

SOCIO-ECONOMIC REGIONAL DEVELOPMENT IN MEXICO 2000-2010

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Summary

This essay assesses the level of socio-economic development (LSED) in Mexican municipalities population during 2000-2010. An index to measure and compare changes of such level is estimated for each municipality population in Mexico. This refers to most of the municipality population reported in the censuses. The LSED is estimated applying factor analysis statistical method to single and compound variables. The municipalities have grouped in five sets: a) those that are part of a metropolitan zone; b) municipalities with at least one medium size city (of 50,000 or more inhabitants); c) urban municipalities (with at least one city of 10,000 to 49,999 inhabitants, excepting metropolitan municipalities); d) semi-urban municipalities (with at least one city of 5,000 to 9,999 inhabitants) and, e) rural municipalities (without any city of 5,000 or larger).

It was found that, in general, there has been some regional development in terms of number of municipalities that experienced positive change in that index, particularly in Central, South, Southeast and Northern Central Mexico. In 1,509 out of 2,456 municipalities have no changed their LSED during the decade. In terms of population, about most of 73.5 million Mexican did not have an increase in their socio-economic condition (65.5 percent of total population). Mexican metropolises, that

*) The authors acknowledge the valuable help of Jerson Andrés Millán López in the estimation of the municipalities socio-economics indexes and management of the large data sets.

concentrate a little more than half Mexican population and economic activity, did not demonstrate sufficient socio-economic improvement for most of their inhabitants; besides they have large inequalities among social groups living within their boundaries. Medium size cities have better conditions than metropolises and seem to have promising opportunities for new comers from their hinterland and further regions. Using this type of analysis is possible identify target populations for policy to promote regional development.

Introduction

This essay reports straightforward results from an exercise to assess the socio-economic level of development that Mexican municipalities population had during 2000-2010. Since same variables and method were used to estimate an index to measure that level for each year, it is possible to compare changes for each municipality population. Presumably, mapping these indexes geographical changes in that development can be analyzed since municipality is the smallest territorial and governmental unit in Mexico. For this, it is important to take into account that there are very large municipalities in both population and territorial extension (having a million or more population) and small ones (with few thousands inhabitants) so that there are many rural and also urban municipalities; the former have typically large territories and the later much smaller. Furthermore, and perhaps more crucial, is the fact that the index is a value weighted according to the socio-economic variables chosen to characterize population socio-economic development in each municipality which is an outcome of factor analysis and principal components statistical method. Hence, it is assumed that indexes represent a kind of “average levels of socio-economic development” of municipality populations; meanwhile in actuality there may be huge differences of socio-economic levels among families and individuals residing within a particular municipality. Of course, this is the well-known “ecological fallacy”. Nevertheless, considering this limitation the essay gives a fairly interesting idea about how Mexican population is experiencing socio-economic development in relevant geographical settings. Using the census tracks as a unit of

analysis (Basic Geographical Statistical Areas, AGEBS in Spanish abbreviation) which are the smallest geographical areas for census data, a more precise study of regional development can be made, but still the “ecological fallacy” is also present.

Level of socio-economic development (LSED) of a municipality population refers to the level that experience most of that population reported in the censuses, since within in a particular municipality, as mentioned before, there are important differences among families or groups of them. So, when indexes of LSED are compared and ranked from highest to lowest, variables chosen and the method used ensure that LSED means that most municipality population have certain socio-economic status according to the value each variable has in each municipality.

As for the method, factor analysis and principal components were applied to four single variables and three compounds ones. According to values or variables for each municipality the statistical method assigns a score in factor having the largest common variation of that variables. Because factors are not observed values, then each factor having the largest common variation of variables for all municipalities is estimated. Observed values are selected ad hoc such that they are closely related to socio-economic development of a municipality population, so that the score of each municipality on the first factor is considered an index of comparative socio-economic level of development for most population residing within the municipality.

Selected single variables:

1. Percentage of employed professional and skilled workers.
2. Employed population in manufacturing and services.
3. Percentage of literacy of population over 15 years old.
4. Percentage of population over 15 years old having post-primary education.

Estimated compounds variables:

1. Wage index.

Weighted sum of the proportions of employed population in the municipality that earns less than 1 minimum wage; between 2 and 5 minimum wage; between more than 5 and less than 10 minimum wages and, proportion of that earns more

than 10 minimum wages.

2. Housing index.

Weighted sum of the following variables:

Percentage of inhabitants who owns their dwelling.

Percentage of population living in houses that have 3 rooms or more.

Percentage of population that have a computer at home.

Percentage of population living in houses that have piped water.

Percentage of population living in houses connected to drainage system.

Percentage of population living in houses that have bathroom.

3 . Urbanization index.

Weighted sum of the proportions of municipality population that resides in localities having more than 10 thousand and less than 15 thousand inhabitants; proportion living in localities with more than 20 thousand, and less than 50 thousand; and, that with more than 100 thousand inhabitants.

Variables loading on first factor

Percentage of employed professional and skilled workers	.837
Employed population in manufacturing and services	.852
Percentage of literacy, population over 15 years old	.848
Percentage of population over 15 years old having post-primary education	.631
Wage index	.918
Housing index	.746
Urbanization index	.656

The three main factors estimated by the statistical method account for 84.78 percent of common variation of variables; the first factor account for 62.47 percent. This was selected to calculated scores for each municipality. It is interesting to observe that the variable “wages” has the highest loading in first factor (see table above), followed by population employed in manufacturing and services and that professional and skilled ones as well as education. This suggests, as expected, that socio-economic development is closely associated with income, education and training.

Social and regional inequality problem

Mexican population growth around 3.5 percent annually during most of four decades in the last century. This large growth coupled with industrialization and urbanization. Through rural-urban migration population concentrated in main metropolises. Thereafter, in medium size cities and more recently in many cities having between 10,000 and 50,000 inhabitants. On the other hand, there are thousands of rural settlements scattered all over the country. Although population residing on these has fallen in relative terms, there are about 25 million people living in rural areas. They normally obtain the lowest real income compared to the national average.

Population grew from 97.5 millions in 2000 to 112.3 millions in 2010 having an annual average rate of growth of 1.8 percent (there is an increase of about two million people each year). In the later year, 62 percent live in cities larger than 10,000 inhabitants and 27.7 percent in those larger than 500,000. As for the economy, GDP average annual rate of growth 2000-2010 was 1.71 percent and the per capita GDP has grown only 0.7 percent during the last 30 years, this is 9,930 dollars at present. Employed population earning less than two minimum wages accounts for 37.32 percent. They are workers earning about ten dollars per day. As it is well known, income distribution has been unequal for long time: the Gini coefficient was 0.48 in 2000 and 0.46 in 2010, whereas in Japan it is 0.25 in 2010. The Mexican Gini coefficient is one of the five highest in the world.

With respect to education, in 2000 Mexicans had an average of 7.5 years of schooling that grew to 8.6 in 2010. Higher education system covers only around 28 percent of population at age of entering university, compared to other developed countries that cover more than 60 percent.

Mexico can be considered as following a model of dual regional economic development. During industrialization opportunities for population has been concentrated in big cities, while rural areas have remain behind. This is more accurate to say for fast industrialization period (1945-1980); but from the end of last century to the present such opportunities have been largely diminished. So, there is poverty, inequality, unemployment and lack of basic urban services in many cities

regardless the size of their population. Some rural areas in Northeast, West and Northwest Mexico (states of Sinaloa, Sonora, Tamaulipas, Jalisco, Veracruz and Michoacan) have important agricultural productivity in commercial products enterprises for internal and export market. Many medium and small size cities in those areas have economic growth higher than the country as a whole. However, many salaried agricultural workers have no social security and earn much less than manufacturing and services workers in cities. Other rural areas in Central, Southeast and Southwest Mexico (some areas of Michoacan, Guerrero, Oaxaca, Chiapas, Tabasco, Campeche and Quintana Roo) have many small peasant farms that produce for self-sufficient food consumption of their families working in this type of agriculture. So, they are likely the most impoverished population. It is worth mentioning that there are some new tourism resorts in the Pacific and the Caribbean coasts, where cities that service the resorts are flourishing. This is the case of Cancun, Playa del Carmen, Iztapa-Zihuatanejo, Huatulco, Riviera Nayarit, Mazatlan, Los Cabos, Puerto Peñasco and other that are under construction at present. Due to the fast grow of such cities they also house fast growing shantytowns and squatter settlements where there are many poor recently arrived population. Many other cities having services as economic base are also growing, but because of large immigration and insufficient demand of labor in formal activities, the underground economy also grows perhaps faster than the formal one. It is estimated that the employed population in the informal sector is about 35 percent of total labor force in the country.

At the macro level, considering states as regions, Mexico has experienced a minimum convergence in terms of regional development in the last 30 years; although, there is still a historical accumulative social and regional inequality. At micro level, states as Jalisco, Aguascalientes, Sonora, Coahuila, Baja California, Nuevo Leon, Tamaulipas, Estado de Mexico, Guanajuato and Queretaro, have experienced some internal convergence as they are having an important manufacturing and commercial development oriented to foreign market, which is mainly lead by transnational companies.

Studies of regional development as a context

Until the mid-fifties of last century, theories of regional development mainly concerned with countries as a region. One set of them focused on balanced economic growth and other accepted that development may be unbalanced. In the former school it is found Cassel (1927), Nurske (1953), Rosenstein-Rodan (1943) y Lewis (1955) and in the second Hirschman (1958), Myrdal (1957) and Perroux (1955) as the most representative scholars. The theory of balanced growth refused the idea to attain a more rapid growth for sectors in developed regions. Followers of this argue that efforts should be made to advance in agriculture and new industries in a simultaneous way, so that. Rosenstein-Rodan (1943) sustained that in the early face of development investment in new enterprises for industrialization could increase profitability of other sector in the economy.

In the seminal work of Arthur Lewis (1954) his model centered on duality of traditional labor market in agriculture and that of urban industry, offers a theoretical framework relevant and useful to examine economic issues related to growth. Lewis emphasized organizational dualism, inter-sectoral labor markets and financing markets implicitly in a dual economy. Surplus of labor force from agriculture in less developed countries permitted lower salaries in manufacturing (Ranis, 2004). Hosseini (2012) argues further that migration from agricultural areas into cities created other dualism: the dichotomy of formal and informal sectors.

Theories of balanced regional economic development sustain that market forces do not diminish the geographical differences in growth; to the contrary, they foster them, so the State should intervene to regulate development in regions. These ideas were developed, among others, by Myrdal, Perroux and Hirschman at mid of twenty century. According to Myrdal some regions grow by depressing others. When the former begin to develop the forces that impulse their growth act in an accumulative fashion, while the opposite occurs in those that do not grow. Accumulation in a region promotes scale economies and technological externalities that attract further resources and foster market growth in a circular way; this does not occur in

backward regions (Moncayo n/d).

Perroux (1955) and Boudeville (1966) proposed the growth poles theory. As Hirschman theory, this emphasizes that in the accumulative processes and that of localization, which produce a type of input-output interdependence centered into an innovative motor industry. Industries and dynamic projects located in a particular area can diffuse growth to its hinterland (Moncayo n/d). Motor industries in growth poles promote geographical concentration of economic activities and population (Rózga, 1994). Hirschman considers impulses of economic growth from Perroux theory. He argues that inequalities among regional or countries are necessary for growth.

According to Rózga (1994) following the theory of accumulative causation there can be regional growth with some balance using the adequate governmental policies. These are important bases of the paradigm of development from above according to which spatial elements hamper some factors of development that in turn incentive population concentration.

For Richardson (1979) reduction of disparities in income, wealth and growth rates as well as efficiency among regions can promote the maximum economic growth of a country, this implies an optimal allocation of resources through time. This also considers that regional inequalities may be a problem only in the first stages of development in a particular country. If infrastructure and labor are almost homogeneous, underdevelopment could be caused by underutilization of resources in some regions. He argues in favor to promote growth considering regional development as a foundation of national economy.

The theory of accumulative causation by Veblen, centered on the “institutional change” explains this process as an accumulative circular reciprocal relationship between individual and the social structure that works in an institutional framework (Fujita, 2004). It can be said that Myrdal’s theory considers institutional aspects in his fourth thesis: a) “Extractive effects” to explain growing economic inequalities among underdeveloped countries and developed ones; b) “propagation effects” that may allow a convergence process; c) the importance of the institutional factors (that emphasize the analysis of non-economic factors, and d) that of policy implications.

On the other hand, the theory of export base by North (1955) considers that regional development depends on the capacity of each one to produce commodities that depends in turn on abundant natural resources. North argues that differences between regions tend to diminish and disappear in the long run (Rózga, 1994).

The center periphery model assumes a dichotomy among regions in which the center dominates peripheries at technologic, economic, political, cultural, and services within an unbalanced relationships. In this concern, Friedmann suggests that the flow of technological and cultural innovations controlled by the center is the main cause of inequalities in development, considered it as an innovation process. Central regions are the big metropolitan centers. Followers of Friedmann's ideas believe that the process of centers formation is very dynamic because of new technologies and industries. However they can lose this role while peripheries could gradually obtain functions of economic centers (Szajnowska-Wisocka, 2009).

Sub-national regions

Balán (1973) follows Friedmann's suggestions that the criterion to distinguish a center from a periphery is to determine where the decision making power is located. In the case of dependent system within a society such power is localized mainly outside that system, as a consequence its development is induced externally. Thus, interest groups of main economic sectors are located in the central region so that decisions concerned peripheral areas, area normally compatible with such interest.

Rózga (1994) mentions that Bors and Stein found strong tendency through per capita income convergence among states of the United States, explain by the inter-state poorly paid labor migration from agriculture to industrial sectors where salaries are higher. Labor force response to better salaries and capital moves where salaries are lower. This supposes to reduce regional differences in resources, wages and productivity. As there is more external economic openness of a country, more concentration of population and economic activities is expected in few regions where exporting industries locate (Balán, 1973). The main stimulus for internal migration, urbanization and urban concentration depends on the way regional and sectorial disequilibrium occurs in the development model (Balán, 1973).

More recent theories of regional economic development can be considered, to a large extent, as criticism and answers to the hypothesis of convergence predicted by general neoclassical economics (Dawkins, 2003). In this framework can be found the regional science created by Walter Isard in 1956, it attempts to put together findings from the German geography with the minimization costs or maximization of benefits from macroeconomics.

Studies on Mexican regional development

Until the seventies of last century, regional studies in Mexico considered states as regions. Stern (1967) proposed a regionalization based on different levels of socioeconomic development. He grouped some regions of the country under this criterion, even though they were discontinuous. He constructed a typology of zones for his comparative analysis using minimum salaries for 111 homogeneous in economic terms in geographical zones. Levels went from “very high” to “very low”. In this way he established inter-regional differences in the country and he also compared Mexican regions with regions from other countries. He found an impressing difference of level of socioeconomic development among rural regions and that of the metropolis and big cities. He asserts that differences among regions in Mexico are more notorious that those in developed countries. Almost fifty years after, this big regional differences persist. In this work we estimated the extent of such regional socioeconomic inequalities.

Unikel, et al. (1976) constructed a regionalization to study urban growth in Mexico, particularly in the metropolitan zones of Mexico that grew exponentially during the period of rapid manufacturing industrialization, called imports substitution model of industrialization. Public policy and public federal investment also promoted population concentration in urban areas, some of them became metropolis, of course, and population growth was mainly due to internal migration.

Arroyo, et al. (1991: 51-53) as well as Garrocho (2011) study regions in terms of network of cities in which there are socioeconomic and population flows as well as urban centers of different sizes, from the big metropolis of Mexico up to the thousands of small rural localities scattered all over the country. In this respect, it is

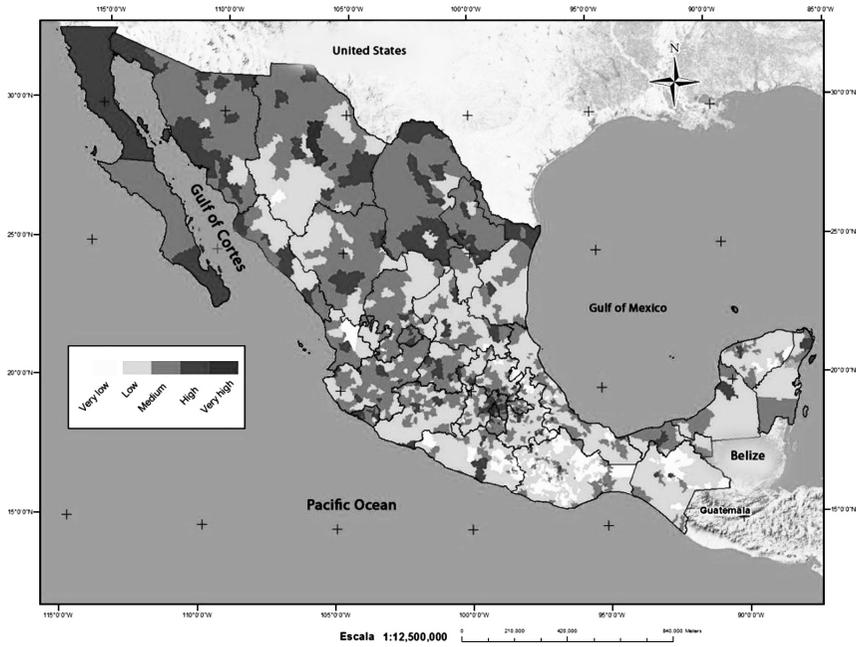
important to point out that municipalities considered as territorial and political administrative areas integrate regions that are structured by systems of cities. In this study five types of municipalities are considered according to their degree of urbanization: municipalities that integrate metropolitan zones, those having middle size cities, larger than 50,000 inhabitants; urban municipalities that have at least one city between 10,000 and 49,999 population and rural municipalities that have no locality larger than 10,000 inhabitants. It has to be recognized that a more precise study about regional development should consider cities and other population settlements as units of analysis, taking into account that each one is part of a system of cities in a hierarchy of “nodal centers”. And, that development of a locality may depend in part on its role within the socioeconomic functionality of the system of cities it belongs.

Results

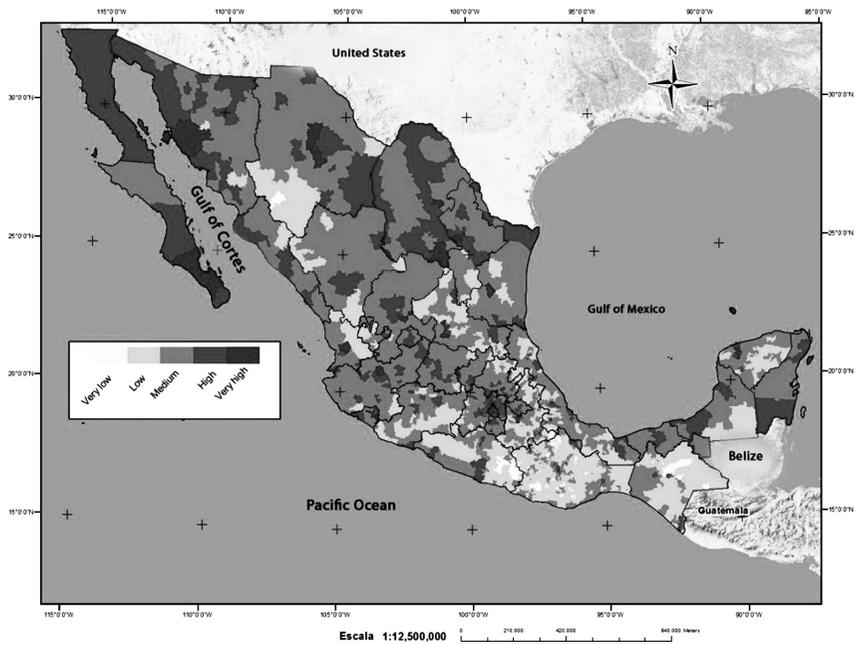
According to the Level of Socio-Economic Development index (LSED), **Maps 1, 2 and 3**, there has been some regional development in terms of number of municipalities that experienced positive change in that index (**Map 3**). They are mainly located in Central, South, Southeast and Northern Central Mexico. There are also few having negative change. It seems therefore, that there has been convergence in territorial development as many traditional rural poor municipalities show some improvement in socio-economic conditions of their populations (see **Table 1**). On the other hand, **Map 3** shows that most municipalities and hence most regions in the country have no change, that is, most population in these regions did not improved their socio-economic conditions during the decade. Of course, many had very high, high or medium LSED in 2000 but remain in the same condition in 2010.

In terms of population, it is interesting to emphasize that about most of 73.5 million Mexican do not have an increase in their socio-economic condition (65.5 percent of total population, **Table 3**) in spite of the fact that Mexico shows manufacturing growth, increase of non-traditional exports, tourism and services dynamism, etcetera, in the majority of urbanized regions. It is fair to say that most

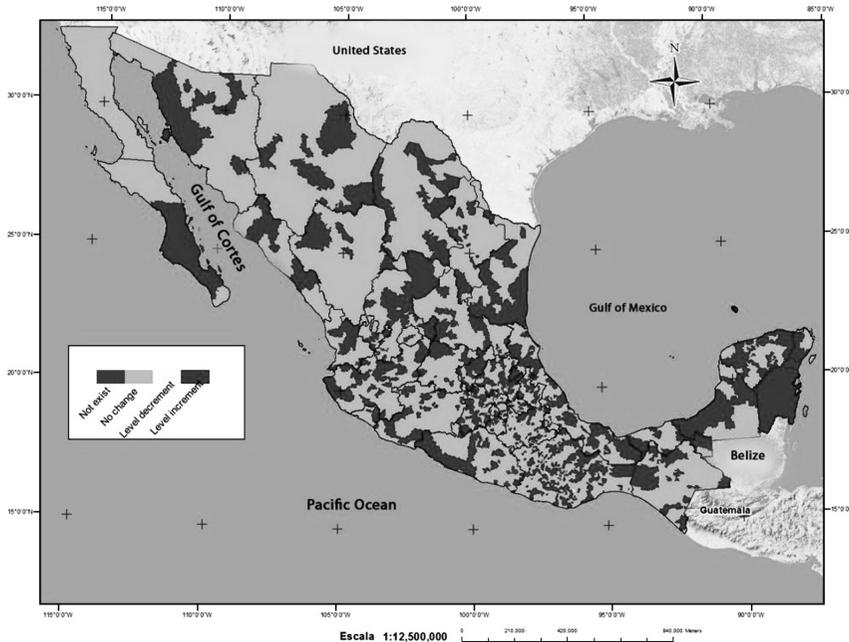
Map 1. Mexican municipalities according to Level of Socio-Economic Development (LSED), 2000



Map 2. Mexican municipalities according to Level of Socio-Economic Development (LSED), 2010



Map 3. Mexican municipalities according to changes of Level of Socio-Economic Development (LSED), 2000-2010



people experiencing socio-economic development live in such areas. They account for 38.4 millions, of these 21.5 millions reside in metropolitan zones and 7.2 millions in municipalities considered as rural ones (those that have no localities with more than 10,000 inhabitants). The rest of population in this category inhabits municipalities considered as having important urbanization.

Maybe because of nearly stagnant economic opportunities in metropolis and in large urban centers in the last decade, most inhabitants in these have no change their LSED. They make about 57.4 percent of the 73.5 million population of the country as a whole that have no change their LSED. The rest of population resides in most of rural and semi-urban municipalities (**Table 1**). This may explain in part why the underground economy is growing in such cities, assuming that most employed people in this sector have low real income and no social security and therefore low economic conditions. But rural municipalities have the largest percentage of population that increased its LSED (41.43 percent, **Table 1**). The same can be said for semi-urban municipalities to a lesser extent. This may be an indicator of

Table 1. Socio-economic change of Mexican municipalities (population and percentages), 2000-2010

Type of municipality	Municipality population experiencing positive change (and %)	Municipality population with no change (and %)	Municipality population with negative change (and %)	Municipalities created after 2000 (and %)	Total (and %)
All Mexican municipalities	38,457,945 34.23	73,591,581 65.51	2,218 0.002	284,794 0.25	112,336,538 100
Municipalities that are part of a metropolitan zone	21,563,283 33.78	42,263,280 66.21	0 0.0	2,216 0.016	63,836,779 100
Municipalities having at least one city equal or larger than 50,000 inhabitants	4,099,062 28.6	10,226,560 71.39	0 0.0	0 0.0	14,325,622 100
Municipalities having at least one city between 10,000 and 49,999 inhabitants	5,541,102 33.25	11,096,165 66.58	0 0.0	28,263 0.17	16,665,530 100
Municipalities that have no locality with more than 10,000 inhabitants	7,254,498 41.43	10,005,576 57.15	2,218 0.01	246,315 1.41	17,508,607 100

regional convergence, although only about 13 million people are involved in such improvement compared with almost twofold in metropolis and municipalities with large cities. This may demonstrate that dual development is still taking place at social and regional level in Mexico.

Looking at **Tables 2** and **3**, it is worth noticing that about 10.5 million Mexicans had low and very low LSED in 2000 and remain having the same level, while 9.5 millions passed to medium LSED in 2010. On the other side, there were 8.5 million populations remained and enjoying very high LSED during the decade. Those having high LSED were about 38.5 millions in 2010, little more than twice that of that existed in 2000.

In sum, it can be assessed that there has been little or no socio-economic development for more Mexicans and for the majority municipalities' populations. However, there is a sign of slight regional convergence considering positive change

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Table 2. Mexican municipalities and population according to Level of Socio-Economic Development (LSED), 2000-2010

LSED 2000	LSED 2010					
	Very High	High	Medium	Low	Very Low	Total
New in 2010	0	(1) 10,216	(5) 90,899	(5) 149,223	(2) 34,456	(13) 284,794
Very High	(18) 8,577,156	0	0	0	0	(197) 8,577,156
High	(34) 16,901,325	(163) 38,586,635	0	0	0	(1137) 55,487,960
Medium	0	(178) 9,880,533	(610) 17,984,944	(1) 1,296	0	(789) 27,866,773
Low	0	(1) 78,623	(495) 9,577,986	(640) 7,478,168	(1) 922	(18) 17,135,699
Very Low	0	0	0	(224) 2,019,478	(78) 964,678	(302) 2,984,156
Total	(343) 25,478,481	(870) 48,556,007	(1110) 27,653,829	(52) 9,648,165	(81) 1,000,056	(2456) 112,336,538

Table 3. Changes in LSED of Mexican municipalities and population, 2000-2010

	Municipalities	Population
New in 2010	13	284,794
Decrease	2	2,218
No change	1509	73,591,581
Increase	932	38,457,945
Total	2456	112,336,538

in rural municipalities' populations. Thus, 1,509 out of 2,456 municipalities have no change in their LSED. They house around 73 million people of the 112.3 millions Mexican in 2010. Municipalities having a little improvement during 2000-2010 are 932; they have about 38 million people and, only two municipalities had decreases of their LSED, they had 2,218 people.

Metropolitan municipalities

These are defined as those that are part of one of the 56 metropolitan zones of

the country. They are integrated by 367 municipalities where around 63.8 million people resided in 2010, of which two thirds did not experienced change in LSED and 21.5 million were better off in 2010 (Tables 4 and 5). It is normally believed that economic development is easier to attain in large cities, so more urban people having better socio-economic status through time is expected. This may explain why most of the metropolitan populations have high and very high LSED already. But low economic growth in the country during the decade also impacted on this no change for most people living in metropolis. Furthermore, it is important to mention that such growth has been historically concentrated in metropolitan zones.

Maps 4 y 5 show the geographical distribution of Mexican metropolis and

Table 4. Metropolitan municipalities and population according to their Level of Socio-Economic Development (LSED), 2000-2010

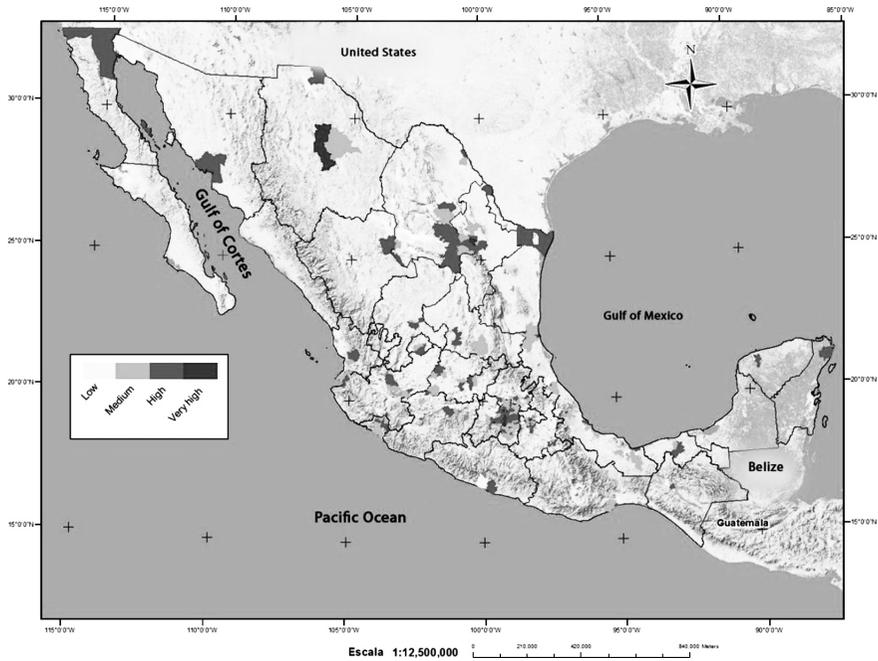
LSED 2000	LSED 2010				
	Very High	High	Medium	Low	Total
Very High	(18) 8,577,156	0	0	0	(18) 8,577,156
High	(31) 15,543,159	(105) 29,847,662	0	0	(136) 45,390,821
Medium	0	(86) 5,256,679	(96) 3,745,156	0	(182) 9,001,835
Low	0	(1) 78,623	(24) 684,822	(5) 93,306	(30) 856,751
New in 2010	0	(1) 10,216	0	0	(1) 10,216
Total	(49) 24,120,315	(193) 35,193,180	(120) 4,429,978	(5) 93,306	(367) 63,836,779

Table 5. Changes in LSED in metropolitan municipalities, and population, 2000-2010

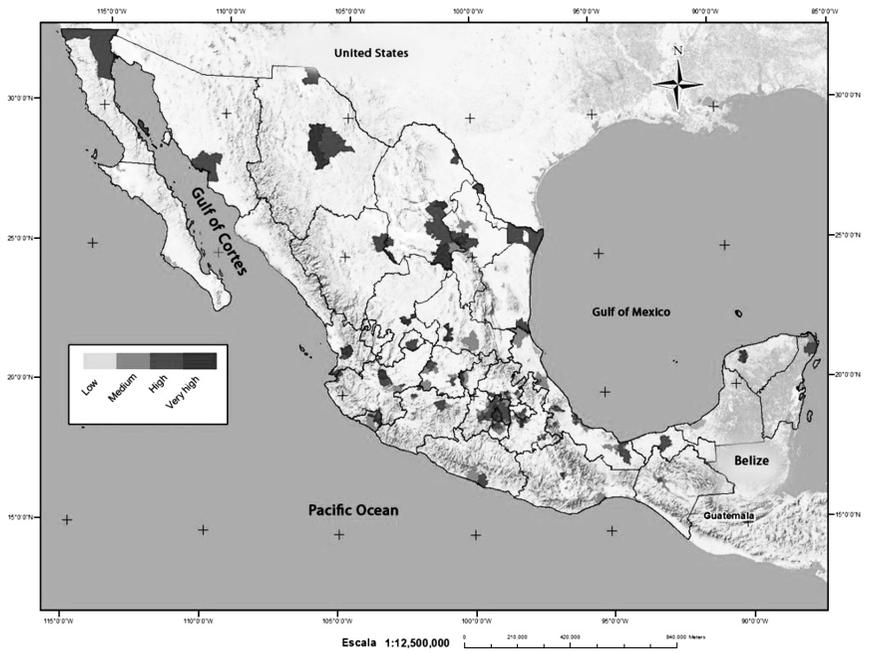
	Municipalities	Population
New in 2010	1	10,216
Low	0	0
No change	224	42,263,280
Increase	142	21,563,283
Total	367	63,836,779

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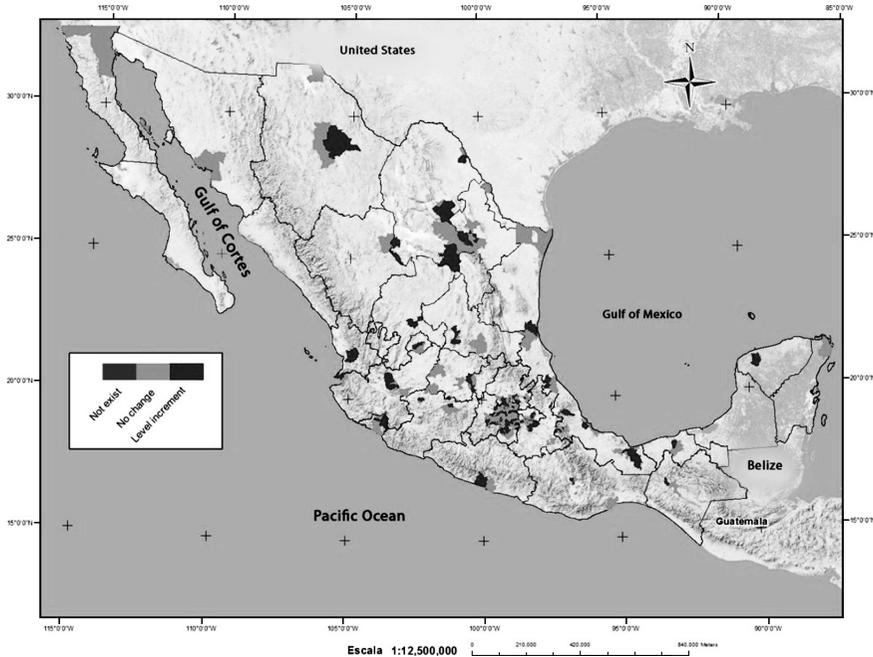
Map 4. Mexican metropolitan municipalities according to Level of Socio-Economic Development (LSED), 2000



Map 5. Mexican metropolitan municipalities according to Level of Socio-Economic Development (LSED), 2010



Map 6. Mexican metropolitan municipalities according to changes of Level of Socio-Economic Development (LSED), 2000-2010



how they have been growing in number largely because of immigration as well as territorial integration of new municipalities. Socio-economic better off metropolitan municipalities are located in Northern Mexico, they are also having positive change of LSED as can be observed in **Map 6**. Although metropolises concentrate a little more than half Mexican population and economic activity, they did not demonstrate sufficient socio-economic improvement for most of their inhabitants. Besides, there are large inequalities among social groups living within their boundaries. As it has been pointed out by some scholars, inequality has grown in many metropolises particularly in the last two decades.

Municipalities with at least one medium size city

They have at least one city larger than 50,000 people; metropolitan municipalities are of course excluded. Because this cities had important population and economic grow during the seventies and eighties it has generally been accepted that they may become areas of new socio-economic opportunities for a large population that

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Table 6. Municipalities with at least one medium size city according to Level of Socio-Economic Development, and population, 2000-2010

LSED 2000	LSED 2010				
	Very High	High	Medium	Low	Total
Very High	0	0	0	0	0
High	(3) 1,358,166	(36) 8,112,770	0	0	(39) 9,470,936
Medium	0	(16) 2,583,532	(17) 2,113,790	0	(33) 4,697,322
Low	0	0	(1) 157,364	0	(1) 157,364
Total	(3) 1,358,166	(52) 10,696,302	(18) 2,271,154	0	(73) 14,325,622

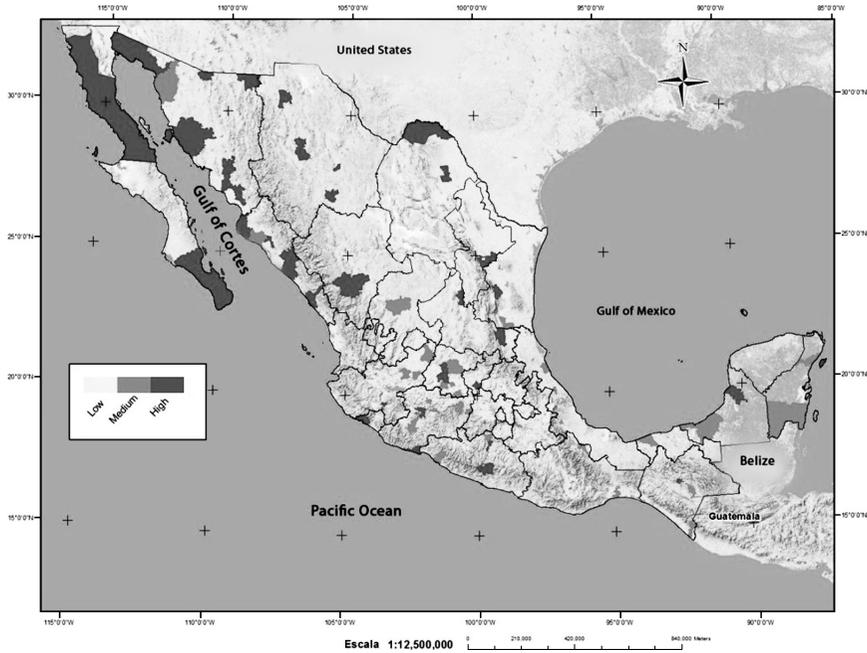
Table 7. Municipalities with at least one medium size city according to changes of Level of Socio-Economic Development, and population, 2000-2010

	Municipalities	Population
New in 2010	0	0
Low	0	0
No change	53	10,226,560
Increase	20	4,099,062
Total	73	14,325,622

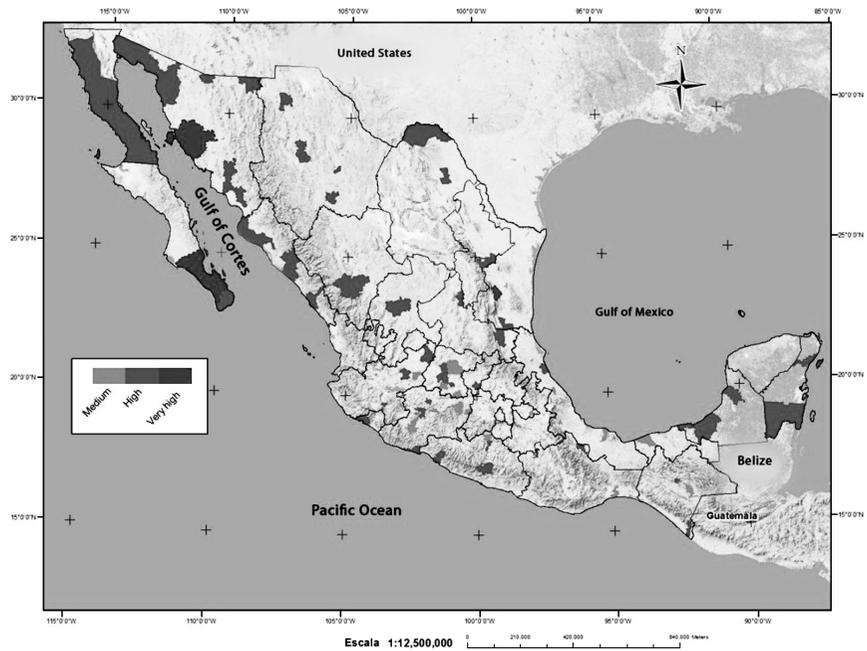
immigrate to them instead to a metropolis (see Graizbord and Ruiz, 1999). Perhaps they have lessened population pressure for metropolises, as these seem to offer diminishing opportunities to low-income new comers. There are 73 municipalities that have such cities in 2010 with the population of 14.3 millions of which 10.6 enjoyed high and medium socio-economic status; maybe because of this, most of the 10.2 millions did not changed their LSED and, most of 4.0 million people improve their socio-economic conditions, that make about 28.6 percent of the total population living in these municipalities, that is the lowest proportion of the five sets of municipalities (see **Tables 1, 6** and **7**).

It can be said that data support the assertion that medium size cities are largely important contributors to regional development; they are also an alternative for migrants searching opportunities of bettering their socio-economic conditions.

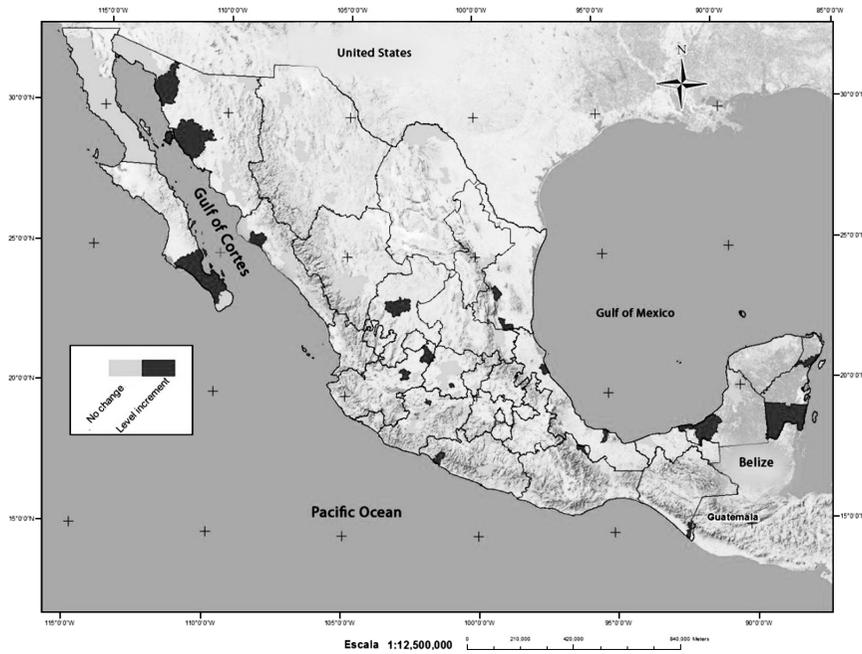
Map 7. Mexican municipalities with at least one medium size city according to Level of Socio-Economic Development (LSED), 2000



Map 8. Mexican municipalities with at least one medium size city according to Level of Socio-Economic Development (LSED), 2010



Map 9. Mexican municipalities with at least one medium size city according to changes in Level of Socio-Economic Development (LSED), 2000-2010



Medium size cities, regarded as municipalities, are scattered all over the country; they are growing in population and number; most of them has high and very high LSED in 2010 (**Maps 7 and 8**). It is interesting to notice that most are located in coastal areas; many have tourism and services at their main economic base. It can be assumed that others are principally located in Central Mexico and have a dynamic manufacturing and services sectors.

Map 9 shows municipalities with medium size cities that improved their LSED. There seems to be no doubt that many of them are interesting examples of urban economic and population growth that deserves further study because they may be promoters of regional development and therefore subjected to public policy for this purpose.

Semi-urbanized municipalities

They are defined as those having at least one city between 10,000 and 49,999 inhabitants (municipalities considered in other four categories are excluded). It can be

assumed that cities in such municipalities are service and no specialized products providers for rather small rural areas that integrated their functional socio-economic hinterland; some of them also combine tourist activity. They have grown in number and population during the decade. By 2010, 16.6 million of people resided in such municipalities which only 5.8 millions have high LSED; 8.9 millions have medium one and, 1.5 with low LSED. Thus, this suggests that most population have a comparative medium socio-economic conditions. Moreover, 11 millions did not improve their LSED and, most of 5.5 million people increased such conditions from low to medium during the decade. There are 377 of such municipalities located

Table 8. Semi-urbanized municipalities and population according to Level of Socio-Economic Development (LSED), 2000-2010

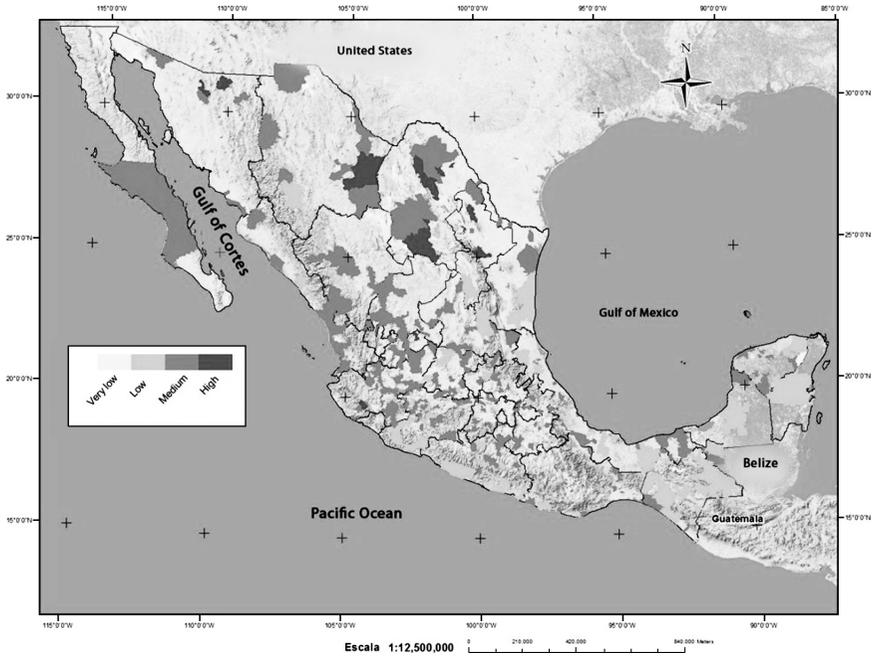
LSED 2000	LSED 2010			
	High	Medium	Low	Total
High	(15) 588,957	0	0	(15) 588,957
Medium	(45) 1,890,833	(201) 8,929,120	0	(246) 10,819,953
Low	0	(83) 3,528,98	(28) 1,578,088	(111) 5,107,077
Very Low	0	0	(4) 121,280	(4) 121,280
New in 2010	0	(1) 28,263	0	(1) 28,263
Total	(60) 2,479,790	(285) 12,486,372	(32) 1,699,368	(377) 16,665,530

Table 9. Semi-urbanized municipalities and population according to changes of Level of Socio-Economic Development (LSED), 2000-2010

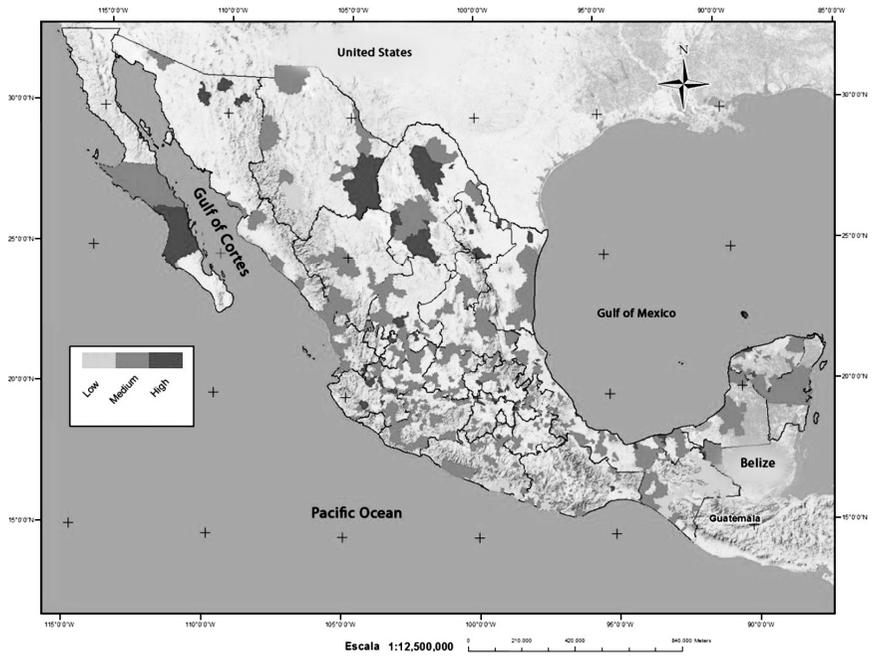
	Municipalities	Population
New in 2010	1	28,263
Low	0	0
No change	244	11,096,165
Increase	132	5,541,102
Total	377	16,665,530

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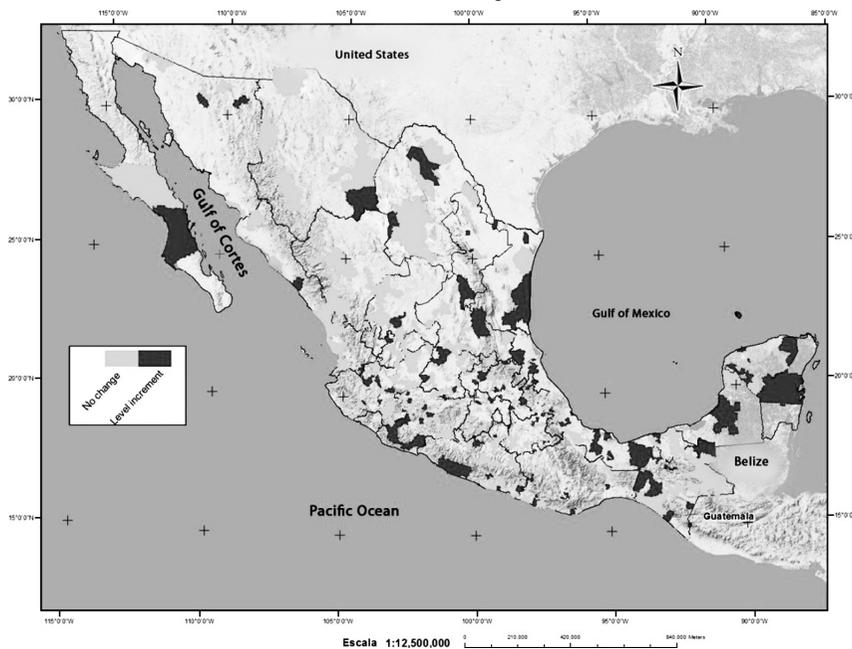
Map 10. Mexican semi-urbanized municipalities according to Level of Socio-Economic Development (LSED), 2000



Map 11. Mexican semi-urbanized municipalities according to Level of Socio-Economic Development (LSED), 2010



Map 12. Mexican semi-urbanized municipalities according to changes of Level of Socio-Economic Development (LSED), 2000-2010



mainly in Central and Southern Mexico, of these 111 have low LSED and 246 medium one (Tables 8 and 9; Maps 10 and 11). It is likely that most cities in such municipalities are growing through immigration from their rural hinterlands, perhaps by flows of migrants who have little resources and are unable to move to larger cities or to the United States*. Similarly, these cities may have poor urban services as well as opportunities for their municipality population to improve their socio-economic conditions. **Map 12** shows positive changes of those municipalities (where live half a million people). There are many localities in Northeast, Central and Southeast regions in the country. In sum, it is difficult to assert that socio-economic development is taking place in this regional context or it may be a quite slow process, regardless inequalities existing within each municipality.

* The United States used to be one of the main migrants destinations from rural and semi-urban areas in Mexico for at least two decades prior to 2008.

Rural municipalities

Most municipalities (1,519) in Mexico are classified as rural since they do not have at least one locality larger than 10,000 inhabitants according to definitions used here. They are found throughout the whole country's territory. They are inhabited by about 17.5 million Mexicans of which 13.8 millions have low and very low LSED. Moreover, around 10 millions did not have change in their LSED and 7.3 millions have some improvement of their socio-economic situation (**Tables 10** and **11**).

Data suggest that poorest Mexicans, who most of them work mostly in agricultural activities, populate this large territorial discontinuous region (**Maps 13**,

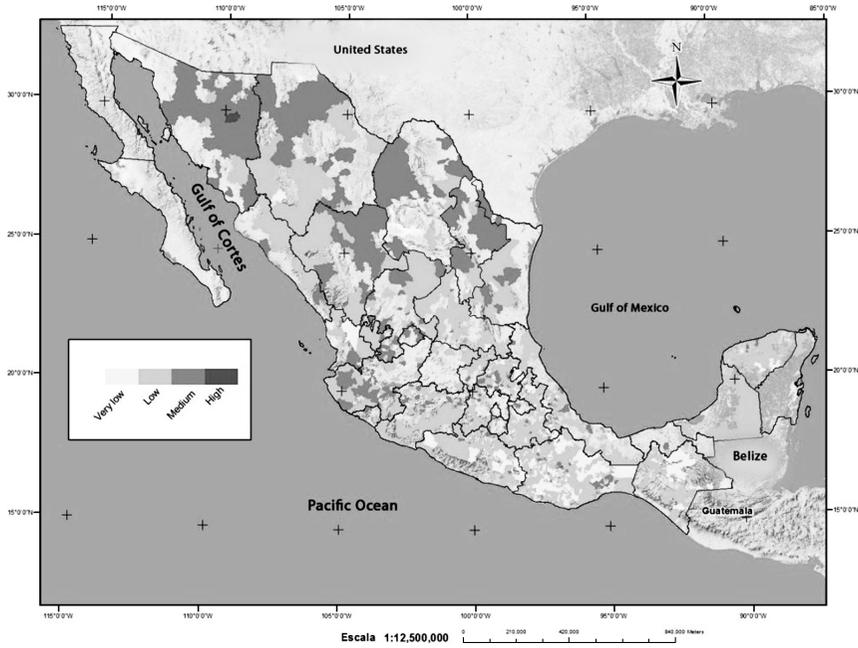
Table 10. Rural municipalities and population according to Level of Socio-Economic Development (LSED), 2000-2010

LSED 2000	LSED 2010				
	High	Medium	Low	Very Low	Total
High	(7) 37,246	0	0	0	(7) 37,246
Medium	(31) 149,489	(296) 3,196,878	(1) 1,296	0	(328) 3,347,663
Low	0	(387) 5,206,811	(607) 5,806,774	(1) 922	(995) 11,014,507
Very Low	0	0	(220) 1,898,198	(78) 964,678	(298) 2,862,876
New in 2010	0	(4) 62,636	(5) 149,223	(2) 34,456	(11) 246,315
Total	(38) 186,735	(687) 8,466,325	(833) 7,855,491	(81) 1,000,056	(1639) 17,508,607

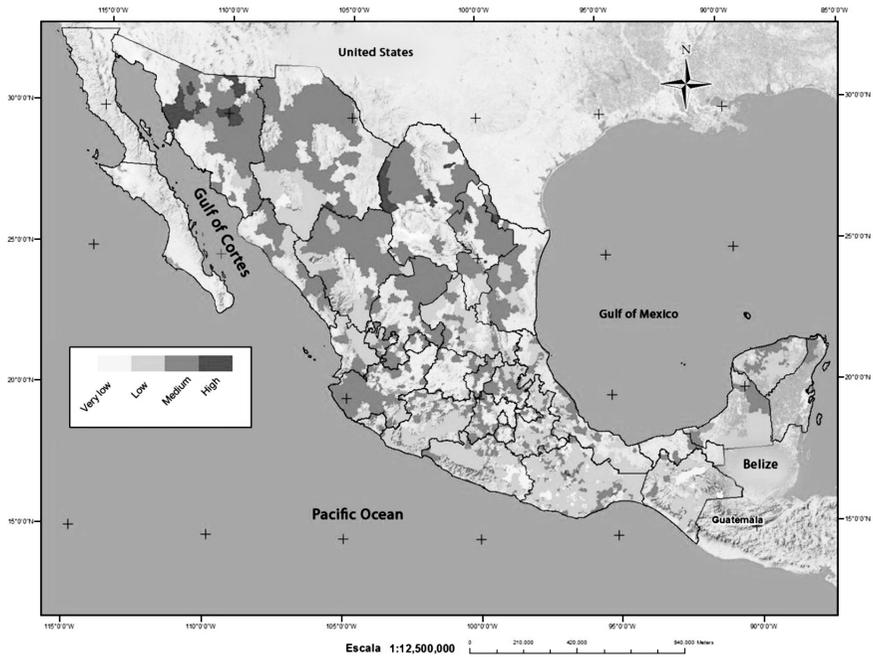
Table 11. Rural municipalities and population according to changes of Level of Socio-Economic Development (LSED), 2000-2010

	Municipalities	Population
New in 2010	11	246,315
Low	2	2,218
No change	988	10,005,576
Increase	638	7,254,498
Total	1639	17,508,607

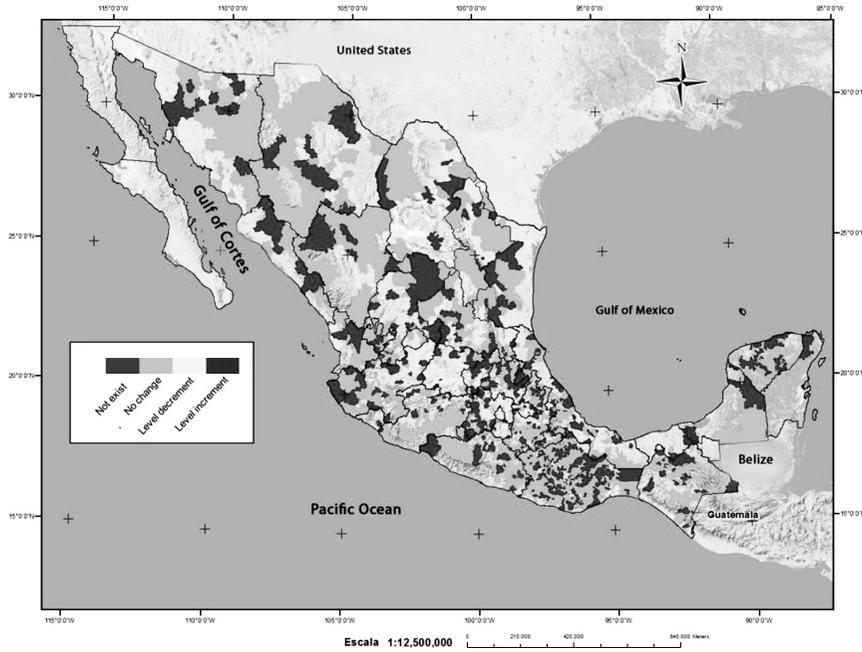
Map 13. Mexican rural municipalities according to Level of Socio-Economic Development (LSED), 2000



Map 14. Mexican rural municipalities according to Level of Socio-Economic Development (LSED), 2010



Map 15. Mexican rural municipalities according to changes of Level of Socio-Economic Development (LSED), 2000-2010



14 and 15). Considering that in this set of municipalities, large population is experiencing an increase of its LSED it can be assumed that there is a slight, perhaps slow, process of regional convergence in socio-economic development considering the socio-economic conditions of all Mexican municipalities.

Maps 13, 14 and 15 show that there is not pattern of regional development since those having some positive changes of their LSED are scattered throughout the country's geography. So, it can be said that population living in most of these municipalities integrate the poorest less developed Mexican regions. Therefore, they should be a first priority for public policy concerning socio-economic territorial development.

Concluding remarks

This analysis show important evidence that there is a dual regional development in Mexico in terms of the socio-economic variables used to measured it here for the decade 2000-2010.

Considering population in absolute terms, socio-economic improvement is taking place in large cities, but in relative ones medium size urban centers seem more promising for population to experience socio-economic development. Although they have had certain concentration of economic activity and population, this is only a small proportion of that concentrated in large metropolises. However, they seem to grow faster than the later. Manufacturing, services and tourism are the main growing activities, as agglomeration diseconomies are rapidly increasing in traditional big cities. Besides, these have the largest population that suffer low and very low socio-economic status with no change during the decade studied here. Perhaps construction of communications infrastructure, new technologies and export oriented manufacturing are favoring medium size cities for attracting new investment and thus promoting economic growth. Maybe this slow process of medium size cities development has being promoted by the North American Free Trade Agreement (NAFTA, signed in 1994) that also underlies the insignificant regional convergence that appear in this analysis in which some relative improvement in rural municipalities also helps in that convergence.

Most dynamic municipalities are found in coastal regions where tourism development is growing as long with the growth of cities where many people reside and work in tourist resorts. As in metropolises there is a large response of immigration population to opportunities in such urban centers, so that the formal sector cannot employ all those offering their labor force. Thus, informal sector grows as well as low-income neighborhoods; meanwhile local governments are unable to satisfy needs of urban infrastructure and public services. Thus, modern “development poles” that are both cities with tourism and services growth and those where exports manufacturing is taking place are having similar “urban pathologies” as big metropolises. A plausible assumption about causes is that population growth, labor force constantly growing, labor saving technologies, migration from rural to urban centers are working forces on the persistence of the dual development in Mexico, quite similar to the model explained by Lewis several decades ago.

There were almost 20 million people that have low and very low socio-economic conditions in 2000, but they account for around 10.5 millions in 2010.

According to estimation, 38.4 millions bettered their living conditions mainly those residing in metropolises and medium size cities; meanwhile 73.5 millions Mexican did no experienced any change. However, it is necessary to insist that this population actually residing in municipalities classified in the corresponding LSED hence no all inhabitants have that LSED, but most do.

Further study should be made to identify economic and institutional factors related to the persistence Mexican dual socio-economic development for the country as a whole and for smaller geographical units as cities and towns. Following the method used here it may be possible to highlight urban centers and other populations settlements that could required specific policy either to accelerated their underway development or to improved it for those stagnant poor populations. Federal and local government policy instruments already available may also demand pertinent political decentralization as well as economic policy that must consider their territorial outcomes.

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