Transformative Urban Coalitions

CITY PROFILES NO. 2

LEÓN, MEXICO

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LEÓN

About TUC City Profiles

To fight the climate crisis, cities have to become more sustainable now. Transformations towards sustainability must be based on the specific urban characteristics of each city. An analysis of the current factors that may or may not enable urban sustainability transformations is a first step for developing locally suited strategies.

TUC City Profiles is a series of short reports developed as part of the Transformative Urban Coalitions (TUC) project to share insights into the existing challenges and opportunities to address cross-cutting urban sustainability transformation and development issues through inclusive climate action in the five Latin American TUC cities.

The following short report summarizes the main findings from a political economy and ecology analysis of León, Mexico, describing its main geographic, socioeconomic and environmental characteristics as well as climate governance set-up. It concludes with suggested entry points for transformative change towards sustainability.

This TUC City Profile was developed by United Nations University – Institute for Environment and Human Security (UNU-EHS) in collaboration with the German Institute of Development and Sustainability (IDOS) and WRI México. It is based on an assessment carried out between February and August 2022.

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Key Messages

Economic dynamism has been maintained at the expense of rising socio-environmental issues in León, namely the deterioration of air and water quality, the overexploitation of groundwater sources, soil erosion and contamination, deforestation, loss of biodiversity, urban sprawl, and inequality. These issues contribute to, and are worsened by, climate change.

Climate governance in León began to materialize in the early 2010s, largely emulating the state's legal and institutional framework. It has since progressed incrementally with each municipal administration. Nevertheless, **mainstreaming of the climate agenda is hampered by several factors, including lack of effective coordination across government bodies and insufficient funding**.

Climate change mitigation projects implemented in León have mostly been aimed at addressing sectoral urban problems, only contributing to reducing emissions implicitly and marginally. Changing this trend requires all urban actors to explicitly integrate climate goals in their agendas and implement them collaboratively.

León's civil society has increasingly denounced social and environmental injustices associated with both public and private projects. It demands **greater participation in urban decisions around topics such as air quality and transport, water, green public spaces and urban reforestation, and gender – all of which could be entry points for transformative climate action**.

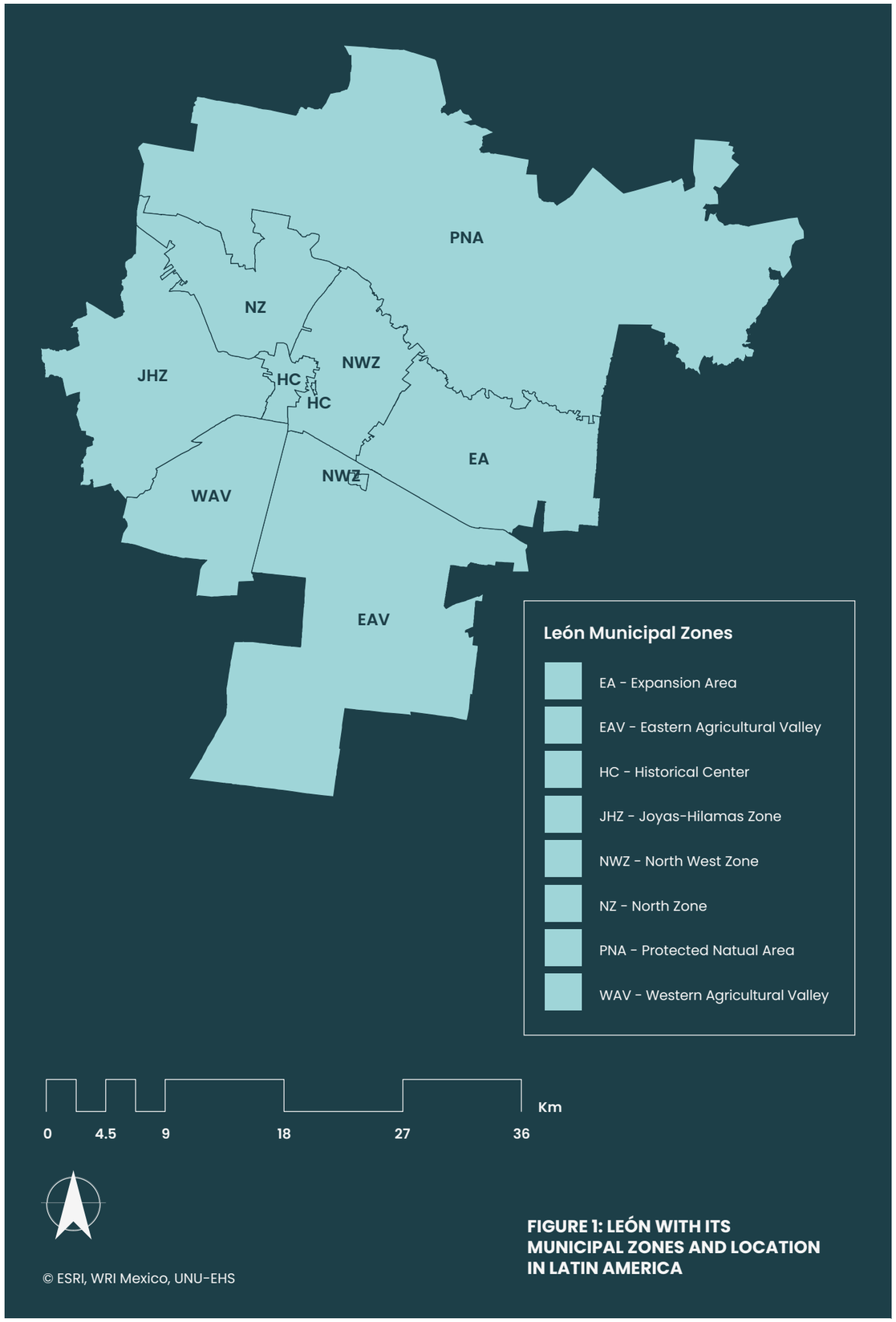


FIGURE 1: LEÓN WITH ITS MUNICIPAL ZONES AND LOCATION IN LATIN AMERICA

1. Urban Development in León

The city of León is located in the Mexican *Bajío* (lowlands), which includes parts of four states (Guanajuato, Querétaro, Aguascalientes and Jalisco). It is so named for its topography, characterized mainly by valleys, plains and hills. The area has acquired great national importance as one of the country's main trade routes (Rodríguez-González and Caldera-Ortega, 2013) (See **Figure 1**).

Within the state of Guanajuato, León stands out for its accelerated urbanization and economic growth since the 1990s, starting with leather tanning and shoemaking, followed by agriculture and more recently the industrial, commercial and tourism sectors (García-Gómez, 2019).

León's population has grown by almost 20 per cent since 2010 to 1,721,215 inhabitants in 2020 (Instituto Municipal de Planeación de León (IMPLAN), 2021a). It is currently the most populated municipality in the state and third most populous municipality in the country. Furthermore, León is among the 10 municipalities with the highest contribution to Mexico's Gross Domestic Product (Datamexico, 2022; Instituto Nacional de Estadística, Geografía e Informática (INEGI), 2020a). Nevertheless, there are areas where the most precarious conditions are concentrated, both in terms of social inequality and poverty, as well as insufficient provision of infrastructure and services. León identifies these as Development Polygons *(Polígonos de Desarrollo)* and Social Boost Zones *(Zonas de Impulso Social)* (IMPLAN, 2021b).

The economic dynamism of León has triggered and/or exacerbated various issues in the city, namely air pollution, water pollution, the overexploitation of groundwater sources, soil erosion and contamination, deforestation in protected natural areas, deterioration of green areas, loss of biodiversity, urban sprawl and inequality (IMPLAN, 2019; Tagle Zamora, Caldera-Ortega and Rodríguez-González, 2017). These urban problems contribute to and are worsened by increasing greenhouse gas (GHG) emissions, and climate change more generally.

Updated in 2020, the most recent GHG inventory for León estimates that a total of 2.67 million tons of carbon dioxide equivalent were emitted within city limits in 2017. This represents an average annual increase of 1.3 per cent in emissions since 2010. The energy sector was responsible for the largest share of emissions in León (79 per cent). Within the energy sector, transport accounted for the majority of emissions (74 per cent of the total). The waste sector was responsible for 11 per cent of total emissions, followed by agriculture, forestry and other land use (9 per cent) and, finally, industrial processes and product use (1 per cent) (Centro Mario Molina, 2020) (See **Figure 2**). This inventory provided the basis for the 2021 update of León's Municipal Climate Change Program (*Programa Municipal de Cambio Climático* (PMCC). The programme includes over 60 measures aimed at climate mitigation, adaptation, education and communication (Centro Mario Molina, 2021).

Currently, only a 1 per cent reduction in energy-related GHG emissions is expected in León by 2030 (Centro Mario Molina, 2021) in spite of the implementation of various transport measures, including the public bicycle system *Bici León*, the expansion of integrated public transport system routes, and the mainstreaming of private vehicle emissions verification. A key opportunity to tackle these emissions is to accelerate the shift to active mobility modes, namely walking and cycling. In 2020, 67 per cent of León households still owned a car or a motorcycle, whereas only 33 per cent opted for bicycles and other non-motorized transport (INEGI, 2020b). An integrated and inclusive urban street design is required to encourage León residents to walk or cycle instead of driving. Measures must (a) improve public space and infrastructure, including better pedestrian traffic conditions and more kilometres of bike lanes; (b) be responsive to the specific weather conditions of the city by, for example, increasing the coverage of trees on sidewalks to provide shade; and (c) take into account and tackle existing inequalities in the access to urban mobility, prioritizing the needs of Development Polygons and Social Boost Zones.

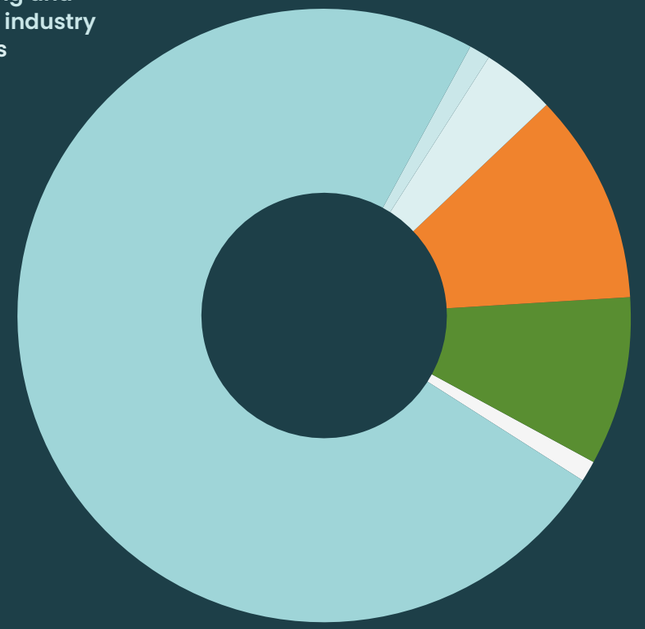
The contribution of the waste sector to municipal GHG emissions is relatively low compared to transport. Yet, it shows the highest potential for emissions reduction in León due to a roll-out of household waste collection services and a biogas cogeneration plant at the El Verde landfill, among other measures. However, financial barriers are limiting plans to expand the plant's capacity as well as its contribution to local decarbonization goals (Centro Mario Molina, 2021).

Overall, there are visible ongoing decarbonization efforts in León, but they have not been progressing fast enough to ensure the achievement of 2030 goals. Already mentioned projects and smaller-scale interventions have been mainly government led. They count on little articulation with and replication by private households. Climate-related measures are also only partially implemented. They often leave aside critical steps, such as a thorough diagnosis and/or follow-up. The lack of appropriate monitoring and evaluation indicators prevents the government from establishing each project's compliance with the goals set forth by the Municipal Climate Change Program.

Funding for climate projects in León represents another challenge. Funds are available, for instance, through the Guanajuato State Environmental Fund and the Air Quality Improvement Management Program, with resources provided by the National Ministry of the Environment and Natural Resources (SEMARNAT) and Guanajuato's Secretary of Environment and Land Management (SMAOT). Sources also exist at the municipal level, including the Environmental Services Payment Program and the Municipal Public Investment Program (former Municipal Environmental Fund). However, resources remain insufficient to finance the actions contemplated in the Municipal Climate Change Program and other climate policy instruments.

Distribution of total GHG emissions in León by sector

79 %
ENERGY
74% Transport
1% Manufacturing and construction industry
4% Other sectors



11 %
WASTE

9 %
AGRICULTURE
FORESTRY, AND OTHER LAND USE (AFOLU)

1 %
INDUSTRIAL PROCESSES
AND PRODUCT USE (IPPU)

FIGURE 2. (DATA FROM 2017)

Source: Centro Mario Molina, 2020. Note: León's GHG inventory follows the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

View of hot-air balloons during the XVIII International Balloon Festival in Leon, Guanajuato State, on November 18, 2018. About 200 balloons from more than 23 countries fly over the Palote dam in the Metropolitan Park.
© MARIO ARMAS / AFP

2. Climate Governance

Climate governance in León was triggered by and largely emulated the policy and institutional frameworks established at the state level back in the 2000s. Municipal climate governance thus progressed incrementally along three key stages:

EMERGENCE IN THE 2000s

Adopted in 2007, the National Climate Change Strategy promoted the creation of interministerial state commissions to deal with climate issues at the local level (SEMARNAT, 2012). In the same year, the Inter-secretarial Commission of Climate Change of the State of Guanajuato (COCLIMA)[1] was established to be led by the Institute of Ecology of the State of Guanajuato. In the years that followed, COCLIMA's achievements were manifold, including the development of the first Climate Change Program of the State of Guanajuato (2011), a Greenhouse Gas Inventory (2013), and the Climate Change Law for the State of Guanajuato and its Municipalities (2013). Enforcement of the state law on climate change and other complementary laws has been the responsibility of Guanajuato's Secretary of Environment and Land Management (SMAOT) since 2019. This institutional and regulatory framework has been replicated by municipalities across the state, including León.

MATERIALIZATION IN THE EARLY 2010s

Institutionalized climate governance in León has its antecedent in the 2012-2015 municipal administration. During that period, key data were compiled to develop the precursors of municipal climate policy, namely the city's first GHG inventory (2013) and the Environmental Management Regulation (RGA) (2014). In 2015, León presented its Municipal Energy Sustainability Program, as well as the first Municipal Climate Change Program (PMCC), both in compliance with the RGA. The RGA created the Municipal Environmental Fund and gave the former General Directorate of Environmental Management, now the General Directorate of the Environment (DGMA), the authority to follow up on actions derived from the PMCC. The RGA also set up mechanisms to coordinate work between environmental and planning government bodies, which are critical for governing climate-related issues. These mechanisms articulate the work of DGMA and the Municipal Planning Institute (IMPLAN), and also other agencies, such as the General Directorate of Mobility, the Directorate of Sustainable Urban Development and the Directorate of Sustainable Economic Development.

1 COCLIMA is a body made up of 18 state government agencies that meets an average of three times a year.

CONSOLIDATION IN THE LATE 2010s / EARLY 2020s

During the 2015-2018 and 2018-2021 administrations, León's GHG inventory and PMCC were updated on behalf of the DGMA. In addition, IMPLAN[2] prepared the Municipal Program for Urban Development and Ecological and Territorial Planning (2020) and formulated the Municipal Development Plan 2045 (2021). Moreover, the General Directorate of Mobility updated its Comprehensive Plan for Sustainable Urban Mobility in 2019. Considering the institutional design of these instruments, the scale of their impact on climate change mitigation and adaptation greatly depends on the degree of effective coordination across governmental bodies.

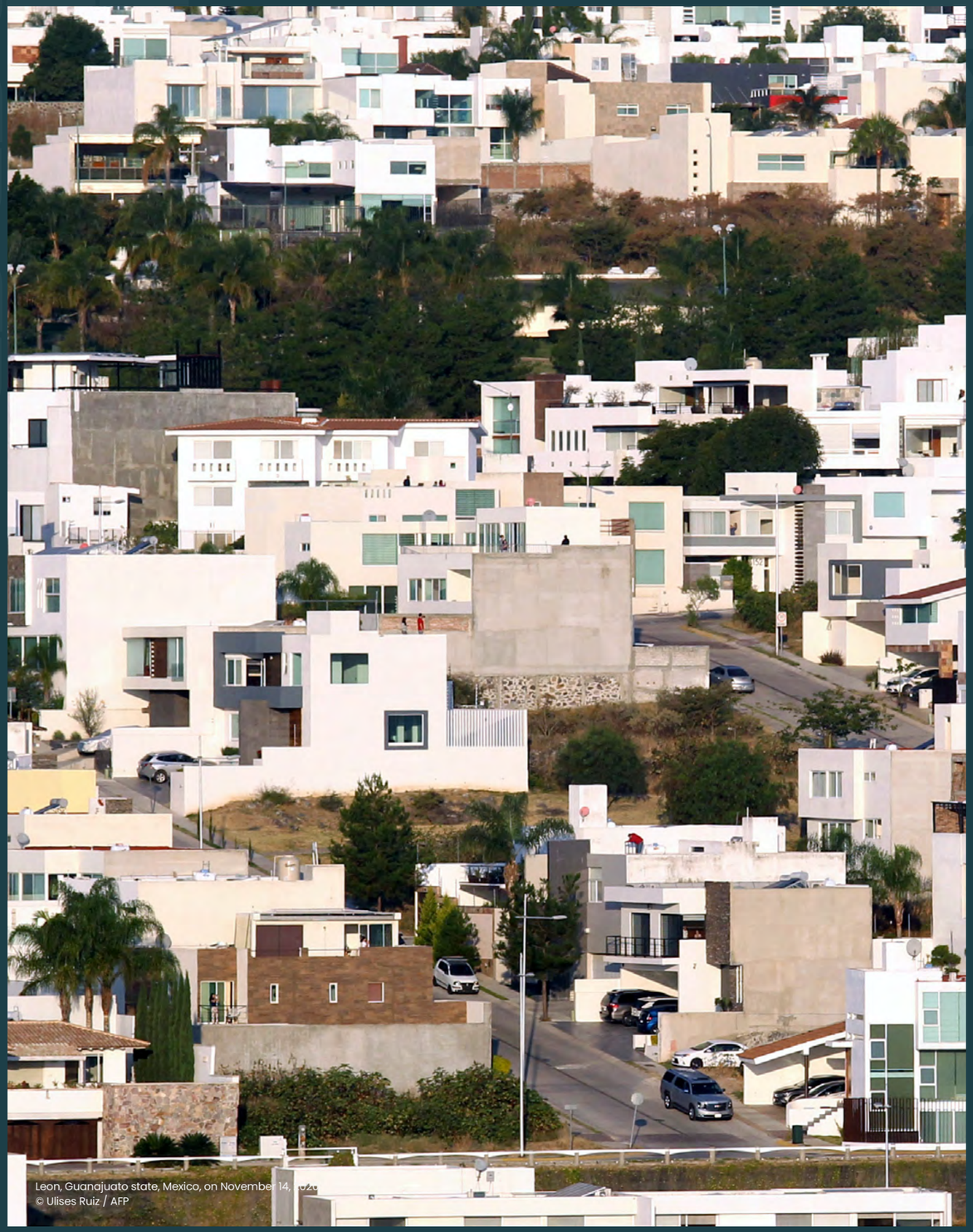
The current administration (2021-2024) has placed significant emphasis on strengthening citizen participation; for example, the institutionalization of participatory budgeting in 2022. If used well, these channels have the potential to complement other more formalized participation channels in the municipality, especially if more vulnerable and marginalized groups are actively included.

Traditional channels for citizen participation in urban decisions in León include the boards of directors and advisory councils of certain public administration agencies. Boards of directors are not only aimed at citizen representation but also possess the power to establish guidelines and strategies and even appoint the directors of such agencies. This is the case, for example, for the Board of Directors of the Potable Water and Sewage System of León (SAPAL), the Board of Directors of the Integral Public Cleaning System of León (SIAP) and the Board of Directors of IMPLAN. Advisory councils are informative or consultative in nature. Their core function is to facilitate the interaction between municipal government officials and the citizens appointed[3] in these spaces to provide feedback on particular actions. The Environmental Advisory Council, composed of representatives from civil society, business and academia, constitutes the most important institutionalized mechanism for citizen participation in climate-related decisions and projects in León. Other noteworthy spaces are the Advisory Council for Sustainable Development around Urban Planning and the Municipal Council for Civil Protection.

In the past decade, León's civil society has increasingly organized to take a more proactive role in multiple issues of municipal public life beyond participation in institutionalized spaces. Informal citizen participation in urban development decisions has been mostly led by local activist organizations and is concentrated in areas where social and environmental injustices are perceived as particularly high. Such socio-environmental conflicts are largely associated with projects undertaken by either the private sector or the municipal government. In recent years, this has been the case for neighbourhood associations *Brisas del Aire* and *Medio Ambiente y Calidad de Vida*, which were created to denounce deteriorating air quality and health conditions associated with the brick-making industry in León. These organizations advocate for regulatory changes that promote the incorporation of cleaner technologies and the relocation of brick kilns. Another conflict took place in 2016, when environmental organizations, including the *Fundación Rescate Arbóreo*, successfully mobilized to stop logging during expansion work of the public transport system project. A third example involves the local NGO *Acción Colectiva* filing several legal complaints and taking to social media to denounce the deterioration of the city's surface water bodies due to illegal wastewater discharges from the leather tanning industry. This unresolved conflict revolves around not only water pollution but also the need for public authorities in León to ensure the private sector's compliance with environmental regulations.

2 IMPLAN also formulates various master plans that affect climate adaptation and mitigation actions, such as bike lanes, linear parks and pedestrian corridors.
3 The conformation of the representatives is a direct and unique attribution of the municipal president and the councilors and trustees of each council.

Road traffic in the evening
© Amar-Preciado / Pexel



Leon, Guanajuato state, Mexico, on November 14, 2020
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3. Entry Points for Urban Sustainability Transformation

The entry points for transformative climate action identified in León can be grouped into five categories:

MAINSTREAM CLIMATE CHANGE INTO MUNICIPAL AGENDAS

Climate governance in León shows several positive traits, but there are also opportunities for strengthening it. Climate change can be mainstreamed through the articulation of climate goals with measures to fulfil both economic and social development objectives that are given higher priority in municipal agendas. In terms of the municipal "government" agenda, this can be done, for example, by explicitly integrating climate policies – such as the goals of the PMCC – into broader programmatic documents and structures of the municipal government, namely the Government Program and the Municipal Budget (see Climate finance). The creation of an Intergovernmental Committee on Climate Change of the Municipality of León, comprised of DGMA, IMPLAN and other relevant authorities (SAPAL, SIAP, the General Directorate of Mobility, etc.) could facilitate the integration of the climate lens across government activities. This would materialize the mainstreaming of climate policy across public policy sectors and could help to translate policy goals into projects and actions.

BOTTOM-UP CLIMATE ACTION

Regarding the municipal "industry" agenda, the significant representation of industry in municipal advisory councils could be leveraged as a stepping stone to foster the private sector's accountability for and ownership of climate change at the municipal level, as both a contributor and a potential solution to the crisis. A complementary approach to influence the "civil society" agenda would be to engage with community-led organizations that advocate for socio-environmental justice causes in León to raise their awareness about interlinkages with climate change. One could thus reinforce and leverage existing social movements around issues that traditionally get more traction in the city, including air quality and transport, water, green public spaces and urban reforestation, and gender, to shift climate narratives. Finally, fostering partnerships among government, civil society and the private sector to design and implement measures together would also provide a solid foundation for transformative climate action in León.

CLIMATE FINANCE

The implementation and upscaling of PMCC-related measures also depends on the importance given to the topic in the municipal government's budget and its materialization through the strengthening of funds allocated to DGMA as well as other agencies. It is thus suggested that funding sources traditionally used for climate projects, such as the Municipal Public Investment Program managed by DGMA, are incremented annually based on municipal incomes deriving from fines applied to polluting agents, fees paid for environmental services, and – where appropriate –taxes. In cases where the federal or the state level currently holds the authority for issuing environmental licenses and receiving fees, some of this authority could be transferred to cities and local governments. In addition, including climate-related solutions in existing infrastructure projects also represents a way of leveraging funds and addressing multiple agendas at the same time. Complementary climate financing could be sought through regional and international cooperation, development banks and other investment agencies.

PARTICIPATION

Although institutionalized citizen participation exists in León via, for example, the Environmental Advisory Council, it is often limited to an informative capacity, strictly consultative and with low incidence in the design, implementation and evaluation of municipal policy, including climate policy. Strengthening such participatory mechanisms, both in their capacity to monitor and influence climate policy and action in the municipality as well as in their representation, is paramount to ensure their contribution to effective municipal climate governance. First, improving representation on the Environmental Advisory Council (and other similar arrangements) could be achieved by changing the process of membership renewal, namely by releasing open calls. Potential new members would be selected based on the suitability and complementarity of their profiles by a diverse Selection Committee, composed of members of the current cohort and approved in *cabildo*.[4] Second, this reform of the Environmental Advisory Council directive could also grant a binding effect to the decisions of the council, ensuring that they are taken up in the Government Program and reflected in the participatory budget to achieve PMCC goals. Importantly, several programmes to strengthen citizen participation in urban decision-making have been created recently in León. It would be advisable to track and evaluate their effectiveness and, if needed, adapt them to better fulfil their aims. Results could also feed into a critical comparative analysis of all of the different local participation channels that exist (e.g. their compositions, goals, resources, achievements) to explore opportunities for consolidation and cross-fertilization of ideas among more inclusive groups.

AWARENESS-RAISING & CAPACITY DEVELOPMENT

Climate mitigation and adaptation solutions, namely solar heaters, energy-efficient lighting and rainwater harvesting systems, are already visible in some sectors, especially in public and private buildings across the city. However, systematic monitoring of such activities, particularly those led by private actors, and their broader integration into urban planning processes are lacking. Collecting and disseminating data regarding the status of implementation of these solutions and their benefits (social, economic and environmental) could raise citizen awareness and possibly increase the scope, impact, support for and perhaps even ownership of climate programmes and projects. Another option to better engage urban actors is through training and capacity development for climate-related issues at the city level. These should focus on the interlinkages between climate change and everyday problems that urban dwellers can easily relate to. In the case of León, this could cover the implications of motorized mobility on emissions, air quality and ultimately public health, for example. Strengthening the climate agenda and associated local knowledge in León may rally community members that already advocate for socio-environmental justice causes, and others, to lead a climate justice movement in the city.

4 As in all Mexican cities, León's municipal government is formed by two main government bodies. The municipal council (*Ayuntamiento*) is a collegiate body that meets in *cabildo* sessions to deliberate on policies and regulations that govern the municipality. The municipal administration is generally constituted by professional bureaucrats designated by the municipal president and is in charge of public services.

> Strengthening participatory mechanisms is paramount to ensure their contribution to effective municipal climate governance.

Hot air balloons are seen during the XVIII International Balloon Festival at the Metropolitan Park in Leon, Guanajuato state, Mexico on November 16, 2019.
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References

Centro Mario Molina (2020). *Inventario de Gases y Compuestos de Efecto Invernadero del Municipio de León, Guanajuato y su Zona Metropolitana, 2017. Resumen Ejecutivo.* León. Available at https://leon.gob.mx/modulos/img/adjuntos/adjuntos-584.pdf.

_____ (2021). *Programa Municipal de Cambio Climático de León, Guanajuato.* Centro Mario Molina: Mexico City. Available at https://ab85c0d4-5539-4c14-97f1-5678e2baa2f4.usrfiles.com/ugd/ab85c0_7abdca72080a4185ba50b989ee4ff40d.pdf.

Datamexico (2022). Indicadores económicos de León, Guanajuato. Ciudad de México. Available at https://datamexico.org/es/profile/geo/leon-991103.
Accessed on 19 August 2022.

García-Gómez, Miguel Ángle (2019). *La Ciudad Histórica de León.* Guanajuato Tlacuilo ediciones: Universidad de Guanajuato.

Instituto Municipal de Planeación de León (2019) Diagnóstico del municipio de León 2019. Available at http://www.implan.gob.mx/estudios.php.

_____ (2021a). *Programa de Gobierno Municipal de León, Guanajuato, 2021-2024.* Available at https://implan.gob.mx/pdf/planeacion/programa-gobierno.pdf.

_____ (2021b). Polígonos de Desarrollo. Available at http://plataformaleon.gob.mx/genially.html.

Instituto Nacional de Estadística, Geografía e Informática (2020a). Aportación al Producto Interno Bruto (PIB) nacional. Available at https://cuentame.inegi.org.mx/monografias/informacion/gto/economia/pib.aspx?tema=me&e=11.
Accessed on 19 August 2022.

_____ (2020b). Censo de Población y Vivienda 2020. Available at https://inegi.org.mx/programas/ccpv/2020//.
Accessed on 19 August 2022.

Rodríguez-González, Juan Antonio, and Alex Ricardo Caldera-Ortega (2013). Crecimiento económico y desarrollo local en la región centro-bajío de México. *Quivera Revista de Estudios Territoriales,* vol. 15, pp. 37-59.

Secretaría de Medio Ambiente y Recursos Naturales (2012). Cambio Climático. Una reflexión desde México. México: Gobierno de México y USAID.

Tagle Zamora, Daniel, Alex Ricardo Caldera-Ortega, and Juan Antonio Rodríguez-González (2017). Complejidad ambiental en el Bajío mexicano: implicaciones del proyecto civilizatorio vinculado al crecimiento económico. *Región y sociedad,* vol.29, No. 68, pp. 193-221.

Transformative Urban Coalitions

ABOUT

Transformative Urban Coalitions

The Transformative Urban Coalitions (TUC) project is implemented by the United Nations University - Institute for Environment and Human Security (UNU-EHS), the World Resources Institute (WRI) together with its national offices in Brazil and Mexico, the International Institute for Environment and Development (IIED) together with IIED – América Latina in Argentina, and the German Institute of Development and Sustainability (IDOS), with support from the German Federal Ministry for Economic Affairs and Climate Action under its International Climate Initiative.

TUC seeks to shift the sustainability trajectory of cities towards zero carbon emissions by 2050 by altering the deeper social, technological and political structures and systems that are currently reinforcing high-carbon, resource-intensive urbanization. To achieve this goal, this project facilitates the establishment of transformative urban coalitions in five Latin American cities to develop new strategies for addressing local challenges in urban development and inequality while at the same time reducing carbon emissions.

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