



MEXICAN CITIES

EXPANSION TRENDS AND THEIR IMPACTS

Executive summary

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Puerto Vallarta, Jalisco. Mexico; Credit: Manuel Rubio / Flickr

Executive Summary

Highlights

- Controlling urban sprawl, pollutant emissions and urban inequality are the three most urgent challenges Mexican cities must address in order to create a roadmap toward a sustainable urban model.
- Population growth in the last two decades did not require expansion of the urban footprint. However, most cities reduced their density.
- Exploratory analysis shows that reduction in urban density might be related to an increase in the emissions of some air pollutants.
- The highest and lowest socioeconomic groups have significantly unequal access to employment and public facilities. In general, the lack of access to formal employment, public primary schools, public health clinics, food supply, and open space exacerbates inequality for the lowest socioeconomic groups.
- Patterns of inequality in access to employment and public facilities are not the same across all cities in Mexico. Cities' differing patterns of inequality demonstrate the need to design public policies adapted to different urban realities.



Museum Cuahunahuac. Credit: Wang Chang Xhiaying/ Flickr

Introduction

Mexican cities face great challenges: accelerated growth and expansion; demographic transition processes with new types of families, smaller households, and new demands for housing; the climate crisis; and acute social inequality. The urban model established in recent decades is one of low density, disconnection, and dispersion, and it presents serious problems: environmental issues such as the urbanization of large areas of agricultural or environmentally valuable land, higher emissions of pollutants, and increased water stress; economic issues such as the loss of productivity due to increased travel times or traffic congestion; and social issues such as the increase in socio-spatial segregation and inequality of access to urban services.

The change to an alternative compact, connected, coordinated, clean, and equitable urban model (4C + E) is a necessity to overcome the social gaps, address the climate and environmental crises, and promote economic development for the entire population. To encourage the urban paradigm shift, the Coalition for Urban Transformation (CUT) seeks to support national governments in developing science-based research aimed at public policy design.

About this report

This document is part of the research program of CUT in Mexico. CUT is a global initiative that aims to support national governments in the transition to a new urban paradigm, with the goals of guaranteeing prosperity, sustainability, and inclusion in cities and achieving zero emissions by 2050. Globally, the coalition is made up of institutions that carry out research oriented to decision-making to implement Sustainable Development Goals (ONU, 2015), The New Urban Agenda (ONU, 2016), and the Nationally Determined Contributions (Gobierno de México, 2015).

This publication is the second installment in the CUT Mexico research program series. It follows “Federal Actions for Urban Planning: Towards Better Cities for All” (Zubicaray, García, Macías et al. 2020), which analyzed the challenges and opportunities of federal policies that impact urban development. The present publication aims to analyze the current challenges in Mexican cities and to transmit that information to the general public. To these ends, the publication is comprised of three elements:

- a) Analysis of urban expansion processes between 2000 and 2018;
- b) Evolution of greenhouse gas emissions and atmospheric pollutants in metropolitan areas; and
- c) Measurement of access to employment and public facilities by socioeconomic group and housing location.



Mazatlan, Sinaloa. Credit: PAmorphica Desing/ Flickr

Main findings

The results of the analysis are summarized below.

a) Urban expansion/sprawl

- Population growth at the metropolitan level since 2000 has been uneven, with rapid growth in coastal tourist cities, border cities in northern Mexico, and cities in the industrial corridor of central Mexico. Major metropolitan areas have experienced moderate growth and growth has frequently stagnated in small cities.
- In the same period, growth of urban footprints has been widespread. Rural towns within metropolitan areas have been most affected with growth rates, as measured by rate of land development, four to seven times higher than in urban localities of metropolitan areas.
- Thus, most Mexican cities have undergone some sort of urban sprawl process in the period analyzed, generating less dense, more spatially expansive cities.

b) Urban pollutant emissions

- Between 2008 and 2016 there was progress in reducing emissions of some pollutants from mobile sources, including carbon monoxide, volatile organic compounds, and ammonia.
- However, particulate matter (PM₁₀ and PM_{2.5}) and nitrous oxides continued to increase, especially in cities with fewer than three million inhabitants. In this case, growth of the vehicle fleet was concurrent with the rise of these pollutants.
- The exploratory analysis shows an apparent correlation between the decrease in urban density and the increase in the emission rate of some pollutants in the subsequent period. In other words, there could be a relationship between the rapid growth in emissions and the prior decrease in urban density. The relationship would apply in the cases of carbon monoxide, ammonia, and nitrous oxides, but the matter requires a more exhaustive analysis.

c) Access to employment and public facilities

- Mexican cities tend to concentrate access to employment and public facilities in the two highest socioeconomic groups while depriving access in the three lowest groups of the Urban Social Inclusion Index (Brito et al., 2021), which tend to occupy the urban periphery.
- Not all cities show the same pattern of inequality. In one group of cities, possible processes of segregation from jobs and public facilities are seen in the highest socioeconomic group.
- For the most part, in the lower socioeconomic groups, the main deficiencies of access tend to be in formal employment, public primary schools, and health clinics. Lack of access to food supply and open space is also noted.



Cancun, Quintana Roo. Credit: José Aguiluz/Flicker

Conclusion

In sum, the analysis shows that Mexican cities over the last few decades have become more sprawling, on a car-centered urban model in which urban expansion links to increased emission of certain kinds of pollutants. In terms of social impact, access to formal employment and public facilities has become highly polarized. The predominant pattern presents a scenario in which the lowest socioeconomic groups, located on the urban periphery have little access to such facilities, while higher socioeconomic groups, located in central areas, benefit from greater access.

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