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Mexico

Agricultural Situation

A Profile of Mexico's Agricultural Sector

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Report Highlights:

The state of Mexican agriculture has been a prominent topic of political, social, and economic discussion during much of the past year. Much of the debate was spurred by the announcement of the U.S. Farm Bill, the elimination of most tariffs and tariff-rate quotas under the provisions of the North American Free Trade Agreement (NAFTA), and the concern that portions of Mexico's agricultural sector will be negatively affected by rising imports from the United States and Canada. To address these concerns, Mexico recently signed a national agricultural agreement that is designed to target more resources to Mexico's rural poor. This report attempts to provide a snapshot of Mexico's rural sector, highlighting a number of the key structural and demographic challenges that face this sector as we enter the final stages of the implementation of NAFTA.

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Overview

The state of Mexican agriculture and Mexico's rural poor has been a prominent topic of political, social, and economic debate for much of the past year. Much of the debate was spurred by the announcement of the 2002 U.S. Farm Bill and the elimination of most agricultural tariffs and tariff-rate quotas under the provisions of the North American Free Trade Agreement (NAFTA) on January 1, 2003. While many in Mexico are of the opinion that NAFTA has generally been good for Mexico, there are significant concerns that certain agricultural producers and the rural poor have not benefited from a more integrated North American market. These concerns recently culminated in the signing of a national agriculture agreement (see MX3067), which is designed to address certain structural issues in agriculture as well as social challenges such as poor education and health care in rural areas.

In general, the data presented in this report demonstrate that Mexico does indeed face significant challenges in transforming its agricultural sector. Perhaps the most significant structural challenge is the fact that about half of Mexico's producers grow crops on farms of five hectares or less. Additionally, the overwhelming majority of Mexico's farmers produce grains, oilseeds, and legumes, which are the least profitable of the major Mexican crops. This lack of productivity, coupled with the lack of off-farm employment in rural areas, has created a significant rural underclass. A recent study by Mexico's Secretariat of Agriculture indicates that 10 million people (10 percent of Mexico's population) either live on or are supported by Mexico's 1.7 million farms with five or fewer hectares.

On the other hand, there are signs that Mexican farmers have already begun the transition to greater economies of scale and off farm employment. The number of land owning farmers dropped 21 percent between 1991 and 2000 and Mexico's smallest farmers earn less than a third of their income from agriculture. Unfortunately, while Mexico has spent a greater proportion of its national budget on agriculture (8.6 percent) than other countries in Latin America, much of the emphasis has been on programs designed to keep people on small inefficient farms, rather than fostering a transition to greater efficiency, productivity, and in some cases, off farm employment. A key agricultural leader has commented that 15 percent of Mexico's farms are currently globally competitive, 35 percent could be competitive, and 50 percent will never be competitive.

It does not appear that the recently signed agricultural agreement contains many of the kinds of policy provisions that will create opportunities for the large number of farmers who will likely need to seek off farm employment in coming years to improve their quality of life. The challenges facing Mexico's small farmers and rural poor have persisted for decades. Now, as Mexico becomes an increasingly significant exporter and importer of agricultural products, the challenge facing the Government of Mexico will be the development of policies that will soften the blow of what appears to be, at least for some, an inevitable economic transition away from the farm. If not, many of Mexico's rural poor may well be left to face the vagaries of economic transition on their own.

Table 1.1 Principal Characteristics of the Agricultural Sectors of Mexico and the United States

Table 1.1 shows the principal demographic characteristics of the Mexican and U.S. agricultural sectors.

Principal Characteristics of the Agricultural Sectors of Mexico and the United States		
	 Mexico	 United States
Population Total (people)	102,377,600	275,562,673
Employed Population	38,983,855	141,815,000
Agricultural Employment (%)	22.2%	2.1%
<i>Source: OECD, 2000</i>		

Conclusions:

- Only 38 percent of Mexico's population is employed compared to 51 percent in the United States. Mexico's relatively young population (50 percent of the population is under the age of 25) and a significant number of chronically unemployed people are two factors that appear to contribute to this difference.
- While Mexico's population is just over third the size of the U.S. population, nearly three times as many people are employed directly in production agriculture in Mexico (8.6 million), compared to 2.9 million in the United States.

Table 1.2 Agricultural Economic Indicators of the Main OECD Member Countries (1992-2000) in Percentages

Table 1.2 shows the main Organisation for Economic Cooperation and Development (OECD) member countries, their agricultural GDP as a percentage of the total GDP, agricultural employment as a percentage of total employment, and agricultural trade as a percentage of total trade.

AGRICULTURAL ECONOMIC INDICATORS OF THE MAIN OECD MEMBER COUNTRIES (1992-2000) IN PERCENTAGES				
OECD Country	<i>Agricultural GDP/ Total GDP</i>	<i>Agricultural Employment/ Total Employment</i>	<i>Agricultural Exports/ Total Exports</i>	<i>Agricultural Imports/ Total Imports</i>
 Australia	2.7	5.2	22.6	4.4
 Canada	1.4	4.2	7.8	6.0
 European Union	5.0	5.6	10.7	11.2
 Japan	1.5	6.0	0.4	13.5
 New Zealand	5.3	10.6	50.7	7.7
 Mexico	6.1	22.6	6.7	7.8
 United States	1.4	2.8	9.2	4.0
OECD Member Countries	1.8	8.8	9.3	9.3
<i>Source: Official OECD data, SAGARPA</i>				

Conclusion:

- Mexico's agricultural sector accounts for a higher percentage of GDP than in other OECD countries, and while agricultural employment is much higher, the ratio of GDP percentage to employment percentage (6.1 percent to 22.6 percent) is similar to the OECD average (1.8 percent to 8.8 percent).

Table 1.3 Total Budget Percentage Designated to Agriculture for Certain Latin American Countries (Average between 1990-2000)

Table 1.3 compares the percentage of total government spending that has been devoted to agricultural spending among certain Latin American countries.

Total Budget's Percentage Designated to Agriculture for Latin America (Average between 1990-2000)	
Country	Percentage
 Argentina	0.88
 Brazil	4.42
 Chile	2.23
 Cost Rica	2.97
 Guatemala	4.20
 Mexico	8.60
 Panama	1.85
<i>Source: SAGARPA</i>	

Conclusion:

- Despite cries for additional government spending on agriculture from Mexico's farming groups, Mexico's agricultural spending as a percentage of total spending far exceeds levels in other Latin American countries.

Table 1.4 Agricultural Labor Productivity, Mexico & the United States

Table 1.4 compares agricultural labor productivity between the Mexico and the United States.

AGRICULTURAL LABOR PRODUCTIVITY (MEXICO—UNITED STATES) 2001 (PERCENTAGE)			
	<i>Total Agricultural Employment (A)</i>	<i>Total Agricultural GDP (B)</i>	<i>Productivity (B/A)</i>
 Mexico	22.6	5.0	0.221
 United States	2.1	1.8	0.850
<i>Source: SAGARPA</i>			

Conclusion:

- Even though Mexico's total agricultural employment is more than seven times the size of that of the United States, total agricultural GDP is proportionally less in Mexico than that of the United States. As a result, productivity is much higher in the United States than in Mexico.

Table 1.5 Economically Active Agricultural Producer Types

Table 1.5 compares the number of landowners with the number agricultural laborers. The total reflects the number of people employed directly by agriculture.

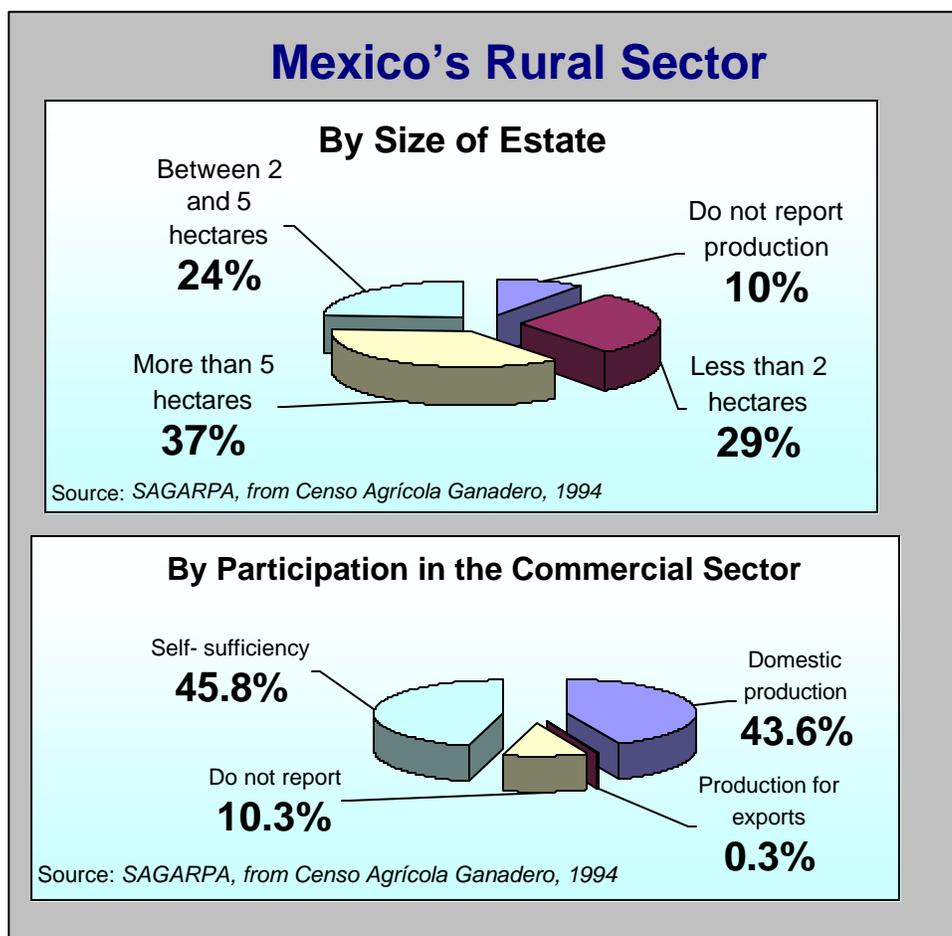
Economically Active Agricultural Producer Types in Mexico					
Types	1991	1995	1998	1999	2000
PRODUCERS (LAND OWNERS)	4,318,053	4,074,350	3,879,013	3,756,988	3,405,264
Agricultural Workers	5,526,967	5,642,897	5,708,186	5,708,186	5,255,760
Total	9,845,020	9,717,247	9,838,318	9,465,174	8,661,024
<i>Source: Government of Mexico General Resource & Services Administration (STPS), National Employment Survey, 2000</i>					

Conclusions:

- Land-owning agricultural producers accounted for only nine percent of Mexico's labor force of 39 million employees in 2000. Additionally, the number of producers who own land dropped 21 percent between 1991 and 2000, pointing to a shift from farming to employment in manufacturing, other types of non-farm work, or unemployment among land owners. The number of hired workers dropped only five percent from 1991 to 2000, implying that the remaining land-owning producers are either supporting or employing a larger number of on-farm workers on a per farm basis.
- According to a survey by the Secretariat of Labor, production agriculture employed nearly 2.3 million workers above the age of 12 in 2000. An additional 140,000 workers performed specialized agricultural tasks such as machinery operations, and another 2.8 million worked without pay as family laborers.

Chart 1.6 Mexico's Rural Sector by Size of Estate and by Participation in the Commercial Sector

Chart 1.6 breaks out Mexico's agricultural sector by farm size and commercial activity.



Conclusions:

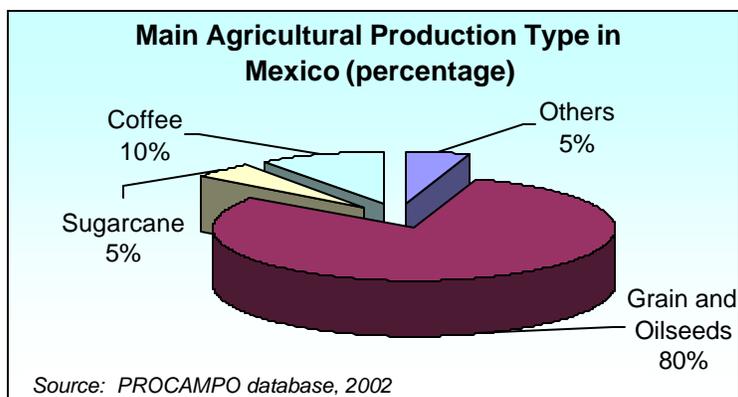
- Perhaps the most significant structural problem in Mexican agriculture relates to farm size. Based on 1994 data (the latest available), just over half of Mexico's farms are five hectares or less. Additionally, nearly half of Mexico's farmers are subsistence farmers who do not participate in the formal economy.
- According to recent data from SAGARPA, 10 million people live on, or are supported by, the approximately 1.7 million farms with less than five hectares. As a result, this group is likely to live in extreme poverty, creating a large rural underclass with little economic opportunity.
- According to a recent SAGARPA study entitled *Programa Sectorial de Agricultura Ganadería Desarrollo Rural, Pesca y Alimentación* for 2000-2006, the ratio of farmland to people living in rural areas is expected to continue decreasing. During the 1960's, there were 0.75 hectares per person living in rural areas, in 2000 the ratio was 0.34 hectares per person, and in 2010 some experts predict the ratio will drop to 0.25 hectares per person. While there has been significant rural-urban migration in

Mexico, factors such as the ancestral land system, which tends to divide farmland among heirs, and poor job in urban areas near rural areas, have caused a large segment of Mexico's population to stay in rural areas.

Table & Chart 1.7 Producers by Type of Crop

The table & chart below shows the major agricultural producers by commodity.

Producers by Commodity Type	
Production Type	Number (in thousands)
Grains & Oilseeds	2,736
Coffee	340
Sugar	156
Others	168
Total	3,400
<i>Source: PROCAMPO database, 2002</i>	



Conclusions:

- Mexico's combined annual grain, dry bean, and oilseed production is approximately 30 MMT. With 2.7 million farmers involved in the production of these crops, annual production per farmer is a mere 11 MT. This limited annual income, coupled with the large numbers of people still living in rural areas who depend in some way on the income from these crops, tends to trap farmers in a cycle of subsistence farming that limits their ability to adopt the kinds of technology or accumulate the capital necessary to generate additional income.
- The situation is further complicated by the fact that many farmers live in, or near one, of Mexico's 190,000 villages with populations of 2,500 or less. Many of these villages are in remote locations where basic economic infrastructure, social services, educational opportunities, and access to markets are limited.

Table 1.8 Average Value Density for Key Crops, 1996-1999

Table 1.8 shows the percentage of cropland designated to each type of crop and compares it to the percentage national crop value. To determine which type of crop is most profitable, production value is divided by cropland to determine value density.

Average Economic Density for Key Crops 1996-1999			
Type	Production Percentage for:		Value Density (b/a)
	Cropland (a)	Production Value (b)	
Cereals	42.2	21.3	0.5
Fruit	5.9	16.7	2.8
Horticulture Products (primarily vegetables)	2.5	17.2	6.9
Industrial products	11.8	15.2	1.3
Feed	22.0	19.1	0.9
Oilseeds	1.8	0.9	0.5
Legumes	11.1	4.7	0.4
Tubers	0.3	3.1	10.1
Others	0.4	1.7	4.2
National Total	100.0	100.0	
Source: Sistema de Información Agropecuaria, SAGARPA, 2003			

Conclusion:

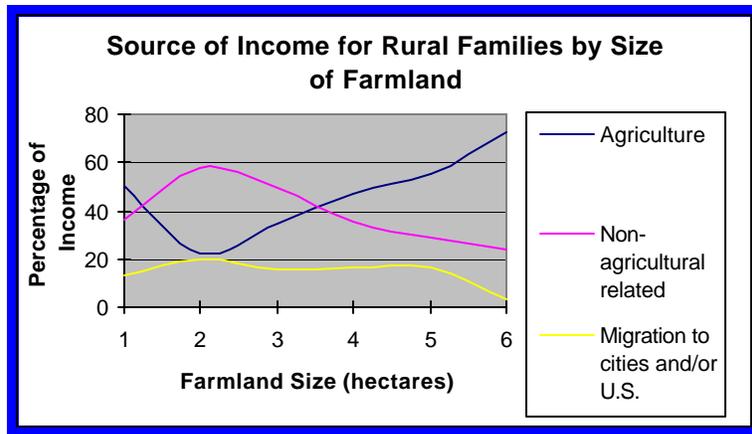
- While the number of producers involved in the production of horticultural products is quite small, this table indicates that these crops generate the most value per hectare. Horticultural products are also Mexico's leading export products. This table does not take cost of production into account, but the large differences in value density appear to be significant enough to point to greater profitability in the production of horticultural crops.

Table & Chart 1.9 Source of Income for Rural Mexican Families by Farm Size

The table & chart below shows the sources of income for rural Mexican families relative to farm size.

Source of Income for Rural Families by Farm Size						
SOURCE OF INCOME	Farm Size					
	Total	0-2 ha	2-5 ha	5-10 ha	10-18 ha	>18 ha
Total Income	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture	50.1	22.2	34.8	47.3	55.2	72.3
Non-agricultural related	36.4	57.8	49.6	35.8	28.5	24.3
Migration to cities and/or U.S.	13.5	20.0	15.7	16.9	16.2	3.4

Source: A.D. Jainvry. Et. A. , University of California, Berkeley, 1995

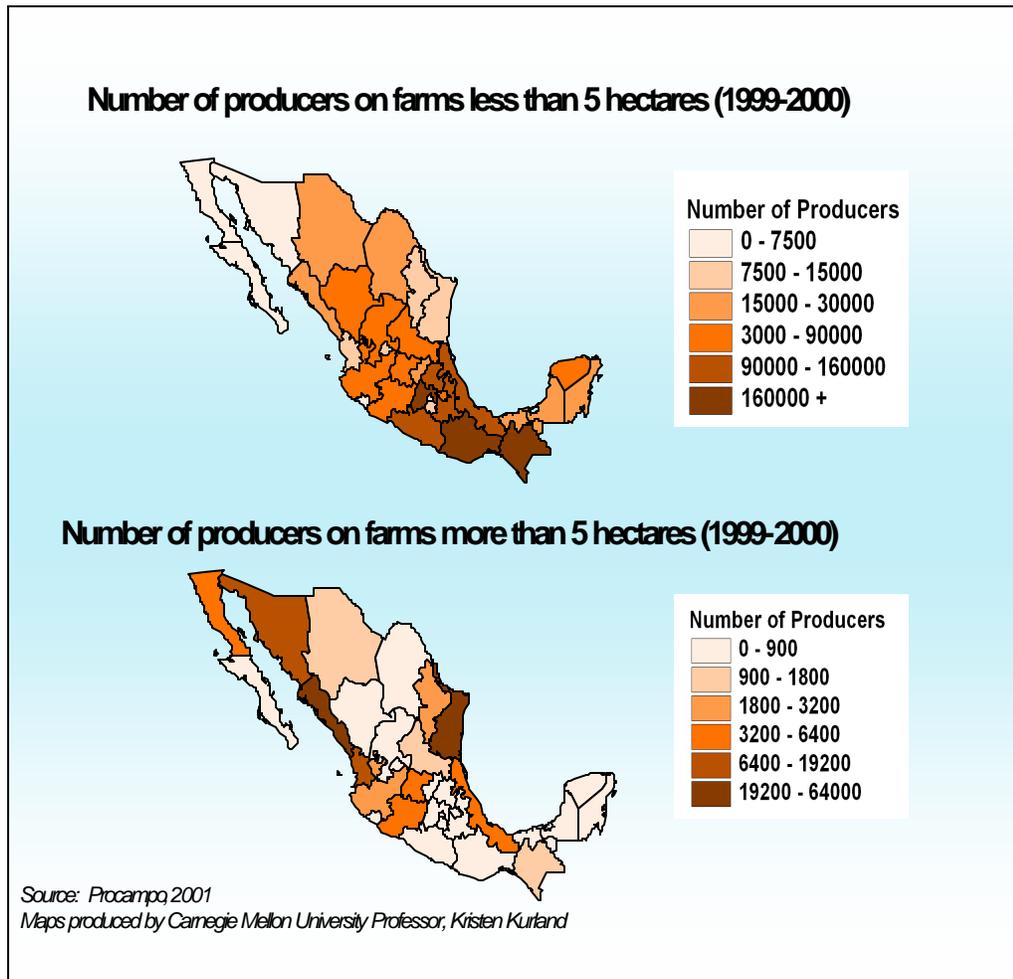


Conclusion:

- Mexico's smallest agricultural producers are already highly dependent on off-farm income and money sent by relatives living in the United States or Mexican urban areas. As farm size increases to a modest 18 hectares, dependence on these alternate sources of income diminishes considerably.

Map 1.10 Number of Producers on Farms Less Than and More Than Five Hectares

Map 1.10 shows the density of producers on farms with less than five hectares of farmland and with more than five hectares of farmland by state

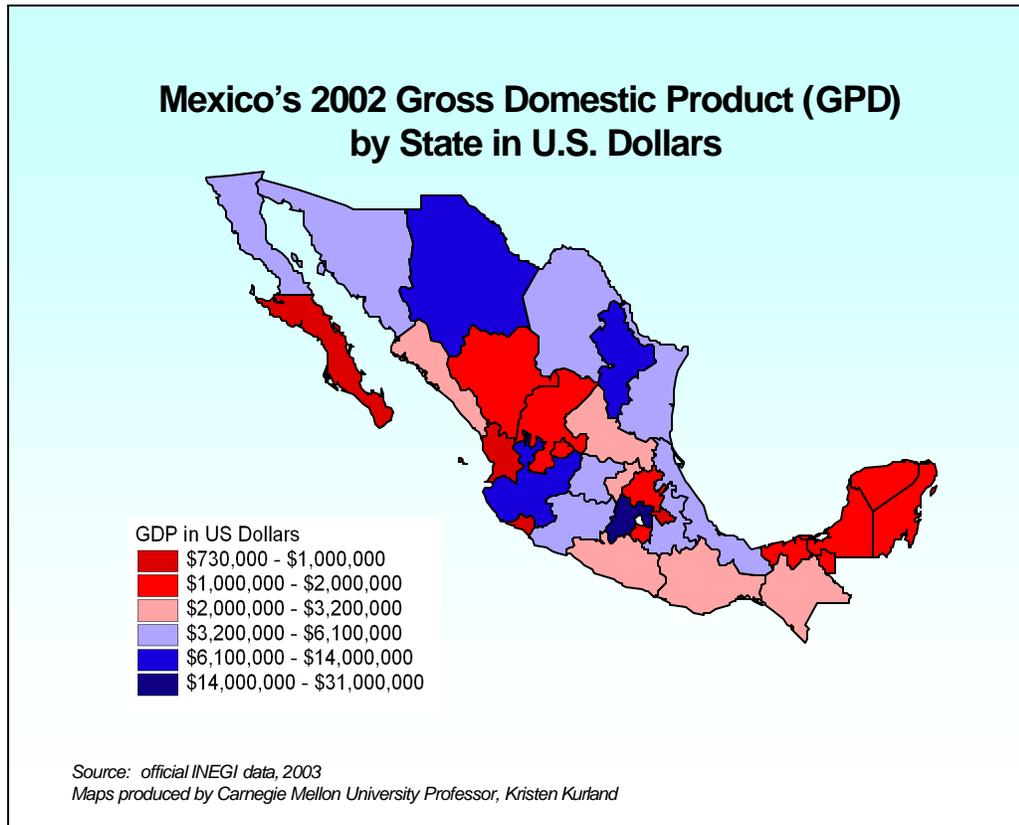


Conclusions:

- The data point to a general difference in farm size between northern and southern states in Mexico.
- The majority of producers with farms of less the five hectares are located in the southeastern costal states of Veracruz, Oaxaca, Guerrero, and Chiapas.
- The majority of producers with farms of more than 100 hectares are located in northern states of Chihuahua, Tamaulipas, Sinaloa, and Sonora.

Map 1.11 Mexico's 2002 Gross Domestic Product (GDP) by State in U.S. Dollars

Map 1.11 shows wealth distribution according to state GDP by state in U.S. dollars



Conclusions:

- Both GDP growth and farm size data point to fairly significant differences in the economic and agricultural well being of northern and southern states.
- States located along the border and near Mexico City, plus the agricultural powerhouse and business hub of Jalisco, are those with the highest GDP. In contrast, Mexico's southern states and those in the arid and mountainous central of the country have the lowest GDP levels. The southern states also have the highest percentage of national indigenous populations, the highest percentage of non-Spanish speaking populations, and the lowest average education levels
- The economic differences between northern and southern states are even more apparent when GDP growth from 1993 to 1999 is aggregated regionally. GDP in northern states grew 10.3 percent during this period, while GDP growth in the southern states was 6.4 percent.

Table 1.12 Foreign Remittances

Table 2.7 highlights the Mexican states with the highest foreign remittances. The percentage derived from dividing the level of remittances by the state GDP provides a rough indicator of the number of people from a particular state who have immigrated to the United States. Foreign remittances are Mexico's third largest source of foreign revenue after oil and tourism.

Foreign Remittances		
State	Remittance (in US \$ millions)	Remittance/ State GDP 1999 (%)
Guanajuato	1,183	8.27
Zacatecas	255	7.84
San Luis Potosí	399	5.34
Michoacán	502	4.61
Nayarit	98	3.95
Durango	202	3.64
Jalisco	656	2.33
Source: Banxico (Mexican Central Bank) and INEGI		

Conclusion:

- The dry, north central states have the highest level of remittances as a percentage of GDP. State leaders are often heard to say that only children and the elderly are left in many rural areas in these states, as working age citizens are in the United States. The proximity of these states to the United States also plays a role in the relatively high levels of immigration. The states of Guanajuato, Zacatecas, Michoacán and Jalisco are all major producers of grains and dry beans, yet agriculture does not appear to provide enough employment to keep the states' residents from migrating to the United States.

Structural Challenges Facing Mexican Agriculture

The following is a listing of a number of the specific challenges facing Mexican agriculture. Many of these challenges have existed for decades. However, as Mexico continues to open its agricultural sector to foreign competition from the United States, Canada, and other countries via free trade agreements, the need to address these issues will likely become increasingly pressing.

Tenuous Land Ownership System: Dating back to the Mexican revolution the "ejido" system of land distribution makes for non economically viable production units; thus, farmers cannot shift to new technologies, obtain credit, increase production, etc.

High Cost of Credit: Comparatively expensive credit, or lack of credit for smaller producers, makes it impossible to expand farming operations and take advantage of economy of scale savings.

Weak Banking System: The Mexican banking sector continues to be skeptical of investments in agriculture. Even if interest rates were to fall significantly, many farmers still would not be able to obtain loans because of restrictive collateral requirements.

High Producer Costs: Mexico has high production and marketing costs largely because producers must import most of their raw materials and cannot take advantage of economies of scale.

Linked Policy Approach to Agricultural and Rural Development Problems: Coupling rural development policies to agriculture policies makes it impossible to focus specifically on the issues affecting agriculture.

Lack of Transportation Infrastructure: The domestic transportation system is poor. Many rural areas have to rely on old trucks on bad roads making it difficult to get product to market. There is a critical need for improving the system of railroads.

Lack of Technology: There is a large divide between processing technology for food products and technology used for production. Though some of the large processing facilities rival the most efficient global operations, production equipment for the most part is antiquated.

Lack of Education: Particularly in rural areas, the lack of education makes transition to new economic realities and adoption of technology difficult and prevents rural development from being decoupled from agriculture. Potential new factories in rural areas will require a better educated workforce.

No Job Relocation Programs: As farmers are forced to leave the farm, they have difficulty finding new jobs.

Lack of Market Information: Mexican agricultural producers do not have access to timely and accurate marketing information to help them make planting and marketing decisions as well as information on how to hedge their risk.

Lack of Irrigation: A lack of water and government funds to develop adequate irrigation have made it difficult for farmers to diversify crop production and increase yields.

Poor Water Quality: Most surface water, including virtually every lake in the country, and many aquifers are seriously polluted. Local officials place most of the blame on agriculture. As rural and urban concerns for potable water increase, environmental policies relating to agriculture will likely become more restrictive.