided with almost all the services they needed. Even when they received a coffee price relatively lower than current prices, they relied on coffee as the best and most profitable crop, but nowadays many coffee growers keep coffee orchards as a secondary income source.

The current organization of the Mexican coffee sector generates an unbalanced distribution of power among the main actors participating in this industry. On the one hand, there is the growers' sector, which is not well organized and lacks information and capital. On the other hand, there is the industry, mainly represented by ANACAFE, which is a very prominent organization that is well informed and has a high level of capital. Furthermore, it is not clear to what extent the recent programmes supporting coffee are designed to include the voice of all the actors participating in the coffee sector, or only the voices of the most prominent ones. Perhaps the most prominent participants in this supply chain are creating institutional and political conditions to benefit from. Thus, in order of importance, the government, the transnational coffee firms and farmer organizations have become the major players in the supply chain.

Under the current market characteristics, any intermediary is free to set the coffee price according to product quality, market conditions and suppliers' characteristics, among other things. Generally, intermediaries use the international commodity price defined each working day in the New York and London markets as a starting point for setting their daily coffee price. Then, intermediaries subtract from the international price any expenses incurred between the farmers' delivery point and their export point. Maybe as a result of the introduction of a number of programmes supporting coffee, especially the Stabilization of Coffee Pricing Fund, this margin has increased. In order to avoid this kind of reaction, in concordance with the proposal made by the OECD (2007), support to the rural sector is required but does not necessarily have to be directly linked to any crop.

The paths of and differences in the coffee prices have varied from period to period. The average rural, international and fob coffee prices have shown different figures between and within the various institutional settings operating in the Mexican coffee sector during the last decades. After the Stabilization of Coffee Pricing Fund programme began operating, a break occurred in the difference between fob and Other Mild coffee prices as well. This suggests that perhaps processors and exporters have been indirectly discounting part of the government subsidies given through this programme. In this respect, the question is to what extent the money given to growers is generating more economic benefit to large-scale processors and exporters than to growers.

Contrary to what theory tells us, the transaction cost (understood as the difference between the fob and the rural coffee prices) was reduced from what it was in the controlled era since the advent of the free market, and it has been much lower in recent years. Even so, it

seems that the coffee producers have not benefited much, as they now receive a relatively higher coffee price but do not receive many of the other services that the government used to provide during the regulated period.

The current market arrangements are more diversified than those under the quota system. Under the government marketing board, not many varieties of market arrangements existed. At that time, intermediaries relied on state agencies to buy coffee. By contrast, under the free market, the relationships between transactors are more diverse. Firms have been establishing any type of market arrangement that allows them to have control of producing, processing and exporting the product. In this way, firms have been the most dynamic actor in filling the gaps left by the institute.

Some of the main reasons to start with the structural changes in the coffee sector were the breakdown of the quota system and the changes in Mexican economic policy. According to our theory, one reason for closing down the main institution governing the coffee sector and creating the successive ones was to align the industry with the liberalization process of the Mexican economy. After more than twenty years since the start of those processes, the coffee sector now has a new structure. This has been established as a response to the government's general organization of the agricultural sector. In this sense, other active partners, such as producers and intermediaries, have been adjusting to what is happening in the primary sector of the Mexican economy.

The liberalization of the Mexican coffee sector and the resulting impact has brought either drawbacks or benefits to all the major players. Large-scale processors and exporters have adapted well to the current institutional environment. Small- and medium-scale farmers, on the other hand, have been losing the ability to compete and participate in the coffee market, as they now face many more constraints than they used to face in the past.

The current government participation in the coffee sector focuses on deregulating the market and allowing agents involved in the supply chain to participate freely. For this reason, it is necessary for the government to work on the provision of public goods and the development of clear rules with which to govern the free market. If a good institutional environment and the most needed public services are provided, the coffee market will be less uncertain. So, as the theory suggests, more impartial government participation and specific economic support aimed at rural areas are desirable to improve the coffee sector.

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