

2 Mexico's Agricultural Sector, Trade Policy and Economic Situation

This chapter presents an introductory overview of the agricultural sector, agricultural trade policy and economic situation of Mexico. Mexico is selected mainly based on the widespread information available on households for Mexico and the country's open trade policy. These aspects are comprehensively described in this chapter. The first section describes agricultural production and trade in Mexico from 1980 to 2008. The second section depicts the economic situation of Mexico during the same period. The third section then describes the main characteristics of households in Mexico, and the last section reviews the main international trade agreements in which Mexico is involved.

2.1 Agricultural Production and Trade

Mexico, like most of the countries in Central and South America, underwent a critical debt crisis in 1982. This crisis led the Mexican government to conceive important economic reforms. In 1988, the new economic strategy reached the agricultural sector, resulting in an agricultural reform. From the 1960's to the end of the 1980's, the national economic strategy had been based on in-land protection of domestic industries and domestic agriculture through import tariffs and quotas. The protection of the agricultural sector included price supports for producers of staple crops and subsidies for agricultural inputs. Agricultural support was also given to producers in the form of credits and insurances through the State Rural Bank (Banrural) (HENRIQUES and PATEL, 2003). The government had also been giving priority to the processing of grains, oils and powders (milk) to support Mexican consumers by supplying cheap food through the National Company for Popular Subsistence (CONASUPO). CONASUPO was a state company that bought staples from producers at guaranteed prices. These products were either further commercialised or partially processed, also by CONASUPO, and sold to low-income households.

Starting in 1992, the agrarian laws were modified to reduce the number of import quotas and permits. Import tariffs were established as the main mechanism for trade regulation. The Mexican government reduced its support for consumers and producers by closing the CONASUPO. Another important modification introduced with the reform of the agrarian law was the decreasing number and amount of credits granted by the Rural Bank (Banrural) (YUNEZ-NAUNDE, 2003).

However, other programs of support conducted by the government in 1994 as a result of the new agricultural policies included the Program of Direct Payments to the Countryside (Programa de Apoyos Directos al Campo, PROCAMPO). PROCAMPO was introduced

simultaneously with the initiation of the tariff cut schedule planned as part of the North American Free Trade Agreement (NAFTA) in winter 1994 and envisaged to conclude in 2008.

PROCAMPO was conceived to establish a compensatory income transfer scheme targeted at basic crop producers. This programme also offered direct income transferred to farm households proportional to the area historically planted with one or more of the nine major staple crops. The programme's economic objective was to provide farmers and households with liquidity to adjust their income. The income of farmers was seriously affected by the agricultural reforms because of the decline of producer prices and rising prices of farm inputs. PROCAMPO also strove for other social goals such as stopping the spread of poverty in rural areas, as well as reducing population migration from rural to urban areas (GARICA-SALAZAR, 2001, MELLA and MERCADO, 2006). The nine major staple crops supported by PROCAMPO were maize, beans, soybeans, rice, wheat, sorghum, cotton, barley and cardamom. Since PROCAMPO was a direct payment based on cultivated areas, main beneficiaries of this program were major producers with large land areas (COLL-HURTADO and GODINEZ-CALDERON, 2003; HERRERA-RAMOS, 2002; SAUDOLET et al., 2001).

In 2008, a new phase in the Mexican economy began. This phase is driven mainly by two facts. First, the tariff elimination program under the North American Trade Agreement (NAFTA) scheme was completed, including the elimination of tariffs for sensitive products for Mexico, Canada and the USA. Second, the direct transfer program PROCAMPO came to an end.

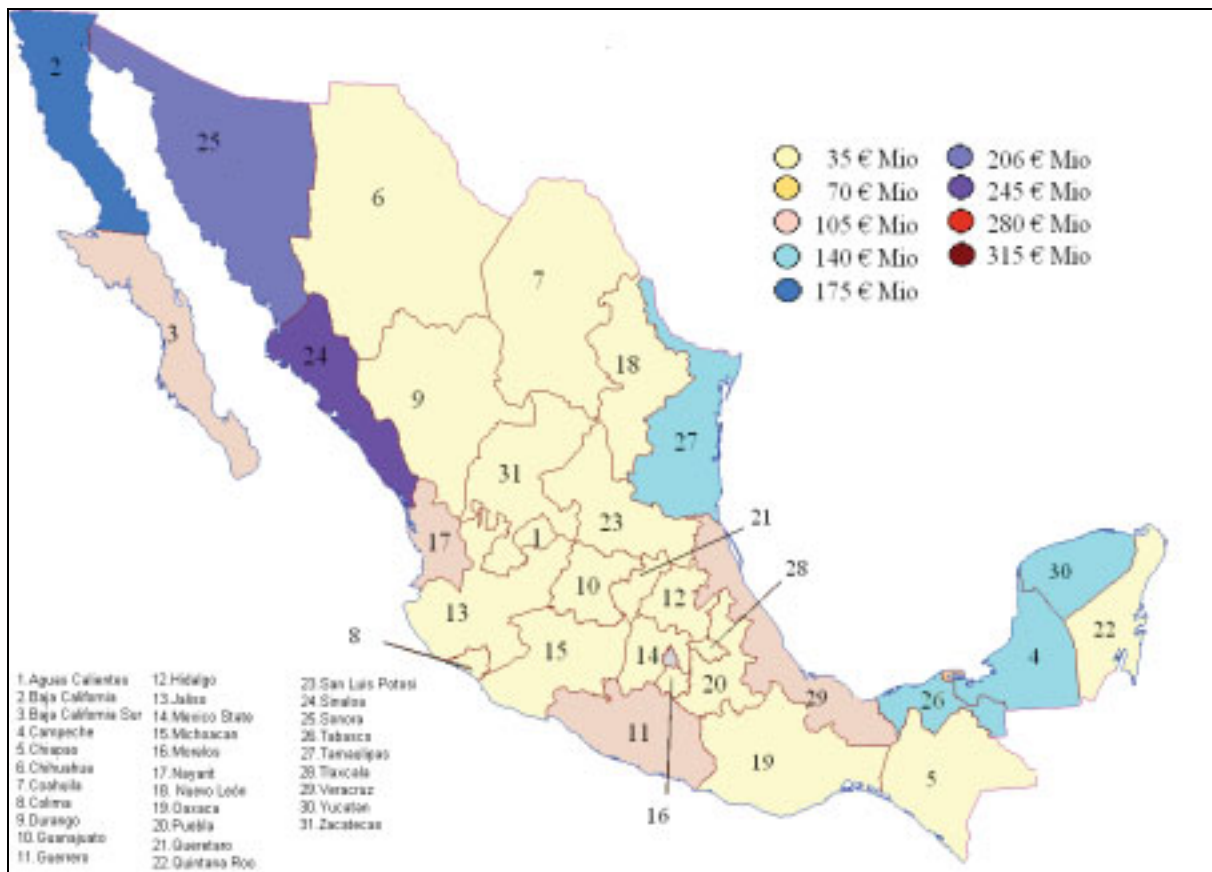
Having stated the economic situation confronting agriculture in Mexico in 2008, this chapter proceeds to deal with the agricultural sector and main changes observed in agricultural development from 1990 to 2005. The second section reviews the economic situation in Mexico. The third section describes the characteristics of households in Mexico, and the last section presents main international trade agreements that Mexico entered under bilateral and multilateral conditions by 2005. The objective of this chapter is provide a background to understand the differences of outcomes presented later on in this study and results obtained from other similar study cases.

2.1.1 Agricultural Production

The agricultural sector in Mexico employs approximately 20 percent of the economically active population and generates about 3.5 percent of the national gross domestic product (GDP) (INEGI, 2007). Generally, the arable land is owned by large land owners and

smallholders in equal proportions. Almost 50 percent of the agricultural land belongs to 26 000 *ejidatarios* (land owners), who possess 2.9 Mio *ejidos* (plots of shared land). The other half of the arable land belongs to smallholders possessing farms smaller than 5 hectares (SAGARPA, 2001). The agricultural production structure in Mexico is focused on traditional Mexican staple crops such as maize, rice and sorghum. From the 196 Mio hectares of total land area in Mexico, by 1950 nearly 10 percent (19 Mio ha) was being used for agricultural activities (COLL-HURTADO and GODINEZ-CALDERON, 2003). The agricultural land area has been reducing gradually: by 1990 it reached 31.1 Mio ha, and one decade later, in 2000, the land area decreased to 21.7 Mio ha. The extension of land surface devoted to agricultural activities is determined year by year as a function of natural factors, mainly climatic forecasting, as well as of national and international market conditions governing in previous years. Since the increase of the participation of Mexico in international trade in the mid-1980's, national and international conditions determine the extent of surface devoted to one or other crop. The Northeast region (Baja California, Baja California Sur, Sonora, and Sinaloa) as well as the Gulf region (Tabasco, Tamaulipas and Veracruz) contribute the highest values of agricultural production (see Figure 2-1).

Figure 2-1 Value of the agricultural production in Mexico (2003)



Source: Anuario Estadístico de la Producción Agrícola, SAGARPA (2005)

Compared with other sectors, the agricultural sector in Mexico has increased its production relatively slow. The average annual growth rate in the agricultural sector has been declining; it averaged 7.7 percent of the GDP in 1989-1991, then 6.2 percent in 1992-1994, and 5 years later dropped to 4.9 percent for the years 1997-1999 and then to 4.2 percent for the period 2000-2005 (SAGARPA, 2005).

A geospatial examination of crops harvested shows that cereals (maize, rice, sorghum and wheat) are the crops with the largest surface area cultivated in Mexico (9.5 Mio ha in 2000). Animal feed crops (mainly barley) represent the second largest group with 5.1 Mio ha; the third largest cultivated group are industrial crops such as cotton, agave and tobacco (SAGARPA, 2005). It is worth saying that surface area is not directly bound to economical value. Some crops, such as legumes, vegetables and fruits, require a relatively small surface area (3 percent of the national surface area cultivated), but, in economic terms, their harvest represents almost 20 percent of national agricultural production. Cereal crops have little economic importance, due to their predominant role as subsistence crops. Export-oriented crops, such as fruits in Michoacán or vegetables in Sinaloa, represent the highest economic value of agriculture in Mexico. Hemp is also cultivated illegally in Mexico, with 5.8 Mio ha by 2004 (USDOJ, 2006). Table 2-1 presents shares of land and production value of different crops by 2003. In this table, fruits and horticultural crops covered only 6 and 3 percent of the arable surface respectively. However, they represented 19 and 16 percent respectively of the total profits from agricultural production in the same year.

Table 2-1 Share of total surface and total value of agricultural production by crops (2003) (%)

Crops	Surface	Production value
Cereals	50.0	25.0
Animal feed crops	17.0	13.0
Legumes	12.0	6.0
Industrial crops	11.0	15.0
Fruits	6.0	19.0
Horticultural crops	3.0	16.0
Other crops	1.0	6.0
Total	100.0	100.0

Source: Anuario Estadístico de la Producción Agrícola, SAGARPA (2005)

Mexico has suitable conditions for the cultivation of fruits and horticultural products. The high diversity of microclimates and soil composition occurring in different regions of the territory makes it possible to harvest diverse horticultural crops during the entire year. Table 2-2 presents the main horticultural and fruit crops produced, as well as their economic value. The main horticultural products are potatoes, tomatoes, zucchini and pepper. These same crops are produced for domestic consumption and export-oriented crops as well (SILLER-

CEPEDA, 2003). The surface occupied by tomatoes and pepper represents a third of the surface devoted to horticultural products. Mexican tomatoes are an important export product (Table 2-2).

Mexico is a large producer of tropical and subtropical fruits. In 2003, more than 20 fruit species were cultivated. The most important crops are (in percent): coffee (41.6), oranges (17.4), coconut (9.4), mangoes (8.3), lemons (5.7), avocados (5.5), cacao (4.7) and bananas (3.9). Other important fruits are cucumbers, watermelons, sugar cane, peaches, apples, asparagus, tamarind and pears (Table 2-2).

Table 2-2 Main horticultural and fruit crops produced in Mexico (2003)

Product	Production (thousands of tonnes)	Value (thousands of USD)
Tomato	48.31	5917.19
Bell pepper	112.00	5433.10
Coffee	728.61	2892.66
Cucumber fresh or chilled	28.04	1390.37
Zucchini	10.84	49.92
Avocado	10.91	352.62
Mango	40.89	722.69
Asparagus	14.24	1300.36
Watermelon	35.41	1627.36
Tobacco	12.50	411.63
Orange	190.02	1491.05
Coconut	10.70	108.54
Cacao	80.90	845.41
Banana	40.66	1148.43

Source: Anuario Estadístico de la Producción Agrícola, SAGARPA (2005)

2.1.2 Level of Technology Applied in Agriculture

The level of technology applied by Mexican farmers is not homogeneous across the country and has profound differences. One group consists mostly of competitive export farmers who continuously adopt new technological developments from Canada and the USA. Another portion represents a considerably high share of farmers – mainly smallholders located in the Southern part of Mexico – whose technological development has been almost steady since 1910.

The level of adoption of new technologies at the farm level is directly bound to farm investment. Because of a lack of information, it is difficult to quantify the value of investments at the farm level. Farm investments can have three main sources: private or

farmers' investments, international investments and investments that are attributable to governmental transfers. Farmers and their families accrued farmers' investments from farming and off-farming activities. The direct international investments in agriculture come mainly from the USA (70 percent), followed by European countries (17 percent) (SAGARPA, 2005). Finally, governmental transfers reach farmers through official programs such as PROCAMPO and "*Alianza para el campo*", which are based on direct payments for investments in agricultural production.

The diversity in options for investments and the application of variable technologies lead to a broad panorama of agricultural possibilities in Mexico. Some farmers cultivate crops with high yields; these farmers are able to rotate their cultures depending on market needs. On the other extreme are farmers who have no access to investment capital or cannot purchase expensive inputs for their subsistence crops. These farmers produce only enough food to cover their own needs, and in rare cases when the harvest exceeds subsistence quantities, they sell the surpluses at the local market.

Investments, hence, lead to access to new technologies and the use of modern machinery, modified seeds, fertilisers, tractors, huller machines, threshing machines, etc. The extent of distribution of technology across the agricultural surface in Mexico is as highly unequal as income distribution across the country (GALINDO-GONZÁLEZ, 1996).

These facts cause the establishment of two fundamental types of agriculture in Mexico: commercial agriculture and subsistence agriculture. Subsistence agriculture is predominant across rural areas with indigenous populations, such as in the states of Guerrero, Oaxaca, Chiapas, Puebla, Estado de Mexico and Hidalgo. Farmers selling to national and international markets are found in Sonora, Sinaloa and the Pacific zone. Farmers who cater to export markets constitute 1 percent of the total national farmer population, while subsistence farmers represent about 60 percent. Approximately 1.5 Mio farmers focus on subsistence; their main crops are maize and beans.

The use of transgenic seeds is the one of the technological innovations introduced in Mexican agriculture in the early 2000's. Their adoption is a main topic of controversial discussions among farmers and environmental specialists because of its potential effects on biodiversity in the long term. Roughly 30 percent of the rural producers have access to this technology. States where its use has been broadly expanded are Baja California, Sonora and Sinaloa, and other Northern states (COLL-HURTADO and GODINEZ-CALDERON, 2003).