



TRADE AND AGRICULTURE DIRECTORATE

**THE ROLE OF AGRICULTURE AND
FARM HOUSEHOLD DIVERSIFICATION**

IN THE RURAL ECONOMY OF

MEXICO

Foreword

This report reviews information on the role of agriculture and farm household diversification in the rural economy of Mexico. It was prepared by Dalila Cervantes-Godoy of the OECD Secretariat.

It is one of 13 country reviews prepared under Output area 3.2.1: Agricultural policy reform (Item 3.2) of the programme of work and budget of the Committee for Agriculture for 2007-08.

Based on material compiled from the available literature, these country reviews address all or most of the topics listed below:

- Definitions and underlying concepts of “rural” as they exist at the national level.
- The availability of data pertaining to the share of agriculture and the agro-food sector in the economies of OECD countries at the national level and in rural areas and trends therein.
- The availability of data relating to the income situation of farm households and in particular the availability of information related to non-farming activities.
- The extent to which non-farming income-earning activities of farm households are farm based (*i.e.* using farm resources as in the case of farm tourism) or rural based (located in rural areas).
- The extent to which the industries upstream and downstream from primary agriculture are located in rural areas.
- The strength of multiplier effects between farm/farm based and up/downstream industries and rural economies.

The information in these country reviews was used as background to the report "The role of agriculture and farm household diversification in the rural economy: evidence and initial policy implications" [TAD/CA/APM/WP(2009)1/FINAL], which was declassified by the Working Party on Agricultural Policies and Markets in February 2009.

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THE ROLE OF AGRICULTURE AND FARM HOUSEHOLD DIVERSIFICATION IN THE RURAL ECONOMY OF MEXICO

Rural areas in Mexico are highly linked to agricultural activities, although in the Past two decades economic diversification has played an increasingly important role. The importance of rural areas is considerable: it accounts for more than 90% of the national territory, comprises 23.5% of the population which represents 24.3 million of people, and 21% of the national employment. However, rural areas are most often associated with poverty and marginalisation. Approximately 57% of rural population live in conditions of poverty and rural areas (localities with less than 2 500 inhabitants) contribute to only 2% of the national GDP, which even when rural extended areas (localities with 2 501 and 15 000) are included increases the share to only 10%. It cannot be generalised, however, that rural areas are poor: there exists in fact a duality which is reflected in the agriculture sector, where a part of rural economy is well developed and strongly linked to the market.

The source for the information presented in this document is the National Institute of Statistics, Geography and Informatics (INEGI). It is important to recognise that statistical data at the rural areas level related to the agricultural sector is occasionally limited, and therefore some of the information presented here had to be extrapolated.

Definition of Mexican rural areas

The National Institute of Statistics, Geography and Informatics (INEGI) takes a demographic approach to define “rural” in Mexico. As such, rural areas are those human settlements where the population is less than 2 500 inhabitants. This report will consider INEGI’s definition of rural areas.

Share of rural areas in national economy

Population

The second half of the 20th century was a period of high urbanization in Mexico, with a corresponding drop in the rural population. At the end of the 1950s, rural and urban areas were equal, but 20 years later, at the beginning of the 1980s, the rural population declined to 33% of the population, and by 2005 to only 23.5% (Figures 1 and 2). In 2005, the total population was estimated at 103.3 million, of which the rural population comprised 24.3 million. According to the most recent national census (2005), there were 5.4 million rural households with an average of 4.5 family members each (INEGI, 2005).

Figure 1. Total Population (million), 1900-2005

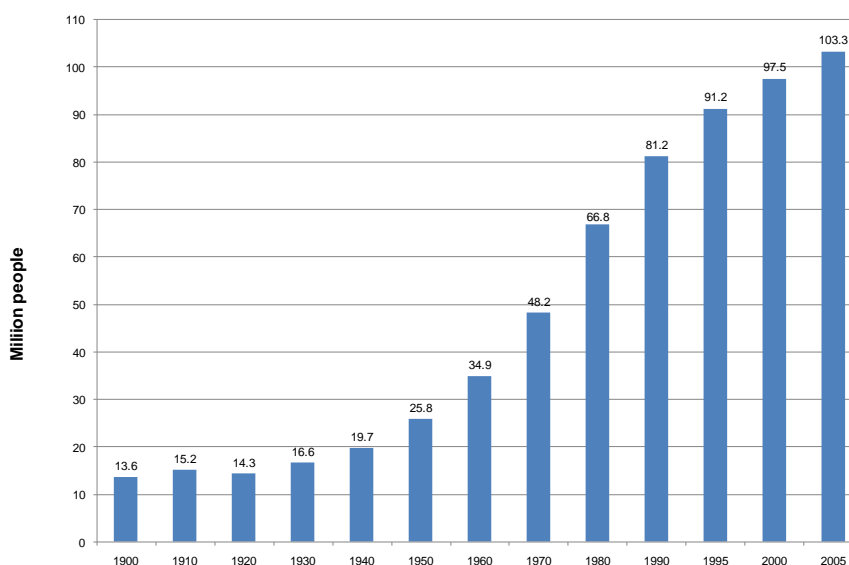
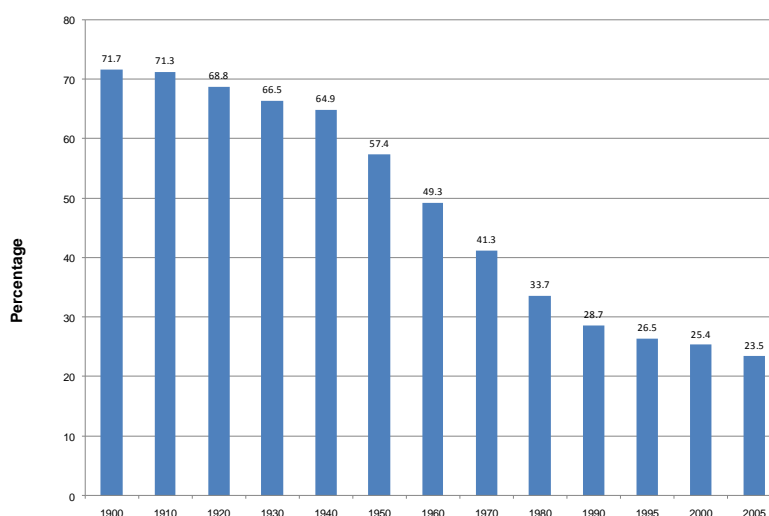


Figure 2. Percentage of rural people, 1900-2005

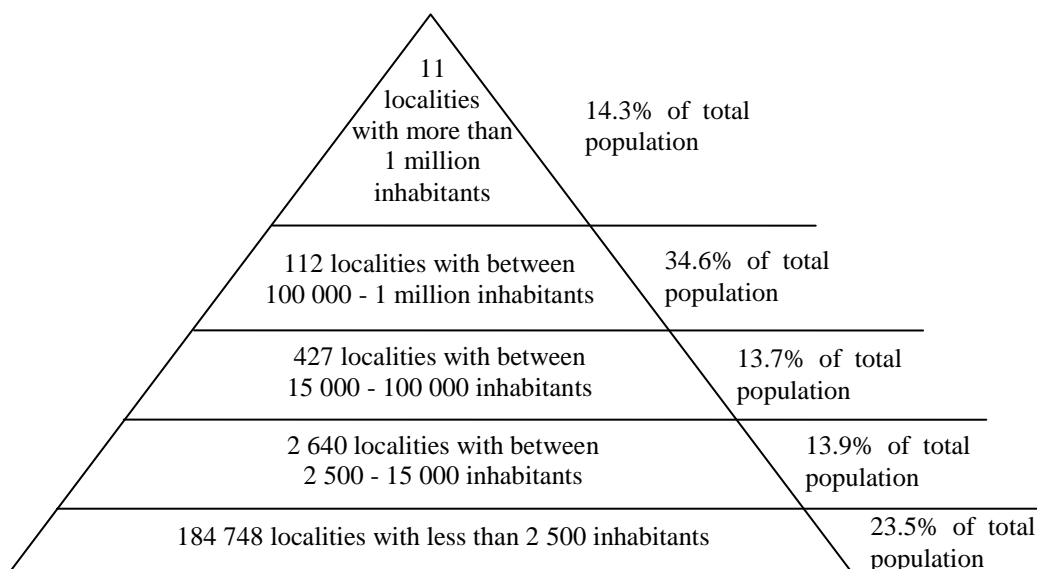


The number for 1910 corresponds to communities with 4 000 and less inhabitants and for 1921, communities with 2 000 inhabitants or less. From 1930 onwards rural corresponds to communities with less than 2 500 inhabitants. Source: INEGI, *Censos de Población y Vivienda* (1985 to 2000) and *Conteos de Población y Vivienda* (1995 and 2005).

There are 32 regional administrative units (*entidades federativas*): 31 states and one Federal District (Mexico City). States are constituted by municipalities (2 454 in total), which are then broken down into localities. According to INEGI (2005), there are 187 938 localities, of which 184 743 (98.3%) have less than 2 500 inhabitants (Figure 3). Approximately 83 161 localities have only one or two households; this shows the high degree of dispersion and atomisation of the rural population. On the other hand, 123 localities cluster 49% of the national population. The extreme cases are the five metropolitan regions that group 30% of the total population: the Metropolitan Area of Mexico City with 19.2 million

inhabitants; Metropolitan Area of Guadalajara with 4.1 million; Metropolitan Area of Monterrey with 3.7 million; and Metropolitan Areas of Puebla and Toluca with 2.1 and 1.6 million respectively (Annex 1).

Figure 3. Structure of Mexican population by number and size of localities, 2005.



Source: INEGI, *II Conteo de Población y Vivienda*, 2005.

Rural areas in Mexico are characterised by dispersion and remoteness (Table 1). Almost a quarter of the Mexican population lives in nearly 190 000 localities, with less than 2 500 inhabitants. This often translates into conditions of poverty and lack of access to basic public services, such as education, health care, water supply, and electricity (OECD, 2007a).

Table 1. Rural population by size of localities

	1 to 49 inhabitants	50 to 99 inhabitants	100 to 499 inhabitants	500 to 999 inhabitants	1 000 to 1 999 inhabitants	2 000 to 2 499 inhabitants	Total
Localities	122 086	15 429	33 414	8 608	4 397	814	184 748
Population	1 330 156	1 107 821	7 900 437	6 043 949	6 080 068	1 814 105	24 276 536

Source: INEGI (2005), *II Conteo de Población y Vivienda*.

Employment

Rural areas continue to have an important share in total employment at the national level (Table 2). According to the National Occupation and Employment Survey 2007 (ENOE), rural areas contribute to 20% of total national employment. When intermediate rural areas (those with 2 500 and 15 000 inhabitants) are added the contribution increases to 33% of national employment. This suggests the important role that non-urban areas still play in the national economy. On the other hand, urban areas, in particular settlements with more than 100 000 people, contribute to 53% of national employment.

Table 2. Share of employment of rural areas and non-rural areas, 2007

Type of settlements	Number of people employed	Percentage
Settlements with > 100 000 inhabitants	22 735 269	53%
Settlements with 15 000 – 100 000 inhabitants	6 151 797	14%
Settlements with 2 500 – 15 000 inhabitants	5 626 837	13%
Settlements with < 2 500 inhabitants (Rural Areas)	8 543 420	20%
Total	43 057 323	100%

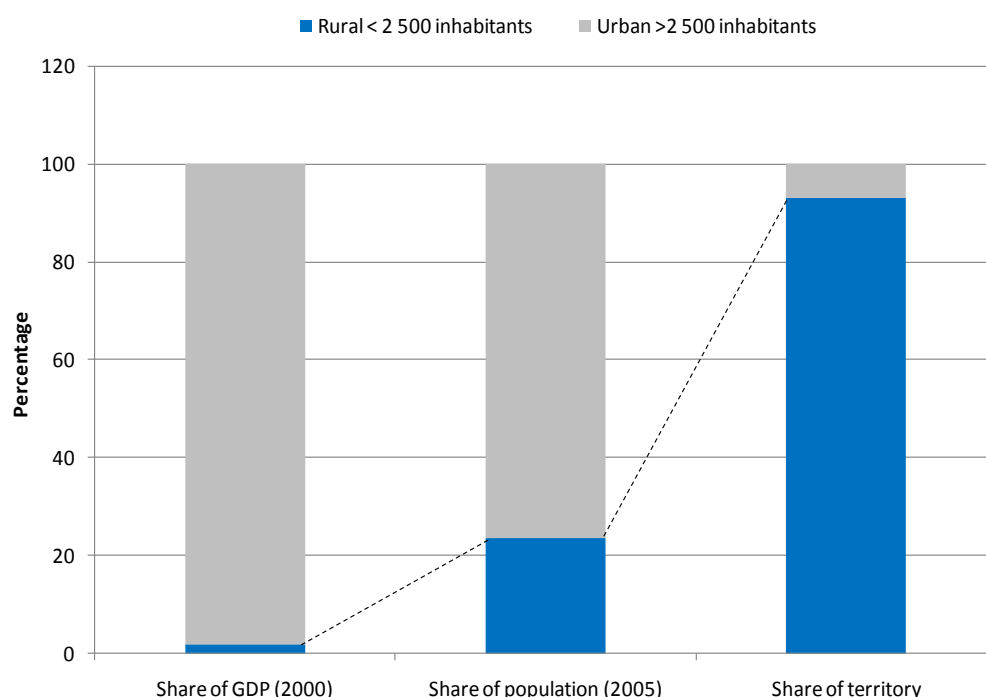
Source: INEGI (2007), *Encuesta Nacional de Ocupación y Empleo (ENOE)*.

Rural GDP

The *OECD Rural Policy Review on Mexico* (2007b) used data from INEGI and from the National System of Municipal Information (*Sistema Nacional de Información Municipal, SNIM*) for their estimates. At the municipal level, it was estimated that the contribution of rural localities (less than 2 500 inhabitants) to the municipal GDP was as low as 2%. Even when semi-rural areas (localities with between 2 501 and 15 000 inhabitants) are taken into consideration, the contribution of rural areas to the national economy adds up to only 10%. These numbers are low when compared to the OECD average of 24% for predominantly rural regions (OECD, 2007b). The disproportion between GDP, population and territory seen in Figure 4 shows that structural obstacles prevent the rural population (24.3 million people in 2005) from being fully integrated and contributing to the national economy (OECD, 2007b).

The incidence of poverty in rural areas is considerable. Despite recent reductions in poverty levels since the peak crisis period of 1995-96, 57% (14 million) of the population in rural areas continue to live in poverty and 28% (4 million) in extreme poverty or food poverty (OECD, 2007b). Although urban poverty has recently become a more significant phenomenon, rural poverty has been the leading characteristic defining the poor in Mexico. Around 61% of the national population in extreme poverty lived in rural areas. There is a negative correlation between a large number of dispersed rural localities and the level of GDP, and a positive correlation between dispersed rural localities and extreme poverty rates (OECD, 2007b). The isolation of dispersed rural localities constitutes not only a challenge for the provision of public and private services, such as education and health which are instrumental in the process of improving living conditions, but also acts as a barrier preventing new opportunities from being exploited. This has contributed to the further marginalisation of the rural population since the drive towards economic liberalisation, which for other sectors of the population has opened economic opportunities (OECD, 2007b).

Figure 4. Rural share of GDP, population and territory



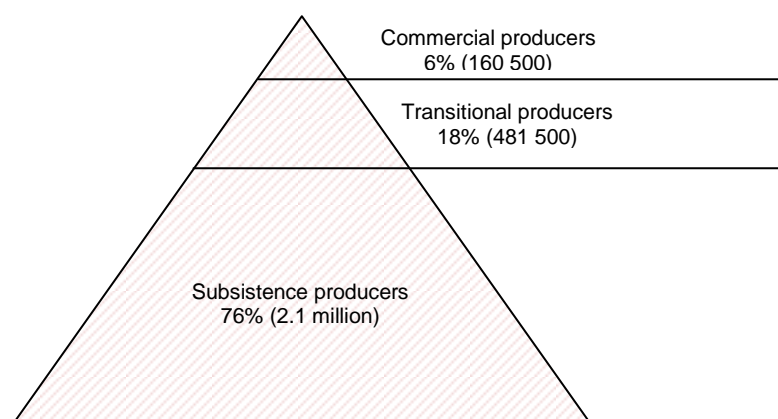
Source: OECD (2007b), with data from INEGI and SNIM (2000, 2005).

Type of agricultural producers

In the magazine *Claridades Agropecuarias* (2006), published by SAGARPA, there is a general categorisation of agricultural producers comprised of three main groups. The first consists of “commercial producers” engaged in market oriented activities and who utilise state-of-the-art technologies. It is estimated that only 6% of agricultural producers fall under this category. The second group is composed of “transitional farmers” who possess a fairly good potential to engage in agricultural activities for commercial purposes, but who continue to lack some of the resources required to increase their scale, whether it be technology, human capital, land, or other, and therefore split their agricultural output between self-consumption and products for the market. Around 18% of producers belong to this category. The third group consists of “subsistence farmers” producing mainly for self-consumption; 76% of all agricultural producers in Mexico fall into this category (*Claridades Agropecuarias*, 2006).

According to INEGI, in 2006 there were 2.7 million agricultural producers; based on this figure, the number of farmers in each category can be estimated. For example, around 160 000 farmers fit in the “commercial producers” category; 481 500 under “transitional producers” category; and 2.1 million under “subsistence producers” classification (Figure 5).

Figure 5. Structure of agricultural producers, 2006



Source: Claridades Agropecuarias (2006); INEGI (2006), *Encuesta Nacional de Ocupación y Empleo*.

Role of agriculture in rural areas

Employment

Information from the 1999 and 2007 National Occupation and Employment Surveys (ENOE) suggests that the primary sector (agriculture, livestock, forestry, fishing and hunting) plays an important role in terms of employment in rural areas, although its importance has decreased. Table 3 shows that in 1999 the contribution of the primary sector to total rural employment was 62%, whereas in 2007 the contribution was 49.6%, a reduction of almost twelve percentage points in six years. The opposite trend is observed in the secondary sector (manufacturing, construction, etc.) and tertiary sector (services, commerce, etc.), where in 1999 their contributions were 15 and 23% respectively, while in 2007 their share in total rural employment reached 21.2 % and 28.8%, respectively an increment of approximately six percentage points for each sector. This suggests the possibility of manufacturing and services sectors to absorb rural labour.

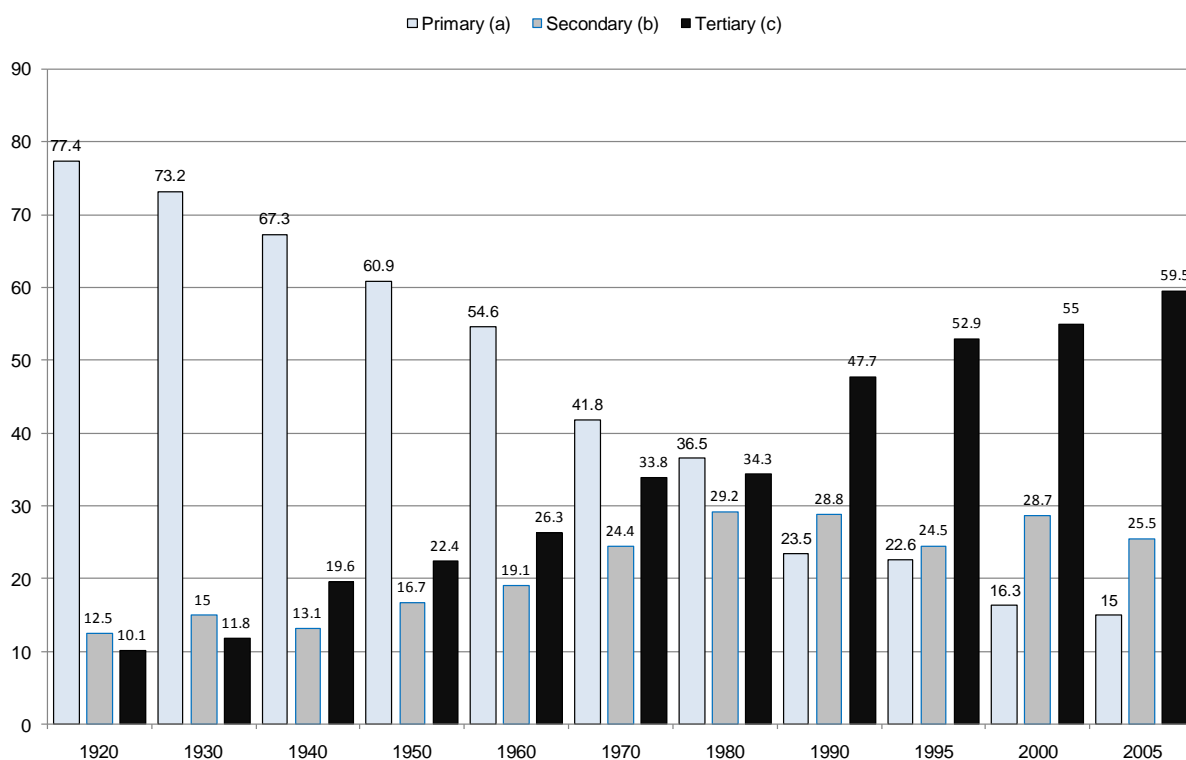
Table 3. Share of rural employment by sector, 1999 and 2007

Sector	1999		2007	
	Number of people employed in localities with less than 2 500 inhabitants	%	Number of people employed in localities with less than 2 500 inhabitants	%
Primary sector	6 202 687	62%	4 236 781	49.6%
Secondary sector	1 548 776	15%	1 814 356	21.2%
Tertiary sector	2 294 677	23%	2 456 599	28.8%
Not specified	n.a.		35 685	0.4%
Total	10 046 140	100%	8 543 420	100%

Source: INEGI (1999 and 2007), *Encuesta Nacional de Ocupación y Empleo*.

In terms of participation of the agricultural sector in employment at the national level, Figure 6 shows the long term trend in the percentage of the economically active population (EAP) engaged in this sector. This percentage has declined significantly over the past 80 years and in 2005 represented only 15% of the total active population. The services sector is now the most important sector in the country, with 60% of total active population working in this area.

Figure 6. Percentage of the economically active population by sector, 1920-2005.



From 1920 to 1930, there is no reference to an age threshold to determine the EAP. From 1940 onwards, with the exception of 1960, the EAP corresponds to the population 8 years and older. For 1950, in addition to the occupied EAP, the census included persons who had been unoccupied in the period of 12 weeks before the census. For 1990, 1995, 2000 and 2005, the data refer to the occupied EAP only (population 14 years and older).

(a) Includes activities relative to agriculture, livestock, forestry and fisheries.

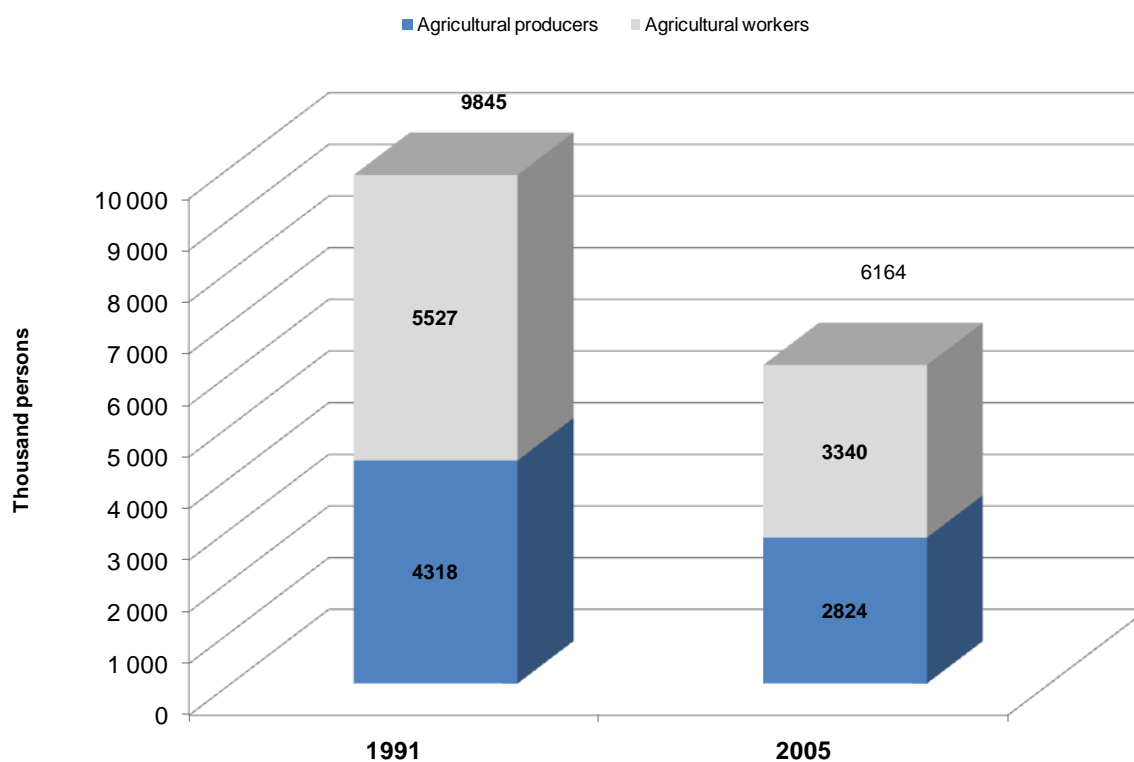
(b) Includes activities relative to mining, oil and gas extraction, manufacturing industry and electricity.

(c) Activities related to commerce, transportation, government and other services.

Source: INEGI (2005), *Encuesta Nacional de Ocupación y Empleo*.

The total number of people (producers and workers) engaged in agricultural activities has progressively declined in the last 17 years (Figure 7), from 9.8 million in 1991 to 6.1 million in 2005. According to Taylor *et al.* (2004) displaced workers from the primary sector have migrated either to work in informal services in urban areas or to the United States if they had networks that facilitated such a move.

Figure 7. People engaged in agriculture, 1991 and 2005

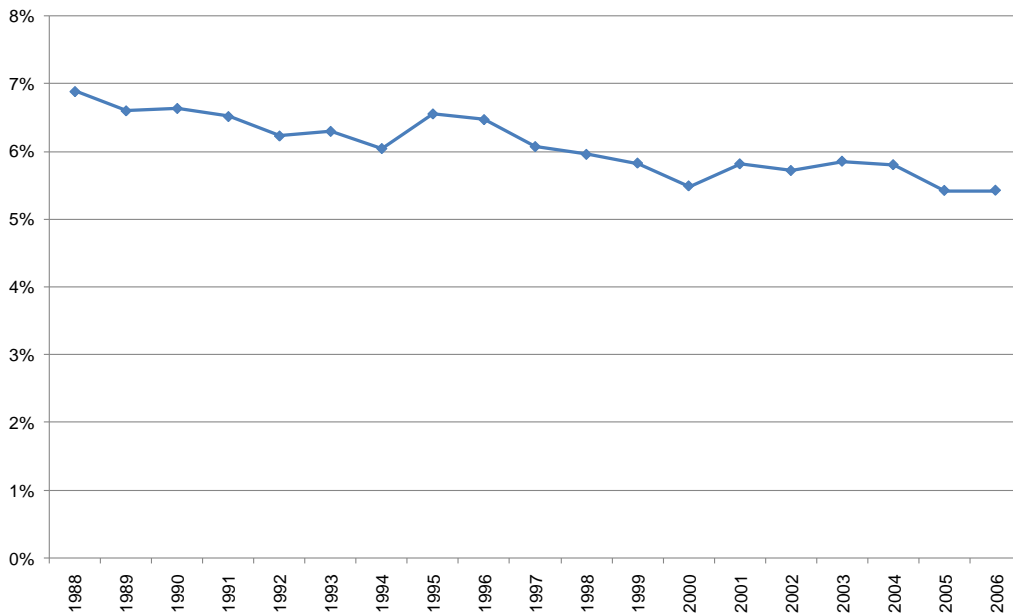


Source: INEGI (1991 and 2005), *Encuesta Nacional de Ocupación y Empleo*; and Claridades Agropecuarias (2006).

Agriculture GDP in rural areas

Information related to the contribution of agriculture to the national GDP is presented in this section. The evolution of agricultural GDP as a percentage of Mexico's GDP over the last 18 years shows a downward tendency, although this decrease has been rather insignificant (Figure 8). For example, the average share between 1988 and 1994 was 6.5% versus 5.6% between 2000 and 2006, a reduction of just less than one percentage point.

Figure 8. Share of agricultural sector in the country's GDP

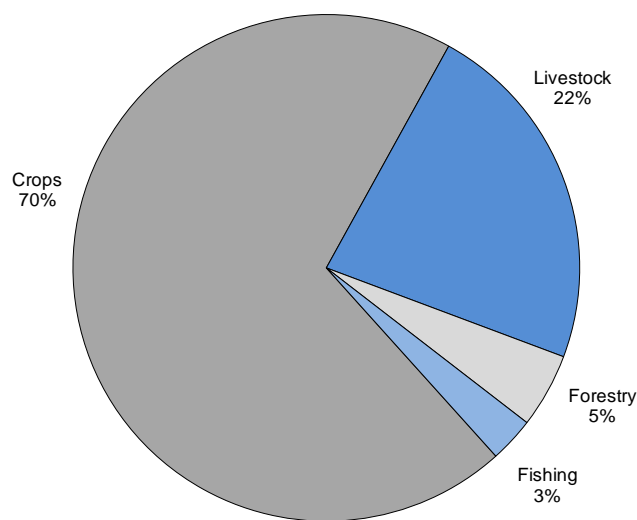


Agricultural GDP includes crops, livestock, forestry, fishing and hunting;

Source: INEGI (2007), *Sistema de Cuentas Nacionales de México*.

In terms of the contribution of agricultural GDP by sub-sector, crop cultivation is considered the most important sub-sector since it accounts for 70% of the total agricultural GDP. The next sub-sector in importance is livestock with a share of 22% of the national agricultural GDP. Forestry and fishing are a bit less important with a contribution of 5% and 3% respectively (Figure 9).

Figure 9. Contribution to the agricultural GDP by sub-sector, 2006



Source: INEGI (2007), *Sistema de Cuentas Nacionales de México*.

Land use

Information related to the share of agriculture land use at the national level is analysed. Table 4 shows the general use of land in Mexico. The total land area in Mexico is 193.4 million hectares, of which 36% or 69 million hectares is covered with forest and tropical forest; however, more than 40% of this type of land have been degraded or altered (OECD, 2007a). Around 30% of the land has little productive use as it is comprised of arid areas.

Table 4. Land use area and type of vegetation in Mexico, 2002

Land use and type of vegetation	Area (ha)	Percentage
With trees (forest and tropical forest)	69 018 549	35.7%
Vegetation in arid areas	57 634 353	29.8%
Cropland ^a	30 201 602	15.6%
Grasslands	27 785 815	14.4%
Other types of vegetation ^b	7 658 923	4.0%
Human settlements	1 120 127	0.6%
Total^c	193 419 369	100%

a. Includes irrigation and seasonal areas, crop areas not cultivated, forest cultivation, and nomadic crop land use.

b. Includes: Areas without apparent vegetation, forests that grow next to rivers and streams (*bosques de galería*), mangroves, palms, aquatic vegetation, coastal dune vegetation, vegetation that grows next to rivers and streams (*vegetación de galería*), gypsophile and halophile vegetations.

c. With regards to the total national area, without taking into account water bodies.

Source: SEMARNAT (2002), *Compendio de Estadísticas Ambientales*.

It is estimated that there are approximately 30 million hectares of cropland in Mexico, although the actual number of hectares cultivated every year is much less. For instance, in 2006, 21.4 million hectares were cultivated, of which 5.4 million or 24.5% were irrigated and the remaining 16 million were seasonal. Table 5 shows the evolution of cropland area. Only between 1980 and 1985 is an important growth in crop land observed, when approximately two million hectares were added. Nevertheless, in the last two decades (1985 to 2005) the area allocated to crops has levelled off to around 21 million hectares.

Table 5. Cropland area in Mexico

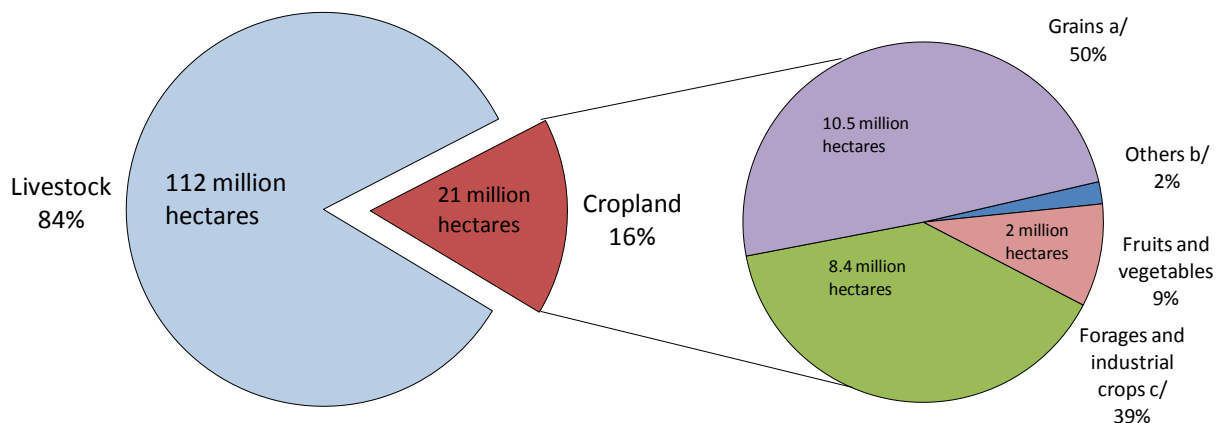
	Cropland (ha)	Irrigated
1980	17 990 577	5 203 416 (29%)
1985	20 168 859	5 640 951 (28%)
1990	19 729 859	5 221 030 (26%)
1995	20 940 620	5 178 586 (25%)
2000	21 780 047	4 804 127 (22%)
2005	21 640 071	5 387 348 (25%)
2006	21 436 172	5 367 918 (25%)

Source: SIAP-SIACON (1980-2006), *Anuario Estadístico de la Producción Agrícola*.

Although 27.7 million hectares are allocated to grassland, the actual number of land used for livestock purposes is around 112 million hectares according to SAGARPA (2006). This represents 56% of the country's total area. Land devoted to livestock could include all types of land use and type of vegetation. If the land allocated to livestock and cropland are added up, a total of 133 million hectares are actually used in agriculture. Figure 10 shows the share of land allocated to livestock and cropland, and within the later

the share of crops cultivated. Here it is important to recall that even when livestock occupies 84% of land use, its contribution to agricultural GDP is only 22% versus the 70% share of crops. Grains are the main users of cropland with 50% followed by forages and industrial crops with 39%. Fruits and vegetables account for only 9% of the cultivated area, however, in terms of value of production, for crops only, fruits and vegetables contributed with 37% against 26% of grains (Figure 11).

Figure 10. Share of total agricultural land by sub-sector, 2006



a. Grains include the production of cereals and dry beans.

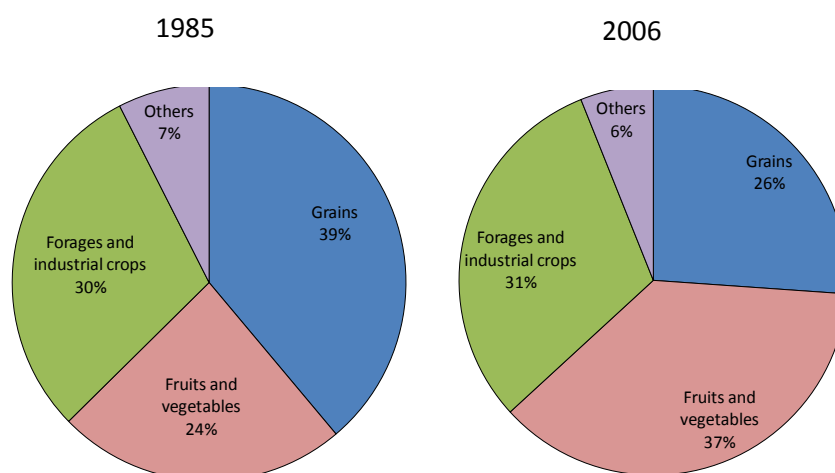
b Others includes oil crops, ornamental plants, fine herbs, medicinal crops, roots, etc.

c. Forages and industrial crops include crops like alfalfa, sugar cane, coffee, agave, etc.

Source: SIAP-SIACON (2007), *Anuario Estadístico de la Producción Agrícola*.

Changes in the structure of crop production in Mexico are illustrated by the share of each category of crops in the total value of production. For instance, in 1985 grains represented nearly 40% of the total value of crop production, fruits and vegetables accounted for 24%, forages and industrial crops 30%, and other crops 7%. While in 2005, the share of fruits and vegetables in the total value of crops soared to 37%, the grains sub-sector saw their share in the total value plummet to 26%. Forages and industrial crops and other crops remained more or less constant. These trends in crop values suggest an increasing importance of fruits and vegetables in agricultural activities in Mexico.

Figure 11. Share of value of production by product category



- a. Grains include the production of cereals and dry beans.
- b. Others group includes oil crops, ornamental plants, fine herbs, medicinal crops, roots, etc.
- c. Forages and industrial crops include crops like alfalfa, sugar cane, coffee, agave, etc.

Source: SIAP-SIACON (2007), *Anuario Estadístico de la Producción Agrícola*.

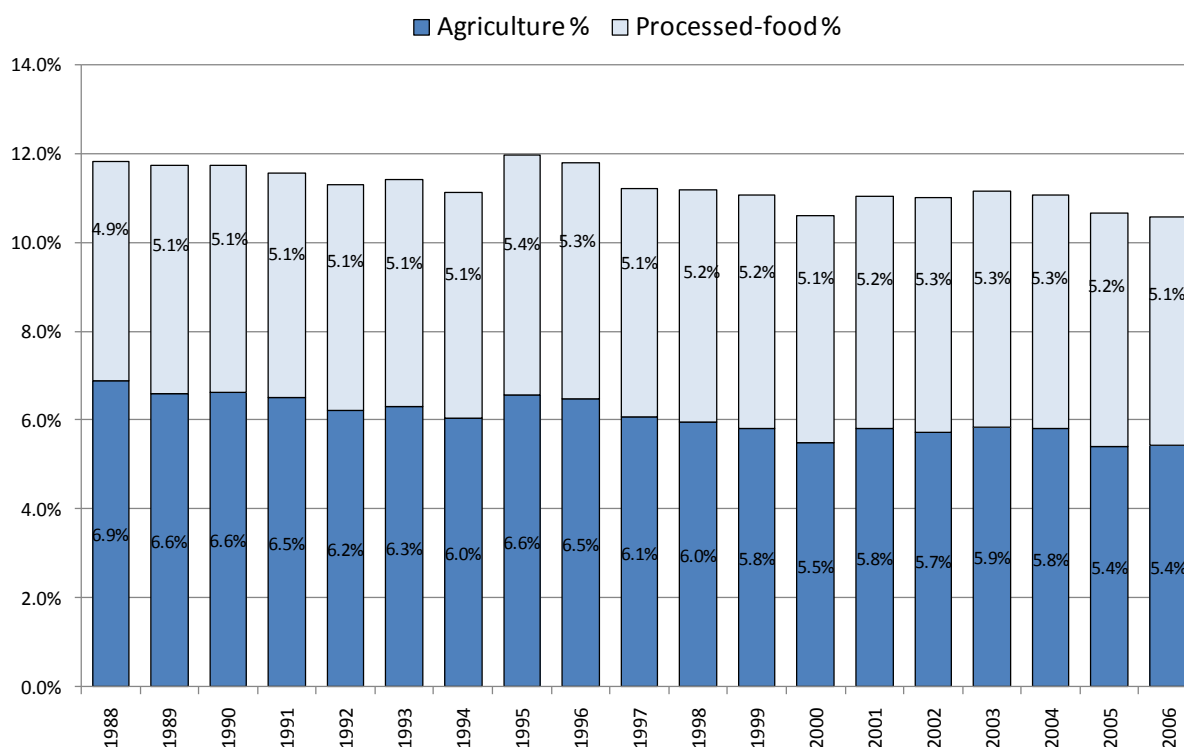
Land tenure

There are two types of land ownership in agriculture: private property and collective property (*ejidos*). According to the last *ejido* Census (2001), the total area of land under this type of ownership accounts for 54.5% of national land, or 105.1 million hectares. This area includes all types of land use (*i.e.* land allocated to agriculture, livestock, protected natural areas, grasslands, arid zones, forests, tropical forest, and human settlements). Around 34.4 million hectares are granted to individuals (*parcelada*), while 69.1 million are commonly owned areas. Of the commonly owned areas, only 1.8% or 1.2 million hectares are devoted to agriculture, 27.6% (19 million hectares) to forest or tropical forest, and 70.6% or 48.8 million hectares to non-cultivated grassland.

Role of processed food industries in rural areas

The role of the agri-food sector in Mexico is as important as agriculture in terms of GDP contribution. Figure 12 shows that the share of agri-food industry in the national's GDP has been relatively constant over the last 19 years, with an average contribution of 5.2%. The same pattern is observed with agricultural which contributes on average 6.1% to the national GDP. When combined, these sectors have contributed on average 11.3% to Mexico's GDP.

Figure 12. Agriculture and processed-food industry GDP as percentage of total GDP, 1988-2006



According to INEGI, processed-food sector includes food, beverages and tobacco industries, whereas agriculture includes crop, livestock, forestry, fishing and hunting.

Source: INEGI (2007), *Sistema de Cuentas Nacionales de México*.

In terms of the contribution of the processed-food sector to national employment, information for 2002 was found. Total employment that year was estimated at 40.3 million, of which only 1.7 million or 4.2% were engaged in processed-food activities. Once again, when both sectors are combined, their share in total national employment was approximately 20% in 2002.

Diversification of activities in rural and farm households

A study by De Janvry and Sadoulet (2001) on rural household income composition suggests that rural households in Mexico, particularly those with few endowments, typically pursue off-farm activities. This is because they lack access to sufficient land to make agriculture a viable income strategy and because market failures (*e.g.* credit) push them into off-farm activities so as to reduce their risks, and to seek resources of liquidity to be used in agriculture. Their study also found that in the case of *ejido* households in Mexico, 55% of the total income comes from off-farm activities.

Every two years, INEGI carries out the *National Income and Expenditures Household Survey* (ENIGH) from which income information of rural households (those located in localities with less than 2 500 inhabitants) and farm households (those rural households whose main economic activity is the agricultural sector) can be found. From this survey, a general composition of rural household income can be created and sources of income can be divided into five main areas:

- 1) *Salaries and wages*;
- 2) *Non-agricultural activities* and such as commercial business, and services

3) *Agricultural activities.*

4) *Financial income*, deriving from equities, sale of stocks and bonds, loans, savings, patents, etc.

5) *Gifts, donations and others*, that comprise remittances, retirement payments, social subventions (e.g. PROCAMPO and OPORTUNIDADES), government donations, interest on investments, properties loans, grants, etc.

Table 6 shows sources of income of rural households using the above categorisation for the years 1996 and 2006. Within rural households, a distinction is made between farm households in which agriculture is the main source of income and non-farm households in which the main source is other than agriculture. Table 6 suggests that over time the participation of agriculture in farm households' income has decreased from 40.5% in 1996 to 28.7% in 2006, an important reflection of income diversification. It also shows that this diversification has lead, for example, to an increase in salaries and wages from 29.18% to 37.11% in ten years; gifts, donations and others category also increased from 15.55% to 22.86%, showing the relevance of remittances and social payments, among other sources. This same category also saw an significant increase in the case of non-farm households, from 17.96% to 28%. Salaries and wages in the case of non-farm households remained almost constant in both years.

Table 6. Composition of total income* in rural areas (< 2 500 inhabitants), 1996 and 2006.

Source	Farm households	Non-farm households	Farm households	Non-farm households
	1996		2006	
	%	%	%	%
Salaries and wages	29.18	53.59	37.11	53.70
Non-agriculture activities	1.83	17.20	2.75	11.50
Agriculture activities	40.50	1.69	28.76	0.92
Financial income	12.94	9.57	8.52	5.88
Gifts, donations, and others	15.55	17.96	22.86	28.00
Total	100	100	100	100

* Six months of income prior to the survey at current pesos.

Source: INEGI, (1996, 2006), *Encuesta Nacional de Ingresos y Gastos de los Hogares*.

Information presented in Table 7 shows income sources of farm households in seven regions. Given that regions in Mexico have different levels of development, it can be expected that agriculture contributes in different magnitudes. For example, income from agricultural activities in northeast and northwest regions represents the lowest levels of the seven regions, 15.1% and 20.4% respectively. For the northeast region this can explained because it is comprised of two states, one of which is highly industrialised (Nuevo León). On the other hand, the north and west regions present the highest percentages, 36.4% and 35.5% respectively. An important share of market oriented agriculture is found in these two regions, located in states such as Jalisco, Guanajuato, Durango, and Aguascalientes.

In the South Pacific and Gulf-Southeast regions, agriculture activities contribute to 28% and 27% of total income respectively. In these regions, the incidence of subsistence agriculture is higher, particularly in states such as Chiapas, Guerrero, Oaxaca, and Veracruz. In the centre region, even when it includes Mexico City and therefore can be expected to have a lower share than other regions, agriculture activities contribute 23.3%, which suggests that other states within the Centre region such as Puebla, Hidalgo, Estado de Mexico offset the impact of Mexico City. Overall, in all regions with agricultural activities salaries and wages, as well the category of gifts, donations and others (*i.e.* remittances and social payments) are the two main sources of income in farm households.

Table 7. Composition of total income* of farm households by region, 2006

Region	Source of income	Total income (thousand pesos)	Percentage
1. Centre	Salaries and wages	3 604 623	48.8%
	Non-agricultural activities	374 019	5.1%
	Agricultural activities	1 719 010	23.3%
	Financial income	490 377	6.6%
	Gifts, donations, and others	1 198 539	16.2%
2. Gulf Southeast	Salaries and wages	4 242 856	43.5%
	Non-agricultural activities	350 636	3.6%
	Agricultural activities	2 625 660	27.0%
	Financial income	697 081	7.1%
	Gifts, donations, and others	1 841 203	18.9%
3. Northeast	Salaries and wages	724 339	40.8%
	Non-agricultural activities	42 928	2.4%
	Agricultural activities	267 852	15.1%
	Financial income	156 314	8.8%
	Gifts, donations, and others	585 333	32.9%
4. Northwest	Salaries and wages	1 911 238	34.3%
	Non-agricultural activities	196 125	3.5%
	Agricultural activities	1 135 656	20.4%
	Financial income	717 869	12.9%
	Gifts, donations, and others	1 608 588	28.9%
5. North	Salaries and wages	1 445 890	22.7%
	Non-agricultural activities	102 198	1.6%
	Agricultural activities	2 324 217	36.4%
	Financial income	604 154	9.5%
	Gifts, donations, and others	1 904 421	29.8%
6. West	Salaries and wages	4 228 572	33.3%
	Non-agricultural activities	64 245	0.5%
	Agricultural activities	4 500 924	35.5%
	Financial income	1 403 428	11.1%
	Gifts, donations, and others	2 485 323	19.6%
7. South Pacific	Salaries and wages	2 302 734	37.1%
	Non-agricultural activities	238 651	3.8%
	Agricultural activities	1 739 955	28.0%
	Financial income	169 270	2.7%
	Gifts, donations, and others	1 753 111	28.3%

* Six months of income prior to the survey at current pesos.

Source: INEGI, (2006), *Encuesta Nacional de Ingresos y Gastos de los Hogares*.

A rural specific survey, *Mexico National Rural Household Survey* (ENHRUM¹), suggests a breakdown of income by income source and reveals the extent to which rural areas rely on non-farm income. Farm production (staples, livestock and cash crops) represents only 18.2% of household total income, and agricultural wage work accounts for another 13%, making a total 31.2% from agricultural activities. By far the largest income share is from local wages in non-agricultural activities 41.2 % (Table 8).

Table 8. Rural household income, distribution and composition, 2003

Income sources	Percentage (%)
Salaries and wages	54.2
Salaries from agriculture	13.0
Salaries from non-agriculture	41.2
Farm production activities	18.2
Livestock	3.7
Staples	2.4
Cash crops	10.0
Others	2.1
Renewable resource extraction	2.3
Public transfers (<i>Oportunidades/Progresa</i>)	4.4
Migrant remittances	12.7
Migrant remittances from the United States	11.0
Internal remittances	1.7
Local non-farm activities	8.3
Commerce	6.0
Services	2.2
Handicrafts	0.1
Total	100

Source: Taylor, Yúnez-Naude and Cerón (2004) from ENHRUM (2003).

Taylor, Yúnez-Naude and Cerón (2004) find in the ENHRUM analysis that the key to economic livelihood in rural Mexico is the management of diverse household assets. Various forms of income generating assets are heterogeneously distributed with different households having different asset portfolios. This leads to a more equitable income distribution across rural households than would otherwise be expected from simply looking at individual asset distributions. More importantly the main assets for Mexico's rural households are increasingly human and migration capital, both having the effect of reorienting households away from agricultural production and towards the non-farm economy. These findings suggest that total rural household income is much more sensitive to human capital and migration than to land or other agricultural assets. This is apparently due to the reduction of off-farm income associated with higher stocks of agricultural assets, while more human capital generates greater off-farm income and has a much smaller effect on shifting resources from the generation of on-farm incomes (Taylor, Yúnez-Naude and Cerón, 2004).

Other interesting findings in this study are the strong positive relations between education and both non-agricultural wage employment and self-employment. Schooling of household members is negatively

1. *Encuesta Nacional de Hogares Rurales en México*, an effort by UC Davis and *El Colegio de México* to obtain detailed production, income, time use, and expenditure data that could be generalized to the entire rural Mexican economy. The survey included more than 1 700 households in 14 states and it was carried out in January and February 2003.

correlated with rural households' participation in agriculture, but positively correlated in non-farm activities (Taylor, Yúnez-Naude and Cerón, 2004). A major policy implication for rural development in this analysis was that policies should not only be oriented to a single activity or a single asset, but rather that policies should be sensitive to the diversity of households' activities.

An analysis of INEGI's *National Income and Expenditures Household Surveys* (1994, 2000, and 2004) done by OECD (2007a) suggests another composition of rural income. Such composition varies between the poor and the rich, as well as over time. Non-monetary income of the poorest decile of the rural population was 40% in 2004, equivalent to twice the national average. Furthermore, whereas the share of non-monetary income of the poorest decile changed from 45% to 40% only between 1994 and 2004, the share of non-monetary income fell from 34% to 20% for those in the centre of the income distribution (decile V), and from 21% to 14% for the richest rural households, decile X (Table 9). The share of business income category, which is particularly large for those with higher income, has been falling for all groups. The rising shares are associated with wage and salary income for all but the poorest; transfers, whether payments from government or remittances from migrants, have also seen an increment (OECD, 2007a).

Table 9. Rural income composition by deciles (percentage) 1994, 2004

	Income deciles						Average of all rural households		
	I		V		X		1994	2000	2004
	1994	2004	1994	2004	1994	2004			
1. Current monetary income	55	60	66	80	79	86	72	77	81
1.1. Work remunerations	22	20	34	46	33	41	34	37	43
1.1.1. Wages and salaries	22	18	33	44	30	38	32	34	40
1.1.2. Others	0	2	1	2	3	3	2	3	2
1.2. Business income	18	15	19	14	34	24	24	25	19
1.2.1. Agriculture business	13	9	13	5	22	7	16	12	6
1.2.2. Other business	5	6	6	10	12	18	8	13	13
1.3. Property income	1	0	0	1	1	3	1	1	1
1.4. Transfers	15	26	13	19	10	18	12	14	18
1.4.1. Retirement and pensions	0	0	1	1	1	7	1	2	4
1.4.2. Other transfers (social payments and remittances)	14	26	12	18	9	11	11	13	14
1.5. Other incomes	0	0	0	0	1	0	1	0	0
2. Non-monetary income	45	40	34	20	21	14	28	23	19
2.1. Self-consumption	13	7	9	2	5	3	7	4	3
2.2. Others	32	33	26	18	17	12	22	19	16

Source: INEGI, (1994, 2000, 2004). Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH).

Rural tourism

In 2004, the tourism sector represented 7.8% of Mexico's GDP and had 5.4% of total employment; these numbers suggest the considerable importance of the sector (SECTUR, 2007). However, in regards to rural tourism, such activity is still incipient and marginal, which makes data difficult to find. The same situation applies to farm tourism, an activity even less relevant.

Rural tourism began in the mid-1970s with the construction of the first *ejidal* hotels and the constitution of several trustfunds that allow *ejidos* and communal lands to integrate into tourism activities. Nowadays, *ejidos* and communal lands can undertake non-agricultural activities as part of their income diversification. Rural tourism is promoted through the federal and/or state government. During the 1990s, the National Fund for the Promotion of Social Enterprises (*Fondo Nacional de Apoyo a Empresas*)

Sociales, FONAES) provided direct support to various regions, most of them with high rates of indigenous inhabitants and rural poverty, with the idea of promoting tourism activities (Juárez Sánchez & Ramírez Valverde, 2007). Several programmes have been created and implemented by the Ministry of Tourism (SECTUR) in recent years, such as the renovation and rescue of old *haciendas*, the promotion of ecotourism in natural protected areas, the improvement of infrastructure, etc. Despite these efforts, rural tourism still presents a low level of development and little research can be found that measures its impacts on rural and/or farm households.

Multiplier effects of agriculture and other rural activities

The last input-output tables produced by INEGI as a part of the national account information were generated in 1980. Information related to the multiplier effects of agriculture at the national level and/or rural areas is limited. However, some studies related to local income and consumption multipliers have been undertaken. For instance, a study carried out by Taylor and Yúñez-Naude in 2003 examines farm and non-farm linkages in Mexico using two methodologies: a village/town social accounting matrix (SAM) and a village/town computable general equilibrium (CGE). The SAM and CGE analysis of multipliers resulting from changes in rural incomes suggests that farm/non-farm demand linkages are important. The great majority of these linkages, however, are with markets outside rather than within villages. For instance, an increase of USD 100 in exogenous household income stimulated an increase in village non-farm production between USD 0.3 and USD 12, while village demand for manufactures from outside markets increased between USD 88 and USD 103. In the village/town micro-region, an increase of USD 100 in exogenous income stimulated an increase of USD 18 in village non-agricultural production; while an increase of USD 74 in commerce demand (almost entirely goods bought outside the village) was observed. Results also showed a USD 38 increase in village demand for goods sold in the town, and a USD 22 increase in village demand for goods from outside the village/town economy.

These findings suggest that in rural Mexico, a large share of rural household demand for purchased inputs, consumption and investment goods is supplied by regional towns which have proliferated in the last decade and which now account for most of the country's urban growth. Most of the farm and non-farm diversification in rural Mexico is between villages, where agriculture is still the main economic activity. Nevertheless, village household incomes have diversified away from agriculture, largely as a result of families' participation in labour markets outside the village and through wage work in distant towns or abroad. Increasing the income of village households and loosening agricultural supply constraints is important for the growth of the rural non-farm economy (RNFE) in towns and small cities. Estimated farm/non-farm linkages resulting from rural income changes appear to depend critically on the supply response of agriculture and on model specification, especially the role of prices (Taylor and Yúñez-Naude, 2003).

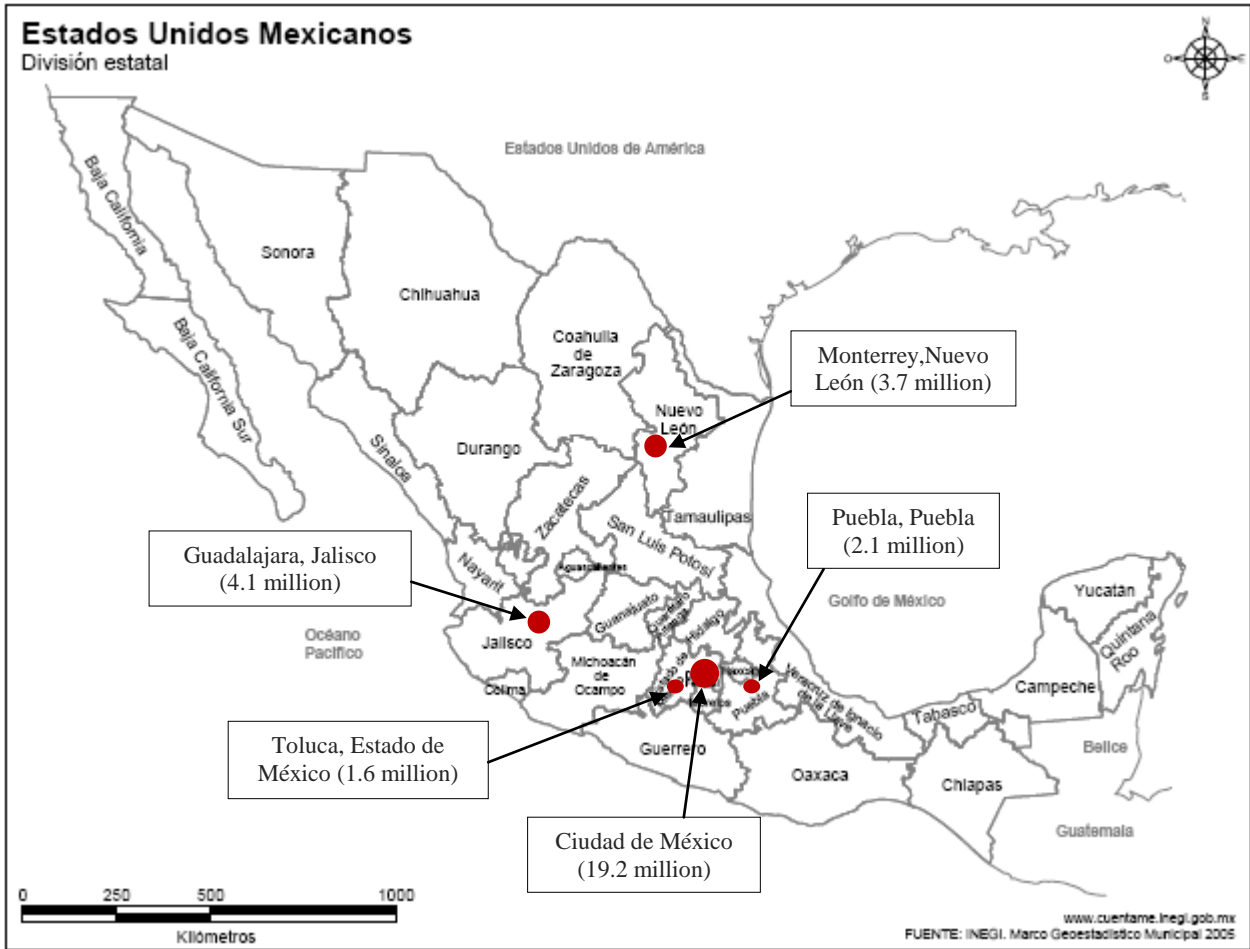
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ANNEX

Map of Mexico with its five main urban areas

2005



Source: INEGI (2005), *II Conteo de Población y Vivienda*.

Annex Table 1. Total population of Mexican states, 2005

State	Capital	State population	State	Capital	State population
1. Aguascalientes	Aguascalientes	1 065 416	17. Nayarit	Tepic	949 684
2. Baja California	Mexicali	2 844 469	18. Nuevo León	Monterrey	4 199 292
3. Baja California Sur	La Paz	512 170	19. Oaxaca	Oaxaca	3 506 821
4. Campeche	Campeche	754 730	20. Puebla	Puebla	5 383 133
5. Coahuila	Saltillo	2 495 200	21. Querétaro	Querétaro	1 598 139
6. Colima	Colima	567 996	22. Quintana Roo	Chetumal	1 135 309
7. Chiapas	Tuxtla Gutiérrez	4 293 459	23. San Luis Potosí	San Luis Potosí	2 410 414
8. Chihuahua	Chihuahua	3 241 444	24. Sinaloa	Culiacán	2 608 442
9. Durango	Durango	1 509 117	25. Sonora	Hermosillo	2 394 861
10. Guanajuato	Guanajuato	4 893 812	26. Tabasco	Villa Hermosa	1 989 969
11. Guerrero	Chilpancingo	3 115 202	27. Tamaulipas	Ciudad Victoria	3 024 238
12. Hidalgo	Pachuca	2 345 514	28. Tlaxcala	Tlaxcala	1 068 207
13. Jalisco	Guadalajara	6 752 113	29. Veracruz	Xalapa	7 110 214
14. Estado de México	Toluca	14 007 495	30. Yucatán	Mérida	1 818 948
15. Michoacán	Morelia	3 966 073	31. Zacatecas	Zacatecas	1 367 692
16. Morelos	Cuernavaca	1 612 899	32. <i>Federal District</i>	<i>Ciudad de México</i>	8 720 916
Total = 103 263 388					

Source: INEGI (2005), *II Conteo de Población y Vivienda*.

Annex Table 2. Rural and urban population of Mexican states, 2005

State	Rural Population (<2500 inhabitants)	Urban Population (>2500 inhabitants)	State	Rural Population (<2500 inhabitants)	Urban Population (>2500 inhabitants)
1. Aguascalientes	200 866 (18.9%)	864 550	17. Nayarit	318 699 (33.6%)	630 985
2. Baja California	199 668 (7.0%)	2 644 801	18. Nuevo León	236 835 (5.6%)	3 962 457
3. Baja California Sur	78 053 (15.2%)	434 117	19. Oaxaca	1 856 026 (52.9%)	1 650 795
4. Campeche	196 073 (26.0%)	558 657	20. Puebla	1 582 425 (29.4%)	3 800 708
5. Coahuila	248 503 (10.0%)	2 246 697	21. Querétaro	481 442 (30.1%)	1 116 697
6. Colima	70 426 (12.4%)	497 570	22. Quintana Roo	163 686 (14.4%)	971 623
7. Chiapas	2 243 712 (52.3%)	2 049 747	23. San Luis Potosí	900 449 (37.4%)	1 509 965
8. Chihuahua	502 586 (15.5%)	2 738 858	24. Sinaloa	761 706 (29.2%)	1 846 736
9. Durango	494 437 (32.8%)	1 014 680	25. Sonora	340 381 (14.2%)	2 054 480
10. Guanajuato	1 482 857 (30.3%)	3 410 955	26. Tabasco	895 670 (45.0%)	1 094 299
11. Guerrero	1 322 247 (42.4%)	1 792 955	27. Tamaulipas	385 324 (12.7%)	2 638 914
12. Hidalgo	1 118 457 (47.7%)	1 227 057	28. Tlaxcala	232 631 (21.8%)	835 576
13. Jalisco	935 509 (13.9%)	5 816 604	29. Veracruz	2 799 452 (39.4%)	4 310 762
14. Estado de México	1 807 281 (12.9%)	12 200 214	30. Yucatán	309 650 (17.0%)	1 509 298
15. Michoacán	1 271 532 (32.1%)	2 694 541	31. Zacatecas	584 730 (42.8%)	782 962
16. Morelos	224 857 (13.9%)	1 388 042	32. <i>Federal District</i>	30 366 (0.35%)	8 690 550

Source: INEGI (2005), *II Censo de Población y Vivienda*.