

# THE NORTH OF MEXICO: CHIAROSCUROS OF AN UNEQUAL REGION



February 2023

**SIGNOS VITALES**  
EL PULSO DE MÉXICO



Is a non-profit, non governmental organization that is structured by a Council built up of people with an outstanding track record, with high ethical and professional level, which have national and international recognition and with a firm commitment to democratic and freedom principles.

The Council is structured with an Executive Committee, and Advisory Committee of Specialists and a Communication Advisory Committee, and a Executive Director coordinates the operation of these three Committees.

One of the main objectives is the collection of reliable and independent information on the key variables of our economic, political and sociocultural context in order to diagnose, with a good degree of certainty, the state where the country is located.

Vital Signs intends to serve as a light to show the direction that Mexico is taking through the dissemination of quarterly reports, with a national and international scope, to alert society and the policy makers of the wide variety of problems that require special attention.



*Weak or absent pulse can have many causes and represents a medical emergency.*

*The more frequent causes are the heart attack and the shock condition. Heart attack occurs when the heart stops beating. The shock condition occurs when the organism suffers a considerable deterioration, which causes a weak pulse, fast heartbeat, shallow, breathing and loss of consciousness. It can be caused by different factors.*

*Vital signs weaken and you have to be constantly taking the pulse.*

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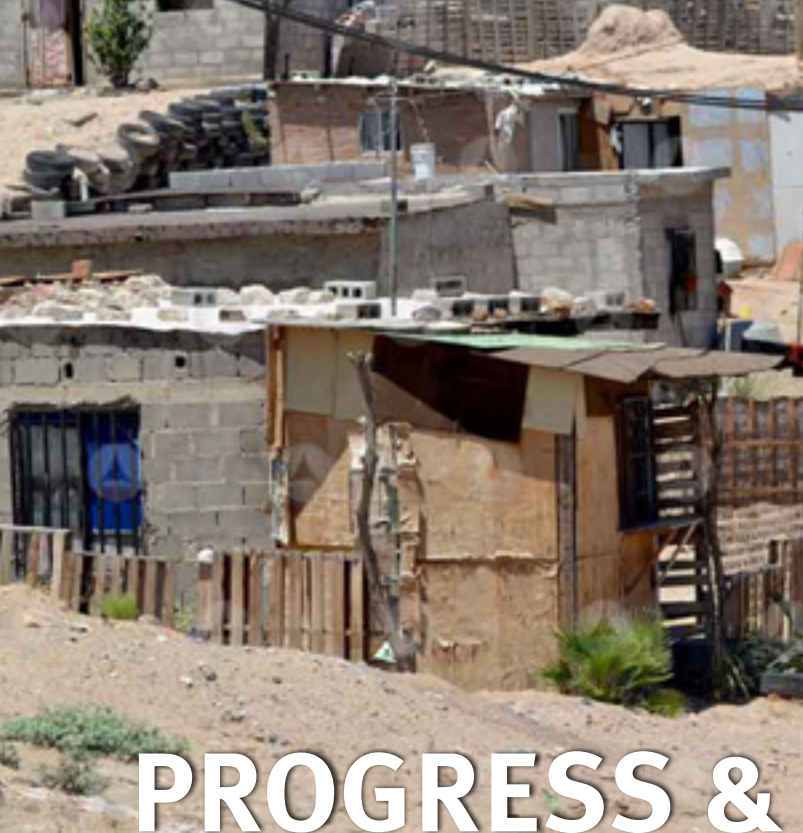
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# EXECUTIVE SUMMARY





# PROGRESS & INEQUALITY

◀ The report on Northern Mexico *The North of Mexico: chiaroscuro of an unequal region* is part of a comprehensive study conducted in the middle of 2022, where the country’s south, central, and metropolitan areas were analyzed. The need to look at and study the country’s regional behavior led Signos Vitales to divide the country into two simple sections: North and South. However, the capital’s metropolitan area, made up of Mexico City and the State of Mexico, due to its importance and the weight it plays in many areas of these analyses, is considered an observation

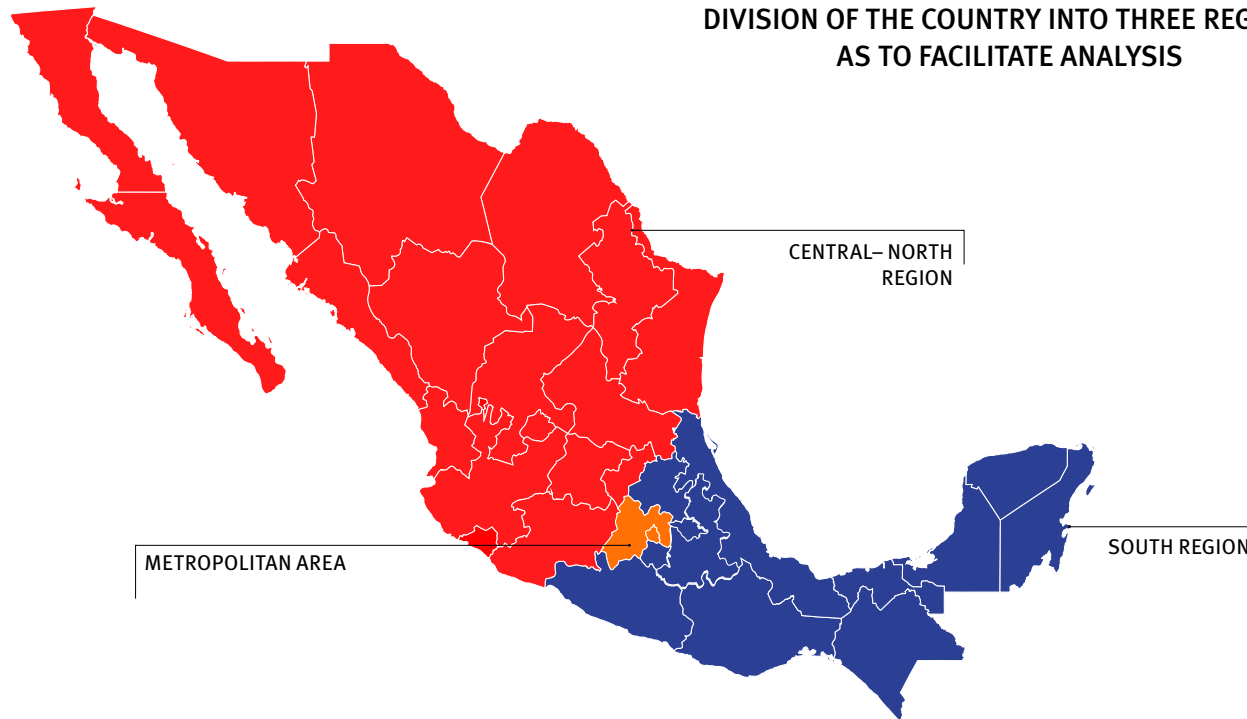
and comparison key area and is therefore included in both studies.

This publication of the Northern region considers 18 states: Aguascalientes, Baja California, Baja California Sur, Chihuahua, Coahuila, Colima, Durango, Guanajuato, Jalisco, Michoacan, Nayarit, Nuevo Leon, Queretaro, San Luis Potosi, Sinaloa, Sonora, Tamaulipas, and Zacatecas. Mexico City and the State of Mexico, the metropolitan area, are added to this group giving a total of 20 states, which are added to

*Images:* “The fight against poverty moves slowly in Mexico” Photo: Archive Norte at <https://nortedigital.mx/va-lento-combate-la-pobreza-mexico/>

“Houses in San Pedro Garza García, N.L.” at <https://www.masterbrokers.mx/property/casa-renta-entre-los-rios-san-pedro-garza-garcia>

## DIVISION OF THE COUNTRY INTO THREE REGIONS AS TO FACILITATE ANALYSIS



the 12 states analyzed in the report of the South to have a national overview. The report *El sur de México: atraso brechas y abandono*<sup>1</sup> (*The South of Mexico: Backwardness, Gaps, and Neglect*).

The differences between these two regions are enormous; each has a unique way of viewing, addressing, and solving public problems. However, a fundamental

<sup>1</sup> The report is available at our website [www.signosvital-es-mexico.org.mx/reportes/](http://www.signosvital-es-mexico.org.mx/reportes/)

commonality lies in the relative lack of impact that the federal, State, and municipal governments have had in achieving sustained goals, progress, and achievements in virtually all areas of impact. Although there have been advances and achievements, there is undoubtedly still an enormous debt to society, which has expected more than it has actually received.

Many entities analyzed in this study border the United States and have been impacted by trade integra-

tion with the United States and Canada. However, they have not always been able to absorb some of the good practices in the United States and transfer them to the governance dynamics within their environments. Thus, the border states and the other states included in this analysis continue with their practices and tasks as usual, without their actions always representing a substantive change for the region and Mexico as a whole.

Undoubtedly, the impact of the northern part of the country represents a transcendental pillar for Mexico's growth and development. This region constitutes a political, economic, and social engine of the country, and at the same time, the border region is a unique area in the world. The border extends along more than 3,000 kilometers. It separates, politically and socially, one of the world's most developed countries from a developing society with severe socioeconomic problems (Lascurain, 2010). Thus, the zone becomes an obligatory route for Mexicans and Central and South American migrants to reach the American dream.

The report has the traditional division that Signos Vitales has used in its Reports and Alerts, a very robust package of information related to governance, social,

**The objective of this report is to have a specialized vision of the Center–North region of Mexico.**

**THIS REGION CONSTITUTES A POLITICAL, ECONOMIC AND SOCIAL MOTOR OF THE COUNTRY, AS WELL AS A UNIQUE BORDER REGION OF THE WORLD.**

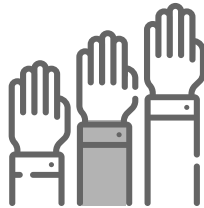
economic, energy, and environmental issues. Following the same line as the previous ones, the report is oriented so that the population in general, as well as specialists and decision-makers in these topics, can make efficient use of the information. This report aims to have a specialized vision of the northern region. At the same time, it can be taken as a comparative element with the report of the South and the metropolitan area of Mexico City.

Together, these two reports, North and South, collect and analyze reliable and independent information on the key variables of our economic, political, and socio-cultural life at the state and regional levels; they report on the State of our country's vital signs, warn

about imminent problems and, finally, leave amply documented reference on the path Mexico is taking.

This report begins with an analysis of GOVERNANCE issues, which shows that the central–northern region of the country has a better performance in democratic terms compared to the South. Still, even so, most of the states have scores below five on a scale of zero to ten. In addition, several northern states are going through a severe insecurity crisis that affects various human rights. The dimension related to citizens’ democracy, which considers the effects of insecurity on the exercise of people’s rights, also presents a decrease in its rating compared to 2020, and in 2021 no entity in the central–north region was considered as highly developed in this dimension.

The report also delves into the problematic issue of MILITARISM. On this issue, Vital Signs has stated that the sustained increase in the power and responsibilities assigned to the Armed Forces, especially during the current administration, represents a direct affront to the Mexican political system. According to the Observatory of the National Guard and the Armed Forces, at least 55 military personnel occupy civilian sphere positions, and 30 are in the center–north of



**The Center–North has a better democratic performance than the South.**

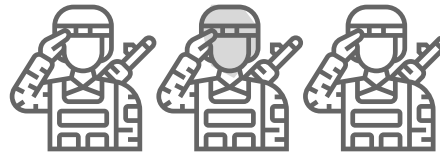
**HOWEVER, IT HAS A SEVERE INSECURITY CRISIS:**

**IN THE CENTRAL–NORTH MOST OF THE CRIME AND INTENTIONAL HOMICIDES ARE COMMITTED IN THE COUNTRY.**

the country. Another relevant indicator presented is the number of National Guardsmen deployed in the national territory, which has been increasing in the central–north region, surpassing the average number of guardsmen deployed in the South.

Similarly, INSECURITY in Mexico has been a primary concern during the XXI century, where crime rates have increased since 2007. Intentional homicide is the most worrying indicator due to the frequency and damage it generates. In 2022 there was a slight decrease in intentional homicides compared to 2021, going from 28 thousand to 26 thousand cases. According to the Executive Secretariat of the National Public Security System, this region of the country is where most crimes and intentional homicides are committed. The states of Mexico, Guanajuato, Jalisco, Baja California, and Nuevo Leon concentrate on the highest incidence of crime in the country. Unfortunately, the majority of femicides also occur in this region.

The report also addresses MEXICO'S POLITICAL SYSTEM, which presents a significant challenge in full compliance with the law. Mexico scores poorly in the World Justice Project's Rule of Law Index 2021, with an average score of 0.40 on a scale of 0 to 1. At the regional level, the country's north is better evaluated

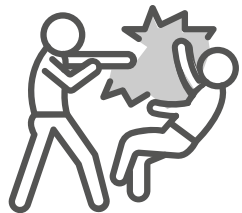


## Militarization in the Center–North

**30 MILITARS OCCUPY CIVILIAN POSITIONS IN THE REGION. THE NUMBER OF NATIONAL GUARDS IS HIGHER TO THOSE SPREAD OUT IN THE SOUTH.**

than the South, with 13 of the 16 states in the center–north scoring better. However, in the evaluation of order and security terms, only seven entities in the center–north maintain a score above the national average. The organization Impunidad Cero presented its Índice Estatal de Desempeño de Procuradurías y Fiscalías 2021 (Prosecutors and Prosecutor's Office Performance State Index), showing that the probability of a crime being reported and solved in Mexico is only 1%. Although the north has a slightly better chance of clarification and effectiveness in solving cases than the South, the results are generally low across the country.

The report also notes that HUMAN RIGHTS VIOLATIONS are more persistent in the central–north region of Mexico due to the presence and strength of criminal groups in the area. The confrontation between cartels and the government has changed the dynamics of organized crime in Mexico, fragmenting criminal organizations and increasing violence. Six major criminal organizations have been identified as active in the country, including the Sinaloa Cartel, the Jalisco Cartel – New Generation, Los Zetas, the Gulf Cartel, the Beltran Leyva Criminal Organization, and Los Caballeros Templarios–La Familia Michoacana, in addition to significant local or regional criminal organizations. At least one of these criminal groups is present in every State in the central–northern part of the country.



### PRESENCE OF THE ORGANIZED CRIME IN ALL STATES OF THE CENTER–NORTH OF MEXICO.

In terms of the entire social fabric, the report shows that in northern Mexico, there are still high levels of POVERTY below the national average, evidencing problems of inequality and food insecurity. Security management and policies and inadequate intergovernmental coordination have also caused social havoc, deprivation, and limitations to social welfare in the North of Mexico.

Collective violence in the country’s north tends to increase inequalities between groups of people and slow economic development. For example, labor income in the north is five times higher than the national average, but there are still economic inequalities and limitations to social development in the region. Nevertheless, the report shows that while patterns of social mobility between generations in Mexico vary significantly across areas of the country, the best opportunities are for those born in the north compared to the South.

In this sense, there is a high persistence of wealth and poverty, where people from economically advantaged households have a high probability of remaining in that situation in adulthood. In contrast, those born in poverty are likely to stay in that same condition. The report shows that social mobility is more

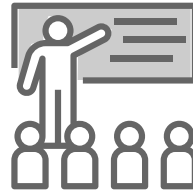


significant in the northern states, with higher levels of development. However, although the north presents more significant opportunities, in 2020, a generalized fall in the Basic Human Needs dimension was observed in the northern states. Having more does not mean being better off.

The report also describes education as an essential element in fighting poverty. However, in Mexico, there is structural inequality in access to the right to education. It is evident that even though the federal government has promoted various educational scholarships, data indicates that support for people with the lowest incomes who attend public school and receive “scholarships” has decreased since 2016, both nationally and in the northern region (from 20.9% of the poor population with scholarship in 2016 to 18.8% in 2018 dropping to 13.2% in 2020). Equally alarming, the health sector presents gaps and lags in Mexico.



**SOCIAL MOBILITY IS HIGHER IN THE NORTHERN STATES, WHERE THERE ARE HIGHER LEVELS OF DEVELOPMENT.**



**Structural inequality exists in access to the right of education, also in the Center–North.**

**SUPPORT FOR PEOPLE WITH THE LOWEST INCOMES WHO ATTEND PUBLIC SCHOOL AND RECEIVE “SCHOLARSHIPS” HAS DECREASED FROM 18.8% IN 2018 TO 13.2% IN 2020.**

The report talks about how health can be affected by various factors, such as access to food, which is considered a physical and economic right. In Mexico, 6 out of 10 households (59.1%) have some food insecurity degree and higher levels in the rest of the country than in the north, according to Coneval.

Regarding science and technology, one of the findings indicates that the low level of investment in Mexico has led to the weakest results in innovation and sophistication in the economic sectors. IMCO has found that only four of the 32 federal entities presented a “high” innovation sub-index in 2022, with Jalisco being the highest, followed by Mexico City, Queretaro, and Nuevo Leon, all belonging to the north of the country and the metropolitan area. The index also reveals that all entities worsened in the sub-index indicators from 2021 to 2022, with a decrease in the number of patents, research centers, productivity, and economic complexity in innovation sectors.

**The lack of investment in science and technology, has provoked the lowest results in innovation and sophistication.**

**ONLY FOUR STATES SHOWED A “HIGH” INNOVATION SUBINDEX IN 2022; JALISCO WAS THE HIGHEST, FOLLOWED BY MEXICO CITY, QUERETARO AND NUEVO LEON.**

The report considers the areas of **ECONOMY, ENERGY, AND ENVIRONMENT**, highlighting that recent economic growth in the northern region of Mexico has not been optimal. Despite the progress after the great confinement, the lag is still notorious. Entities such as Coahuila, Guanajuato, Nuevo Leon, San Luis Potosi, and Tamaulipas have not recovered from the level of activity recorded in the last quarter of 2018. The loss in production has been moderately offset by higher economic activity in the rest of the entities in the region, especially in those economies that generate higher value added. However, only Baja California and Nayarit are above their long-term trajectory.

The price rise (annual inflation of 7.8%) has accompanied this weak and heterogeneous performance. The main obstacle to growth in economic activity over the next six months is inflation, according to business representatives consulted by Banco de Mexico. Nevertheless, the northern region has contributed the most to the growth of the wage bill, with 45.4% (9 billion pesos) and a growth of 5.6%. However, wage growth in this region has not been enough to compensate for the growth of the working-age population and the prices increase in 11 of the entities that make up the northern region, which has affected the life quality of its inhabitants.

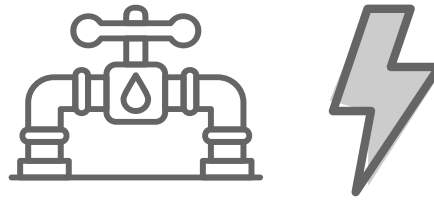




Private consumption in northern Mexico has not reached a pre-pandemic level. In the country as a whole, personal consumption has been weak and driven mainly by an increase in activity in the Metropolitan Zone. Gross fixed investment in all regions of the country has declined, affecting the supply and quality of public services and limiting economic growth. The north, used as a lifeline for the rest of the country, is now in similar conditions to the rest of the regions. Foreign Direct Investment (FDI) in Mexico grew 13% in the first three quarters of 2022 compared to the same period of the previous year. The country's north received 42.1% of FDI growth, concentrating a total of 371.8 billion dollars.

Mexico's northern region has competitive economic advantages but faces limitations in some sectors, particularly electricity transmission. The country needs significant power generation and transmission investments to meet its growing demand. Still, paral-

**THE CENTRAL-NORTHERN REGION HAS CONTRIBUTED THE MOST TO THE GROWTH OF THE WAGE BILL, WITH 45.4% (9 BILLION PESOS) AND A GROWTH OF 5.6%.**



**The Center-North has competitive economic advantages, but faces limitations, particularly in electric energy transmission.**

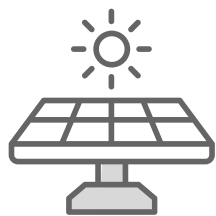
**MEXICO DOES NOT TAKE ADVANTAGE OF THE FREE MARKET NOR THE PROXIMITY WITH THE UNITED STATES TO STORE NATURAL GAS. IT ONLY HAS 2.4 DAYS OF STORAGE.**

ysis in transmission capacity has generated bottlenecks in the power grid and affected the wholesale market and system reliability. In 2021, there were a high number of declarations of emergency and alert operating states due to the lack of infrastructure in the transmission network, which has mainly affected the north of the country.

Even though Mexico has one of the most extensive gas pipeline networks in the world and is a neighbor

of the largest natural gas producer, it does not take advantage of the free market or the proximity to store natural gas. Mexico has only 2.4 days of natural gas storage in three facilities, far below other countries. Northern Mexico has excellent energy potential but has been affected by decisions made by the federal government, such as the cancellation of exploration rounds and the extraction of conventional and non-conventional resources, the lack of exploitation of wind and solar potential, and the reform of the Mining Law that establishes that the exploration, exploitation, and use of lithium are activities to be carried out by the State.

Finally, the report addresses a section aimed at understanding the environmental panorama in northern Mexico. It is worth mentioning that the country, in general, has a long-standing backlog in terms of environmental policy implementation. For decades, support by the three levels of government for ecological issues has been precarious. For clear evidence, it



**IT CAN BE ADDED THE LACK OF EXPLOITATION OF WIND AND SOLAR POTENTIAL, AMONG OTHERS.**

**Sloppiness, disinterest, negligence, and ignorance of the environmental issue has been the way to handle it in the country.**

**THE NORTHERN STATES ALSO FACE EVIDENT BACKWARDNESS REGARDING WATER, SOIL, AND AIR MANAGEMENT.**

is enough to look at the National Development Plan 2019–2024 and the Sectoral Program for the Environment and Natural Resources to understand the sloppiness, disinterest, negligence, and ignorance of the environmental issue being handled in the country.

Even though it could be thought that the proximity of the entities that border the United States could reflect advances or improvements in their environmental and institutional capacities, the reality is very different. Their backwardness is evident regarding water, soil, and air management. All the North entities lack updated data and relevant information for decision-making. In terms of water, even though practically all the entities analyzed have more than 90% of the wa-

ter services, such as drainage, sanitation, and piped water, their quality, and efficiency pose an enormous question mark. In terms of total soil degradation by State, the most affected states are Chihuahua, the State of Mexico, Mexico City, Guanajuato, Queretaro, Nuevo Leon, and Sonora. All have more than 65% degradation—leaving the two Baja Californias, Colima, Durango, and Sinaloa, as the entities with the minor degradation, regarding the number of days per year in which any current air quality standard is exceeded per State and its metropolitan area, the metro area has reached more than 270 days per year, quantifying up to three different types of pollutants. Guadalajara, Jalisco, is in the same situation, with at least three pollutants detected.

This report shows the chiaroscuro of a region that has registered economic growth far above the rest of the country but has concentrated on many problems of organized crime, insecurity, and environmental deterioration.

**This report presents the chiaroscuro of a region that has registered economic growth far above the rest of the country but has concentrated on many problems of organized crime, insecurity, and environmental deterioration.**





# GOVERNANCE





# UNSTOPPABLE VIOLENCE

Since the Constitution of 1857, it was decided that the Mexican State would be organized as a federation and would provide the federative entities with a good level of autonomy. The establishment of the single-party system during much of the 20th century left this constitutional mandate in effect. The country was organized more as a unitary state with a significant centralization of competencies in the federal government. The transition to an electoral democracy partially modified this concentration, and the dif-

ficulty of building a national project governed by the federation increased regional differences.

In terms of governance, the main problem experienced by central-north Mexico has to do with insecurity and violence. This does not mean that this region does not have significant challenges pending in other areas, but rather that most of its debts to society result from an evident governmental incapacity to guarantee the first of the public goods with which a State must comply: security.

*Image: “Violence triggers in the North of Mexico: attacks are reported in Tijuana, Tecate, Mexicali and Baja California” at <https://opinion-sonora.com/2022/08/12/se-desate-la-violencia-en-el-norte-de-mexico-reportan-ataques-y-atentados-en-tijuana-tecate-mexicali-y-baja-california/>*

This section will review how democracy in the center–north of the country has been negatively affected by the consequences of violence and insecurity on people’s rights and liberties. We observe the accelerated advance of militarization, which, although it is generalized, has an essential regional accent, partly as a consequence of the incidence of crime, which, as will be seen below, has focused on particular areas of central and northern Mexico, where organized crime has also taken control of large areas of territory. This has worsened the country’s rule of law levels, hindering the exercise of such essential human rights as life and liberty.

THE ACCELERATED ADVANCE OF MILITARIZATION, HAS AN ESSENTIAL REGIONAL ACCENT, PARTLY AS A CONSEQUENCE OF THE INCIDENCE OF CRIME, WHICH HAS FOCUSED ON PARTICULAR AREAS OF CENTRAL AND NORTHERN MEXICO, WHERE ORGANIZED CRIME HAS ALSO TAKEN CONTROL OF LARGE AREAS OF TERRITORY.

## DEMOCRATIC DEVELOPMENT INDEX IN THE CENTER–NORTH REGION OF MEXICO

As discussed in our report *The South of Mexico: Backwardness, Gaps, and Neglect*,<sup>2</sup> the formation of a democracy is a lengthy process that requires the creation of institutions, the enhancement of freedoms, the protection of human rights, as well as the development of an advanced political culture. Mexico’s transition to a pluralistic democratic system has been a long process that spanned the latter part of the 20th century and part of the XXI century. As has been observed, this federal democratic transition has not necessarily been matched at the sub–national level, where there is an excellent variety in democratic development. In this installment, we review the situation of democracy in the central–northern part of the country.

Generally, Mexico’s Democratic Development Index 2021, the latest available, shows subnational democratic regression. The overall average of the index in 2020 was 5.4 and dropped to 4.1 in 2021. While in 2020, eight states had high democratic develop-

<sup>2</sup> For further information, see [Reporte–2–2022.pdf \(signosvitaesmexico.org.mx\)](#)

ment, by 2021, only two were considered as such. Furthermore, in 2021 eight entities were considered minimal democracies, two more than in 2020 (Konrad Adenauer Foundation *et al.*, 2022).

As expected, the central–north region hosts most of the top–ranked states by this index. In this report, the average for the 18 states considered central–north Mexico was 4.4 for 2021, slightly higher than the 3.7 points average for southern Mexico<sup>3</sup>. Although the central–north region does not have any state considered advanced in democratic terms (only Yucatan and Hidalgo are in this category), nine of the ten states with medium democratic development are from the north. In contrast, 6 of the 12 states with low democratic development and 3 of the entities with minimal democratic development are from the center–north of the country (Konrad Adenauer Foundation *et al.*, 2022).

The good comparative result of the central–northern region should not be a cause for celebration since most states scored below five on a scale of zero to ten, where ten is the best score. Likewise, several northern states have long been going through a

<sup>3</sup> The states considered in this report to be part of the south are all those not included in the central–north region, plus Mexico City and the State of Mexico.



Image: Democratic Development Index of Mexico 2021.

severe insecurity crisis that affects several human rights, including the right to life and security. In fact, of the four dimensions measured by the index, the second was the one that worsened in 2020 (Konrad Adenauer Foundation *et al.*, 2022). In it, the citizens' democracy is measured, and one of the indicators considered in this item is the conditioning of freedoms and rights due to insecurity.

Considering center–north states of the country only, it is observed that the dimension related to citizens' democracy –where insecurity effects on the exercise

of people's rights are contemplated— presents a decreased score concerning 2020 (from 4.98 to 4.42). In addition, in 2021 no central–north region entity was considered as highly developed in this dimension (in 2020 Tamaulipas did enter this category). Furthermore, in 2020, 9 entities of the central–north region were qualified as democracies with medium development. By 2021 there were only six. On the contrary, while in 2020, eight states in this region considered democracies with low or minimal development, by 2021, there were twelve (Konrad Adenauer Foundation *et al.*, 2022).

Militarism is understood as the influence of the military apparatus in the orientation of state power (Fernandez & Martinez, 1984), which implies the influence or even the predominance of military control over civilian power in the field of public decisions in general and not only in those related to defense and security, is undoubtedly one of the main threats to democracy and freedoms in Mexico. Signos Vitales has consistently argued that the sustained increase in the power and responsibilities assigned to the Armed Forces (FFAA for its acronym in Spanish) in the last six years, but notably accelerated during the current administration, represents a direct affront to the entire Mexican political system.

TABLE 1. DIMENSION 1 OF THE DEMOCRACY DEVELOPMENT INDEX (IDD) FOR CENTRAL–NORTHERN STATES

STATE	2020	2021
Aguascalientes	5,092	4,295
Baja California	4,465	3,479
Baja California Sur	6,328	4,311
Chihuahua	2,978	3,727
Coahuila	4,623	3,749
Colima	3,362	2,681
Durango	4,421	5,873
Guanajuato	5,045	4,351
Jalisco	6,089	4,225
Michoacan	2,887	4,561
Nayarit	4,24	4,348
Nuevo Leon	3,833	3,514
Queretaro	6,933	6,510
San Luis Potosi	6,394	6,346
Sinaloa	5,182	4,529
Sonora	6,716	3,655
Tamaulipas	7,046	3,805
Zacatecas	4,174	5,686
<b>AVERAGE</b>	<b>498,933,333</b>	<b>442,472,222</b>

Source: In house elaboration with information from Konrad Adenauer Foundation *et al.* (2022)



One of the indicators that shows the speed with which this government has ceded formal power within the administration is the number of military personnel in civilian positions within the federal public administration. As has been repeated in several reports, most of the members of the National Guard are military personnel transferred from the Secretariat of National Defense (Sedena for its acronym in Spanish) and the Marine Secretariat (Semar for its acronym in Spanish) to the Security Secretariat and Citizen Protection (SSPC for its acronym in Spanish) and continue to maintain their positions in the Armed Forces. Therefore, it can be said that the National Guard's work has a military character under the government's regulations on security matters<sup>4</sup>.

According to the Observatory of the National Guard and the Armed Forces, at least 55 military personnel occupy positions in the civilian sphere. Of these, 30 are working in the center-north of the country. At least ten military personnel serve as directors of the National Migration Institute's offices in the center-north of the country; seven are general directors of

<sup>4</sup> The new security regulations have been composed of several laws that violate various human rights. Some of these are the National Guard Law, the National Law on the Use of Force, and the General Law of the National Public Security System.

integral port administrations, and thirteen work in the police or security-related institutions (Causa en Comun, 2021).

As can be seen, Baja California Sur and Tamaulipas are the states in the north of the country with the most military personnel controlling administrative positions, followed by Colima and Sonora. On the other hand, states such as Nuevo Leon, Queretaro, San Luis Potosi, Durango, and Zacatecas have no sig-



*Image: "Mexico hardened military migration controls with 21,500 guards". Photo Reuters/José Torres at <https://www.infobae.com/america/mexico/2019/06/24/mexico-endurecio-sus-controles-migratorios-con-21500-uniformados/>*

TABLE 2. MILITARY ELEMENTS IN THE CIVILIAN SPHERE 1/6

STATE	INSTITUTION/ UNIT	NAME	PREVIOUS POSITION	CURRENT POSITION	STARTIN DATE OF FUNCTIONS	
AGUASCA- LIENTES	National Migration Institute	Pedro León Álvarez Alcacio		Brigadier General IC DEM	Head of Representative Office	17/03/2020
<i>Image:</i> <a href="https://twitter.com/sggdurango/status/1468235846839111681">https://twitter.com/sggdurango/status/1468235846839111681</a>						
BAJA CALIFORNIA	Integral Port Administration	Manuel Fernando Gutiérrez Gallardo		Captain in Deep Fishing	General Director	14/08/2020
<i>Image:</i> <a href="https://elbarlovento.com.mx/marina-mercante/cap-alt-manuel-fernando-gutierrez-gallardo-nuevo-director-general-de-api-ensenada/">https://elbarlovento.com.mx/marina-mercante/cap-alt-manuel-fernando-gutierrez-gallardo-nuevo-director-general-de-api-ensenada/</a>						
BAJA CALIFORNIA SUR	Municipal Traffic of Los Cabos	Jesús Antonio Gómez Rodríguez		Captain	Director	03/09/2019
<i>Imagen:</i> <a href="https://tribunadeloscabos.com.mx/80-porciento-llamadas-911-son-falsas/">https://tribunadeloscabos.com.mx/80-porciento-llamadas-911-son-falsas/</a>						
BAJA CALIFORNIA SUR	Secretariat of Public Security	Germán Wong López (destituido en 2019 y reem- plazado por Luis A Cancino Vicente)		Ship Captain	Secretary	07/02/2018
<i>Image:</i> <a href="https://www.elsudcaliforniano.com.mx/local/destituyen-al-secretario-de-seguridad-publica-estatal-anuncia-cmd-7063050.html">https://www.elsudcaliforniano.com.mx/local/destituyen-al-secretario-de-seguridad-publica-estatal-anuncia-cmd-7063050.html</a>						
BAJA CALIFORNIA SUR	La Paz Local Police	Armando Valdez		Corvette Captain	Director	12/08/2019






*Image:* <https://colectivopericu.files.wordpress.com/2019/08/x-omar-armando-valdez-policia-la-paz.jpg>

TABLE 2. MILITARY ELEMENTS IN THE CIVILIAN SPHERE 2/6

ESTADO	INSTITUCIÓN/ DEPENDENCIA	NOMBRE		CARGO PREVIO	CARGO ACTUAL	FECHA DE INICIO DE FUNCIONES
BAJA CALIFORNIA SUR	Municipal Transit of Loreto	Carlos Lenin López Torres		Naval Lieutenant	Director	17/10/2019
<i>Image: <a href="https://aldiabcs.com/loreto/rinde-protesta-director-de-seguridad-publica/">https://aldiabcs.com/loreto/rinde-protesta-director-de-seguridad-publica/</a></i>						
BAJA CALIFORNIA SUR	Municipal Transit of Mulege	Lizandro Castan Melchor		Naval Lieutenant	Director	19/02/2019
<i>Image: <a href="https://es-la.facebook.com/guerrerodesal/videos/estamos-teniente-de-nav%C3%ADo-lizandro-castan-melchor-director-de-seguridad-p%C3%BAblica-/385216195536094/">https://es-la.facebook.com/guerrerodesal/videos/estamos-teniente-de-nav%C3%ADo-lizandro-castan-melchor-director-de-seguridad-p%C3%BAblica-/385216195536094/</a></i>						
CHIHUAHUA	National Migration Institute	Pedro Alberto Alcalá López		General	Titular de Oficina de Representación	17/03/2020
<i>Image: <a href="https://netnoticias.mx/juarez/presentan-a-nuevo-titular-del-inm/">https://netnoticias.mx/juarez/presentan-a-nuevo-titular-del-inm/</a></i>						
COAHUILA	National Migration Institute	José de Jesús Barajas Santos		Major General PADEMA	Titular de Oficina de Representación	21/08/2019
<i>Image: <a href="https://vanguardia.com.mx/coahuila/saltillo/nombran-al-general-jose-de-jesus-barajas-como-titular-de-migracion-en-coahuila-PTVG3478153">https://vanguardia.com.mx/coahuila/saltillo/nombran-al-general-jose-de-jesus-barajas-como-titular-de-migracion-en-coahuila-PTVG3478153</a></i>						
COLIMA	Integral Port Administration	Salvador Gómez Meillón		Admiral	Director General	02/09/2020






*Image: <https://prensalibre.si/?p=3324>*

TABLE 2. MILITARY ELEMENTS IN THE CIVILIAN SPHERE 3/6

ESTADO	INSTITUCIÓN/ DEPENDENCIA	NOMBRE		CARGO PREVIO	CARGO ACTUAL	FECHA DE INICIO DE FUNCIONES
COLIMA	Secretariat of Public Security	Carlos Jesús Miravete		Jurisdictional Analyst Fourth Naval Region	Subsecretario de Operaciones	18/06/2020
<i>Image: <a href="https://www.colimanoticias.com/carlos-jesus-miravete-estrada/">https://www.colimanoticias.com/carlos-jesus-miravete-estrada/</a></i>						
COLIMA	Secretariat of Public Security	Fernando Troncoso Torres		General Director of Private Security of the State of Puebla	Director General de Policía Auxiliar	18/06/2020
<i>Image: <a href="https://www.colimanoticias.com/fernando-troncoso-torres/">https://www.colimanoticias.com/fernando-troncoso-torres/</a></i>						
COLIMA	National Migration Institute	Ramón Juárez Suárez		Vice Admiral CG	Titular de Oficina de Representación	17/03/2020
<i>Image: <a href="https://www.facebook.com/photo/?fbid=937434973073371&amp;set=a.937434993073369">https://www.facebook.com/photo/?fbid=937434973073371&amp;set=a.937434993073369</a></i>						
GUANA- JUATO	National Migration Institute	Enrique Aviña Gutiérrez		Brigadier General DEM	Titular de Oficina de Representación	21/08/2019
<i>Image: <a href="https://twitter.com/diegosinhue/status/1305678046649888769/photo/1">https://twitter.com/diegosinhue/status/1305678046649888769/photo/1</a></i>						
JALISCO	Integral Port Administration	Víctor Francisco Uribe Arévalo		Admiral	Director General	07/08/2020

*Image: <https://www.ensenada.net/noticias/nota.php?id=44815>*






TABLE 2. MILITARY ELEMENTS IN THE CIVILIAN SPHERE 4/6

ESTADO	INSTITUCIÓN/ DEPENDENCIA	NOMBRE		CARGO PREVIO	CARGO ACTUAL	FECHA DE INICIO DE FUNCIONES
JALISCO	National Migration Institute	Pedro Valencia Salcedo		Brigadier General DEM	Titular de Oficina de Representación	21/08/2019
<i>Image: <a href="https://www.gob.mx/inm/galerias/comisionado-del-inm-toma-protesta-a-pedro-valencia-salcedo-como-titular-de-la-oficina-de-representacion-en-jalisco">https://www.gob.mx/inm/galerias/comisionado-del-inm-toma-protesta-a-pedro-valencia-salcedo-como-titular-de-la-oficina-de-representacion-en-jalisco</a></i>						
MICHOACÁN	Integral Port Administration	Jorge Luis Cruz		Admiral	Director General	02/09/2020
<i>Image: <a href="https://twitter.com/nmas/status/961954213143171072/photo/1">https://twitter.com/nmas/status/961954213143171072/photo/1</a></i>						
MICHOACÁN	National Migration Institute	Salomón Maldonado Silva		Brigadier General DEM	Titular de Oficina de Representación	21/08/2019
<i>Image: <a href="https://twitter.com/INAMI_mx/status/1175186668673888256/photo/1">https://twitter.com/INAMI_mx/status/1175186668673888256/photo/1</a></i>						
NAYARIT	National Migration Institute	Miguel Ángel Nophal Balderas		Brigadier General	Titular de Oficina de Representación	17/03/2020
SINALOA	Integral Port Administration	Mariel Aquileo Ancona		Rear Admiral	Director General	02/09/2020

*Image: <https://tvpacifico.mx/noticias/286756-nueva-terminal-portuaria-si-va-asegura-asipona>*



TABLE 2. MILITARY ELEMENTS IN THE CIVILIAN SPHERE 5/6

ESTADO	INSTITUCIÓN/ DEPENDENCIA	NOMBRE		CARGO PREVIO	CARGO ACTUAL	FECHA DE INICIO DE FUNCIONES
SINALOA	National Migration Institute	Genaro García Wong		Brigadier General DEM	Titular de Oficina de Representación	17/03/2020
SONORA	Hermosillo Municipal Police	Gilberto Landeros Briseño		Retired Major Ge- neral of the General Staff	Comisionado General	15/08/2019
<i>Image:</i> <a href="https://www.razon.com.mx/estados/asume-general-gilberto-landeros-titularidad-secretaria-seguridad-ciudadana-bc-465795">https://www.razon.com.mx/estados/asume-general-gilberto-landeros-titularidad-secretaria-seguridad-ciudadana-bc-465795</a>						
SONORA	Guaymas Department of Public Safety	Andrés Humberto Cano Ahuir (renunció en noviembre de 2021)		Captain	Director de Seguridad Pública	21/08/2019
<i>Image:</i> <a href="https://www.sdpnoticias.com/estados/sonora/quien-es-andres-cano-ahuir-secretario-de-seguridad-municipal-en-guaymas/">https://www.sdpnoticias.com/estados/sonora/quien-es-andres-cano-ahuir-secretario-de-seguridad-municipal-en-guaymas/</a>						
SONORA	Empalme Department of Public Safety	Luis Alberto Taylor (dejó su puesto en agosto de 2022)		Naval Lieutenant	Comisario General de Seguridad Pública	15/04/2020
<i>Image:</i> <a href="https://www.radarsonora.com/luis-alberto-taylor-deja-la-comisaria-de-seguridad-en-empalme/">https://www.radarsonora.com/luis-alberto-taylor-deja-la-comisaria-de-seguridad-en-empalme/</a>						
SONORA	National Migration Institute	Salvador González Guerrero		Rear Admiral CG DEM	Titular de Oficina de Representación	17/03/2020

*Image:* [https://m.facebook.com/848008481893903/photos/a.848552278506190/5095447203816655/?locale=ne\\_NP&\\_rdr](https://m.facebook.com/848008481893903/photos/a.848552278506190/5095447203816655/?locale=ne_NP&_rdr)

TABLE 2. MILITARY ELEMENTS IN THE CIVILIAN SPHERE 6/6

ESTADO	INSTITUCIÓN/ DEPENDENCIA	NOMBRE		CARGO PREVIO	CARGO ACTUAL	FECHA DE INICIO DE FUNCIONES
TAMAULI- PAS	Integral Port Administration	Miguel Báez Barrera		Vice Admiral	Director General de API Tampico	10/08/2020
<i>Image: <a href="https://enlineadirecta.info/2020/08/10/378315/">https://enlineadirecta.info/2020/08/10/378315/</a></i>						
TAMAULI- PAS	Integral Port Administration	Óscar Miguel Ochoa Gorena		Captain in Deep Fish	Director General de API Altamira	10/08/2020
<i>Image: <a href="https://www.puertoaltamira.com.mx/esps/0002932/api-altamira-dona-plantas-a-los-municipios-de-la-zona">https://www.puertoaltamira.com.mx/esps/0002932/api-altamira-dona-plantas-a-los-municipios-de-la-zona</a></i>						
TAMAULI- PAS	State Police	Rodrigo Bautista		Lieutenant	Jefe de Delegación Estatad en la Zona Sur	27/08/2019
TAMAULI- PAS	Secretariat of Public Safety	José Jorge Ontiveros Molina		Captain	Secretario de Seguridad Pública del Estado	20/07/2020
<i>Image: <a href="https://usecim.net/2022/03/29/tamaulipas-con-grandes-aciertos-en-el-rescate-de-la-seguridad-publica/">https://usecim.net/2022/03/29/tamaulipas-con-grandes-aciertos-en-el-rescate-de-la-seguridad-publica/</a></i>						
TAMAULI- PAS	Tampico Traffic and Highway Department	René Naranjo Sánchez		Navío	Titular	27/01/2020
<i>Image: <a href="https://diariodebate.com/tampico/buscan-mayor-movilidad-en-calles-de-los-mercados/">https://diariodebate.com/tampico/buscan-mayor-movilidad-en-calles-de-los-mercados/</a></i>						

Source: In-house elaboration with information from Causa en Común (2021).

nificant military presence in civilian positions. In other words, a large part of military inclusion in public administration focuses on specific entities, which is expected to increase steadily in the following years.

Another relevant indicator to understand the level of militarization by region is the number of national guards deployed in the national territory. Although in 2019, the year in which the National Guard was created, the average number of elements deployed per State in the center–north of the country (1,933.2) was lower than the corresponding average for southern states (2,383.7). That trend has been reverted, partly as a security crisis sign presented by specific entities such as Guanajuato, Jalisco, and Michoacan, but also as a civilian force weakness sign in that country’s region. While in 2019, the central–north zone of Mexico averaged 1,933 guards per entity in the area, by 2021, that figure was already 2,818, thus surpassing the average number of guards deployed in the South that year, which equaled 2,711 (Observatorio de la Guardia Nacional y la Militarización en Mexico, 2022).

TABLE 3. NUMBER OF NATIONAL GUARDS DEPLOYED BY STATE IN THE CENTER–NORTH OF THE COUNTRY

STATE	DEC 2019	DEC 2020	DEC 2021	DEC 2022
<b>TOTAL</b>	<b>34,798</b>	<b>46,015</b>	<b>48,368</b>	<b>43,060</b>
<b>AVERAGE NUMBER OF GUARDS BY STATE</b>	<b>1,933</b>	<b>2,556</b>	<b>2,687</b>	<b>2,818</b>
Aguascalientes	524	377	364	839
Baja California	1,888	2,099	2,119	1,639
Baja California Sur	842	1,098	1,385	870
Chihuahua	2,025	2,547	2,542	3,090
Coahuila	1,438	2,222	2,160	2,258
Colima	902	805	992	789
Durango	680	1,356	1,324	1,625
Guanajuato	3,326	6,880	6,260	6,644
Jalisco	3,848	5,842	6,384	4,500
Michoacan	4,362	4,961	6,171	4,640
Nayarit	977	1,091	1,275	1,026
Nuevo Leon	2,131	2,357	2,405	2,874
Queretaro	1,782	1,098	1,090	1,006
San Luis Potosi	1,231	1,153	1,349	1,179
Sinaloa	1,662	3,650	4,124	3,989
Sonora	2,621	2,459	2,669	2,007
Tamaulipas	2,912	3,880	3,827	2,665
Zacatecas	1,647	2,140	1,928	1,420

Source: In-house elaboration with information from Observatorio de la Guardia Nacional y la Militarización en Mexico (2022).



**TABLE 4. NUMBER OF NATIONAL GUARDS DEPLOYED BY STATE  
IN THE SOUTH OF THE COUNTRY**

STATE	DEC 2019	DEC 2020	DEC 2021	DEC 2022
<b>TOTAL</b>	<b>27,618</b>	<b>29,306</b>	<b>29,724</b>	<b>29,232</b>
<b>AVERAGE NUMBER OF GUARDS BY STATE</b>	<b>2,301.5</b>	<b>2,442</b>	<b>2,477</b>	<b>2,436</b>
Campeche	874	921	915	1,004
Chiapas	3,369	3,484	3,762	3,810
Guerrero	3,311	4,304	3,438	2,951
Hidalgo	2,043	1,941	1,817	1,810
Morelos	1,397	1,269	1,206	1,241
Oaxaca	4,323	5,097	5,344	4,699
Puebla	3,066	3,464	3,387	2,435
Quintana Roo	1,994	1,653	1,717	2,462
Tabasco	1,587	1,713	2,047	2,067
Tlaxcala	697	557	568	1,812
Veracruz	4,198	4,287	4,666	4,045
Yucatan	759	616	857	896

*Source:* In house elaboration with information from Observatorio de la Guardia Nacional y la Militarización en Mexico (2022).

**GROWTH OF THE NATIONAL GUARD IN  
THE CENTER-NORTH REGION:**

IN 2019: 1,933 GUARDS BY STATE

IN 2021: 2,818 GUARDS BY STATE

**AVERAGE NUMBER OF GUARDS IN  
THE SOUTH:**

IN 2021: 2,711

## ◀ PUBLIC SECURITY

It is not news that insecurity has been a great concern of Mexican society for almost the entire 21st century. The increase in crime rates recorded since 2007 has not been contained by any government (Signos Vitales, 2022a). Although there have been years of improvements, the general evaluation of the matter is negative. Of course, intentional homicide is the most worrisome indicator, not only because of the frequency with which it occurs but also because of the harm it generates for the direct and indirect victims of this crime—the year 2022 presented a slight decrease in intentional homicides concerning 2021, going from 28,279 to 26,273 cases. As noted, only murder, not counting femicides, has bordered on 30 thousand records since 2019, according to the Executive Secretariat of the National Public Security System (SESNSP, 2023). Moreover, while the whole country has been a victim of this type of violence, some states are red hot spots.

First, it is worth mentioning that between January and December 2022 alone, the SESNSP reported 2,141,951 crimes in the country. Most of these occurred in central–northern Mexico, where 48.2% of the records were lodged (SESNSP, 2022). The South

accounted for 22.3%. Although the State of Mexico and Mexico City are the entities with the highest incidence of crime (29.4% of total records), partly due to the size of their population, states such as Guanajuato, Jalisco, Baja California, and Nuevo Leon concentrate a large part of the country’s crime incidence (SESNSP, 2022), each of these states exceeds 100 thousand criminal records.

Using intentional homicides as the leading indicator to measure violence, it is observed that between January and October 2022, eight of the ten most violent municipalities in Mexico are located in the center–north of the country. Only Tijuana, the most violent municipality (1,525 homicides), is twice as violent as Ciudad Juarez (749 homicides), its closest competitor. The eight most violent municipalities in the center–north of the country alone account for one–fifth of the total number of homicides in the entire national territory (20.1%) (Causa en Comun, 2022a).

When comparing intentional homicide incidence corresponding to the period from January to October 2021 with that of the same period, but in 2022, it can be seen that 15 of the 18 states for this report make up

TABLE 5. INCIDENTS BY FEDERAL ENTITY

FEDERAL ENTITY	INCIDENTS	FEDERAL ENTITY	INCIDENTS	FEDERAL ENTITY	INCIDENTS
<b>CENTER-NORTH REGION</b>		<b>SOUTH REGION</b>		<b>METROPOLITAN AREA</b>	
Aguascalientes	39,571	Campeche	35,536	Mexico City	232,641
Baja California	109,721	Chiapas	16,002	State of Mexico	397,513
Baja California Sur	20,486	Guerrero	27,119	<b>TOTAL</b>	<b>630,154</b>
Chihuahua	73,206	Hidalgo	52,588		
Coahuila	64,608	Morelos	44,284		
Colima	28,692	Oaxaca	43,340		
Durango	26,434	Puebla	77,106		
Guanajuato	141,340	Quintana Roo	51,297		
Jalisco	128,401	Tabasco	45,448		
Michoacan	45,374	Tlaxcala	4,415		
Nayarit	9,152	Veracruz	86,155		
Nuevo Leon	105,732	Yucatan	4,209		
Querétaro	58,688	<b>TOTAL</b>	<b>487,499</b>		
San Luis Potosi	55,902				
Sinaloa	30,311				
Sonora	33,510				
Tamaulipas	37,623				
Zacatecas	25,547				
<b>TOTAL</b>	<b>1,034,298</b>				

Source: In-house elaboration with information from SESNSP (2022).

**TABLE 6. MUNICIPALITIES WITH THE HIGHEST NUMBER OF REGISTERED HOMICIDE CASES  
JANUARY – OCTOBER 2021 VS JANUARY – OCTOBER 2022**

2021				2022			
PLACE	FEDERAL ENTITY	MUNICIPALITY	TOTAL	PLACE	FEDERAL ENTITY	MUNICIPALITY	TOTAL
1	Baja California	Tijuana	1,504	1	Baja California	Tijuana	1,525
2	Chihuahua	Juarez	999	2	Chihuahua	Juárez	749
3	Guanajuato	Leon	603	3	Guanajuato	Leon	507
4	Sonora	Cajeme	485	4	Sonora	Cajeme	413
5	Zacatecas	Fresnillo	374	5	Guanajuato	Celaya	383
6	Guerrero	Acapulco	373	6	Guerrero	Acapulco	361
7	Jalisco	Guadala- jara	336	7	Chihuahua	Chihuahua	307
8	Guanajuato	Celaya	319	8	Michoacan	Morelia	296
9	Michoacan	Zamora	298	9	Quintana Roo	Benito Juarez	289
10	Sinaloa	Culiacan	290	10	Michoacan	Zamora	273

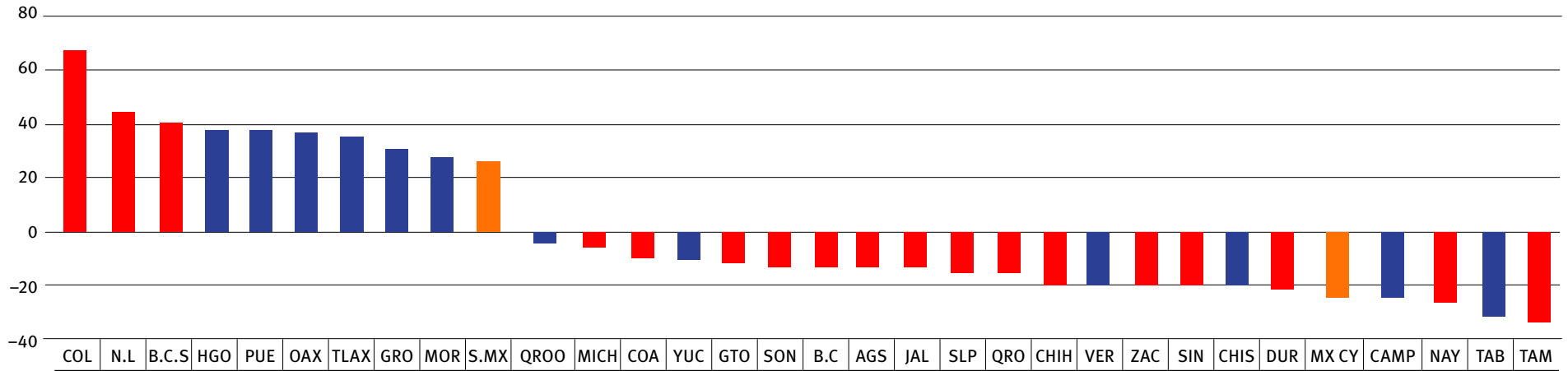
Source: Causa en Común (2022a) (p.12).

the central–north region experienced a decrease in this indicator. Tamaulipas (–33%) and Nayarit (–27%) headed the list of reductions if only the central–north region is considered. Despite this data, the three states that worsened the most in terms of intentional homicides are precisely in the center–north: Colima (66%), Nuevo Leon (33%), and Baja California (24%) (Causa en Común, 2022a).

THE THREE ENTITIES THAT WORSENED EVEN MORE THEIR REGISTRY OF INTENTIONAL HOMICIDE CASES ARE FROM THE CENTER–NORTH REGION: COLIMA (66%), NUEVO LEON (33%) AND BAJA CALIFORNIA (24%)

CAUSA EN COMÚN, 2022

GRAPH 1. PERCENTAGE VARIATION IN THE NUMBER OF VICTIMS OF INTENTIONAL HOMICIDE REGISTERED BY ENTITY  
 JANUARY – OCTOBER 2022 VS JANUARY – OCTOBER 2021



Source: Causa en Común (2022a) (p.11).



Image: “September, the month with more homicides in 2022 in Guanajuato”. Photo: Jesús Gutiérrez at <https://www.elsoldeleon.com.mx/local/septiembre-mes-con-mas-homicidios-durante-2022-en-guanajuato-9067691.html>

When reviewing the data on femicides, the central–northern part of the country once again comes out badly qualified. Most of the 792 femicides occurred in the center–north of the country. Seven of the ten municipalities with the most femicides between January and October 2022 are in that region. Villa Juarez, Ciudad Juarez, and Morelia are the cities with the highest records, with 14, 13, and 12, respectively (Causa en Común, 2022a).

When reviewing the variation of femicides by State between January and October 2021 and the same period in 2022, it is observed that only seven of the 18 states that comprise the central–northern part of the country presented reductions in the number of femicides: Nayarit, San Luis Potosi, Sinaloa, Jalisco, Guanajuato, Sonora, and Chihuahua. Eleven of the 18 states in this region increased their incidence of

TABLE 7. MUNICIPALITIES WITH THE HIGHEST NUMBER OF REGISTERED CASES OF FEMICIDE  
JANUARY – OCTOBER 2021 VS JANUARY – OCTOBER 2022

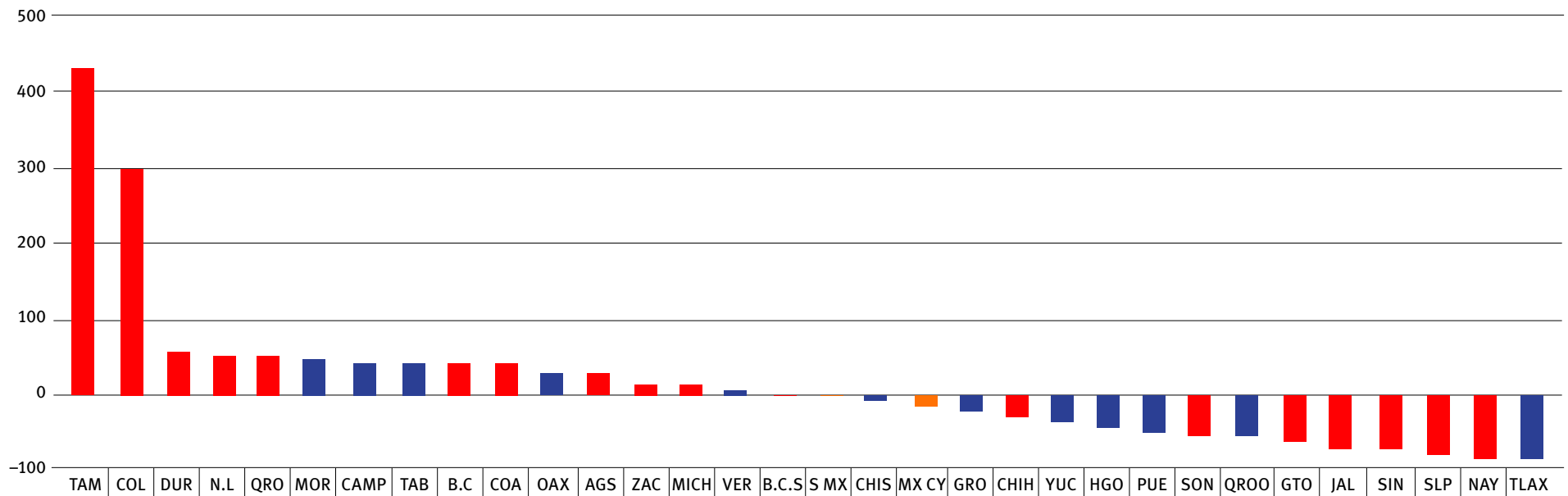
2021				2022			
PLACE	FEDERAL ENTITY	MUNICIPALITY	TOTAL	PLACE	FEDERAL ENTITY	MUNICIPALITY	TOTAL
1	Sinaloa	Culiacan	16	1	Nuevo Leon	Juarez	14
2	Chihuahua	Juarez	15	2	Chihuahua	Juarez	13
3	Jalisco	Tlaquepaque	14	3	Michoacan	Morelia	12
4	Jalisco	Tlajomulco	12	4	Nuevo Leon	Guadalupe	11
5	Chihuahua	Chihuahua	11	5	Mexico City	Iztapalapa	9
6	Mexico City	Gustavo A. Madero	11	6	Colima	Manzanillo	9
7	Baja California	Tijuana	10	7	State of Mexico	Valle de Chalco	9
8	Puebla	Puebla	10	8	Nuevo Leon	General Escobedo	9
9	Quintana Roo	Benito Juarez	10	9	Guanajuato	Leon	8
10	Jalisco	Guadalajara	9	10	State of Mexico	Ecatepec	8

Source: Causa en Común (2022a) (p.16).

femicides. The cases of Tamaulipas (433%), Colima (300%), Durango (67%), Nuevo Leon (59%), and Queretaro (57%) were particularly worrying. The second element that should raise all alarms, reviewed below, is the impunity in which these crimes remain (Causa en Común, 2022a).

Of course, intentional homicides and femicides are acts that generate terror, regardless of how they are conducted. Even so, there are certain acts that, because of the level of horror they generate, can be considered atrocities. The organization, Causa en Común (2022b), has documented these events during the last year and has shown that, between January

**GRAPH 2. PERCENTAGE VARIATION IN REGISTERED VICTIMS OF FEMICIDE**  
 JANUARY – OCTOBER 2022 VS JANUARY – OCTOBER 2021



Source: Causa en Común (2022a) (p. 15).

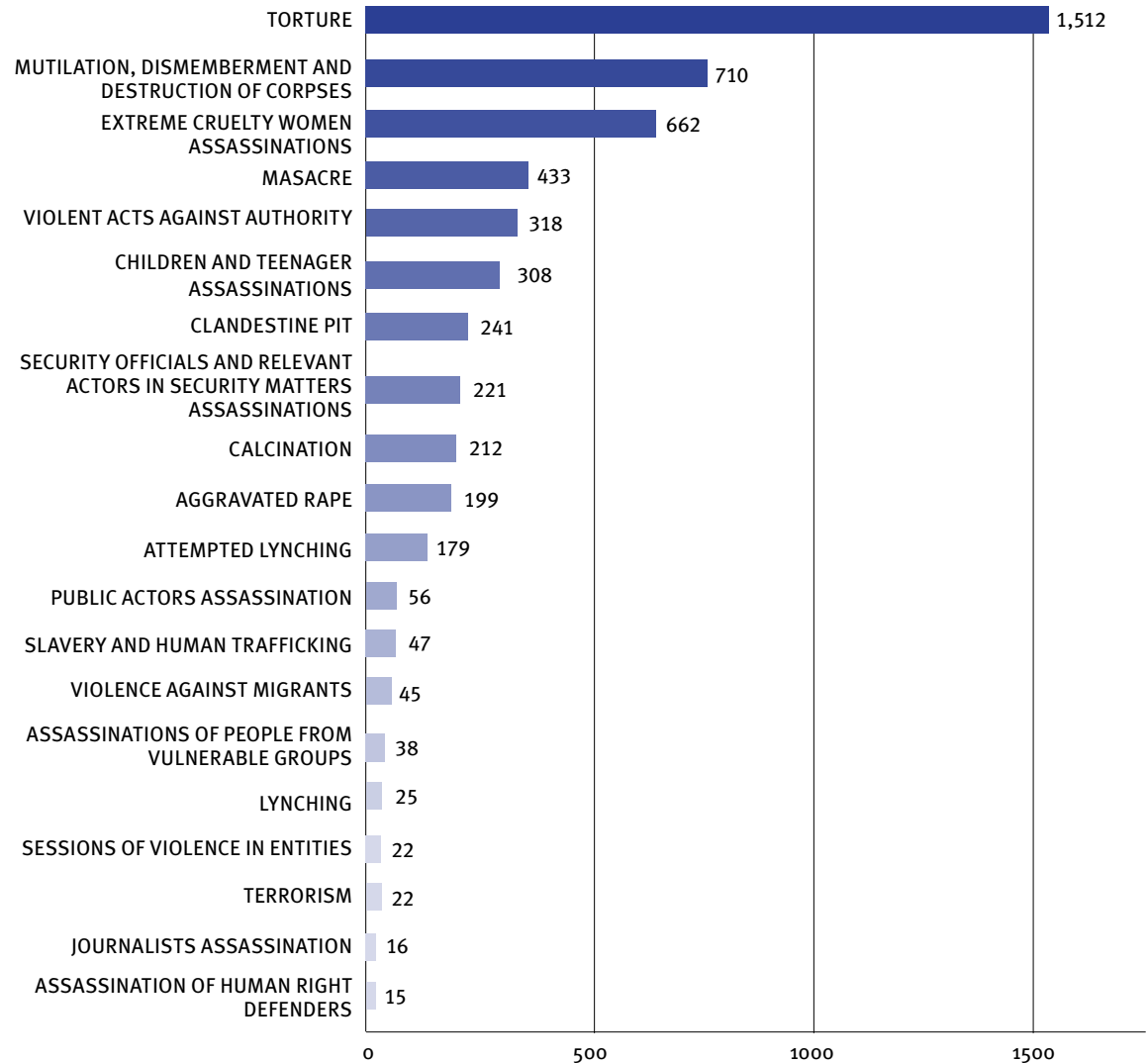
and October 2022, the most frequently occurring atrocity is torture, followed by mutilation, dismemberment, and destruction of corpses, murder of women with extreme cruelty and massacre.

When atrocities are reviewed at the subnational level, it is observed that 59.2% (3,127) of the total (5,281) were committed in central–northern Mexico. Although Coahuila, Queretaro, Aguascalientes, Baja California Sur, and Tamaulipas are the states with the lowest number of atrocities, only Baja California, Guanajuato, and Michoacan (the three states with the most atrocities) account for 1,178 atrocities, 22.3% of the national total (Causa en Común, 2022b).

**BETWEEN JANUARY AND OCTOBER 2022,  
5,281 ATROCITIES WERE REGISTERED.  
MORE THAN HALF, 3,127, WERE COMMITTED  
IN THE CENTER–NORTH REGION OF MEXICO**

**CAUSA EN COMÚN, 2022**

**GRAPH 3. NUMBER OF ATROCITIES FROM JANUARY–OCTOBER 2022**



Source: Causa en Común (2022B) (p. 7).



TABLE 8. ATROCITIES REGISTERED IN NEWSPAPER ARTICLES PER STATE 1/2  
JANUARY–OCTOBER 2022

STATE	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	TOTAL
<b>CENTER–NORTH REGION</b>																					
Aguascalientes	1	2	5	3	9	3	9	0	0	0	0	0	0	0	2	0	4	0	4	0	42
Baja California	24	26	74	45	199	15	72	2	2	1	2	14	2	1	7	6	0	8	22	8	530
Baja California Sur	1	12	3	2	5	0	6	0	0	0	0	0	0	0	7	1	0	0	2	0	39
Chihuahua	29	12	12	10	81	6	25	2	0	1	2	5	1	0	3	1	0	5	9	2	206
Coahuila	0	1	2	1	7	3	10	0	0	1	0	1	0	0	1	1	1	1	2	0	32
Colima	8	6	67	3	49	4	21	0	0	0	1	16	1	0	4	0	0	0	8	2	190
Durango	1	1	2	1	15	9	11	0	0	1	0	0	0	3	11	1	5	0	1	0	62
Guanajuato	53	25	93	18	137	37	49	0	1	2	3	30	0	0	0	1	3	0	9	0	461
Jalisco	18	13	45	11	61	12	28	0	0	1	4	9	0	0	4	0	0	0	16	0	222
Michoacan	51	16	47	13	111	40	50	1	2	5	4	19	3	0	3	0	2	0	30	2	399
Nayarit	3	1	3	1	4	1	3	0	0	1	0	0	0	0	31	4	1	0	2	0	55
Nuevo Leon	15	10	22	5	39	15	20	0	0	0	0	4	1	0	3	2	2	2	5	0	145
Queretaro	2	1	4	1	11	3	8	0	0	0	0	0	0	0	0	0	3	0	3	0	36
San Luis Potosi	15	5	8	4	26	1	3	0	0	0	2	3	0	0	9	5	6	2	25	0	114
Sinaloa	2	13	8	5	73	8	19	1	2	1	2	3	0	0	1	0	1	1	9	0	149
Sonora	15	27	14	12	56	9	16	0	2	1	2	10	0	0	3	0	1	0	15	1	184
Tamaulipas	0	2	14	1	4	1	5	0	1	0	0	0	0	0	2	1	0	2	7	1	41
Zacatecas	41	1	28	5	37	22	30	0	1	2	0	27	1	0	3	0	0	0	18	4	220

- \* 1. Masacre
- 2. Clandestine pit
- 3. Mutilation, dismemberment and destruction corpses
- 4. Calcination
- 5. Torture
- 6. Children and teenager assassination

- 7. Extreme cruelty women assassination
- 8. Assassination of human rights defenders
- 9. Journalists assassination
- 10. Assassination of people from vulnerable groups
- 11. Political actors assassination
- 12. Security officials and relevant actors in security matters assassinations
- 13. Terrorism

- 14. Lynching
- 15. Aggravated rape
- 16. Slavery and human trafficking
- 17. Attempted lynching
- 18. Violence against migrants
- 19. Violent acts against authorities
- 20. Sessions of violence in entities

TABLE 8. ATROCITIES REGISTERED IN NEWSPAPER ARTICLES PER STATE 2/2  
JANUARY–OCTOBER 2022

STATE	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	TOTAL
<b>SOUTH REGION</b>																					
Campeche	1	3	3	2	3	3	5	0	0	0	1	2	0	0	3	1	17	0	1	0	45
Chiapas	6	1	18	4	18	9	11	0	0	6	1	1	1	2	8	3	9	9	4	1	112
Guerrero	25	5	56	5	85	9	21	1	1	0	3	10	0	0	2	0	1	0	10	0	234
Hidalgo	9	2	4	4	26	4	13	0	0	1	0	3	0	2	1	0	18	0	6	0	93
Morelos	11	22	44	19	107	16	37	2	0	2	9	9	8	0	15	3	16	1	21	0	342
Oaxaca	20	3	10	5	38	11	34	3	1	2	1	11	0	5	4	2	19	1	22	0	192
Puebla	14	6	25	7	62	7	23	1	0	1	4	8	0	3	11	1	23	2	10	0	208
Quintana Roo	8	4	32	3	75	4	6	0	0	1	3	4	0	0	1	4	5	0	12	1	163
Tabasco	5	7	8	2	30	6	15	0	0	3	1	3	0	1	12	0	7	1	1	0	102
Tlaxcala	0	2	6	3	26	4	5	0	0	0	1	2	0	2	3	1	17	1	5	0	78
Veracruz	21	5	22	4	45	12	44	2	3	2	9	12	3	1	13	7	3	8	18	0	234
Yucatan	1	0	2	3	6	0	6	0	0	0	0	0	0	0	18	1	6	0	0	0	43
<b>METROPOLITAN AREA</b>																					
State of Mexico	27	4	24	9	56	25	40	0	0	2	1	13	1	4	14	1	7	1	19	0	248
Mexico City	6	3	5	1	11	9	17	0	0	1	0	2	0	1	0	0	2	0	2	0	60
<b>AVERAGES</b>																					
Total National	433	241	710	212	1512	308	662	15	16	38	56	221	22	25	199	47	179	45	318	22	5,281
National Average	13.5	7.5	22.2	6.6	47.3	9.6	20.7	0.5	0.5	1.2	1.8	6.9	0.7	0.8	6.2	1.5	5.6	1.4	9.9	0.7	165.0
South Average	10.1	5.0	19.2	5.1	43.4	7.1	18.3	0.8	0.4	1.5	2.8	5.4	1.0	1.3	7.6	1.9	11.8	1.9	9.2	0.2	153.8

Source: In-house elaboration with information from Causa en Común (2022b) (p.9).

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>* 1. Masacre</li> <li>2. Clandestine pit</li> <li>3. Mutilation, dismemberment and destruction corpses</li> <li>4. Calcination</li> <li>5. Torture</li> <li>6. Children and teenager assassination</li> </ul> | <ul style="list-style-type: none"> <li>7. Extreme cruelty women assassination</li> <li>8. Assassination of human rights defenders</li> <li>9. Journalists assassination</li> <li>10. Assassination of people from vulnerable groups</li> <li>11. Political actors assassination</li> <li>12. Security officials and relevant actors in security matters assassinations</li> <li>13. Terrorism</li> </ul> | <ul style="list-style-type: none"> <li>14. Lynching</li> <li>15. Aggravated rape</li> <li>16. Slavery and human trafficking</li> <li>17. Attempted lynching</li> <li>18. Violence against migrants</li> <li>19. Violent acts against authorities</li> <li>20. Sessions of violence in entities</li> </ul> |
|--|--|---|

## RULE OF LAW

As stated in the report *El Sur de Mexico: Atraso, brechas y abandono (Southern Mexico: Backwardness, Gaps and Neglect)* presented by Signos Vitales (2022a), the Mexican political system presents a significant challenge in terms of full observance of the law, or other words, in terms of building the rule of law. Mexico scores poorly in the *World Justice Project's Rule of Law Index 2021–2022* (2022). The country's average score is 0.41 on a scale ranging from 0 to 1, where 1 is the best possible score regarding adherence to the rule of law.

When evaluating the result on a regional basis, the country's center–north is better evaluated than the South. In fact, 13 of the 16 top–rated states are in the center–north. Yucatan no longer repeats as the State with the best rule of law in Mexico; Queretaro replaced it. Nine of the ten top–ranked states are in the center–north. In contrast, only one of the ten worst–ranked states is from that geographic region (Jalisco is ranked 24th out of 32) (World Justice Project, 2022).

TABLE 9. MEXICO RULE OF LAW INDEX CHANGE  
2020–2021 — 2021–2022 CHANGE BY STATE

PLACE	STATE	SCORE*	2020–2021 – 2021–2022** CHANGE
1	Queretaro	0.49	0.02
3	Guanajuato	0.46	0.01
4	Aguascalientes	0.46	0.00
5	Sinaloa	0.46	0.01
6	Durango	0.45	0.01
7	Nuevo Leon	0.45	0.01
8	Zacatecas	0.45	0.00
9	Baja California Sur	0.44	0.00
10	Coahuila	0.44	–0.02
12	Chihuahua	0.42	0.00
13	Nayarit	0.42	–0.02
15	Tamaulipas	0.42	0.01
16	Baja California	0.41	0.00
17	Colima	0.40	–0.02
18	Michoacan	0.40	–0.01
21	San Luis Potosi	0.38	–0.02
22	Sonora	0.38	–0.03
24	Jalisco	0.38	0.00
CENTER–NORTH REGION AVERAGE		0.43	–0.02
SOUTH REGION AVERAGE		0.39	0.00
METROPOLITAN AREA AVERAGE		0.36	0.00
NATIONAL AVERAGE		0.41	–0.01

Note: \*Scores only have two digits after the point.\*\*For more information on results and methodology consult the World Justice Project.

Source: In-house elaboration with information from World Justice Project (2022) (p.11).

As expected, factor 5 of the Rule of Law Index 2021–2022, related to the evaluation of order and security, is where the central–north region is worst. Only nine states in the region maintain a score above the national average: Durango (0.64), Baja California Sur (0.60), Coahuila (0.59), Nayarit (0.58), Sinaloa (0.51), Aguascalientes (0.49), Tamaulipas (0.49), Queretaro (0.46) and Michoacan (0.45) (World Justice Project, 2022).

Signos Vitales has consistently reported that corruption and impunity rates in Mexico are alarmingly high. As discussed in the report “The South of Mexico: Backwardness, Gaps, and Neglect,”<sup>5</sup> the latest data from the National Survey of Victimization and Perception of Public Safety (ENVIPE for its acronym in Spanish), the latest ENVIPE data available show that the percentage of crimes that were not reported in the country in 2021 is 93.2 out of 100. This is among the highest black figures measured by the National Institute of Statistics and Geography (INEGI for its acronym in Spanish) since 2017 (INEGI, 2022c).

When approaching the impunity phenomenon more carefully, it is necessary to look at the work of the country’s and public prosecutors’ offices. In this

<sup>5</sup> For further information, see [Reporte–2–2022.pdf \(signosvitalesmexico.org.mx\)](#) (p.37–38).

TABLE 10. FACTOR 5: ORDER AND SECURITY

POSITION	STATE	SCORE*
2	Durango	0.64
4	Baja California Sur	0.60
5	Coahuila	0.59
7	Nayarit	0.58
10	Sinaloa	0.51
12	Aguascalientes	0.49
13	Tamaulipas	0.49
14	Queretaro	0.46
15	Michoacán	0.45
17	Zacatecas	0.42
18	Nuevo Leon	0.40
19	Chihuahua	0.36
21	San Luis Potosi	0.33
22	Jalisco	0.33
23	Guanajuato	0.32
24	Colima	0.32
26	Baja California	0.31
27	Sonora	0.29
<b>CENTER–NORTH REGION AVERAGE</b>		<b>0.44</b>
<b>SOUTH REGION AVERAGE</b>		<b>0.45</b>
<b>METROPOLITAN AREA AVERAGE</b>		<b>0.26</b>
<b>NATIONAL AVERAGE</b>		<b>0.43</b>

Source: In-house elaboration with information from World Justice Project (2022) (p.14).

sense, the organization Impunidad Cero (2021) presented its Índice Estatal de Desempeño de Procuradurías y Fiscalías 2021 (Prosecutors and Prosecutor’s Office Performance State Index 2021). It shows that by 2020, the probability of a crime being reported and solved in Mexico was only 1%. Although the likelihood of clarification that Impunidad Cero reports for the center–north of the country in 2020 (equivalent to 1.14%) is slightly higher than that corresponding to the South of Mexico (1.07%), Mexico City (0.93%) and the State of Mexico (0.99%), the difference is almost imperceptible. Moreover, the result in this category is the worst reported for the center–north of the country since 2017.

Similarly, the effectiveness in the resolution of cases reported in the State Performance Index of Prosecutor’s Offices and Public Prosecutor’s Offices 2021 rates slightly better in the center–north of the country than in the south. However, as with the previous indicator, the effectiveness in resolving cases in the center–north has consistently worsened. In fact, 2020 has the worst result, equivalent to 16% (Impunity Zero, 2021).

When reviewing impunity in homicide, the report on intentional homicide and femicide 2022 presented by

TABLE 11. PROBABILITY OF SOLVING CRIMES IN CENTER–NORTH MEXICO

STATE	2017	2018	2019	2020
Aguascalientes	0.67%	1.23%	0.94%	0.26%
Baja California	1.26%	1.07%	3.37%	2.77%
Baja California Sur	0.79%	0.95%	1.48%	0.43%
Coahuila	3.56%	2.15%	2.01%	1.26%
Colima	1.81%	3.65%	1.56%	0.81%
Chihuahua	0.65%	1.74%	2.07%	0.70%
Durango	1.92%	0.77%	1.16%	0.77%
Guanajuato	3.39%	4.26%	2.83%	2.99%
Jalisco	0.47%	0.37%	0.57%	1.11%
Michoacan	0.54%	1.44%	1.46%	1.30%
Nayarit	6.32%	3.70%	2.17%	1.50%
Nuevo Leon	2.44%	2.48%	1.94%	1.46%
Queretaro	0.72%	1.75%	3.15%	2.16%
San Luis Potosi	1.36%	1.24%	0.82%	0.59%
Sinaloa	1.10%	1.54%	1.43%	0.79%
Sonora	1.83%	1.13%	1.24%	0.91%
Tamaulipas	0.34%	0.29%	0.42%	0.30%
Zacatecas	1.09%	1.80%	1.65%	0.43%
<b>CENTER–NORTH AVERAGE</b>	<b>1.68%</b>	<b>1.75%</b>	<b>1.68%</b>	<b>1.14%</b>
<b>SOUTH AVERAGE</b>	<b>0.60%</b>	<b>0.93%</b>	<b>1.29%</b>	<b>1.07%</b>
<b>METROPOLITAN AVERAGE</b>	<b>0.73%</b>	<b>0.99%</b>	<b>1.22%</b>	<b>0.96%</b>
<b>NATIONAL AVERAGE</b>	<b>0.90%</b>	<b>1.14%</b>	<b>1.32%</b>	<b>1.04%</b>

Source: In-house elaboration with information from Impunidad Cero (2021).

TABLE 12. PROSECUTORIAL EFFECTIVENESS IN CENTER–NORTH MEXICO

ENTIDAD	2017	2018	2019	2020
Aguascalientes	9.2%	16.8%	8.9%	4.0%
Baja California	16.1%	13.7%	31.2%	27.1%
Baja California Sur	6.0%	7.2%	10.4%	4.8%
Coahuila	43.9%	26.5%	29.5%	17.2%
Colima	20.6%	41.5%	13.3%	8.7%
Chihuahua	8.1%	21.7%	22.7%	9.7%
Durango	24.6%	9.9%	12.6%	10.1%
Guanajuato	40.8%	51.3%	37.3%	37.4%
Jalisco	6.9%	5.4%	7.8%	15.6%
Michoacan	8.7%	23.3%	20.0%	20.3%
Nayarit	76.2%	44.6%	40.2%	25.0%
Nuevo Leon	38.8%	39.3%	31.7%	18.2%
Queretaro	8.9%	21.6%	33.1%	29.2%
San Luis Potosi	19.1%	17.5%	11.8%	10.7%
Sinaloa	15.5%	21.7%	22.7%	18.0%
Sonora	31.6%	19.4%	17.8%	17.8%
Tamaulipas	7.3%	6.2%	11.7%	4.9%
Zacatecas	14.3%	23.7%	30.0%	8.7%
<b>CENTER–NORTH AVERAGE</b>	<b>22.0%</b>	<b>22.9%</b>	<b>21.8%</b>	<b>16.0%</b>
<b>SOUTH AVERAGE</b>	<b>9.8%</b>	<b>13.6%</b>	<b>15.5%</b>	<b>16.8%</b>
<b>METROPOLITAN AVERAGE</b>	<b>12.6%</b>	<b>17.2%</b>	<b>20.7%</b>	<b>13.9%</b>
<b>NATIONAL AVERAGE</b>	<b>14.1%</b>	<b>18.0%</b>	<b>19.4%</b>	<b>15.5%</b>

Source: In-house elaboration with information from Impunidad Cero (2021).

Impunidad Cero shows that in six years, only 7% of homicide cases have been solved. In that same period, less than 50% of reported femicides have ended with a conviction. Moreover, following the information of the State Performance Index of Public Prosecutor's Offices 2021 (latest available), the average impunity rate in the center–north of the country (77.9%) is lower than the national average (89.6%). Even so, the figures are still alarming, especially since it is such a severe crime that leaves many traces (Impunidad Cero, 2022).

It is logical that impunity also significantly affects human rights. INEGI's National State Human Rights Census 2021 (the latest available) presents the most recent data on alleged human rights violations registered in each State, both by the National Human Rights Commission (CNDH for its acronyms in Spanish) and by local Public Human Rights Bodies (OPDH for its acronym in Spanish).

A review of the complaint files classified as allegedly violating human rights at the CNDH and the OPDH by a federative entity shows that the central–northern region concentrates 47.8% of the files. In comparison, the South only has 23.4% of them. Mexico City and the State of Mexico account for 28.7% (INEGI, 2022a).

**TABLE 13. IMPUNITY IN INTENTIONAL HOMICIDE  
IN CENTER–NORTH MEXICO IN 2019**

STATE	INTENTIONAL HOMICIDE %
Aguascalientes	42.2%
Baja California	91.2%
Baja California Sur	79.8%
Coahuila	78.5%
Colima	87.3%
Chihuahua	89.7%
Durango	52.4%
Guanajuato	90.2%
Jalisco	86.2%
Michoacan	89.1%
Nayarit	89.1%
Nuevo Leon	35.9%
Queretaro	48.8%
San Luis Potosi	91.1%
Sinaloa	88.7%
Sonora	80.6%
Tamaulipas	89.8%
Zacatecas	91.6%
<b>CENTER–NORTH AVERAGE</b>	<b>77.9%</b>
<b>SOUTH AVERAGE</b>	<b>86.9%</b>
<b>METROPOLITAN AVERAGE</b>	<b>79.3%</b>
<b>NATIONAL AVERAGE</b>	<b>89.6%</b>

Source: In-house elaboration with information from Impunidad Cero (2022).

As has been observed throughout this report, human rights violations appear to be more persistent in the central–northern region of the country. In part, perhaps, because of the presence and strength of criminal groups in that area. This is not to say that the rest of the country does not face significant challenges in



Image: “16 corpses are found in two municipalities of the Mexican state of Zacatecas”. Photo EFE/James Romero at <https://www.latimes.com/espanol/mexico/articulo/2022-02-05/hallan-16-cadaveres-en-dos-municipios-del-estado-mexicano-de-zacatecas>



**TABLE 14. COMPLAINT FILES CLASSIFIED AS ALLEGEDLY VIOLATING HUMAN RIGHTS  
AT THE CNDH AND THE OPDH BY STATE IN CENTER-NORTH MEXICO, 2020**

STATE	NO. OF FILES	TOTAL	
Aguascalientes	345	<b>TOTAL CENTER-NORTH</b>	<b>45,818</b>
Baja California	5,197	<b>TOTAL SOUTH</b>	<b>22,496</b>
Baja California Sur	201	<b>TOTAL METROPOLITAN</b>	<b>27,630</b>
Coahuila	2,741	<b>TOTAL OPDH</b>	<b>80,275</b>
Colima	378	<b>TOTAL CNDH</b>	<b>15,669</b>
Chihuahua	1,190	<b>TOTAL NATIONAL</b>	<b>95,944</b>
Durango	812		
Guanajuato	765		
Jalisco	9,410		
Michoacan	805		
Nayarit	745		
Nuevo Leon	1,318		
Querétaro	909		
San Luis Potosi	2,606		
Sinaloa	352		
Sonora	715		
Tamaulipas	909		
Zacatecas	751		
CNDH	15,669		
<b>CENTER-NORTH AVERAGE</b>	<b>1,674.9</b>		
<b>SOUTH AVERAGE</b>	<b>1,874.7</b>		
<b>METROPOLITAN AVERAGE</b>	<b>1,381.5</b>		
<b>NATIONAL AVERAGE</b>	<b>2,508.6</b>		

**CONCENTRATION OF COMPLAINT FILES CLASSIFIED AS ALLEGEDLY VIOLATING HUMAN RIGHTS SHOW:**

**47.8% IN CENTER-NORTH REGION**

**23.4% IN SOUTH REGION**

**28.7% IN METROPOLITAN AREA**

**INEGI, 2022**

Source: In-house elaboration with information from INEGI (2022a).

this area, but rather that violence, abuse, and criminality, already high throughout the national territory, reach scandalous levels in certain entities located further north than in the South of Mexico.

It has been mentioned several times that the confrontation between cartels and the government against certain criminal groups significantly changed the dynamics of organized crime in Mexico since the beginning of Felipe Calderon's six-year term. In addition to increasing violence and diversifying illicit markets, the fragmentation of these criminal organizations has created a new geography of crime. As mentioned in the report "Mexico's South: Backwardness, Gaps and Abandonment,"<sup>6</sup> Lantia Intelligence (2020) has identified six major active criminal organizations: the Sinaloa Cartel (CDS for its acronym in Spanish), the Jalisco Cartel – New Generation (CJNG for its acronym in Spanish), the Zetas, the Gulf Cartel (CDG for its acronym in Spanish), the Beltran Leyva Criminal Organization (OCBL for its acronym in Spanish) and Los Caballeros Templarios–La Familia Michoacana (CT–FM for its acronym in Spanish), in addition to local or significant regional criminal organizations (LROs for its acronym in Spanish).

<sup>6</sup> For further information, see [Reporte-2-2022.pdf \(signosvitalesmexico.org.mx\)](#) (p.29–31).

All states in the central–north part of the country have the presence of at least one of these criminal groups. As is well known, the Sinaloa Cartel and the Jalisco Cartel – New Generation are the ones that have managed to penetrate more territories throughout the country, but other groups maintain specific regional controls. For example, the Tijuana Cartel – New Generation (CTNG) maintains control in Baja, California, thanks to its alliance with the CJNG. The Cartel del Poniente and the Cartel del Noreste stand out in Coahuila. The latter also has a significant presence in Nuevo Leon, San Luis, and Tamaulipas. In Aguascalientes and Zacatecas, a strong presence of the Taliban group has been identified (Lantia Intelligence, 2020).

*Image:* "Fentanil, problem that grows in the US and in Mexico" at <https://www.eleconomista.com.mx/politica/Fentanilo-un-problema-que-crece-en-EU-y-Mexico-20211024-0085.html>



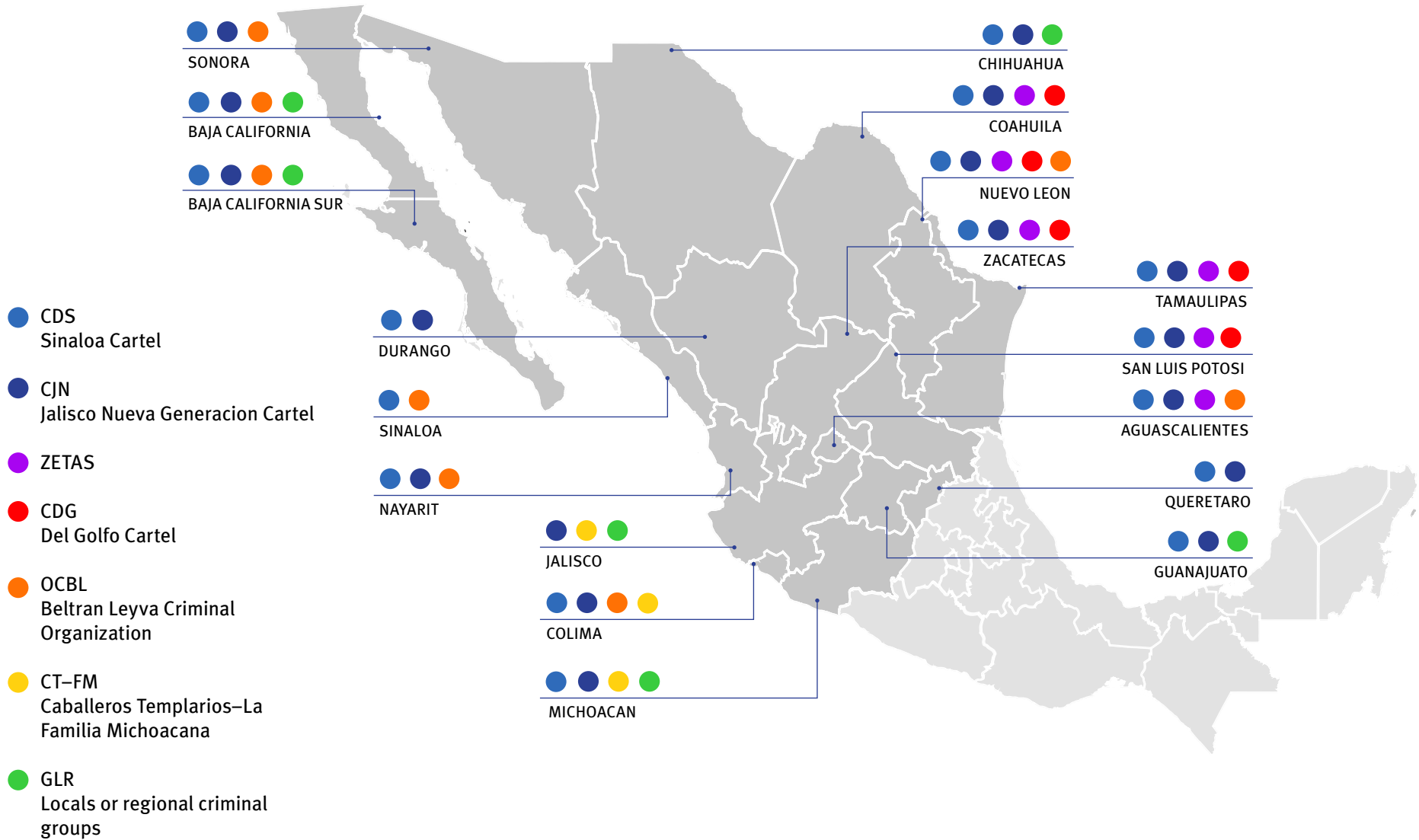
TABLE 15. CRIMINAL PRESENCE AND ACTIVITIES IN CENTER-NORTH REGION

CRIMINAL PRESENCE AND ACTIVITIES	CARTELS		SPIN-OFFS OF CRIMINAL ORGANIZATIONS				GLR	ACTIVITIES			
	CDS	CJNG	ZETAS	CDG	OCBL	CT-FM		DRUG TRAF-FICKING-DRUG DEALING	EXTORTION-CO-LLECTION OF FLOOR RIGHTS	HIGH IMPACT CRI-MES (ROBBERY OF TRANSPOR-TATION COM-PANIES, RAIL-ROADS, HUMAN TRAFFICING)	ILLCIT HYDRO-CARBON MARKET (MIH FOR ITS ACRONYM IN SPANISH)
Aguascalientes											
Baja California											
Baja California Sur											
Chihuahua											
Coahuila											
Colima											
Durango											
Guanajuato											
Jalisco											
Michoacan											
Nayarit											
Nuevo Leon											
Queretaro											
San Luis Potosi											
Sinaloa											
Sonora											
Tamaulipas											
Zacatecas											

CDS: Sinaloa Cartel; CJN: Jalisco Nueva Generacion Cartel; CDG: del Golfo Cartel; OCBL: Beltrán Leyva Criminal Organization; CT-FM: Caballeros Templarios-La Familia Michoacana; GLR: Local or regional criminal groups.

Source: In-house elaboration with information from Lantia Intelligence (2020).

## CARTEL CRIMINAL PRESENCE IN CENTER-NORTH REGION





# SOCIAL CIAROSCURO

*Image: Poverty in Tamaulipas at <https://www.elsoldetampico.com.mx/local/regional/avanza-tamaulipas-en-combate-a-pobreza-3973414.html>*





## THE CENTER–NORTH: ¿MORE OPPORTUNITIES?

◀ In our country, inequalities limit the development of the physical, social and human capital necessary to increase social well-being. Dimensions of inequality, such as gender, race, or geography, are interconnected and affect people's lives. Globally Mexico is within the top 25% of countries with the highest levels of inequality in the world (Solt, 2020). Given that Mexico has high economic inequality compared to others, with a Gini coefficient of 45.4<sup>7</sup> (World Bank, 2020),

<sup>7</sup> The Gini index measures the degree to which income is distributed among individuals or households within an econo-

we face the severe risk of low social mobility in the future and fewer opportunities to get ahead.

In addition, at the national level, the Human Development Index (HDI for its acronym in Spanish) of the United Nations Development Program (UNDP) (PNUD for its acronym in Spanish) reflects a drop for Mexico during 2020 compared to the years before

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my. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality (World Bank, 2020).

*Image:* “More than 400,00 students from Durango will return to classes next Monday” at <https://www.elsiglodedurango.com.mx/noticia/2022/mas-de-400-mil-alumnos-de-durango-regresaran-el-proximo-lunes-a-clases.html>

the pandemic<sup>8</sup>. This implies challenges in ensuring full and equitable development for all people. In the UNDP's latest edition (2021–2022), Mexico scored 0.758 points (on a scale from 0 to 1, where zero is the minimum development and 1 is the maximum), which placed our country in 86th place out of 191. Two of the indicators that most influenced the decline in the HDI were life expectancy (life expectancy fell from 75.1 years in 2020 to 70.2 in 2021–2022) and the level of per capita income with a drop of 6.5% from one year to the next <sup>9</sup>(UNDP, 2022).

At the regional level, inequalities are present depending on the place of origin. In particular, the country's northern region has more favorable characteristics in social and, above all, economic terms. For example, during the first semester of 2022, the northern part of the republic registered a strong presence of the manufacturing industry (physical volume index of 125.5)<sup>10</sup> above the national average (109.87), which

8 In 2015 the HDI .768, in 2018 it was .777, the highest HDI was in 2019 with .779 points (UNDP, 2022).

9 From \$19,160 in 2020 to \$17,896 in 2021 (annual per capita national income) (UNDP, 2022).

10 In this case, the physical volume of production index represents the economic value of production for the manufacturing industry. The southern and metropolitan regions present lower indexes than the national average, with 108.1 and 96.1 production indexes, respectively (INEGI, 2023b).

MANUFACTURING INDUSTRY HAS DRIVEN ECONOMIC GROWTH IN THE CENTER–NORTH REGION, SUPERIOR TO THE NATIONAL AVERAGE.



*Image:* “Manufacturing Industry, the biggest trade component between USA and Mexico” at <https://mexicoindustry.com/noticia/industria-manufacturera-el-componente-mas-grande-del-comercio-entre-estados-unidos-y-mexico>



has translated into a remarkable economic growth in that area (INEGI, 2023b), which has been reflected over time. In Mexico alone, between 1990 and 2010, 64% of the municipalities that showed positive dynamics were concentrated mainly in the central and northern zones and in the Yucatan Peninsula, while 16% of the municipalities in the South of the country showed high increases in poverty levels (Bebbington *et al.*, 2016).

In sum, although different circumstances have produced inequalities, it is the role of the State to reduce them and ensure that no one is left behind, an element that is also an integral part of the Sustainable Development Goals of the 2030 Agenda, making regional development policies that dynamize the national economy as a whole necessary.

## ◀ LESS POVERTY IN THE CENTER–NORTH

The extremes of inequality and poverty are reflected throughout the country. While the northern region has the lowest levels of poverty and extreme poverty, the metropolitan area of the country has poverty levels below the national average. The rest of the country has higher poverty and food insecurity levels and the lowest income levels (Signos Vitales, 2022a). However, ineffective security management and policies, inadequate national and transnational intergovernmental coordination on security, and little promotion of social development have also led to social havoc, deprivation, and limitations to social welfare in northern Mexico.

According to Coneval (n.d.a), in the north, 32% of the people live in poverty, and 3.6% are in extreme poverty. These percentages are lower than the 2020 national average and much lower than the metropolitan area and the rest of the country (Graph 4).

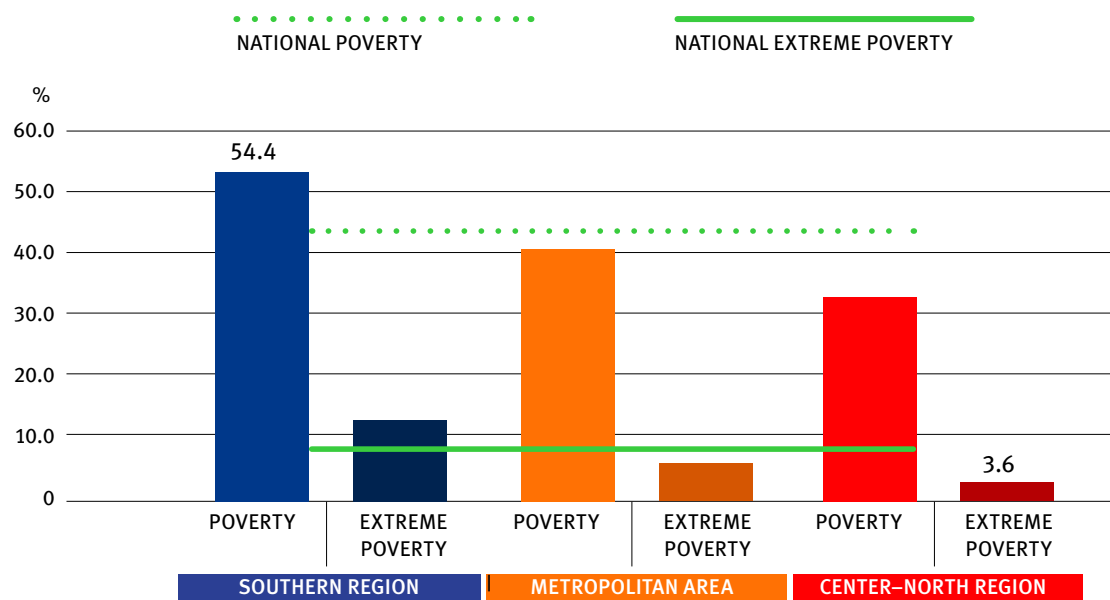
The five entities with the lowest Social Gap Index<sup>11</sup>

<sup>11</sup> The IRS is a weighted measure that summarizes indicators of education, access to health services, housing quality and space, basic housing services, and household assets. It does not constitute a poverty measure since it does not include information on income, access to social security, or food (Coneval, 2021).

IN THE CENTER–NORTH OF THE COUNTRY, 32% OF PEOPLE ARE IN POVERTY CONDITIONS AND 3.6% IN EXTREME POVERTY

CONEVAL, S.F.

**GRAPH 4. PERCENTAGE OF POPULATION LIVING IN POVERTY OR EXTREME POVERTY IN STATES BELONGING TO THE COUNTRY'S NORTHERN, SOUTHERN, AND METROPOLITAN REGIONS**



Source: In-house elaboration with data from Coneval (n.d.a).

(SRI), according to Coneval (n.d.a.), were: Nuevo Leon, Coahuila, Mexico City, Aguascalientes, and Colima. Although, in general, there is a lower lag in the country's north, this does not mean that all the entities included in the northern region have an adequate level of social welfare.

Some elements suggest that there is also backwardness and inequality in the north. For example, 5 of the country's ten municipalities with the high-

est social backwardness belong to the northern region<sup>12</sup>(Coneval, 2021). Likewise, four states in the northern region are counted within the top 5 entities with the highest population between 6 and 14 years of age that does not attend school. Michoacan and Guanajuato have between 30 and 45 percent of their population over 15 years of age with incomplete pri-

<sup>12</sup> Chihuahua: Batopilas de Manuel Gomez Morin y Mixtla de Altamirano; Durango: Mezquital; Nayarit: Del Nayar y Jalisco: Mezquitic (Coneval, 2021).

THE FIVE ENTITIES WITH LOWER INDEX OF FALLING BEHIND (IRS) ACCORDING TO CONEVAL (S.F.A.), WERE: NUEVO LEON, COAHUILA, MEXICO CITY, AGUASCALIENTES AND COLIMA

CONEVAL, S.F.A.



mary education. San Luis Potosi and Michoacan are the northern states with the most housing deficiencies, such as lack of drainage or piped water from the public network. Michoacan and Jalisco have between 30 and 40 percent of their population without health services. (Coneval, 2021).

In addition, the collective violence experienced, especially in the country's north, may increase inequalities between groups of people. UNDP (2022) reveals that in some areas of the world, such as Mexico, violence in neighborhoods where drug cartels or other criminal groups reside slows down development, as

shown by information on brutal acts such as executions and violent confrontations, which also induces higher levels of stress and anguish in the region, slows down investment, growth, development and decreases people's quality of life.

*Images:* Municipalities in the North falling behind: Del Nayar, Nayarit.; Batopilas, Chihuahua; Mezquitic, Jalisco at:  
<https://www.corazondenayarit.com/descubre/del-nayar/>  
<https://mexicorutamagica.mx/2020/12/23/como-llegar-a-batopilas-que-hacer/>  
<https://www.gob.mx/inpi/articulos/encuentro-historico-entre-el-pueblo-wixarika-de-santa-catarina-cuexcomatlan-y-el-gobierno-de-mexico?idiom=es>

## INCOME IN THE CENTER-NORTH

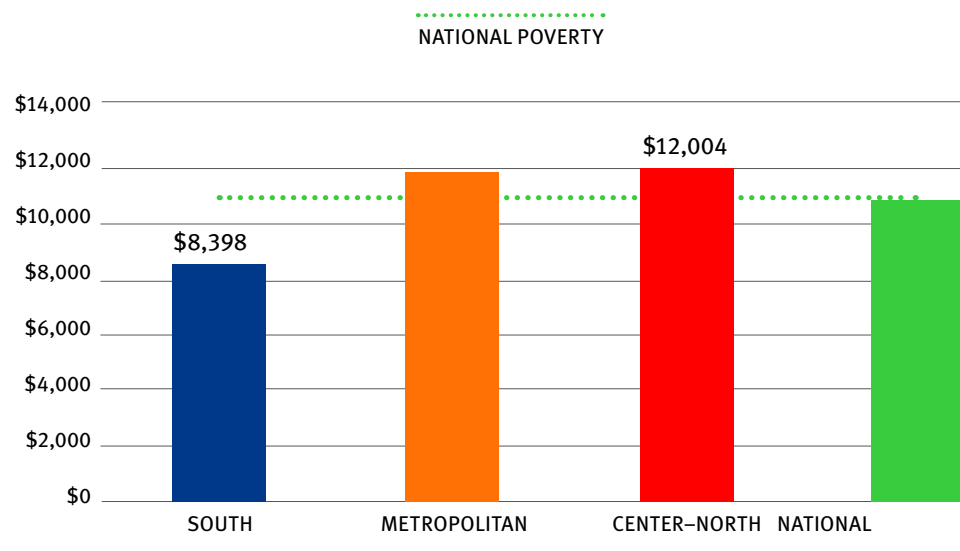
One of the main development goals in democracies is high social mobility, allowing people born with no or scarce economic resources to improve their living conditions (Colmex, 2018). In Mexico, labor income is the primary source of income (INEGI, 2021b), so it could become an engine to increase social mobility and decrease inequality and poverty levels.

The Household Income and Expenditure Survey (ENIGH for its acronym in Spanish) for 2020 reports a monthly labor income of 12,004 pesos per household for the northern part of the country, a figure above the national average and the Metropolitan Zone (\$10,702 and 11,936 pesos per month, respectively) (INEGI, 2021b) (Graph 5).

The labor markets in the northern states have the highest salaries for entities with higher economic development. On average, the northern region reports two characteristic effects: 1) Higher income levels than the rest of the country and 2) Lower employment rates under a critical situation in terms of income and hours worked<sup>13</sup>. In other words, the northern region

<sup>13</sup> The rate of critical conditions of occupation (TCCO) Percentage of the employed population represented by those employed who are working less than 35 hours per week for

GRAPH 5. MONTHLY LABOR INCOME PER HOUSEHOLD IN THE COUNTRY'S NORTHERN, SOUTHERN, AND METROPOLITAN REGIONS FOR 2020



Source: In-house elaboration with data from INEGI (2021b).

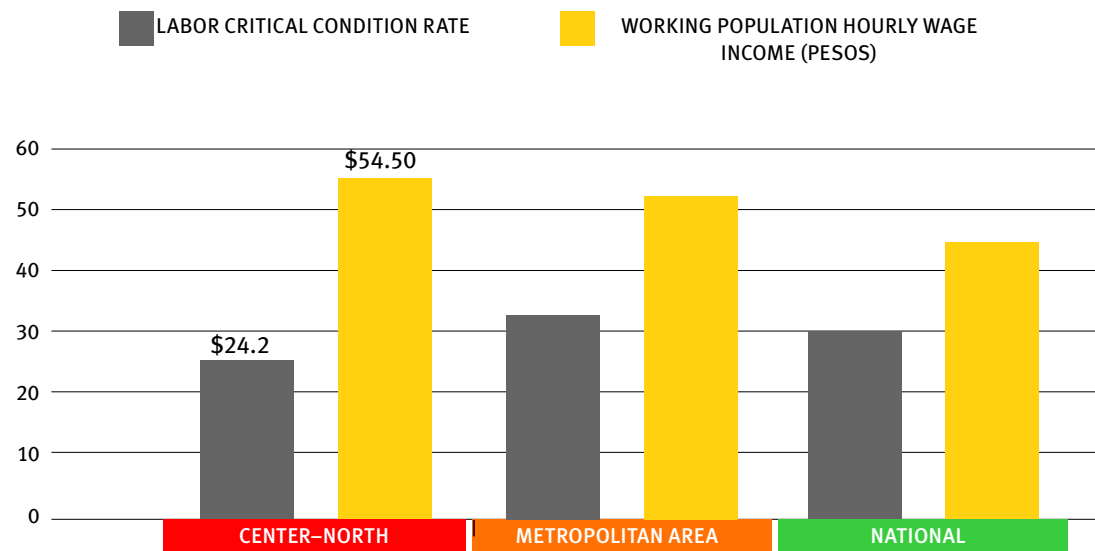
shows an income of 56.8 pesos per hour worked, while in the metropolitan area, it is \$49.2, and at the national level, it is \$44.5. On the other hand, at the national level and in the country's metropolitan area, the rate of critical conditions of occupation (TCCO for its acronyms in Spanish) is higher than in the North (INEGI, 2022b) (Graph 6).

For the third quarter of 2022, the northern states with the highest wages were: Baja California Sur, Baja California, Nuevo Leon, and Sinaloa. While the states with the least critical employment conditions were: Baja California Sur, Jalisco, Sinaloa, and Nuevo Leon (INEGI, 2022b).

The short-term effects of the pandemic in Mexico caused millions of working people to face low wages or layoffs (Feix, 2020), which has impacted labor income. At the national level, people in work poverty had increased, from 36.6% in the 2020 first quarter (when the pandemic began) to 40.7% in 2021 third quarter and 40.1% in the 2022 same quarter. The population in extreme working poverty increased

market reasons, those who work more than 35 hours per week with a monthly income of up to one minimum wage and those who work more than 48 hours per week earning more than one to two minimum wages (INEGI, 2022b). (INEGI, 2022b).

**GRAPH 6. INCOME PER HOUR WORKED AND RATE OF CRITICAL OCCUPATIONAL CONDITIONS BY REGION 2022**



Source: In-house elaboration with data from INEGI (2022b).

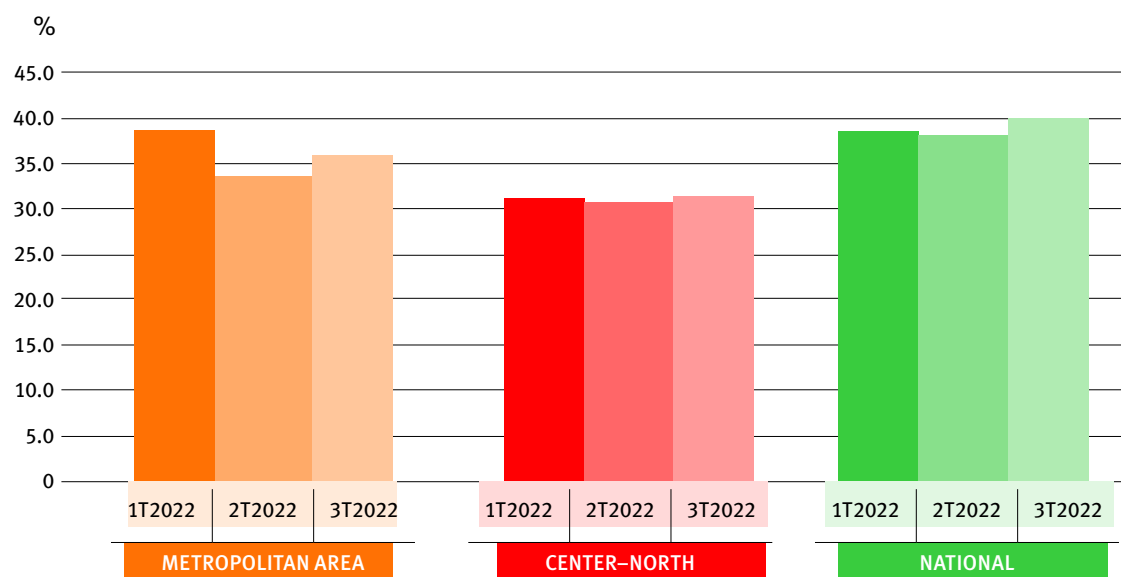
from 8.7 million people in 2018 to 10.8 million in 2020. (Coneval, n.d.b).

Between the second and third quarters of 2022, increases in working poverty were reported<sup>14</sup> in 27 of the country's 32 federative entities. Guerrero, Sinaloa, and Michoacan were the states with the highest increase in the percentage of working poverty, with 5.7, 3.7, and 3.5 percentage points, respectively (Coneval, n.d.b).

At the national level, the increases went from 38.8% of people without sufficient labor income to acquire the food basket (labor poverty) in the first quarter of the year to 40.1% in the third quarter of 2022 (Coneval, n.d.b). Although in the north, the increase of people in working poverty is lower, during the year, it also increased by 1.2 percentage points from the first to the third quarter of the year (Coneval, n.d.b) (Graph 7).

The differences in salaries and working conditions between states imply different scenarios of improved opportunities (social mobility) for Mexicans.

GRÁPH 7. PERCENTAGE OF THE POPULATION IN WORKING POVERTY  
AT NATIONAL LEVEL AND BY REGION



Source: In-house elaboration with data from Coneval (n.d.b).

<sup>14</sup> In-working poverty can be understood as: the percentage of the population with labor income below the monetary value of the food basket (Coneval, n.d.b).



## ◀ MORE SOCIAL MOBILITY IN THE CENTER–NORTH

As we have pointed out in Signos Vitales (2022a), mobility patterns between generations have been found to vary significantly across regions in the country. Those born in households in the most disadvantaged percentile in the north have a higher probability of improving their socioeconomic position than if they were born in the South under similar circumstances (Delajara & Graña, 2017). Without considering the characteristics of their home of origin or their effort, people in Mexico have higher or lower wage and social mobility expectations simply because they were born in a given entity.

Our country has evidence of a high persistence of wealth and poverty. Individuals from economically advantaged households have a high probability of remaining in that situation in adulthood. At the same time, those who grew up in poverty are likely to remain in that same condition. Delajara and Graña (2017) find that mobility is higher in northern states, with higher levels of development.

According to the Centro de Estudios Espinosa Yglesias (CEEY for its acronym in Spanish) Social Mobility Report for 2019, there is greater fluidity in the north

than in any other region of the country (Orozco et al., 2019), as shown in Graphic 8. Considering the population in poverty (quintile I and II) in the country's north, 62 out of every 100 people (61.9%) born below the poverty line remain poor for the rest of their lives. In the Metropolitan Zone, this proportion increases to 67 out of every 100 people. In the rest of the country, it is even higher; 85 out of every 100 born poor remain in that position for the rest of their lives (Orozco *et al.*, 2019).

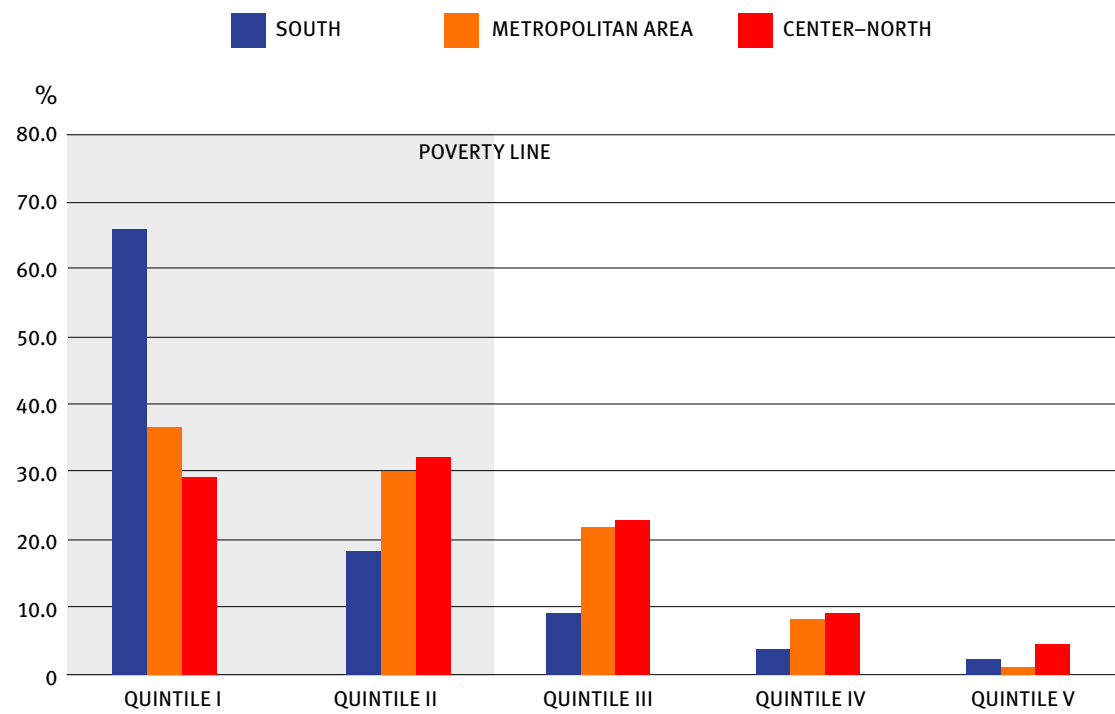
The information above accounts for inequities in how opportunities are distributed across regions and the associated outcomes between generations. In conclusion, the poverty's inheritance in Mexico is less drastic for the north than for the rest of the country.

It is essential to remember that although the north presents more significant opportunities, development, and higher incomes, having more does not mean being better off. In 2020, the relationship between the Gross Domestic Product (PIB for its acronym in Spanish) and the Social Progress Index (IPS for its acronym in Spanish) revealed that 21 states regressed in the score. The most affected entities

IN MEXICO, POVERTY INHERITANCE IS LESS DRASTIC FOR THE NORTH THAN IN THE REST OF THE COUNTRY.



**GRAPH 8. SOCIOECONOMIC MOBILITY BETWEEN TWO GENERATIONS: POPULATION WITH POORER ORIGIN VS POPULATION WITH MORE PROSPEROUS ORIGIN IN THE NORTHERN REGION AND THE METROPOLITAN AREA (% PEOPLE)**



*Source:* In-house elaboration with data from CEEY (2017).

belonged to the Metropolitan Zone (Mexico City) and the northern region (San Luis Potosi) (Mexico ¿como vamos? n.d.). In 2020, a generalized drop was observed in the dimension of Basic Human Needs. The decrease in the score in 2020 is mainly due to

the loss of points in the Health and Well-being component, which includes variables related to mortality at a second level, such as mortality from circulatory diseases, mortality from diabetes, suicide rate and life expectancy (Mexico ¿como vamos? n.d.).

With the scenario mentioned above, the objective of social programs includes overcoming social deprivation, improving opportunities and aspects such as health or education, labor improvement, and, or improvement in social welfare. In Mexico, data from social programs granted by the federal government indicate that, in the northern region, up to 3.1 social interventions are granted for each beneficiary of social programs, a figure lower than the national average (3.4) and reported for the Metropolitan Zone (5.9 interventions per beneficiary), but higher than the rest of the country (2.6) (Government of Mexico, n.d.).

THE SOCIAL PROGRAMS THAT THE FEDERAL GOVERNMENT GRANT ARE:

3.1 SOCIAL INTERVENTIONS FOR EACH BENEFICIARY IN THE CENTER–NORTH REGION

5.9 INTERVENTIONS FOR EACH BENEFICIARY IN THE METROPOLITAN AREA.

GOVERNMENT OF MEXICO, N.D.

## AN EVALUATION OF EDUCATION IN THE CENTER–NORTH

In Mexico and the world, students and teaching staff had to adapt suddenly to a distance education model for more than one school year, where the loss of learning was one of the costs of education in the country. Monroy–Gomez–Franco *et al.* (2021) suggest that, in the best scenario, the short–term learning loss was equivalent to one–third of the school cycle, which in the long term becomes a learning loss of an entire school cycle. Additionally, the components related to educational indicators have an uneven trend throughout the national territory, in which the primary beneficiary in terms of social support and scholarships has been Mexico City.

Access to knowledge is one of the main drivers of social mobility. It allows people to enter the labor market and obtain better salaries for a life with greater well–being. This will depend, to a large extent, on educational attainment and the quality of education (Orozco *et al.*, 2019). Although access to primary education and illiteracy are variables where improvements are observed (Mexico ¿como vamos?, n.d.), enrollment and gender parity in higher secondary

education are still significant challenges throughout the country (Signos Vitales, 2022a).

As far as schooling is concerned, one of the challenges facing the country is the average number of years of schooling people attain throughout their lives, implying, as we have already mentioned, that social mobility is at stake and, therefore, the level of future income and well-being. In Mexico, according to the 2020 Population and Housing Census, the northern region has 9.9 years of schooling, which is higher than the national average (9.7 years) and lower than in the metropolitan area (10.8 years) (INEGI, 2020a).

At the regional level, the highest percentage of children who surpass their parents in terms of educational attainment in the Schooling Index is in the northern region (73.9% in the Education Index) (De la Torre, 2020). The lowest persistence and the highest upward mobility correspond to the metropolitan area, followed by the northern region.

The importance of the northern region's education is linked to the U.S.–Mexico border due to the relationship between wages and education. It returns to schooling in the Mexican states along the north of the border. Since 2000, workers residing in cities with higher relative development, such as Tijuana,

TABLE 16. SCHOOLING OF 15 YEARS OF AGE AND OLDER

STATE	SCHOOLING	STATE	SCHOOLING
Aguascalientes	10.3	Morelos	9.8
Baja California	10.2	Nayarit	9.7
Baja California Sur	10.3	Nuevo Leon	10.7
Campeche	9.6	Oaxaca	8.1
Coahuila	10.4	Puebla	9.2
Colima	10.0	Queretaro	10.5
Chiapas	7.8	Quintana Roo	10.2
Chihuahua	10.0	San Luis Potosi	9.6
Mexico City	11.5	Sinaloa	10.2
Durango	9.7	Sonora	10.4
Guanajuato	9.0	Tabasco	9.7
Guerrero	8.4	Tamaulipas	10.1
Hidalgo	9.4	Tlaxcala	9.8
Jalisco	9.9	Veracruz	8.7
State of Mexico	10.1	Yucatan	9.6
Michoacan	8.6	Zacatecas	9.2
CENTER–NORTH REGION			9.9
METROPOLITAN AREA			10.8
SOUTH REGION			9.2
NATIONAL			9.7

Source: In-house elaboration with data from SEP (n.d.).

Mexicali, Ciudad Juarez, and Nuevo Laredo, show a defined territorial pattern with higher labor income than, in contrast, in the less developed and more distant areas of the northern border (Urciaga & Al-mendarez, 2008).

## CHALLENGES OF THE RIGHT TO EDUCATION

Learning, conditions of permanence, and schooling are essential to combat poverty, so the right to education considers the dimension of quality with equity. It is about the development of competencies for the full development of people (Accion Ciudadana Frente a la Pobreza, 2017). Unfortunately, access to the right to education in Mexico suffers from a notorious structural inequality that is reflected differently in the country's regions.

As Signos Vitales (2022a) mentioned, one of the emblems of the current Federal Government's efforts to promote education has been its commitment to educational scholarships. The purpose is to help young people attending high school in a public school to continue and complete their studies, giving preference to those who study in schools in "priority localities." However, data from the Social Rights Information System (SIDS, for its acronym in Spanish) indicate that support for those with an income below the poverty line who attend public school and receive scholarships has been decreasing since 2016 nationwide (Coneval, Council for the Evaluation of Social Development Policy for its acronym in Spanish, n.d.c).

TABLE 16 SUMMARY. SCHOOLING OF 15 YEARS OF AGE AND OLDER

REGION	AVERAGE SCHOOLING
SOUTH REGION	9.2
METROPOLITAN AREA	10.8
CENTER-NORTH REGION	9.9
NATIONAL	9.7

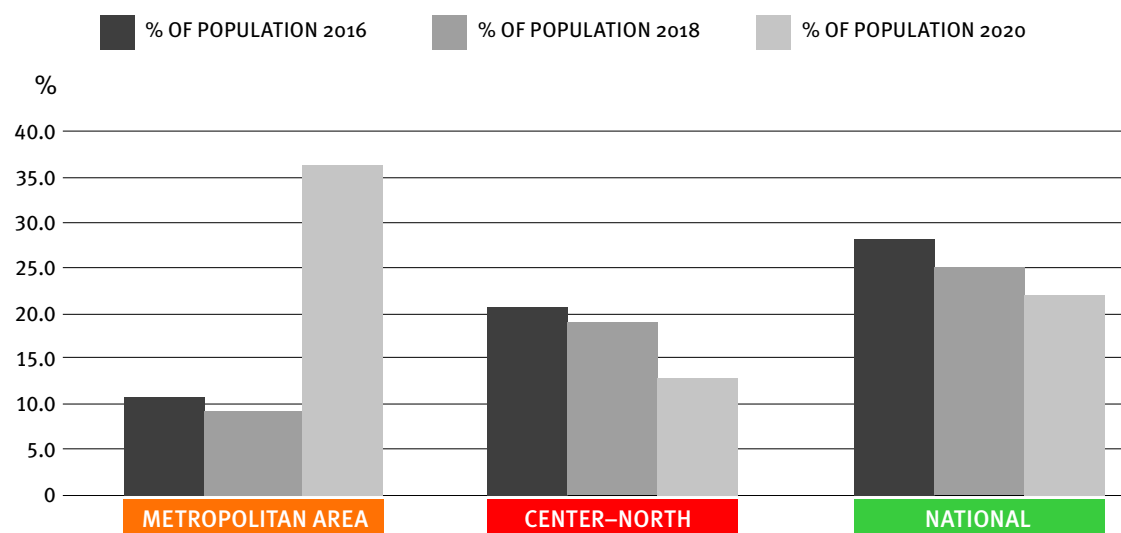
Source: In-house elaboration with data from SEP (s.f.).

The northern region also suffered significant decreases as it went from 20.9% of the poor population with scholarship in 2016 to 18.8% in 2018, dropping to 13.2% in 2020 (Coneval, n.d.c) (Graph 9). What is striking is the notorious increase in support for the metropolitan area of 26.8 percentage points from 2018 to 2020 (Coneval, n.d.c).

The most significant decreases in the proportion of people below the poverty line attending public school and receiving scholarships from 2016 to 2020 were Nayarit, with 21.2 percentage points less than reported in 2016, Michoacan and Zacatecas, with 13.1 pp less, and Tamaulipas, with 11.1 pp less than reported in 2016, implying that their adequate access to education is severely limited (Coneval, n.d.c). In contrast, Mexico City is the entity with the highest increase of people attending public education and receiving scholarships. That percentage went from 7.9% in 2016 to 7.8% in 2018 to 60.2% in 2020 (Coneval, n.d.c).

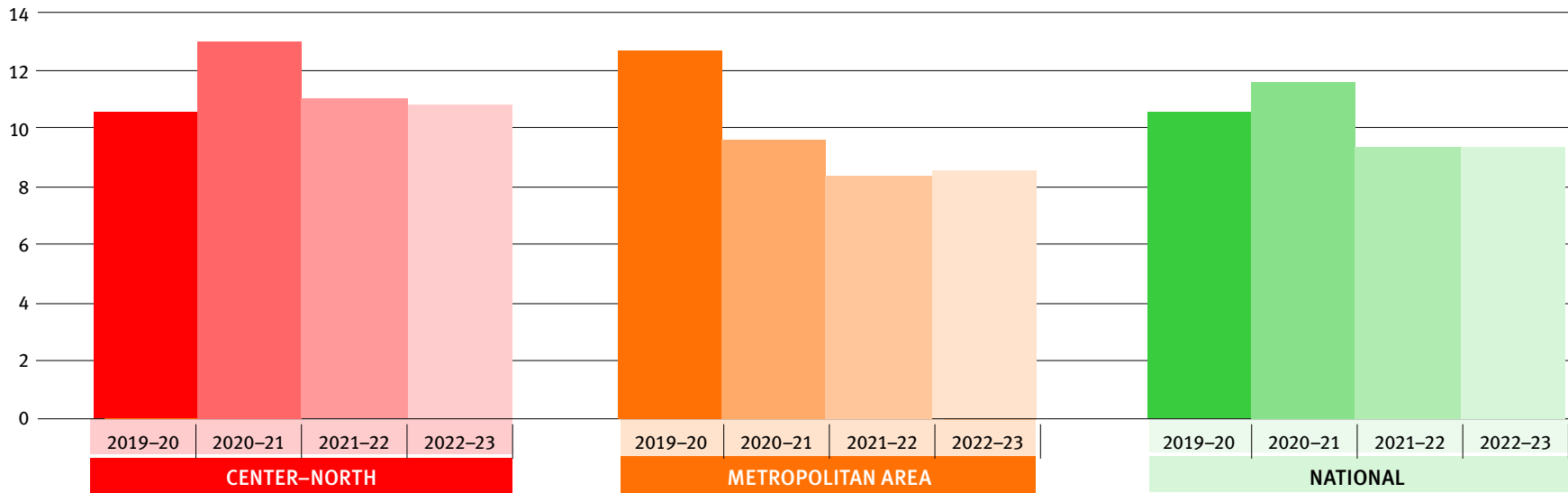
On the other hand, school dropout has reflected one more dimension of the educational crisis in Mexico, where both the northern region and the metropolitan area have reported dropout rates above the national averages for the different school cycles. According

GRAPH 9. POPULATION PERCENTAGE AGED 3 TO 29 YEARS OLD WITH BELOW-THE-POVERTY-LINE INCOME ATTENDING COMPULSORY PUBLIC EDUCATION AND RECEIVING SCHOLARSHIPS IN THE COUNTRY'S NORTHERN REGION AND METROPOLITAN AREA



Source: In-house elaboration with data from Coneval (s.f.c).

**GRAPH 10. AVERAGE SCHOOL DROPOUT RATE FOR THE NORTHERN REGION AND METROPOLITAN AREA BY SCHOOL YEARS**



Source: In-house elaboration with data from SEP (n.d.).

to SEP educational statistics (n.d), at the end of the 2022–2023 school year, the estimated dropout rate for the northern region will be 10.7%, a figure that exceeds the national average (9.2%), and for the metropolitan area, it will be 8.3% (Graph 10).

Dropping out of school represents a barrier to better future opportunities, higher income, and well-being. The probability that students who have dropped out of school will return to school is very low.

As if that were not enough, one more barrier faced by students in recent Mexico was access to digital media to continue their studies. According to the Use and Availability of Information Technologies in the Household National Survey (ENDUTIH, for its acronym in Spanish), access to digital media continues to be restricted, with only 5 out of 10 people having access to a computer (44.2%) and 6 out of 10 having access to the internet (60.6%). At the regional level, the Metropolitan Zone and the northern region of Mexi-



co exceed the national averages regarding access to a computer, internet, or television (Table 17) (INEGI, National Institute of Statistics and Geography for its acronym in Spanish, 2020b).

In the case of internet availability at the state level, the highest values were in Mexico City (80.5%), Sonora (79.5%), Nuevo Leon (78.8%), and Baja California (75.8%), which belong to the country's northern region. In comparison, the states with the lowest values were Chiapas (27.3%), Oaxaca (40.0%), and Tabasco (45.2%), which belong to the south (INEGI, 2020b).

Although the northern region has higher levels of schooling and greater access to digital media, the high school dropout rate and the loss of learning have reduced the quality of education, which hinders human development and, thus, the ability to respond to the challenges that humanity will face (UNDP, 2022). While education and innovation are a matter of every society, the government is crucial in that sense, not only in economic support such as scholarships but also in the creation of adequate policy incentives for inclusion and innovation, being an active partner responsible for the educational quality of the country and the region.

TABLE 17 SUMMARY. HOUSEHOLDS WITH INFORMATION AND COMMUNICATIONS TECHNOLOGY EQUIPMENT, 2020

REGION	COMPUTER	INTERNET	TELEVISION
SOUTH REGION	37,08%	49,02%	87,15%
METROPOLITAN AREA	56,14%	75,57%	95,26%
CENTER-NORTH REGION	46,73%	63,64%	93,38%
NATIONAL	44,20%	60,60%	91,60%

Source: In-house elaboration with data from INEGI (2020b).

THE CENTER-NORTH REGION HOLDS HIGHER LEVELS OF SCHOOLING AND GREATER ACCESS TO DIGITAL MEDIA, BUT THE HIGH SCHOOL DROPOUT RATE AND THE LOSS OF LEARNING HAVE REDUCED QUALITY OF EDUCATION.

TABLE 17. HOUSEHOLDS WITH INFORMATION AND COMMUNICATIONS TECHNOLOGY EQUIPMENT  
BY STATE, TYPE OF TECHNOLOGY, 2020

STATE	COMPUTERS		INTERNET		TELEVISION	
	ABSOLUTE	PERCENTAGE	ABSOLUTE	PERCENTAGE	ABSOLUTE	PERCENTAGE
Aguascalientes	193 556	52.2	254 512	68.7	354 477	95.6
Baja California	638 393	57.9	835 644	75.8	1 033 359	93.7
Baja California Sur	138 388	50.5	192 363	70.3	241 106	88.1
Coahuila	415 331	46.3	582 014	64.9	859 595	95.8
Colima	121 457	49.6	164 445	67.1	225 498	92.0
Chihuahua	578 197	49.4	768 857	65.7	1 118 296	95.5
Durango	228 586	45.1	252 026	49.7	481 228	95.0
Guanajuato	615 744	39.2	868 191	55.3	1 472 281	93.7
Jalisco	1 100 223	46.9	1 571 689	66.9	2 210 381	94.1
Michoacan	478 839	35.3	659 600	48.7	1 239 683	91.5
Nayarit	167 120	41.1	216 718	53.3	370 691	91.1
Nuevo Leon	908 385	58.5	1 223 150	78.8	1 484 809	95.7
Queretaro	319 465	51.6	437 049	70.6	581 495	93.9
San Luis Potosi	311 624	38.2	406 081	49.8	731 549	89.6
Sinaloa	401 338	45.3	513 962	57.9	833 441	94.0
Sonora	452 430	50.0	718 757	79.5	839 851	92.9
Tamaulipas	531 750	45.6	768 957	65.9	1 093 609	93.7
Zacatecas	174 479	38.5	257 006	56.8	429 091	94.8
CENTER-NORTH		46.73		63.64		93.38
METROPOLITAN AREA		56.14		75.57		95.26
SOUTH		37.08		49.02		87.15
NATIONAL		44.20		60.60		91.60

Source: In-house elaboration with data from INEGI (2020b).

## ◀ THE HUMANITARIAN CRISIS AT THE BORDER

The context of migration in Mexico is very complex as it involves different flows of people, such as origin, transit, destination, and return migration. According to the International Organization for Migration (IOM), the Mexico–United States migration corridor is currently the second busiest in the world (McAuliffe & Triandafyllidou, 2021). In this sense, the diversity of flows includes both migrants in transit and people in need of international protection, as well as those internally displaced by force and Mexican nationals returning from another country, mainly the United States (McAuliffe & Triandafyllidou, 2021).

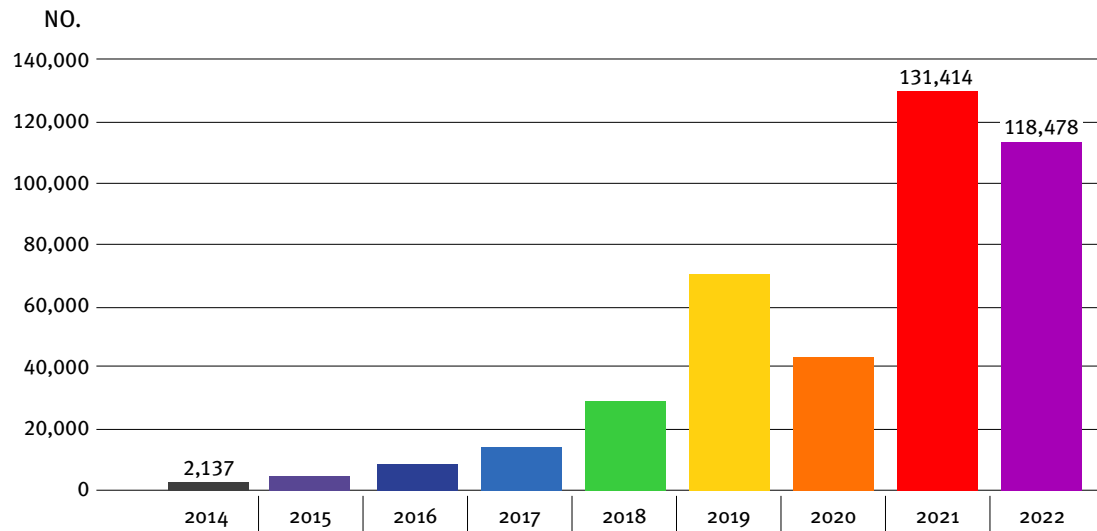
There are three crucial flows worldwide: The first is between Mexico and the United States of America<sup>15</sup>. According to the CNDH (n.d.), Mexicans have been the most potent group of immigrants from that country since the 1980s. It is known that the Mexican border with the U.S. is crossed by Mexicans and people

<sup>15</sup> The second is in Europe and neighboring countries. In addition to dealing with migrants crossing countries due to economic crises, there is also another group that seeks to escape the violence in their countries and migrate to Europe illegally. And finally, there is the flow in the Middle East and North Africa, one of which has been increasing in recent years and has been driven by wars. This area has witnessed the movement of both refugees and internally displaced persons (CNDH, n.d.).



*Image:* “The United States will allow the entrance to those seeking asylum who wait in Mexico” Central American migrants in Tijuana, an archive photo at <https://www.dw.com/es/estados-unidos-permitir%C3%A1-la-entrada-a-solicitantes-de-asilo-que-esperan-en-m%C3%A9xico/a-56547425>

GRAPH 11. NUMBER OF ASYLUM APPLICATIONS IN MEXICO  
2014–2022



Source: In-house elaboration with data from Comar (n.d.).




coming from Central American countries in search of a better economic situation.

Following the political changes in the United States and the tightening of its immigration policies, there has been an increase in refugee applications in Mexico, which has accelerated since 2016 (Ruiz, 2020). The number of requests has increased from just over 2 thousand in 2014 to more than 131 thousand in 2021 (Graph 11), where Haiti, Honduras, Cuba, Venezuela, and El Salvador accounted for 83% of all asylum re-

quests for the country (UNHCR, 2021), in addition, 31,688 are children requiring asylum in Mexico (COMAR, n.d.).

From January to March 2022, around 30 thousand refugee applications were registered in Mexico, slightly more than those recorded for 2018, and the number of internal displacements due to disasters, violence, or conflicts was 2.5 million people between 2008 and 2021 (Oxfam, n.d.).

TABLE 18. RESULTS OF THE ASSESSMENT OF ASYLUM SEEKERS IN BASIC NEEDS AND DEPRIVATION

POBREZA Y HAMBRE	CARENCIAS SOCIALES	NECESIDADES BÁSICAS
 <ul style="list-style-type: none"> <li>» 99% do not have enough money for food, housing and medical care.</li> <li>» 60% have no income.</li> <li>» 60% of the population buys their own food.</li> <li>» 56% did not have enough food to feed their families this week.</li> <li>» 89% fear that they will not have enough food.</li> </ul>	 <ul style="list-style-type: none"> <li>» 12% live in shelters or in the street.</li> <li>» 73% pay to rent a room or apartment.</li> <li>» In these dwellings, 30% lack water, 53% lack drinking water, 44% lack private space, and 76% lack sufficient beds for all inhabitants.</li> <li>» 46% suffer from medical conditions such as hypertension, asthma, or injuries.</li> <li>» 32% need medication, but only 28% of them receive it on a regular basis.</li> <li>» 71% of children have not attended school in Mexico.</li> </ul>	 <ul style="list-style-type: none"> <li>» Lack of documentation in Mexico.</li> <li>» Lack of information.</li> <li>» Social isolation.</li> <li>» Lack of access to services.</li> <li>» Excess violence.</li> </ul>

Source: In-house elaboration with data from Mexican Migration Field Research Program (MIRPS) (2021).

In the country's north, especially in the border area, with the increase in the number of applicants, the shortages and humanitarian needs that migrants need to address are also increasing. According to

a report by the University of San Diego California (Mexican Migration Field Research Program MMFRP) (2021), 99% of migrants do not have enough money for basic needs such as food, housing, or access

to health care, in addition to facing street situations that put their health, integrity and social welfare at risk (Table 18).

During 2022, 388,611 people were presented or channeled by the National Migration Institute, 34.3% more than in 2021. 14.4% of the referrals (60,020) were children and adolescents (NNA, for its acronym in Spanish) (Government Secretariat, 2021a: 2022). The most significant number of events involving persons in an irregular situation in Mexico is in the northern part of the country (Baja California, Coahuila, Sonora, Nuevo Leon, and Tamaulipas) (Government Secretariat, 2022) (Table 19).

Despite the inconvenience faced by migrants, the COVID-19 pandemic has added new and more significant obstacles. The Federal Government issued that in terms of health and response to the COVID-19 pandemic, applicants, refugees, or those who received complementary protection have access to the vaccine against COVID-19, according to the stages defined in the National Vaccination Policy by the Ministry of Health (Mexican Government, 2021). However, there is no clear information on the follow-up of migrants on official websites.

**TABLE 19. EVENTS OF IRREGULAR MIGRANTS IN MEXICO  
BY STATE, JANUARY–NOVEMBER 2021–2022**

STATE	2021	2022	VARIATION %
Chiapas	71 808	132 565	84.6
Baja California	26 667	40 731	52.7
Tabasco	43 168	39 589	-8.3
Veracruz	21 779	32 013	47
Coahuila	15 292	27 155	77.6
Sonora	12 991	21 150	62.8
Nuevo Leon	13 773	17 095	24.1
Tamaulipas	23 779	14 800	-37.8
Other	60 131	63 513	5.6
<b>NATIONAL</b>	<b>289 388</b>	<b>388 611</b>	<b>34.3</b>

*Source:* In-house elaboration with data from Mexican Migration Field Research Program (2022).



In September 2021, the Government reported that on the first day of vaccination, in whose organization uniformed members of the National Guard participated in guarding the place, 23 women and 76 men from Cuba, Honduras, El Salvador, Guatemala, Venezuela, and Haiti were given a dose of the CanSino brand. All of them were detained in the Siglo XXI Migratory Station, the largest in the country, designed to hold 800 people, but which, in times of increased migratory containment, has held more than 2,000 foreigners (Government Secretariat, 2021b).

The Mexican Social Security Institute (IMSS, for its acronym in Spanish), the agency in charge of the anti-virus vaccination process in Mexico, reported that by February 2022, it had applied 17,907 first doses to Haiti, Honduras, and El Salvador migrants. The two-dose schedule was only applied to 10,750, that is, only 5% of the migrant population detected by the government on their entry through southern Mexico (Mariscal & Dominguez, 2022).

Since 2020, the COVID-19 pandemic has significantly impacted migration in Mexico. Trends in mobility, return migration, apprehensions at the U.S.–Mexico border, and visa issuance has been impacted by the pandemic and movement restrictions as a health con-

tainment measure. Unfortunately, although health is a human right, the delay in the supply of vaccines and the discretionary nature with which migration authorities determined vaccination needs had a decisive influence on the health and lives of migrants seeking more and better living standards.



*Image:* “Mexico: Vaccine registration does not include important population sectors and risk public health” at <https://www.es.amnesty.org/en-que-estamos/noticias/noticia/articulo/mexico-el-registro-de-vacunacion-excluye-a-importantes-sectores-de-la-poblacion-y-pone-en-riesgo-la-salud-publica/>



## HEALTH IN THE CENTER–NORTH

As we pointed out in *Signos Vitales* (2022a), health can be affected throughout life by various factors, such as advances or setbacks in expected years of life, as well as by accidents or illnesses. According to CEEY (Espinosa Yglesias Study Center for its acronym in Spanish), since health conditions are transmitted from one generation to the next, children may inherit conditions that make it challenging to improve their position concerning their parent’s health. In addition to the fact that the environment, nutritional patterns or habits, and physical activity play an important role (Orozco *et al.*, 2019).

One of the factors mentioned above corresponds to food. It is a physical and economic right that all individuals possess (OHCHR, 2004). Freedom from hunger is the minimum level that must be guaranteed within the right to food. The limitations to the full exercise of this right in Mexico are reflected in the lack of access to food reported by Coneval (s.f.d). The lack of access to food is considered in the country’s households that present some degree of food insecurity (moderate or severe), which reflects the reduction in the consumption of calories.

At the national level, it was identified that 6 out of 10 households (59.1%) are in some degree of food insecurity (mild, moderate, and severe), reporting that in 2 out of 10 (20.6%) of households, it is moderate and severe. This percentage means that, in the months before the survey, households reduced the amount of food they usually consume, including situations in which some of the members omit mealtimes or stop eating for a whole day due to a lack of money or resources to buy food (Shama *et al.*, 2021).

Regionally, the country’s north reports levels below the national average regarding food insecurity. In Mexico, 21 out of every 100 people suffer moderate and severe food insecurity, 17 out of every 100 in the north, and 28 out of every 100 face it in the rest of the country (Shama *et al.*, 2021) (Graph 12).

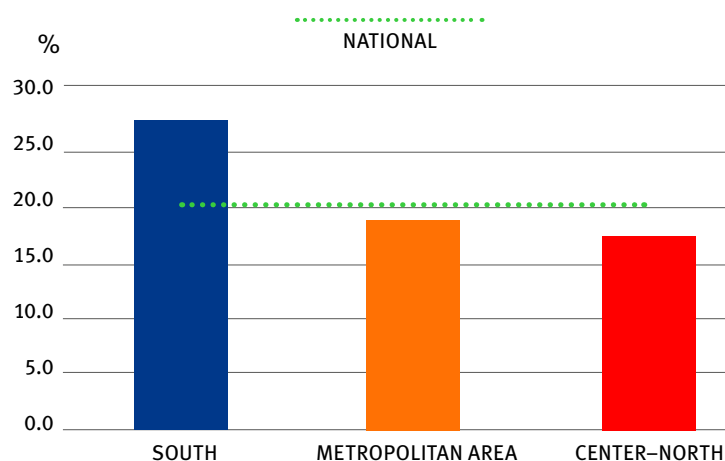
The country's financial capacities to acquire the basic food basket are different. The northern region has the lowest levels of working poverty, which shows the inability of households to obtain the basic food basket necessary to subsist on their labor wages. In other words, in the north, there are lower levels of working poverty and, at the same time, higher spending per person on food (Shama *et al.*, 2021).

At the national level, the average monthly food expenditure per person was 1,500 pesos. The northern region reported 1,689 pesos per person per month, while the metropolitan area reported 1,733 pesos (Shama, *et al.*, 2021) (Graph 13). These amounts show the differences in the capacity of households in the different regions of the country.

Given the health and economic crisis in 2020 due to the COVID-19 pandemic, Mexican households experienced a sharp drop in income, which required an adjustment in spending on non-food and non-health services and products. This loss was particularly significant in clothing, footwear, household goods, and culture and entertainment services (Shama *et al.*, 2021).

At the regional level, the health spending reported in the ENSANUT (National Health and Nutrition Survey, for its acronym in Spanish) for the north reports

GRAPH 12. POPULATION PERCENTAGE WITH MODERATE AND SEVERE FOOD INSECURITY  
2020



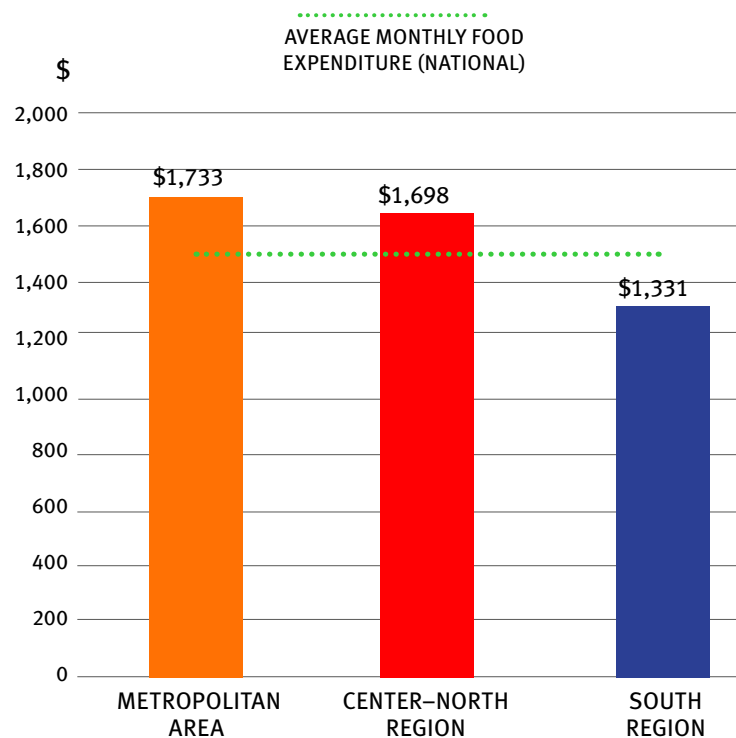
Source: In-house elaboration with data from Shama, *et al.* (2021).

THE LACK OF ACCESS TO FOOD IS CONSIDERED IN THE COUNTRY'S HOUSEHOLDS THAT PRESENT SOME DEGREE OF FOOD INSECURITY (MODERATE OR SEVERE), WHICH REFLECTS THE REDUCTION IN THE CONSUMPTION OF CALORIES.

figures above the national average. The 56.8% of the population in the north who spent on a hospital transfer paid an average of 87 pesos. In contrast, in the Metropolitan Area, both the proportion of people and the average expenditure on transfers were lower (49% and 49 pesos). The same pattern is seen in the category of “other medical expenses,” such as studies and clinical analyses. In the north, 21.2% of the people who reported spending on tests and studies paid an average of 1,600 pesos, while at the national level, 23.6% of people paid 1,000 pesos for this item (Shama *et al.*, 2021).

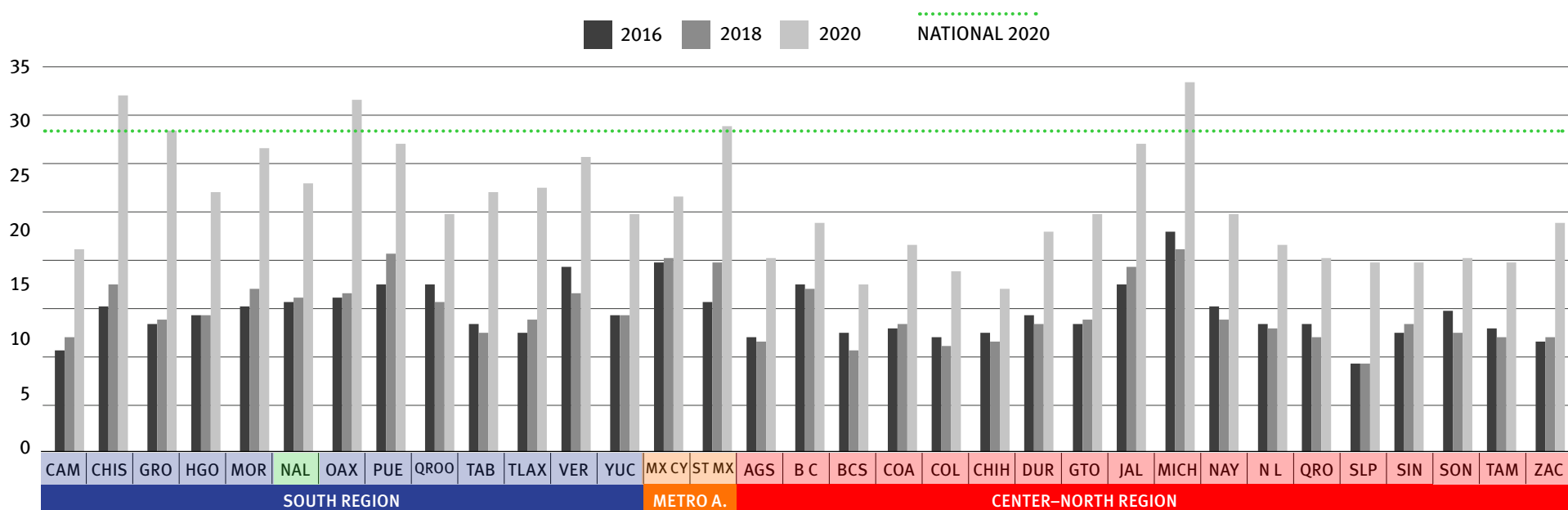
As if this were not enough, in Mexico, the public health system design is segmented according to the working status of the population. While waged people, retirees, and their families have access to social security institutions access such as IMSS (51%), ISSSTE (7.7%), and even Pemex (Mexican Petroleum for its acronym in Spanish) security (1.3%), there is a lower percentage of self-employed people or informal sector workers who usually receive care in Insabi 35.5% (formerly Seguro Popular) or IMSS–Bienestar (1.0%) (INEGI, 2020a). This segmentation implies unequal access to the right to health protection, as the benefits differ depending on the institution to which one is affiliated.

GRAPH 13. AVERAGE MONTHLY FOOD EXPENDITURES PER PERSON  
2020



Source: In-house elaboration with data from Shama, *et al.* (2021).

GRAPH 14. LACK OF ACCESS EVOLUTION TO HEALTH SERVICES IN THE COUNTRY



Source: In-house elaboration with data from Coneval (n.d).

In addition, the lack of access to health services has been increasing since 2016, which at the national level has left more than 15 million people without access to health services (Coneval, n.d). At the regional level, 2020 was the year where such deficiency grew the most for all entities in the northern region and the metropolitan area (Graph 14). Entities such as Michoacan, Jalisco, and the State of Mexico report percentages above the national average (Coneval, n.d.d).

IN 2020 THE LACK OF ACCESS TO HEALTH SERVICES GREW ABOVE NATIONAL AVERAGE IN MOST ENTITIES IN THE CENTER-NORTH REGION. MICHOACAN, JALISCO AND THE STATE OF MEXICO REPORTED PERCENTAGES ABOVE THE NATIONAL AVERAGE.

CONEVAL, N.D.D.

## HEALTHCARE SHORTAGES AND NEGLECT

One more sign of the Federal Government’s neglect of healthcare is reflected in the shortage of medicines in the country’s public hospitals. The lack of adequate access to medicines, medical supplies, and vaccines is a problem that has worsened in recent years. In 2021, there were 1,227 reports of shortages concentrated in states such as Mexico City, the State of Mexico, Guerrero, and Jalisco. Even though the country’s scarcity has improved concerning 2021, we are still below the levels of 2017 and 2018, which infringes on health rights (Cero Desabasto, 2022).

On the other hand, social security protects against poverty and social inequality, so access to it enables or hinders access to health services for those who work and their families (Accion Ciudadana Contra la Pobreza, n.d.). At the national level, 6 out of 10 people (61%) do not have social security. Therefore it is impossible to access health services as a work benefit (Accion Ciudadana Contra la Pobreza, n.d.). In the north, the lack of social benefits and access to social security is less drastic (Table 20). However, one out of every two people (52.9%) does not have access to SS, and it should be noted that this lack violates existing labor rights (Accion Ciudadana Contra la Pobreza, n.d.).

TABLE 20. PERCENTAGE OF PEOPLE WITHOUT SOCIAL SECURITY  
APRIL TO JUNE 2022

REGION	PEOPLE WITHOUT SOCIAL SECURITY %
METROPOLITAN AREA	55.5%
CENTER-NORTH REGION	52.9%
NATIONAL	61.0%

Source: In-house elaboration with data from Acción Ciudadana contra la pobreza (n.d.).

It is clear that even though the northern region has more favorable economic and social characteristics, we are still far from ending social inequality, so having more does not mean being better off. The gaps are still significant in the country’s north, with problems such as latent migration, educational abandonment, lack of health care, shortages, and access to quality food (among others).

The social problems we face remain. The challenges to overcome include economic reactivation, poverty levels, food insecurity levels, educational quality, and thus equal opportunities. Unfortunately, social supports follow different dynamics than those dictat-

ed by the behavior of poverty. The data reveals that support goes mainly to the Metropolitan Area and thus does not prioritize the most disadvantaged.

In Mexico, inequality and deprivation are common denominators throughout the country. Although the north of the country presents more and better opportunities to get ahead or more social mobility, we continue to present essential deficiencies that the COVID-19 pandemic aggravated. The search for social transformations in education, health, poverty, and food, to mention a few, includes the active role of public policy to combat the inequalities that Mexico presents today. Social gaps must be closed, and new opportunities must be opened. Unfortunately, Mexico faces a panorama full of attempts to build a welfare state with social programs based on transfers that lack the universality of social rights, which is reflected in the increase in social deprivation.



*Image: “IMSS Bienestar. More patients”. Photo: Demian Chávez at <https://www.proceso.com.mx/reportajes/2022/4/26/ante-el-fracaso-el-insabi-se-achica-284901.html#&gid=1&pid=1>*

IN MEXICO INEQUALITY AND DEPRIVATION ARE COMMON DENOMINATORS THROUGHOUT THE COUNTRY. ALTHOUGH THE CENTER-NORTH OF THE COUNTRY PRESENTS MORE AND BETTER OPPORTUNITIES TO GET AHEAD OR MORE SOCIAL MOBILITY, WE CONTINUE TO PRESENT ESSENTIAL DEFICIENCIES THAT THE COVID-19 PANDEMIC AGGRAVATED.







# SCIENCE & TECHNOLOGY





# ADVANCES IN INNOVATION

◀ **O**n several occasions, we have pointed out the importance of science and technology investment for the country's development and growth. A knowledge society promotes the plurality of ideas and helps to build a community that values cultural, economic, and social diversity, where tradition, nature, and scientific knowledge coexist.

Scientific advances can prevent catastrophes, help stop the progress of diseases, increase the quality

of life, and improve social processes. Unfortunately, science has not had the necessary attention and support to promote knowledge in Mexico. Mexico is one of the countries that allocates the least resources to the scientific sector, with a significant deficit in Science, Technology, and Innovation (STI). In 2020, OECD member countries allocated an average of 2.67% of their GDP to Research and Development (R&D), while Mexico only allocated 0.30% of its GDP to the same area (OECD, 2023). In other words, Mex-

*Image: "Aerospacial industry grows 12% annually in Chihuahua" at <https://a21.com.mx/aeronautica/2016/03/25/industria-aerospacial-crece-12-anual-en-chihuahua>*

ico invests nine times less in R&D (8.8) than the other OECD member countries and reports seven times fewer patents than Latin America and the Caribbean, which translates into limitations and obstacles to transition to a knowledge society (Signos Vitales, 2022b).

Despite the scientific deficit, science in Mexico has achieved important advances. However, the current administration has dismantled the Mexican scientific system and promoted institutional destruction, budgetary austerity, and attacks on scientists and universities, all of which undermine technological progress and slows down the innovation needed to respond to the challenges in all areas of science.

SCIENCE IN MEXICO HAD ACHIEVED IMPORTANT ADVANCES. HOWEVER, THE CURRENT ADMINISTRATION HAS DISMANTLED THE MEXICAN SCIENTIFIC SYSTEM AND PROMOTED INSTITUTIONAL DESTRUCTION, BUDGETARY AUSTERITY, AND ATTACKS ON SCIENTISTS AND UNIVERSITIES.

## INNOVATION IN THE CENTER-NORTH

Given the low level of investment in STI in Mexico, the results in innovation and sophistication of the country's economic sectors are low. The Mexican Institute for Competitiveness (IMCO, for its acronym in Spanish) measures the level of innovation and sophistication in financial sectors to measure the capacity of states to compete in high-value-added sectors intensive in knowledge and state-of-the-art technology. In this sense, the research context and the generation of patents reveal setbacks in the scientific sector, in the case of Mexico.

In 2022, only four of the 32 states presented a "high" innovation sub-index,<sup>16</sup> mostly belonging to the country's north (Table 21). Twelve more entities are in the "Medium High" classification, and the rest are in "Medium Low" or "Low" (IMCO, n.d.).

The ranking indicates that an entity with more innovative economic sectors attracts more investment, which generates a virtuous circle of knowledge generation (IMCO, n.d.). Only Jalisco, Queretaro, and

<sup>16</sup> The Innovation sub-index measures the ability of states to compete successfully in the economy, particularly in high-value-added, knowledge-intensive, and high-tech sectors. IMCO, n.d

TABLE 21. INNOVATION SUB-INDEX RESULTS  
BY FEDERAL ENTITIES

VERY HIGH	HIGH	MEDIUM HIGH	MEDIUM LOW	LOW	VERY LOW
	1. Jalisco	5. Coahuila	17. Yucatan	27. Michoacan	
	2. Mexico City	6. Guanajuato	18. Morelos	28. Quintana Roo	
	3. Queretaro	7. Sonora	19. Puebla	29. Colima	
	4. Nuevo Leon	8. Campeche	20. Hidalgo	30. Oaxaca	
		9. Chihuahua	21. State of Mexico	31. Chiapas	
		10. Tabasco	22. Baja California Sur	32. Guerrero	
		11. Aguascalientes	23. Veracruz		
		12. San Luis Potosí	24. Zacatecas		
		13. Sinaloa	25. Tlaxcala		
		14. Tamaulipas	26. Nayarit		
		15. Durango			
		16. Baja California			

Source: In-house elaboration with data from IMCO (n.d).

Nuevo Leon, together with Mexico City, report a high innovation sub-index, which implies greater technological development in these entities. Coahuila, Guanajuato, Sonora, Chihuahua, Aguascalientes, San Luis Potosi, Sinaloa, Tamaulipas, Durango, and Baja California, belonging to the northern region of the country, are in the medium-high classification (IMCO, 2022a).

As if that were not enough, all the entities worsened in the sub-index indicators. That is to say, from 2021 to 2022, the results of the Competitiveness Index decreased in terms of the number of patents, research centers, productivity, or economic complexity in innovation sectors; the best entities in terms of the number of patents, research centers, productivity or economic complexity in innovation sectors belong to the northern region of the country (Jalisco and Nuevo

Leon) and Mexico City (Table 22). While Mexico City had 2.4 research centers per 100,000 people of the economically active population, Colima has only 0.3 (IMCO, 2022a).

In 15 states, the rate of patents applied for was less than one per 100,000 persons of the economically active population (EAP). Jalisco considered a sub-index of technological innovation, applied for the high-

est number, with almost six patents applied for every 100,000 people in the EAP. Even so, between 2020 – 2021, the average patents rate of the economically active population applied in the 32 states decreased from 1.8 to 1.6 per 100 thousand (IMCO, 2022a).

The above scenario reflects the need to strengthen the Mexican scientific sector, to promote a research

TABLE 22. RESULTS BY INNOVATION SUB-INDEX INDICATOR

INDICATOR	STATE COMPETITIVENESS INDEX 2021	STATE COMPETITIVENESS INDEX 2022	¿IMPROVED OR WORSENE?	BEST ENTITY	WORST ENTITY
PATENTS: Patents are applied per one hundred thousand inhabitants of the economically active population	1.82	1.57	Worsened	Jalisco	Chiapas
RESEARCH CENTERS: Centers per one hundred thousand inhabitants of the economically active population	1.3	1.18	Worsened	Mexico City	Colima
TOTAL FACTOR PRODUCTIVITY: Annual Growth Rate	-1.33	-4.28	Worsened	Campeche	Quintana Roo
ECONOMIC COMPLEXITY IN INNOVATION SECTORS: Index	53.62	51.77	Worsened	Nuevo Leon	Queretaro

Source: In-house elaboration with data from IMCO (2022a).

ecosystem to attract and retain more investment and talent to drive the full growth and development of the country. Despite the low results, the authorities have taken actions that further deteriorate science, limiting its expansion, and the fatal state of the Mexican scientific system is reflected in the following data.

IN 2022, ONLY FOUR OF THE 32 STATES PRESENTED A “HIGH” INNOVATION SUB-INDEX, MOSTLY BELONGING TO THE COUNTRY’S NORTH.

THE RANKING INDICATES THAT AN ENTITY WITH MORE INNOVATIVE ECONOMIC SECTORS ATTRACTS MORE INVESTMENT, WHICH GENERATES A VIRTUOUS CIRCLE OF KNOWLEDGE GENERATION (IMCO, N.D.).

ONLY JALISCO, QUERETARO, AND NUEVO LEON, TOGETHER WITH MEXICO CITY, REPORT A HIGH INNOVATION SUB-INDEX, WHICH IMPLIES GREATER TECHNOLOGICAL DEVELOPMENT IN THESE ENTITIES.

## MEXICAN SCIENTIFIC SYSTEM



With the low investment in the scientific field and the changes of the current administration, the scholarships in force as of December of each year have also been decreasing, thus reducing the opportunities for thousands of students to aspire to greater social mobility, more and better opportunities, and higher incomes. These decreases, in turn, slow down the country’s innovation results.

It is important to mention that the structure of the Mexican scientific system is built on three pillars: the postgraduate scholarship program, the national system of researchers, and the system of research funds, which are also present in a differentiated distribution in the regions of the country. These differences reflect and exacerbate regional inequalities and discourage high-level human capital formation.

The science destruction in Mexico has been concentrated in the institutional dismantling that has a major impact on the scientists’ training and technologists in the country. Conacyt (National Council for Science and Technology for its acronym in Spanish) grants alone in recent years have been gradually decreasing since 2018, as shown in Graph 15 below.

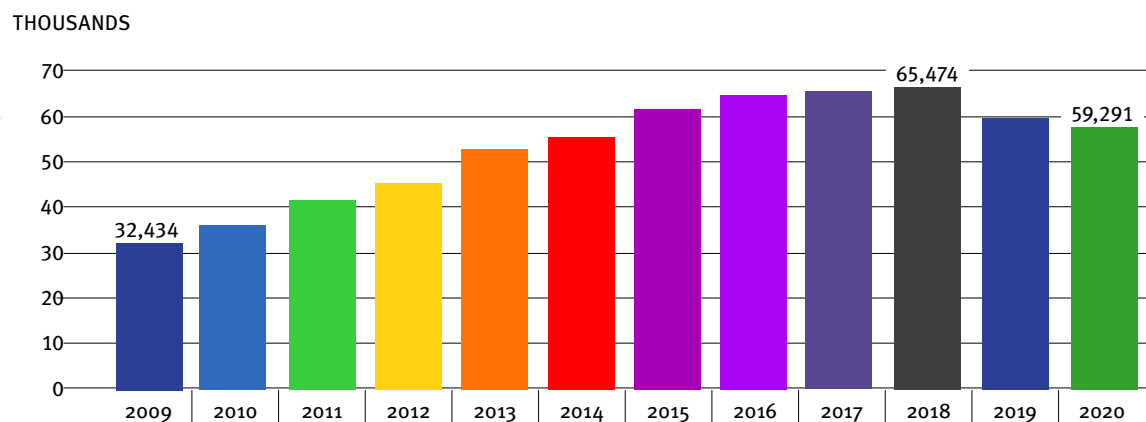


Regarding the training of scientists and specialists, the postgraduate scholarship program reflects that by 2022, 43.2% of the scholarships were destined for the northern region (which includes 18 entities) to the metropolitan area 31.9% (includes only the Mexico State and Mexico City) and the rest of the country only 24.9% (12 entities are involved). It is necessary to distinguish that Mexico City represents 25.8% of the total number of scholarships within the country; such behavior is similar to that reported in 2018 and 2021 (Conacyt, n.d) (Table 23).

Regarding the National System of Investigators (SNI for its acronym in Spanish), the 2022 researcher census shows considerable differences between regions. The Metropolitan Zone has 0.56 researchers per 1,000 inhabitants, a number well above the national average (0.24), while for the northern region, only 0.22 researchers are reported as members of the SNI per 1,000 inhabitants (Conacyt, 2022).

The lowest number of members of the National System of Researchers in the northern region is found in the states of Guanajuato, with 0.08 SNI researchers per 1,000 inhabitants, followed by Tamaulipas, San Luis Potosi and Durango (with 0.11 researchers per

GRAPH 15. SCHOLARSHIPS IN EFFECT AS OF DECEMBER OF EACH YEAR



Source: In-house elaboration with data from Conacyt (2022).

TABLE 23. GRADUATE SCHOLARSHIPS AND QUALITY SUPPORT 2018, 2021 AND 2022 BY REGION

REGION	% 2018	% 2021	% 2022
METROPOLITAN AREA	34.5	35.1	31.9
CENTER-NORTH REGION	42.6	42.2	43.2
SOUTH REGION	22.9	22.7	24.9

Source: In-house elaboration with data from Conacyt (n.d.).

1,000 inhabitants) and finally Michoacan and Coahuila (0.17 in each state).<sup>17</sup>

The advances of the knowledge society are supported by scientific development, so within territorial development policies, it is necessary to ensure the equitable distribution and use of the wealth of knowledge needed to promote national development (Londoño, 2008). Unfortunately, the attacks on science in Mexico have been manifested from different aspects, such as budgetary adjustment (see Signos Vitales, 2022b, p.206), institutional dismantling, or law initiatives with centralist and ideologized purposes (Lazcano, 2023).

TABLE 24 SUMMARY. SNI RESEARCHERS PER 1,000 HABITANTES 2020

REGION	NO. OF SNI PER 1000 INHABITANTS
METROPOLITAN AREA	0.56
CENTER-NORTH REGION	0.22
NATIONAL	0.24

Source: In-house elaboration with data from Conacyt (2022).

<sup>17</sup> In-house calculation with data from Conacyt (2022).

TABLE 24. SNI RESEARCHERS PER 1,000 INHABITANTS IN 2020

REGION	STATE	NO. OF SNI PER 1000 INHABITANTS	AVERAGE
METROPOLITAN AREA	Mexico City	0.99	0.56
	State of Mexico	0.13	
CENTER-NORTH REGION	Baja California Sur	0.57	0.22
	Jalisco	0.40	
	Chihuahua	0.35	
	Nuevo León	0.31	
	Aguascalientes	0.27	
	Querétaro	0.24	
	Baja California	0.20	
	Sinaloa	0.19	
	Zacatecas	0.19	
	Nayarit	0.19	
	Sonora	0.18	
	Colima	0.18	
	Michoacán	0.17	
	Coahuila	0.17	
	Tamaulipas	0.11	
	San Luis Potosí	0.11	
Durango	0.11		
Guanajuato	0.08		
NATIONAL			0.24

Source: In-house elaboration with data from Conacyt (2022).



## ATTACKS ON SCIENCE

In *Signos Vitales*, we have also warned about the attacks on science since the beginning of the current administration, the attacks on freedom of thought, and the scientific pace imposition. The case of CIDE (Centre of Research and Higher Education Specialising in Social Sciences for its acronym in Spanish) and UNAM (the Autonomous University of Mexico for, its acronym in Spanish) have been just some of the cases we have documented. Limitations to science range from the weakening of the budget attached to republican austerity, the disappearance of funds and trusts, and career disincentives for both researchers and students, and this risks knowledge and innovation in Mexico (*Signos Vitales*, 2021b).

As if that were not enough, the new initiative of the General Law on Humanities, Science, Technology, and Innovation seeks to put an end to “neoliberal science” under the premise of promoting a “humanistic science.” The idea is to dismantle all the governance bodies of the scientific system and submit the exercise of science to a new body where there are no counterweights and which restricts freedom of research, imposing priorities from the government (*Lazcano*, 2023).

Under this scheme, the initiative aims to dismantle the Mexican scientific system built over the years under the leadership of Conacyt and its advisory bodies made up of scientists and academics. Likewise, it is intended to confer powers to the new Conahciti, representing a concentration of decisions that would affect the future of national scientific policy (*Toche*, 2023). In the words of Dr. Researcher Brenda Valderrama<sup>18</sup>, “verticality in decision-making is also proposed, which excludes and dismantles the governance bodies of the Mexican system, without feedback and with total subordination to the decisions of the president of the republic” (*Toche*, 2023).

Thus, the current Federal Government has been committed to destroying institutions involved in scientific development, with attacks on scientists and universities, dismantling the budget, and subjugating science to a new concentrated body such as Conacyt. The area of science, technology, and innovation in Mexico is at risk due to ideological imposition and budgetary adjustments that, far from encouraging knowledge, hinder the path toward a more developed society.



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<sup>18</sup> Researcher and teacher who has closely followed the course of science policy in Mexico. 1985–2019.



# ECONOMY



# REGIONAL GROWTH

◀ **T**he country's northern and central states have taken the most advantage of their proximity to the United States under the tri-national trade agreement. The economic growth rate during the almost thirty years that the treaty has been in force in the north is significantly higher than in the country's south (Cardenas, 2015).

Despite this trend, economic growth in the northern region is far from optimal. Despite the progress ob-

served, the recovery of the great confinement still did not reach the second quarter of 2022. Entities of great relevance due to their weight in the aggregate of national economic activity do not even recover the level of activity registered in the last quarter of 2018. Such are the cases of Coahuila (-7.9), Guanajuato (-2.3%), Nuevo Leon (-0.1%), San Luis Potosi (-0.8%), and Tamaulipas (-0.9%) (INEGI, n.d.b). Also, in the north is the entity with the highest lag in economic activity, Baja California Sur (-15.7%) (INEGI, n.d.b).

*Image:* "Inflation gives no truce in Mexico and it rises up to 7.91% in January" at <https://elpais.com/mexico/2023-02-09/la-inflacion-no-da-tregua-en-mexico-y-se-ubica-en-791-en-enero.html>

This production loss has been moderately compensated by more significant economic activity in the rest of the entities that make up the northern region, especially those economies that generate greater value added, such as Baja California (9.3%), Chihuahua (4.4%), Jalisco (3.1%), Nayarit (8.7%) and Queretaro (0.5%) (INEGI, n.d.b). The manufacturing industry and commerce have induced this increase in activity. However, of the entities mentioned above, only Baja California and Nayarit are above their long-term trajectory, 3.3% and 1.9%, respectively, while Chihuahua is close to returning to its potential level (-0.3%).<sup>19</sup>

At the national level, the country's economic activity is lagging by -1.7% concerning the last quarter of 2018 (Banxico, Bank of Mexico for its Acronym in Spanish, 2022). Despite the weak economic recovery of the country and the different regions, this growth has not been homogeneous, even within the same regions. The metropolitan area (MA, for its acronym in Spanish) continues to exhibit the most significant lag since Vital Signs has been tracking the regional growth trajectory. Given the weight of Mexico City (CDMX, for its acronym in Spanish) in national pro-

duction, it continues to put downward pressure on the country's growth (-0.3%) (INEGI, n.d.b).

Accompanying this weak and heterogeneous performance of the regions is the rise in prices (annual inflation of 7.8%) (INEGI, 2023c). According to business representatives consulted by the Bank of Mexico (Banxico), the main obstacle to growth in economic activity in the next six months is inflation (35% at the national level), even higher than issues related to governance (second most important factor) (19.4%) (Banxico, 2022). In the case of the North, a third (between 34.4% and 34.8%) of people in business consider inflation as the leading risk factor (Banxico, 2022).

PRODUCTION LOSS HAS BEEN MODERATELY COMPENSATED BY MORE SIGNIFICANT ECONOMIC ACTIVITY IN THE REST OF THE ENTITIES THAT MAKE UP THE NORTHERN REGION, ESPECIALLY THOSE ECONOMIES THAT GENERATE GREATER VALUE ADDED, SUCH AS BAJA CALIFORNIA (9.3%), CHIHUAHUA (4.4%), JALISCO (3.1%), NAYARIT (8.7%) AND QUERETARO (0.5%)

INEGI, S.F.B.

<sup>19</sup> In-house calculations with data from (INEGI, s.f.b).



## ◀ PRIVATE CONSUMPTION

- LABOR INCOME

The wage bill (sum of wages of employed personnel) continues its upward trend after the great confinement. At the national level, the variation between the last quarter of 2019 and the third quarter of 2022 is 6.6%, 19.8 billion pesos (mmdp) (Coneval, 2022). Of this increase, the north accounts for 45.4% (9 billion pesos) (5.6% growth), the MA and the south of the country have contributed little more than half of the growth, 6.7 billion pesos (6.3 billion pesos contributed only by the State of Mexico) and 4.1 billion pesos (Coneval, 2022), respectively. Here again, the lethargy with which workers' income in the Mexico City is progressing is striking.

Although the depth of the wages' collapse at the national level in 2020 (−7.3% variation between the last quarter of 2019 and the third quarter of 2020), the northern region was the least affected (−4.6% in the same period). It has a better outlook than the rest, and by the second quarter of 2022, it will consolidate as the region that contributes the highest proportion of wages in the country (53.2%) (Coneval, 2022). This phenomenon is remarkable if we consider that with the 2008–2009 financial crisis outbreak, the drop

was −15.8%. The wage bill went from 148.9 billion pesos (second quarter of 2008) to 125.4 billion pesos (historical minimum) (last quarter of 2011). It was not until the first quarter of 2019 that the north returned to its previous level (152 billion pesos) (Coneval, 2022). The wage slump in the north was enormous and highly prolonged (more than 11 years).

Wage growth is insufficient given the growth of the working-age population and the increase in prices in 11 of the entities that make up the northern region, reducing the quality of life of their people over the last three years.

**AT THE NATIONAL LEVEL, THE WAGE BILL GREW 6.6% (19.8 BILLION PESOS (BP)) BETWEEN 2019 –2022:**

**THE CENTER-NORTH CONTRIBUTED WITH 9 BP, THE STATE OF MEXICO ACCOUNTED FOR 6.3 BP, MEXICO CITY FOR 0.4 BP AND THE SOUTH OF THE COUNTRY CONTRIBUTED FOR 4.1 BP**  
CONEVAL, 2022.

**HERE AGAIN, IS STRIKING THE LETHARGY WITH WHICH WORKERS' INCOME IN MEXICO CITY IS PROGRESSING.**

- REMITTANCES, ALSO AN INCENTIVE FOR DEMAND

Remittances have been a significant source of income for the country, and the exponential trend continued during a good part of 2022, especially in the south and MA. The approximate variation in per capita terms between the last quarter of 2019 and the second quarter of 2022 is 75.7% and 76.8%, respectively (Banxico, n.d.). At the national level, the growth rate is 59.7%, while the north presents the lowest rate (48.8%); however, it continues to be the region that obtains more remittances per capita, concentrating 57% of the total as of the third quarter of 2022 and explains 51.6% of the growth in remittances received in Mexico between 2018 and 2022<sup>20</sup> (9.4 mddd) (Banxico, n.d.).

This upward trend began with the recovery from the great financial crisis. Moreover, during the health crisis, this trajectory was accentuated. Although personal transfers play a critical role in the country's poorest region (as crucial as labor income), for the rest of the country, they are already playing an equally important role, although to a much lesser extent in the MA (Coneval, 2022). According to Banxico (2021b), a

good portion of the northern region<sup>21</sup> they have benefited the most by increasing private consumption by 1.7% amid the great confinement, followed by other southern states (1.2%). Nationally, the boost was 1.1%. Thus, remittances cushioned what appeared to be a more considerable economic downturn throughout the country, including the north.

The available data suggest that remittances are being distributed progressively in this subset of northern entities. This means that remittances reach households with lower incomes (first quintile or poorest 20%) and have a lower incidence in the wealthiest 20% (Banxico, 2021b). This explains why this first quintile increased its consumption by 5.2%, while in the country as a whole, it is the third quintile that benefits the most (variation of 2.5%) (Banxico, 2021b).

On the other hand, two different phenomena can be observed. In the south, personal transfers have been complementary and have made it possible to support the slow growth of labor income. However, in the north, they may compensate for the loss of labor income of the poorest population. Between the first quarter of 2003 (the date since records began)

REMITTANCES  
CUSHIONED WHAT  
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ECONOMIC DOWNTURN  
THROUGHOUT THE  
COUNTRY, INCLUDING  
THE NORTH.

<sup>20</sup> Accrued from the first to the third quarter of each year.

<sup>21</sup> Aguascalientes, Baja California Sur, Colima, Durango, Jalisco, Michoacan, Nayarit, San Luis Potosi, Sinaloa y Zacatecas.



and the second quarter of 2022, the average quarterly growth rate (TMC, for its acronym in Spanish) in the country's north was 2.2%. At the national level, the TMC was 2%; in the MA, and the south, this rate was 1.9% in the same period. Then, let us only consider those states bordering the United States (Baja California, Coahuila, Chihuahua, Nuevo Leon, Sonora, and Tamaulipas). The TMC soars to 2.9% quarterly, and the advance is considerable even within the same northern region (Banxico, n.d.).

- MOBILITY AND (UN)EXPECTED SHOCKS

By making mobility more flexible, not only in Mexico but also in the United States, the possibility of moving goods, offering services, and thus also labor has resulted in more significant demand dynamics. Consumption has begun to restore, albeit at a much slower pace than might be expected, especially if we look at the growth of wages and personal transfers in recent quarters. The slow progress may be due to supply-side shocks (supply chain disruptions), public health issues, and, more recently, the effects of climate change (drinking water shortages).

As of October 2022, private consumption in the north, measured by ATM transactions, has not reached the pre-pandemic level (February 2020) (-4.1%) (INEGI,

n.d.a), considering point-of-sale terminal transactions, the lag in the north is considerable (-11.2%), while the country shows a slight improvement (2%) driven mainly by a historical increase in activity in the MA (25.6%) (INEGI, n.d.b). To a large extent, the country's weak trajectory of private consumption is being induced by the contraction of consumption in the north.

- INVESTMENTS

By the third quarter of 2022, GDP barely reached the pre-confinement level (0.3% above the close of 2019) (INEGI, n.d.c). Mexico is one of the largest economies that has taken the longest to return to



*Image:* Fewer transactions in ATM in the center-north of the country at <https://www.eleconomista.com.mx/sectorfinanciero/Acudir-al-cajero-automatico-en-Mexico-puede-costar-hasta-30-pesos-20211109-0095.html>

the pre-pandemic level. To a large extent, this delay is due to the feeble performance of gross fixed capital formation (physical investment), which is the only component of demand that is lagging (-1.7% compared to the same quarter) (-60.7 billion pesos) (INEGI, n.d.c). This is because the public and private sectors are still far from their pre-confinement investment levels. In the case of public investment, the lag is more significant (-4.4%), but given the weight of private investment (it represents 87.3% of total fixed investment), the latter explains 74.1% of the lag (-44.9 billion pesos) even though the variation is -1.5% concerning the pre-confinement level (INEGI, n.d.c).

On the other hand, private investment has grown thanks to the acquisition of machinery and equipment, mainly from abroad (imports). The accumulated growth from January to September 2022 concerning the same period in 2021 is 16.5% (INEGI, n.d.c). In contrast to these products, construction barely grows (0.4%) (6.5 billion pesos), as a result of the drop in housing construction (-5.1%) (-44.7 billion pesos) and the increase in other buildings and structures (5.4%) (51.2 billion pesos) (INEGI, n.d.c). Although it is optimal (and desirable) to observe growth in both



*Image:* “Executives in Mexico plan to invest in the next 12 months to buy machinery and equipment for production (June 2021)” at <https://www.mms-mexico.com/noticias/post/mejora-la-expectativa-de-inversion-en-maquinaria-y-equipos-para-la-produccion>

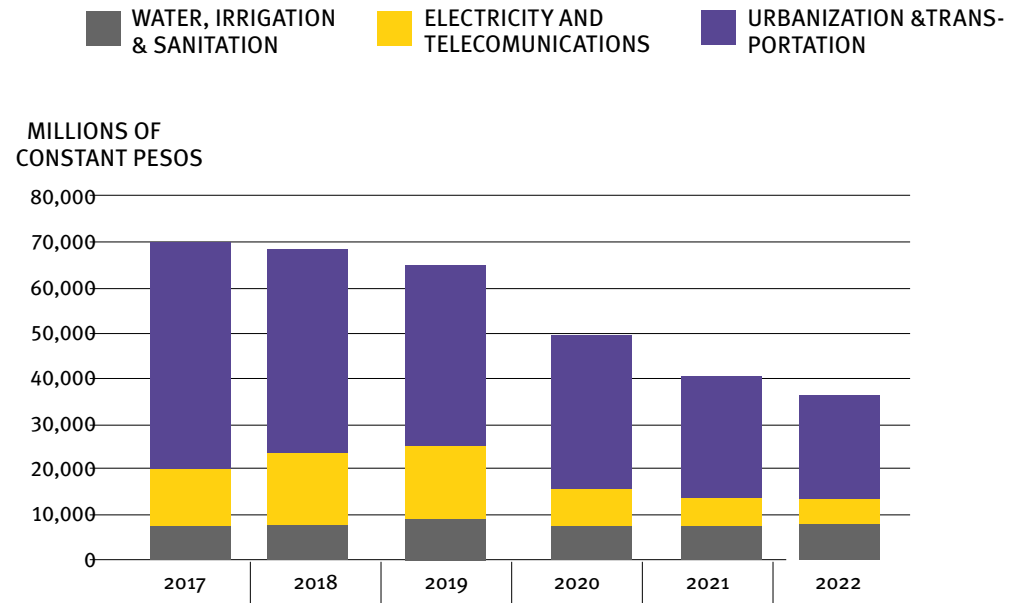
components (government and private), without the growth of private investment, specifically in construction, Mexico will hardly return to a long-term growth path, which was poor. In this sense, the north is a fundamental piece.

## LOWER PUBLIC AND PRIVATE INVESTMENTS

All regions of the country have been victims of the fall in gross fixed investment. Although to a lesser extent in the north, this contraction can generate severe distortions in the supply and quality of public services and restrictions on the supply side, which limits the economy's growth. The maximum value generated by construction companies was in 2008 for the northern region (255.9 billion pesos) (INEGI, 2023a). Between 2009 and 2018, construction's value remained between 221.1 billion pesos and 243.5 billion pesos. By 2021, this value was only 160.6 billion pesos (–37.3% below the historical maximum) (INEGI, 2023a). The north, which had been a kind of lifeline for the rest of the country, is now in a similar condition to the rest of the regions. The accumulated January–October 2022 was –3.6% (INEGI, 2023a), below the same period of 2021, so 2022 will have turned out to be a worse year than 2021 in terms of construction. In contrast to the north, construction activity grew 3.3% nationwide in the same period (INEGI, 2023a).

In amount, the most considerable loss concerning last year is observed in the activities of electricity and telecommunications and transportation and urban-

GRAPH 16. THE COLLAPSE OF INVESTMENT IN TRANSPORTATION AND ELECTRICITY, AND THE WATER CRISIS IS NO COINCIDENCE  
MILIONS OF CONSTANT PESOS



Source: In-house elaboration with data from INEGI (2023a).

ization, –2.2 billion pesos (–29.5%) and –4.4 billion pesos (–15.7%), respectively (INEGI, 2023a). However, it also presents significant losses in building investment (–1.6 billion pesos) (–2%) (INEGI, 2023a). The contraction in construction does not occur equally among the entities of the region; it can even be affirmed that a group of these<sup>22</sup> (mainly in the west) shows favorable growth rates (annual rate of 14.8%) much higher than the national average (2.5%) (INEGI, 2023a). These rates should be considered considering changes in global supply chains.

On the other hand, investment conditions may undermine the region’s growth, given the limited access to energy and efficient transportation. Public sector efforts in construction in the north have been clearly insufficient; the sector invested 109.2 billion pesos in 2011 (INEGI, 2023a), a figure that marked a turning point. From then until 2018, the annual CCT was –4.3%, but between 2018 and 2021, this rate was –19.2% annually (INEGI, 2023a). We estimate that this rate will not show significant changes at the end of 2022; those positive changes will come from private initiatives, which will have barely recovered the

<sup>22</sup> Baja California Sur (2%), Colima (23.6%), Chihuahua (29.4%), Durango (24.4%), Guanajuato (9.1%), Jalisco (14.4%), San Luis Potosi (11.5%), Sinaloa (6.6%), Sonora (11.6%) and Tamaulipas (14.1%).

pre-financing level but will be far from the 2018 level by around –18% (–27 billion pesos).<sup>23</sup> Public sector investment in the north was already plummeting, but now it has collapsed.

At the time of the decline in public investment, the private sector remained buoyant between 2010 and 2017, so the aggregate did not collapse. However, in the first three years of Lopez Obrador’s administration, the annual private TMC is –7.4% (INEGI, 2023a), i.e., year-on-year private construction investment has fallen at a rate of 7.4%. From January to November 2022, although it has shown erratic behavior, private investment has counteracted the fall as it has grown 3.7% (4 billion pesos) (INEGI, 2023a) compared to the same period of 2021. This growth is clearly insufficient since the public sector has decreased investment by –22.8% (–8.7 billion pesos) (INEGI, 2023a). Then, public sector investments are concentrated in hydrocarbons, specifically in refineries (construction and maintenance).

The federal government carries out the most significant construction projects in the center and south of the country; in 2022, due to the effect of these projects, the south concentrates most of the construction

<sup>23</sup> In-house estimations with data from INEGI (2023a).

IN THE FIRST  
THREE YEARS OF  
LOPEZ OBRADOR’S  
ADMINISTRATION,  
THE ANNUAL PRIVATE  
CONSTRUCTION  
INVESTMENT IS –7.4%

INEGI, 2023

value (54.5%) (63.2 billion pesos) (INEGI, 2023a). The transfer of resources from other regions to a few projects means that the Mexican State is abandoning other priority sectors of the economy. The investment crisis began years ago, but since 2018 the collapse has been indisputable. The north stands out for being a competitive region; unfortunately, the expansion of supply does not go hand in hand with the region's growing needs.

THE TRANSFER OF RESOURCES FROM OTHER REGIONS TO A FEW PROJECTS MEANS THAT THE MEXICAN STATE IS ABANDONING OTHER PRIORITY SECTORS OF THE ECONOMY.



*Image:* “Pemex Dos Bocas refinery under construction in Tabasco state”, Mexico. Photo: Cesar Rodriguez/Bloomberg <https://www.bloomberg.com/news/articles/2022-01-21/mexico-s-crown-jewel-oil-refinery-is-3-6-billion-over-budget?leadSource=uverify%2owall>



*Image:* “11 most interesting pieces of information that you did not know about AIFA” at [https://mexico.as.com/mexico/2022/03/18/actualidad/1647561825\\_485904.html](https://mexico.as.com/mexico/2022/03/18/actualidad/1647561825_485904.html)



*Image:* “Section 5 of the Mayan Train: Yucatan judge granted definite suspension of the works” at <https://www.yucatan.com.mx/mexico/2023/2/7/tramo-del-tren-maya-juez-de-yucatan-otorga-suspension-definitiva-de-las-obras-381202.html>



## FOREIGN DIRECT INVESTMENT (IED)

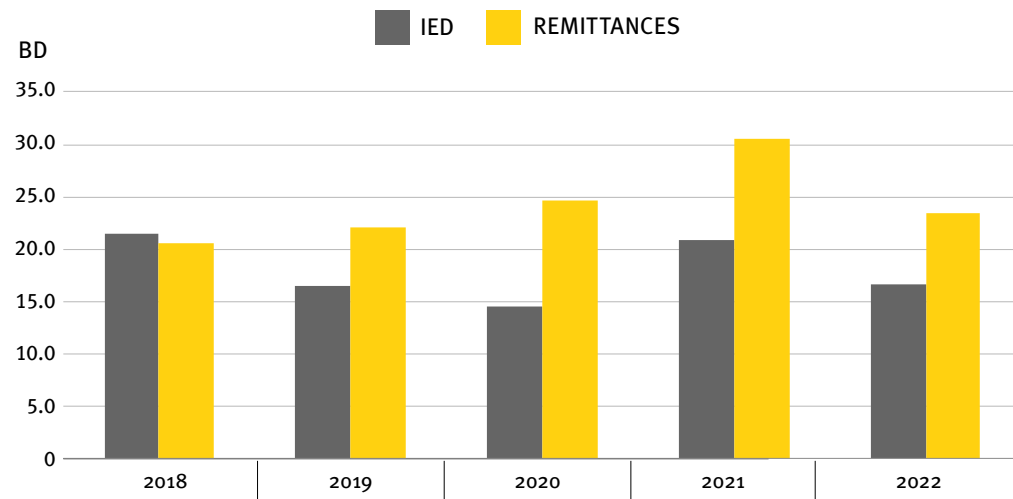


The expansion of supply depends on both nationals and foreigners. In this sense, and given the international relocation situation, foreigners are motivated to continue investing in some of the country's entities. Up to the third quarter of 2022, the accumulated flow of Foreign Direct Investment (FDI) grew 13% compared to the same period of the previous year. The north grew 11.5% (1.6 billion dollars), equivalent to 42.1% of FDI growth in Mexico. This region is the one that receives the most FDI, concentrating 371.8 billion dollars (mdd). As of the third quarter of 2022, the annual accumulated amount equals 55.4% (Government of Mexico, 2022). But only seven northern states have received two out of every three dollars of FDI (67%) in the region: Baja California (32.2 billion dollars), Chihuahua (38.7 billion dollars), Coahuila (25.6 billion dollars), Guanajuato (26.1 billion dollars), Jalisco (38.8 billion dollars), Nuevo Leon (62.7 billion dollars) and Tamaulipas (24.8 billion dollars) (Government of Mexico, 2022).

Despite concentrating more than the rest of the country, the north is below MA's FDI in per capita terms. For each inhabitant of the MA, there are 7,715.6 dollars of FDI. In the north, there are 6,253.6 dollars

per inhabitant, and the national average is 5,216.2 dollars (Government of Mexico, 2022). Like the total amount, the amount per capita grew considerably in all country regions from the pre-confinement level to the 2022 third quarter: north 10.6%, MA 13.9%, country's south 21.8%, and national level 13%. The growth in the amount is thus considerably higher than the population growth, especially in the south (24.9% vs. 2.6%) (Government of Mexico, 2022).

GRAPH 17. REMITTANCES HAVE FAR OUTPACED FOREIGN DIRECT INVESTMENT IN THE NORTH  
2018–2022. BILLIONS OF DOLLARS \*



Note: \*Figures from 2022 correspond to the accumulated January to September.

Source: In-house elaboration with data from Government of Mexico (2022).



This investment growth is mainly observed in five sectors of the Mexican economy: mining (\$7.9 billion), manufacturing industries (\$34.1 billion), and the manufacturing sector (\$34.1 billion)<sup>24</sup>, trade (\$6.9 billion), transportation, post, and storage (\$10.7 billion), and financial and insurance services (\$15.2 billion). In sum, the variation of these sectors explains 81.5% of the growth in the country (Government of Mexico, 2022). This increase in investments is also demonstrated by a greater flow from Germany (\$4.2 billion), Canada (\$9.6 billion), Spain (\$10.6 billion), the United States (\$37.6 billion), and Japan (\$4 billion). The sum of these amounts explains 71.9% of the variation. From these nations come 3 out of every 4 dollars invested in the Mexican economy, which maintained their participation almost unchanged since the end of 2019. Although there is a group of other countries that have substantially increased their investments in Mexico (58.7%) (\$7.3 billion), they maintain a very low representation concerning the total (2.9%) (Government of Mexico, 2022).

<sup>24</sup> Driven by the subsectors of transportation equipment manufacturing (14.3 billion dollars), chemical industry (3 billion dollars), basic metal industries (2.9 billion dollars), and manufacturing of computer, communication, measuring, and other electronic equipment, components, and accessories (2.7 billion dollars) (Government of Mexico, 2022).

On the other hand, the increase in capital stock is not homogeneous, even in the northern region. Nuevo Leon increased its capital stock in the manufacturing industry by 20.2% (\$6.9 billion). This entity alone accounts for 20.4% of the growth in the sector in the last three years in the whole country and by itself is higher than the increase in the stock of the MA (\$6.1 billion) (Mexican Government, 2022). In addition to Nuevo Leon, six other entities contributed significantly to the increase in capital stock (41%): Baja California (\$2.5 billion), Chihuahua (\$2.9 billion), Coahuila (\$2 billion), Guanajuato (\$2.7 billion), Jalisco (\$2.3 billion) and San Luis Potosi (\$1.7 billion) (Mexican Government, 2022). Manufacturing has been fundamental to the growth of the region and the country as a whole, but a few entities underpin growth.

THE INVESTMENT GROWTH IS EXPLAINED BY GREATER FLOW FROM GERMANY (4.2 BILLION DOLLARS (BD)), CANADA (9.6 BD), SPAIN (10.6 BD), UNITED STATES (37.6 BD) AND JAPAN (4 BD). FROM THESE NATIONS COME 3 OUT OF EVERY 4 DOLLARS INVESTED IN THE MEXICAN ECONOMY, WHICH MAINTAINED THEIR PARTICIPATION ALMOST UNCHANGED SINCE THE END OF 2019

GOVERNMENT OF MEXICO, 2022

## ◀ PUBLIC FINANCES

### • TAX COLLECTION EFFORT

In 2021, income taxes represented 42% of management revenues in the north (INEGI, n.d.a). They are and have been one of the main pillars of the country's own revenues. Although in the composition of revenues, taxes do not present a significant difference with the south (41.1%), the amount collected in the north for the same concept is more than double (53.8 billion pesos vs. 20.9 billion pesos) (INEGI, n.d.a). In this sense, labor formality favors such collection through the Payroll Tax. In addition to this tax, duties constitute the second most important source of own revenues (32.1%), and 75.6% of the collection for this concept is due to the public registry of property and commerce (20.9%), issuance of driver's licenses (7.3%), vehicle control (37.7%) and various road and transportation services (9.7%) (INEGI, n.d.a).

As a result of this collection effort, the north is the region that receives the most resources from federal participation (branch 28,<sup>25</sup> The amount is 48.5% higher than that of the south (418.1 billion pesos vs. 281.5 billion pesos) (INEGI, n.d.a). Combining both

<sup>25</sup> Federal participation is distributed according to the collective effort of the federal entities, among other variables determined by the Fiscal Coordination Law.



*Image:* Entrance to a SAT office at [https://verne.elpais.com/verne/2017/03/25/mexico/1490411222\\_007699.html](https://verne.elpais.com/verne/2017/03/25/mexico/1490411222_007699.html)

elements allows the north to have more significant slack in public spending; 50.3% of revenues are freely available<sup>26</sup> (they can have any use). This margin is positive but does not mean the region has complete independence. 43.6% of the northern region's revenues are federal contributions (INEGI, n.d.a), which means that this proportion of revenues has already been assigned an ex-ante use, whether for health, public safety, education, social assistance, or payment of financial debt. In turn, 25.6% of these resources are part of a reallocation agreement (121.3 billion pesos) (INEGI, n.d.a). This proportion has decreased recently; in 2018, 33.6% of contributions were part of these agreements (159.2 billion pesos) (INEGI, n.d.a).

<sup>26</sup> Sum of own revenues plus federal participation.

These reallocation agreements, not contained in the Fiscal Coordination Law and therefore their allocation is at the mercy of the federal executive and Congress, are primarily oriented to higher education (33.7%), various programs for the education sector (19.9%), health (19.9%), higher secondary education (6.7%) and communications and transportation (3.19%) (INEGI, n.d.a).

However, until 2018 many of these agreements were nourished by resources from branch 23, which was primarily earmarked for capital formation (infrastructure) and equipment.<sup>27</sup>

- COMPOSITION OF SUBNATIONAL PUBLIC EXPENDITURE

The allocation of spending does not differ much among regions. The federal entities cover, in the first place, all those expenditures that are unavoidable, either because they are provided for in some legal ordinance or because they are indispensable for the daily operation of state governments (INEGI, n.d.a):

<sup>27</sup> For more detailed information on the definition, composition and behavior of federalized spending in branch 23 see: <https://www.cefp.gob.mx/publicaciones/documento/2022/cefp0352022.pdf>

[https://www.pef.hacienda.gob.mx/work/models/PEF2018/docs/23/r23\\_ep.pdf](https://www.pef.hacienda.gob.mx/work/models/PEF2018/docs/23/r23_ep.pdf)

1. State payrolls, including teachers, doctors, health personnel, and state police (56.6%).
2. Transfers to city halls and municipalities also receive participation and contributions (15.5%).
3. The financial cost of debt (4.9%).
4. Pensions and retirements (1.2%).
5. Transfers to other branches of government (legislative and judicial), autonomous, and electoral bodies. (3.9%).
6. Operating expenses include water, electricity, voice and data services, and leasing (0.7%).
7. Other liabilities not considered as financial debt: are financial factoring, public-private partnerships, and suppliers (between 2 and 3%).

At the national level, these concepts account for 86.5% of state government budgets; in the north, they account for 88% (INEGI, n.d.a.). Making state governments work is costly. Fortunately for many of these governments, all these obligations are covered by federal resources, mainly branches 28 and 33, federal participation, and contributions. After covering these obligations, branch 33 provides resources for social assistance contained in the Mul-

tiple Contribution Fund<sup>28</sup> (2.1%) and a considerable number of resources from agreements with the federation (2.1%)<sup>29</sup>. Thus, north budget availability is close to 8% of the total, while at the national level, it is around 9%.<sup>30</sup>

The difference with the south was considerable until 2018. However, this has been shrinking due to the federal government's pressure exerted by compressing branch 23 (salary and economic forecasts). The drop in public investment is the size of this restriction. In addition, the disappearance of municipal security funds may increase spending pressure on the entities.

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<sup>28</sup> Governments should not spend these resources on any other object of expenditure different from what is foreseen in the corresponding legal ordinances, unless the federal government itself allows the reallocation of the expenditure.

<sup>29</sup> We associate these agreements with the budget for infrastructure programs, other than the physical investment projects of the federal entities.

<sup>30</sup> In-house calculation with data from INEGI (s.f.a.).

## ◀ LABOR MARKET

### • POST-COVID EMPLOYMENT

As of the third quarter of 2022, there are 2.1 million more employed than there were prior to the health crisis (last quarter of 2019), of which almost 1.1 million are in the north, and another 1 million employed are distributed in the other regions (INEGI, 2022b). The North has played an essential role in Mexico's labor market performance. 53 out of every 100 jobs have been generated here since the health crisis, and 2 out of every three jobs have access to health services (65%) (INEGI, 2022b). Job growth in the north has been 4.3%, and in the country, it is 3.8% (INEGI, 2022b).

The north continues to be the region that generates the most formal jobs in the country. Likewise, it is the region with the highest formality rate; 47 out of every 100 employed people have access to health services, while at the national level, only 38 out of every 100 have this benefit. It is closely followed by the MA, with 41 out of every 100 employed. Despite accelerating the inclusion of formal employment in the post-confinement era, the north marginally increased this proportion concerning the pre-pandemic level (when it was 46 out of every 100) (INEGI,

2022b). The labor market's performance is favorable compared to the rest of the country, although services show little progress at the sectoral level (381.5 thousand employed compared to the pre-pandemic level) (variation of 2.4%). In comparison, the primary and secondary sectors have better results (5% and 7.6%, respectively) (INEGI, 2022b).

The slow growth in employment in the tertiary sector (services) is noteworthy since by the third quarter of 2022, and it accounted for 59.3% of the employed population in the north. This performance is due to the almost null growth in informal employment (0.5%), especially in retail trade, where 60.6 thousand jobs have been lost (INEGI, 2022b).

- **MANUFACTURING AND SERVICES, A STEP TOWARDS MOBILITY AND SUPPORT FOR STATE FINANCES**

The share of employment in manufacturing and retail trade activities accounts for 44 out of every 100 formal jobs in the country's north (INEGI, 2022b). The dependence on the public sector in generating jobs is much lower than in other regions of the country, although it is still a relevant actor. Around 19 out of every 100 formal jobs depend on the education and health sectors or the three levels of government.

States of Michoacan and Zacatecas are the north's exception, where 34 out of every 100 and 35 out of every 100 government-employed people work, respectively, whose proportions are close to those of the south (INEGI, 2022b). In contrast, in the north, there are two of the economies with the lowest dependence on the public sector in terms of employment: Nuevo Leon and Chihuahua, with 15 out of every 100 formal jobs dependent on the public sector (INEGI, 2022b). Likewise, Baja California Sur, Colima, and Nayarit's economies show much less vocation to manufacturing and commerce.



*Image: "American enterprises choose Mexico to produce" at <https://inmobiliare.com/empresas-estadounidenses-eligien-fabricar-en-mexico-el-resurgimiento-de-nearshoring/>*

As of the third quarter of 2022, 59.6% of manufacturing jobs in Mexico are generated in the north (5.6 million employed), and 73% of these jobs are formal (4.1 million employed). Between the last quarter of 2019 (prior to COVID-19) and the third quarter of 2022, this activity explains 72.5% of the growth in employment in the secondary sector in the north (409 thousand employed), 36.9% of the growth in the region and 47.6% of the growth in formal employment (INEGI, 2022b). The role of manufacturing in job creation, capital formation, and, consequently, in the region's economic growth is not in doubt. The growth of the activity maintains its upward trajectory (7.8% in the same period). However, despite the international situation and changes in subcontracting, growth has been higher in informal employment (9% growth in informality vs. 7.3% in formal employment) (INEGI, 2022b) and is insufficient to meet the needs of the region's economy.

- THE LONG-TERM GAP IN EMPLOYMENT

Employment has shown more evident signs of recovery in the north, driven by 1 million 536.5 thousand workers with the highest levels of education (high school and higher) and with a considerable net loss of the population with lower levels of education (be-

low high school) (-431.9 thousand), primarily women (66.2%, -285.8 thousand) (INEGI, 2022b). Similarly, manufacturing, professional, financial, and corporate services are the main contributors to growth (equivalent to 56.8%) (INEGI, 2022b). Had the long-term employment trajectory continued (without a health crisis) in the northern region, 27.1 million workers should be employed by the third quarter of 2022<sup>31</sup>, instead of the current 26.9 million employed (INEGI, 2022b), i.e., the north is close to returning to its long-term path, but the balance is still in deficit (-179.2 thousand employed) (-0.7%)<sup>32</sup>. The advance of the north goes hand in hand with the lag of the country (-0.4%) (-252.6 thousand)<sup>33</sup>. In other words, although the north attenuates job losses, growth is insufficient for the region's needs and explains most of the long-term gap (71%)<sup>34</sup>.

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31 In-house calculation with data from ENOE (The National Survey on Occupation and Employment for its acronym in Spanish).

32 In-house calculation with data from ENOE.

33 In-house calculation with data from ENOE.

34 In-house calculation with data from ENOE.

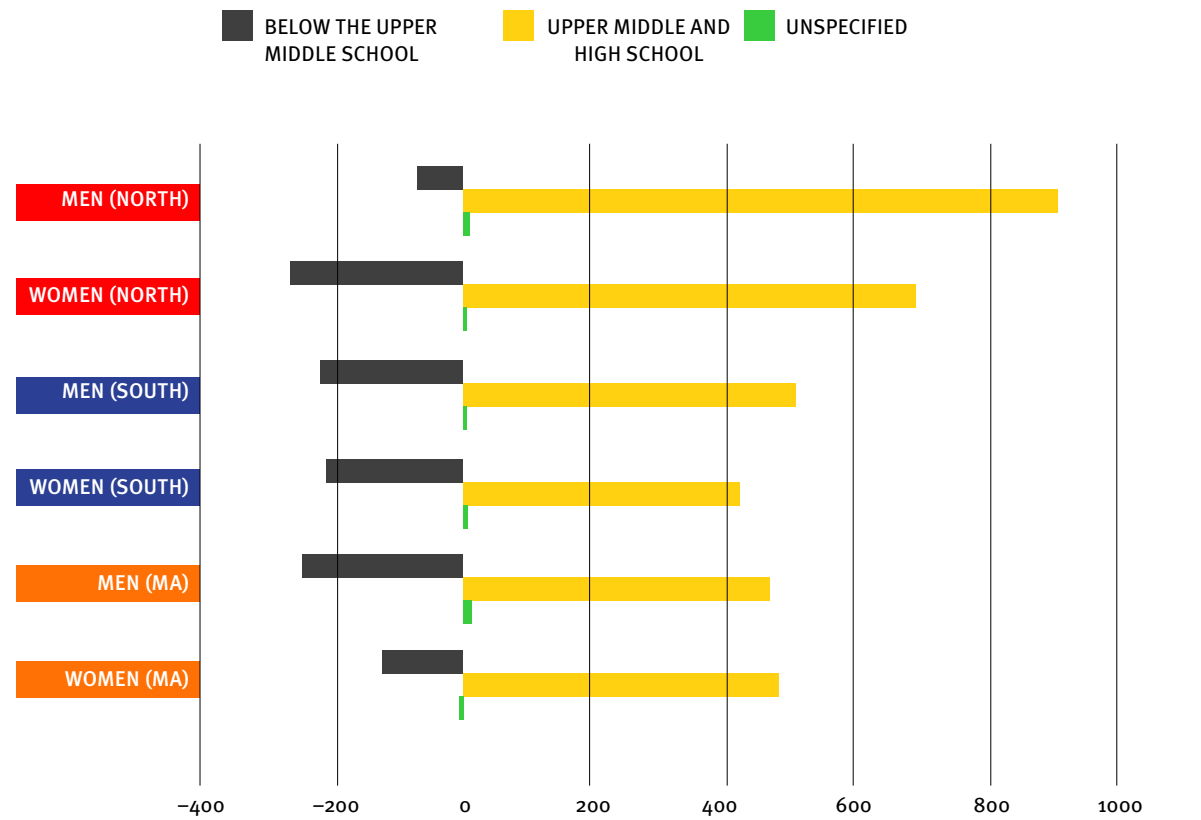


- **WOMEN'S LABOR PARTICIPATION**

Women's labor participation is one of the labor market's great pending issues in the north. As of the third quarter of 2022, female participation in Mexico is 39.7%. The north (39.4%) and the south (38.5%) have the lowest participation rates, unlike the MA, which is the region with the highest representation of women in the labor market (42.1%) (INEGI, 2022b). The health crisis halted the slow progress of women's participation in the economy, largely due to the care crisis faced by women. To date, the northern region is lagging the furthest behind (39.4% in the third quarter of 2022 vs. 39.5% as of the last quarter of 2019), the south is barely recovering the labor participation rate of women, and only the MA managed to recently surpass the level before the outbreak of the pandemic (41.3% prior to the health crisis vs. 42.1% in the third quarter of 2022) (INEGI, 2022b).

After confinement, the north and the south have distinguished themselves by including a lower proportion of women per 100 men entering the labor market: 57 women per 100 men and 68 per 100, respectively (INEGI, 2022b). This event, while not new, implies that the trend is far from reversing in both cases. From the fourth quarter of 2019 to the first quarter

**GRAPH 18. DROP IN EMPLOYMENT IN LESS SKILLED WORK, AFFECTING WOMEN IN THE NORTH**  
THOUSANDS OF JOBS. VARIATION: LAST QUARTER OF 2019 VS THIRD QUARTER OF 2022



Source: In-house elaboration with information from INEGI (2022b).

of 2022, in the north, 705.8 thousand men joined the labor market for 403.7 thousand women, while in the south, there were 314.4 thousand men for 212.5 thousand women (INEGI, 2022b). Thus, these two regions tend to generate more significant labor gaps. The MA is the opposite and should be recognized within the multiple crises this region faces since, in the same period, for every 100 men employed, 173 women have been employed (INEGI, 2022b).

Nor are there considerable differences among the northern states. Only seven of these women's labor participation rate is higher than average. In some, it is barely above average: Aguascalientes (40.8%), Baja California (39.8%), Baja California Sur (40.8%), Colima (41.6%), Guanajuato (40.2%), Nayarit (42.1%) and Sonora (40.5%) (INEGI, 2022b). Reversing the trend implies accelerating the integration of women at a faster rate than men, and this condition is only met in eight northern economies (post-major confinement) (INEGI, 2022b). Even the progress is barely noticeable in women with higher levels of education (middle and higher education) since they have gone from participating 43% to 43.2% of the employed population at that level. The Mexican average is 43.1%, so the loss of human capital is replicated in all regions of the country (INEGI, 2022b).



*Image:* “How much contribute women to the economy?” at <https://www.forbes.com.mx/cuan-to-aportan-las-mujeres-la-economia-nacional/>







# ENERGY AND ENVIRONMENT



Image: <https://elpais.com/mexico/2022-07-18/el-norte-de-mexico-se-seca.html>





# BOTTLENECKS & DAMAGE

◀ **T**he north has many competitive advantages that allow it to remain the most prosperous economic region in the country. However, it faces severe constraints that generate bottlenecks in other sectors of the economy. Most likely, the constraint of greatest financial interest is related to energy:

## 1. TRANSMISSION OF ELECTRIC ENERGY

According to the Program for the Development of the National Electric System 2022–2036 (Prodesen, for its acronym in Spanish), the country requires no less than 26 billion dollars of investment in electric generation and 20 billion dollars of investment in transmission and distribution to cover an energy demand of 110 Gigawatts in the next three years (Moreno, 2022). The paralysis in transmission capacity results

*Image: “Pollution provoked by human beings in the port of Yavaros” Digital Bank at <https://www.elimparcial.com/sonora/sonora/Amenaza-contaminacion-a-las-costas-de-Sonora-20190617-0014.html>*

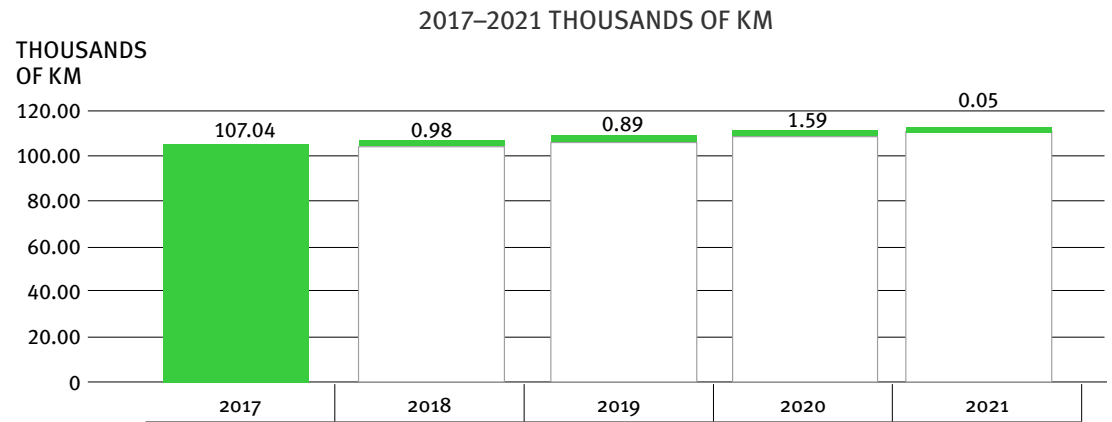
in grid congestion, to the detriment of the wholesale electricity market and the reliability of the National Interconnected System.

Unlike other business areas, such generation, transmission, and distribution of electricity are tasks assigned only to the Mexican State (natural monopoly). Unfortunately, the Federal Electricity Commission (CFE, for its acronym in Spanish) fails to comply with the constitutional mandate. The (failed) energy counter-reform was focused on electricity generation. The transmission investment deficit is not recent either. Between 2018 and 2021, the transmission grid grew 2.3% (2,531 kilometers), but from 2020 to 2021, the grid had the poorest growth in this period, just 52 kilometers (0.05% annually) (Cenace, 2019).

At the end of 2021, 87 declarations of emergency operating states (EOE, for its acronym in Spanish) and 2,097 alert operating states (EOA) were made. Annual growth was 70.6% and 16%, respectively. Three out of four EOAs occurred in the country's north, with Hermosillo leading the way (14.7%). Also, in 2021, the Monterrey metropolitan area and the Queretaro area accounted for 8.6% and 2.6% of the EOE, respectively. As determined by the same National Center for Energy Control (Cenace, for its acronym in

Spanish) (2019), the lack of infrastructure of the National Transmission Network (RNAT, for its acronym in Spanish) is the one that produces the highest percentage of EOA (72.2%), another considerable percentage is due to failures of the same RNT (25.4%). Similarly, failures in the RNT produce the highest percentage of EOE (83.9%). Only 2.3% of such state is created by weather conditions (Cenace, 2019).

GRAPH 19. TRANSMISSION NETWORK UNDER PROVISION



Source: In-house elaboration with information from Cenace (n.d.).

AT THE END OF 2021, 87 DECLARATIONS OF EMERGENCY OPERATING STATES AND 2,097 ALERT OPERATING STATES WERE MADE. THREE OUT OF FOUR OCCURRED IN THE COUNTRY'S NORTH, WITH HERMOSILLO LEADING THE WAY.

## 2. NATURAL GAS STORAGE

It is of little use to have one of the most extensive gas pipeline networks in the world and to have the largest natural gas producer in the world as a neighbor when we do not take advantage of the free market (instead of suffering its ups and downs) and the same proximity. It should be remembered that natural gas is the fuel used to produce more than half of the country's electric energy and is considered transition energy.

Mexico has only 2.4 days of natural gas storage in three facilities (Altamira, Ensenada, and Manzanillo, all in the north). This figure is far below other economies such as Austria (318.3), France (98.8), Italy (93.8), and Spain (34.2) (IMCO, 2022b).

At least 20 gas infrastructure projects represent investments for 300 mmdp and 50 thousand direct and indirect jobs, pending approval (CCE, 2021). According to the Mexican Institute for Competitiveness (IMCO) (2022b), although 2018 the “public policy on natural gas storage” was published to increase the country's storage capacity to five days gradually, it has not been followed up, and the bids for the four fields with which it was intended to start are suspended.

In 2021, the Mexican economy faced a severe power outage due to the disruption in the availability of natural gas. According to the Bank of Mexico (Banxico) (2021), the outage generated a 0.37% loss of manufacturing GDP or 0.22% of GDP between 2021 first quarter and 2020 last quarter. A subset of northern states had the largest losses (0.28% of GDP and 0.48% of manufacturing GDP)<sup>35</sup>. Texas' Low temperatures and inadequate CFE management <sup>36</sup> put much of the manufacturing sector in check<sup>37</sup> and, as expected, to the north and, to some extent, to the MA.

In addition to these problems, other measures taken by the federal government have affected the north in energy and economic matters. In the first place, the country's energy sector has coexisted with high uncertainty levels day by day since the beginning of this federal administration, starting with the cancellation of rounds 3.2 and 3.3 (exploration and extraction of conventional and non-conventional resources in land areas), which would have attracted considerable

<sup>35</sup> Within Banxico's regional classification, these entities are part of the northern region.

<sup>36</sup> La evidencia apunta a que la CFE especulo con el precio del gas natural.

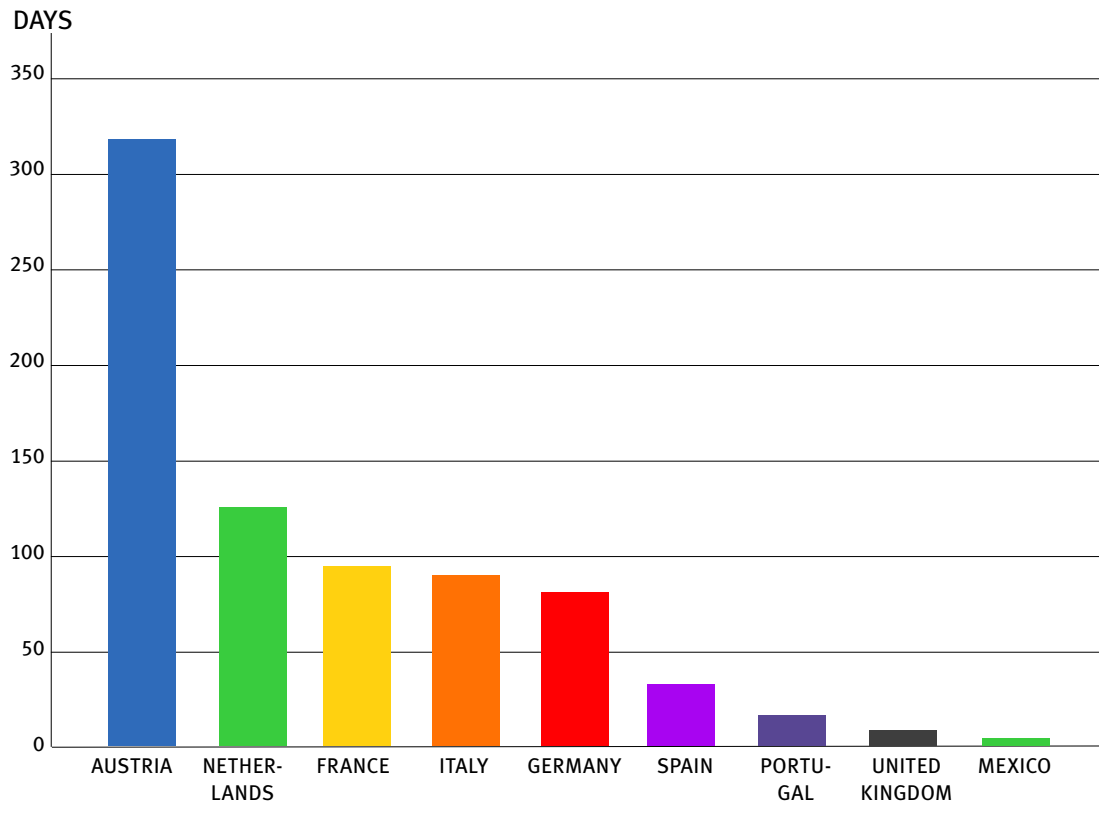
<sup>37</sup> 13.9% of northern companies (Banxico ranking) stopped completely due to natural gas or electricity shortages on at least one day, and 14.6% stopped partially for the same reasons on at least one day.

AT LEAST 20 GAS INFRASTRUCTURE PROJECTS REPRESENT INVESTMENTS FOR 300 BILLION PESOS AND 50 THOUSAND DIRECT AND INDIRECT JOBS, PENDING APPROVAL

CCE, 2021.



**GRAPH 20. MEXICO, MISSED OPPORTUNITY AND UNCERTAINTY IN THE INDUSTRY**  
NATURAL GAS STORAGE DAYS



Source: In-house elaboration with information from March (2022) and IMCO (2022b).

THE COUNTRY'S ENERGY SECTOR HAS COEXISTED WITH HIGH UNCERTAINTY LEVELS DAY BY DAY SINCE THE BEGINNING OF THIS FEDERAL ADMINISTRATION, STARTING WITH THE CANCELLATION OF ROUNDS 3.2 AND 3.3 OF CONVENTIONAL AND NON-CONVENTIONAL RESOURCES IN LAND AREAS.

investments to the state of Tamaulipas (\$12.4 billion) and the opportunity to extract the highly valued natural gas. Tamaulipas also has enormous wind energy potential (Wilson Center, 2012); however, it is being underutilized.

Mexico also has excellent potential for solar energy generation, and this potential is exceptional in the north. Finally, given the appearance of essential lithium deposits in Sonora, the Mexican government reformed the Mining Law, which establishes that the

exploration, exploitation, and use of lithium<sup>38</sup> are activities to be carried out by the State, without the possibility of granting concessions, under the argument that they are activities of public utility (Ballesteros, 2022). It is estimated that in order to cover the world's lithium demand by 2035, 74 additional lithium mines will be required (Benchmark Source, 2022). Climate factors or armed conflicts such as the

<sup>38</sup> Lithium plays a relevant role in the energy transition due to its importance in storing electrical energy.

Russian invasion of Ukraine have added much more significant uncertainty to the markets, especially for rare metals and gases, which are extremely necessary for the energy transition.

*Image: "What is lithium and what is it for?" at <https://www.elsoldemexico.com.mx/doble-via/ciencia/que-es-el-litio-y-para-que-se-utiliza-aqui-te-explicamos-4565501.html>*



## ENVIRONMENT

The Signos Vitales report *Southern Mexico: backwardness, gaps and neglect* described a bleak and discouraging outlook for the environment and natural resource protection in that part of the country (Signos Vitales, 2022a). For this study, which concentrates on information, data, and indicators for the country's north, the scenario seems equally dark and has a compromised future. The northern region has particular characteristics and unique needs and requirements, which determine it by itself and make it completely different from the southern region.

Each state's micro-region has its own unique environment and surroundings. Consequently, each has its own delimited data, which, when combined with those of the other states, give shape and meaning to the perspective of the country in the northern zone. Although each state has its own variables, it is possible to have a general picture of the state of natural resources and the environment in the northern region. In order to achieve this regional vision, this section includes indicators such as a) water availability, access, and pollution; b) soil degradation and pollution; c) air quality and pollution; and d) the institutional

capacities of each state, which are evidently different in each one of them.

It is worth mentioning that the country generally has a long-standing backlog in terms of environmental policy implementation, which Signos Vitales have already documented<sup>39</sup>. For decades, support by the three levels of government for ecological issues has been precarious, and the policies that have been implemented have served as a placebo to hide and accelerate environmental damage in Mexico. However, during the current federal administration, this situation has worsened to critical levels. For clear evidence, it is enough to look at the level of priority the government has given to issues related to sustainable development, environmental protection, climate change, and natural resources within the National Development Plan 2019–2024 (PND 2020 – 2024) (Segob, 2019). In this political manifesto, rather than a public policy document, all these issues are framed within a social policy that, confusingly and ineffectively, tries to cover the actions that the administra-

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<sup>39</sup> See: <https://signosvitalismexico.org.mx/reportes/estancamiento-y-regresion-mexico-en-el-mundo/> and <https://signosvitalismexico.org.mx/economia/deterioro-ambiental-y-crecimiento-economico-en-mexico/>

tion must follow in a single paragraph to ensure a healthy environment.

To date, Mexico's vast and ample biodiversity is at a level of high vulnerability as never before recorded in the country (Signos Vitales, 2022b, pp. 170–199). The lack of care, disinterest, negligence, and ignorance with which the environmental issue has been handled is once again evident, as is the case with the PND (National Development Plan for its acronym in Spanish) (2020 – 2024) when analyzing the Sectoral Program for the Environment and Natural Resources (Segob, 2020). This program was delayed for more than two years after the beginning of the administration, and it shows serious inconsistencies with the actions and policies implemented by the Ministry of Environment and Natural Resources (Semarnat). This situation is dragging down the 20 states that make up the northern zone.

One of these initial failures is the failure to update data and indicators of the Environmental Information National System (SNIA, for its acronym in Spanish), a strategic database for decision-making by many of the actors that make up the Mexican State (Signos Vitales, 2020). Additionally, the failure to update the SNIA since 2017 has prevented the monitoring of nat-

ural resources in the area. Furthermore, in addition to this lack of updated information, more than 80% of the variables of the National System of Environmental Information and Natural Resources (SNIARN, for its acronym in Spanish) have disappeared (Signos Vitales, 2020).

Although it might be thought that the proximity of the states bordering the United States might reflect progress or improvements in their environmental and institutional capacities, the reality is quite different. They are lagging in terms of water, soil, and air management. Given their national and international commitments, the domino effect these entities could have generated has been practically null for the other entities in the country's north. The border states and practically all of them lack updated data and relevant information for decision-making. This deficiency has demerited environmental management in the states.

THE CENTER-NORTH ENTITIES ARE LAGGING IN TERMS OF WATER, SOIL, AND AIR MANAGEMENT. THEY LACK UPDATED DATA AND RELEVANT INFORMATION FOR DECISION-MAKING. THIS DEFICIENCY HAS DEMERITED ENVIRONMENTAL MANAGEMENT IN THOSE STATES.

There are also inequalities and differences among the 20 central–north entities regarding infrastructure development, legal systems, political structures, decision–making routes, and levels of prosperity and per capita income. Moreover, there are contrasts in the number of non–governmental and environmental organizations regarding culture, customs, and perception of environmental quality and their degrees of protection (Lascurain, 2010).

Also, during this administration, environmental deterioration has contributed significantly to the country’s social welfare loss. More than four and a half years into this administration, it has become evident that Semarnat (Secretariat of Environment and Natural Resources for its acronym in Spanish) has prioritized political issues instead of those that should be addressed (Grupo Reforma, 2022). The results of policies implemented over the last 30 years have not shown effective results, and high economic, political, social, and environmental costs are expected, which will end up affecting the most vulnerable population (Signos Vitales, 2022b).

## ◀ ENVIRONMENTAL WORTH OF CENTER–NORTH

The northern Mexican region has an unparalleled biodiversity variety and an abundant natural resource source. Considering the 20 entities in this study, it is essential to highlight that its natural resources are wealthy and comprise at least 92 Natural Protected Areas (ANP, for its acronym in Spanish), which are recognized worldwide for their high environmental value. In total, it exceeds 52.7 million hectares (CONANP, National Commission of Protected Natural Areas for its acronym in Spanish, 2021). Notably, this region exceeds by more than double the number of ANPs in the southern part (CONANP, 2021)<sup>40</sup>. Therefore, this northern region’s environmental value and impact are among Mexico’s great treasures. However, these resources and biodiversity are at permanent risk due to the pressure that the growing population, regional development, and economic growth have imposed on the region.

Due to its geographic conformation, it is evident how this region concentrates critical points of development and growth that affect, in a sensitive manner,

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<sup>40</sup> The southern zone analyzed in the previous report has more than 20 million hectares of PNA. (Signos Vitales, 2022a).

TABLE 25. NATURAL PROTECTED AREAS THAT MAKE UP THE MEXICAN NORTHERN REGION

REGION	NO.OF ANP	HECTARES
Central and Volcanic Axis	36	1,729,164
Northeast and Upper Gulf of California	9	2,230,372
North and Sierra Madre Occidental	11	2,031,009
Northeast and Sierra Madre Oriental	17	3,246,339
Baja California Peninsula and North Pacific	19	43,471,482
<b>TOTAL</b>	<b>92</b>	<b>52,708,366</b>

ALSO, DURING THIS ADMINISTRATION, ENVIRONMENTAL DETERIORATION HAS CONTRIBUTED SIGNIFICANTLY TO THE COUNTRY'S SOCIAL WELFARE LOSS.

Source: In-house elaboration with information from CONANP (2021).

the care of the environment. The entities that make up the country's metropolitan area<sup>41</sup> are home to the largest population of more than 26 million people. In comparison, the entities of the northern region<sup>42</sup>congregate a little more than 58 million people (INEGI, 2020). The part itself is home to more than 66% of the country's population, while the Metropolitan

<sup>41</sup> Comprised of entities such as Mexico City and Mexico State.

<sup>42</sup> Comprised of Aguascalientes, Baja California, Baja California Sur, Coahuila, Colima, Chihuahua, Durango, Guanajuato, Jalisco, Michoacan, Nayarit, Nuevo Leon, Queretaro, San Luis Potosi, Sinaloa, Sonora, Tamaulipas and Zacatecas.

Area is home to more than 20% (INEGI, 2020). This population outlook defines the demand for natural resources and the stress level on water basins, soil, and air, mainly in the central zone (INEGI, 2020).

The region<sup>43</sup> has a coastline of more than 6,900 kilometers. Due to its natural wealth, it is one of those with highly diverse flora and fauna; in many cases, endemic and endangered (Conabio, National Com-

<sup>43</sup> The entities considered are Baja California, Baja California Sur, Sonora, Sinaloa, Sinaloa, Nayarit, Jalisco, Colima, Michoacan, and Tamaulipas.





*Image:* El Soldado, a small wetland in the Gulf of California. Photo: Mongabay.com at <https://www.ecoturismo.com/el-soldado-humedal-con-gran-biodiversidad-no-roeste-de-mexico>



*Image:* El Pinacate and Altar desert in Sonora. Photo: Alfredo Martínez en <https://www.mexicodesconocido.com.mx/tips-viajero-el-pinacate-y-gran-desierto-de-altar-sonora.html>



*Image:* Manantlan Mountains in Jalisco. File: Conanp at <https://www.gob.mx/Semarnat/articulos/reserva-de-la-biosfera-sierra-de-manantlan>

mission for Knowledge and Use of Biodiversity for its acronym in Spanish, n.d.). The coastline represents more than 68% of the country's total (CONANP, 2021), so its importance is incalculable in coastal management and the country's economic development potential. The entire northern region is a clear example of natural wealth, even compared to the country's southern part, which also has a well-earned name and surname.

Even though the northern region is an obligatory reference in any world bibliography when talking about environmental diversity and the wide range of flora and fauna, the inefficiency of the three government orders is indisputable. Until before its institutional crisis in 2022 perpetrated by this government, the National Commission for the Knowledge and Use of Biodiversity (Conabio) constantly alerted in its documents "the need" that the country faces, firstly to save and protect those areas that are being violat-

ed and not protected and, secondly, to reorient the entire environmental policy that has been insufficient and limited in addressing the real problems of the country. Unfortunately, these recommendations were not considered for decades during the existence of Conabio.<sup>44</sup>

Despite having a very valuable ecosystem, official data indicate that this area has deteriorated by more than 50% (Conabio, n.d.), an effect that will be even more devastating with the projects that have been implemented in the Baja California Peninsula, Sonora, and Sinaloa that directly affect the Sea of Cortes. As of 2019, at least 22 serious pollution accidents have been recorded, derived from the mining and metallurgical activity of Corporativo Grupo Mexico (Espinosa, 2019). They affected the already existing environmental problems in the area: a) misuse and depletion of water, b) air pollution, c) disposal of toxic waste, and d) risks to the health and quality of life of the region's inhabitants (Alfie, 2002).

According to INECC (National Institute for Ecology and Climate Change, for its acronym in Spanish) (n.d.a), of the original potential of Mesophilic Forest

that the zone showed (121,821 Km<sup>2</sup>), a deterioration is evident by including at least 142 patches in the states of Sinaloa, Nayarit, Jalisco, Colima, Michoacan and Tamaulipas (there is a vulnerability of more than 20%). Regarding the change in the potential distribution of species in non-analogous conditions within Natural Protected Areas, the regions located mainly in Aguascalientes, Durango, Nayarit, Jalisco, and Zacatecas are those with the highest risk category, with almost 89% of the surface area with potential for change, which falls within the alarm category. Similarly, within the high category (>86%), which

AS OF 2019, AT LEAST 22 SERIOUS POLLUTION ACCIDENTS HAVE BEEN RECORDED, DERIVED FROM THE MINING AND METALLURGICAL ACTIVITY OF CORPORATIVO GRUPO MEXICO

ESPINOSA, 2019.



*Image:* “Group Mexico unpunished after eight years of the spillage in Sonora river” at <https://desinformemonos.org/grupo-mexico-impune-a-ocho-anos-del-derrame-en-rio-sonora/>

<sup>44</sup>For more information see <https://www.biodiversidad.gob.mx/>



requires immediate attention from the authorities, are regions in the states of Coahuila, Colima, State of Mexico, Jalisco, Nuevo Leon and Queretaro (INECC, n.d.b.).

Of the 207 dams distributed in the national territory, nearly 90% of them are located in the entities we analyze in this report (186). Of these, more than 85% are in very high or high vulnerability, which means they can present infrastructure failures and generate floods, causing various damages and losses (Mexican Government, n.d.b.). A similar case occurs with the same dams but related to their vulnerability to climate change and their infrastructure for energy generation or water storage in the event of water stress, where more than 90% of these dams have a medium to very high vulnerability (Mexican Government, n.d.a.).



*Image:* “Draught in Nuevo Leon state. This is the level of the dam” at <https://abcnoticias.mx/local/2022/6/28/sequia-en-nuevo-leon-este-es-el-nivel-actual-de-las-presas-165533.html>

**OF THE 207 DAMS DISTRIBUTED IN THE NATIONAL TERRITORY, NEARLY 90% OF THEM ARE LOCATED IN THE ENTITIES WE ANALYZE IN THIS REPORT (186). OF THESE, MORE THAN 85% ARE IN VERY HIGH OR HIGH VULNERABILITY, WHICH MEANS THEY CAN PRESENT INFRASTRUCTURE FAILURES AND GENERATE FLOODS, CAUSING VARIOUS DAMAGES AND LOSSES**

GOVERNMENT OF MEXICO, N.D.B.

## GENERAL CONDITIONS OF NATURAL RESOURCES IN THE CENTER–NORTH

Although the environmental deterioration in this region is not as stressful as in the southern region, if the course is not corrected shortly, it will not be able to support further growth of large cities and maintain the demand for energy flows required by its population. In terms of renewable water per capita, for example, the entities with the best performance are Baja California Sur, Coahuila, Colima, Chihuahua, Durango, Jalisco, Michoacan, Nayarit, San Luis Potosi, Sinaloa, Sonora, and Tamaulipas, which can renew their water at a rate of over 1,000 m<sup>3</sup> per inhabitant per year. While entities such as Aguascalientes, Baja California, Mexico City, Guanajuato, Mexico State, Nuevo Leon, and Queretaro had a precarious performance until 2019, not having reached at least 1,000 m<sup>3</sup> per inhabitant per year. It is evident that the entities with the greatest water stress are those located in the center of the country, having a greater demand for the resource, mainly due to the high population living in them (INEGI, n.d.).

Even though practically all of the entities analyzed have more than 90% of the water services, such as drainage, sanitation, and piped water, the quality

TABLE 26. RENEWABLE WATER PER INHABITANT OF EACH STATE BY 2019

STATE	AVERAGE RENEWABLE WATER (HM <sup>3</sup> /YEAR)	RENEWABLE PER CAPITA BY 2019 (M <sup>3</sup> /INHAB/YEAR)
Aguascalientes	536	396
Baja California	3.045	827
Baja California Sur	1.235	1.443
Coahuila	3.457	1.116
Colima	2.159	2.799
Chihuahua	11.759	3.054
Mexico City	644	73
Durango	12.594	6.874
Guanajuato	3.886	648
Jalisco	15.951	1.926
State of Mexico	4.786	268
Michoacan	12.633	2.679
Nayarit	6.606	5.075
Nuevo Leon	4.448	828
Queretaro	1.94	915
San Luis Potosi	10.862	3.815
Sinaloa	9.903	3.212
Sonora	7.154	2.316
Tamaulipas	8.962	2.423
Zacatecas	4.016	2.474
<b>NATIONAL</b>	<b>451.585</b>	<b>3.586</b>

Source: In-house elaboration with information from INEGI (n. d).

and efficiency of these services raise an enormous question mark. Entities that make up the metropolitan area (Mexico State and Mexico City) and part of its periphery (Michoacan and Queretaro) have the highest contamination percentage, with more than 70% of their water basins at risk. Meanwhile, states such as Chihuahua, Coahuila, Guanajuato, Nuevo Leon, Queretaro, and Zacatecas have yellow alerts regarding contamination of their watersheds, with more than 40%. Thus, the entities with the least contamination of their watersheds are Baja Californias, Durango, Nayarit, Jalisco, Sonora, and Tamaulipas (Conagua, The National Water Commission for its acronym in Spanish, 2021).

**THE METROPOLITAN AREA, MICHOACAN AND QUERETARO, HAVE THE HIGHEST CONTAMINATION PERCENTAGE, WITH MORE THAN 70% OF THEIR WATER BASINS AT RISK**

CONAGUA, 2021.

**TABLE 27. TOTAL NUMBER OF INHABITED DWELLINGS AND WATER SERVICES AVAILABILITY 2019**

STATE	INHABITED PRIVATE DWELLINGS	WITH DRAINAGE	WITH SANITARY FACILITIES	WITH PIPED WATER
Aguascalientes	386.011	>90%	>90%	>90%
Baja California	1,144,251	>90%	>90%	>90%
Baja California Sur	239.358	>80%	>90%	>80%
Coahuila	900.275	>90%	>90%	>80%
Colima	226.445	>90%	>90%	>90%
Chihuahua	1,145,185	>80%	>80%	>80%
Mexico City	2,752,169	>90%	>90%	>90%
Durango	493.142	>80%	>80%	>80%
Guanajuato	1,584,834	>80%	>90%	>80%
Jalisco	2,327,794	>90%	>90%	>90%
State of Mexico	4,561,381	>90%	>90%	>90%
Michoacan	1,282,371	>90%	>90%	>90%
Nayarit	360.079	>90%	>90%	>90%
Nuevo Leon	1,654,199	>90%	>90%	>90%
Queretaro	667.596	>90%	>90%	>90%
San Luis Potosi	773.425	>80%	>90%	>80%
Sinaloa	853.421	>90%	>90%	>90%
Sonora	874.341	>80%	>90%	>90%
Tamaulipas	1,067,197	>90%	>90%	>90%
Zacatecas	442.263	>90%	>90%	>90%
<b>TOTAL</b>	<b>35,156,897</b>	<b>&gt;90%</b>	<b>&gt;90%</b>	<b>&gt;90%</b>

Source: In-house elaboration with information from INEGI (2021a).

Concerning total soil degradation<sup>45</sup> per federative entity, the most affected entities are Chihuahua, Mexico State, Mexico City, Guanajuato, Queretaro, Nuevo Leon, and Sonora, more than 60% affected. Baja Californias, Colima, Durango, and Sinaloa are the entities with minor degradation (>40%), and Tamaulipas and Zacatecas are the least affected (>40% to 59%) (Semarnat, 2002). In terms of contaminated sites registered as environmental liabilities by state, with the latest information available for 2002, the most affected states are Chihuahua (66%), Mexico City (46%), Colima (54%), Durango (60%), Mexico State (60%), Guanajuato (63%), Jalisco (53%), Michoacan (55%), Sinaloa (52%) and Tamaulipas (56%) (Semarnat, 2002). (Semarnat, 2002).

According to official data from the National Institute of Ecology and Climate Change (INECC) (2020), in terms of the number of days per year in which any current air quality standard is exceeded per state and its metropolitan area, the metropolitan area has reached more than 270 days per year with up to three different types of pollutants. Guadalajara, Jalisco, is in the same situation (<230 days), with at least three contaminants detected. But some entities also con-

<sup>45</sup> Degradation due to water, wind, chemical and physical erosion.

centrate the most significant number of cities that exceed the number of days with concentrations above the current limits for any pollutant: Aguascalientes (Aguascalientes), Baja California (Tijuana), Chihuahua (Chihuahua and Ciudad Juarez), Coahuila (Torreon and Saltillo), Guanajuato (Celaya, Irapuato, Leon, Salamanca, and Silao) and Queretaro (Queretaro, Corregidora, El Marques, and San Juan del Rio).



*Image:* “High levels of atmospheric pollution in Guadalajara”. Photo: El Informador at <https://zonaguadalajara.com/MAG-con-altos-grados-de-contaminacion-atmosferica-al-amanecer-del-25/>



## PERFORMANCE AND COMPLIANCE OF ENVIRONMENTAL REGULATIONS

A healthy environment is a guarantee of social well-being. “Natural resources are intimately linked to the objectives of sustainable development” (International Resource Panel, 2019) and represent the basis for economic growth and development. Therefore, “formally recognizing the right to a healthy environment is fundamental to combat the scourges of climate change, biodiversity loss, and pollution, which kill more than eight million people yearly” (United Nations, 2018). The effects of deterioration are manifested “in the loss of forest areas, in the alteration of hydrological cycles, in the loss of ecosystems, of soil, in the contamination of soil, water, and atmosphere, among others” (Carabias, n.d.) which generate economic and social affectations.

The leading causes derive from political, economic, and social activities, which generate transversal consequences that do not reflect the actual costs of these actions and put the development of the territory at risk, being “necessary to stop the current trends of environmental destruction” (Carabias, n.d.) if we want to promote sustainable growth and generate a healthy environment.

Mexico entered the era of ecological modernization under an extreme vulnerability determined primarily by the lack of interest on the part of government administrations in making the environmental issue one that was at the top of their agendas. Thus, Mexico belatedly began a long and challenging process of adaptation to the new national and international environment, giving rise to an environmental policy in transition characterized by a disjointed management of its different components and adopting ambivalent responses to extremely delicate challenges.

Historically, the federal government has not been able to see the state governments as a group of allies. On the contrary, these governments have had to make many environmental decisions without federal support. Consequently, implementing their policies has had different shortcomings and deficiencies, directly impacting the regions’ environmental quality. The fact that the federal government has left federal entities in the background is a policy exacerbated throughout the last administration. It has not shown a vocation to address environmental and climate issues.

All entities analyzed in this report have an agency specialized in environmental care and protection.

Unlike Semarnat, the institutional capacities of each of the state agencies have been gradually strengthened. With the accelerated dismantling of Semarnat and its budget reduction, many of its main functions have disappeared, and international commitments have not been fulfilled.

However, there is a significant discrepancy among the 20 entities in this study regarding the budget allocated to each agency. The entities with considerable budget reductions are Aguascalientes, the two Baja Californias, Chihuahua, Coahuila, Colima, Durango, Jalisco, Michoacan, Queretaro, San Luis Potosi, Tamaulipas and Zacatecas. Naturally, they are the ones that report the most significant environmental damage to water, soil, and air. For their part, Guanajuato, Nayarit, Sinaloa, and Sonora have had to maneuver through budget increases and decreases. Because the federal government does not take the environmental proposal seriously, the effect is felt in the states, especially those that have come to power through the same party as the federal government. This policy affects the continuity of projects implemented in the past and those scheduled for implementation in the future. Finally, the only state that has increased its budget exponentially is Nuevo Leon

(by almost 500%)<sup>46</sup>. This will ensure both continuity and policy innovation.

Like the rest of the country, northern Mexico depends substantially on the tourism services offered in the area. In entities such as Baja California, Baja California Sur, Sonora, Sinaloa, Nayarit, and Colima, the linkage with green tourism is more than 60% (Vital Signs, 2021a). Of the 20 entities analyzed in this report, only two have a tourism-oriented capital infrastructure of more than 20% of their total assets (more than double the national average), namely Baja California Sur (48.3%) and Nayarit (41.9%) (Vital Signs, 2021a).

THE ONLY STATE THAT  
HAS INCREASED ITS  
BUDGET EXPONENTIALLY  
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INNOVATION.

<sup>46</sup> Information obtained through the review of documents from the Secretaries of Government of the States. (2019–2023).

In Mexico, according to the 2019 Economic Census, 786,540 establishments depend economically on tourism (16.4% of the total number of establishments in the country), and 9.9% of the country's fixed assets are oriented to tourism production (Signos Vitales, 2021a). For the states in the north of the country, it is estimated that, after the great confinement during the COVID-19 pandemic, the attempt to recover the sector will be much more aggressive and firmer, being able to put aside the importance that the care and protection of the natural environment deserves.

In many cases, strengthening institutional capacities has been a task that has taken many years, so each entity has accumulated an important number of Laws

ACCORDING TO THE 2019 ECONOMIC CENSUS, 786,540 ESTABLISHMENTS DEPEND ECONOMICALLY ON TOURISM (16.4% OF THE TOTAL NUMBER OF ESTABLISHMENTS IN THE COUNTRY), AND 9.9% OF THE COUNTRY'S FIXED ASSETS ARE ORIENTED TO TOURISM PRODUCTION

SIGNOS VITALES, 2021.



*Image:* Cabo San Lucas at <https://www.turismo-mexico.es/baja-california-sur/los-cabos-san-jose-y-cabo-san-lucas/>



*Image:* "Colima, city of contrasts" Photo: Archive MD at <https://www.mexicodesconocido.com.mx/colima-una-ciudad-de-contrastes.html>



*Image:* "Nayarit wants to be the jewel that conquers Europeans" at <https://www.altonivel.com.mx/empresas/turismo/nayarit-joya-turismo-europeos/>

**TABLE 28. BUDGET OF THE SECRETARIATS RELATED TO ENVIRONMENTAL ISSUES BY STATE. FIGURES IN MILLIONS OF PESOS\***

REGION	STATE	BUDGET 2019	BUDGET 2020	BUDGET 2021	BUDGET 2022	TOTAL
METROPOLITAN AREA	Mexico City	1,413	1,435	1,201	765	
	State of Mexico	1,416	1,243	1,175	1,243	
METROPOLITAN AREA						2,106
CENTER-NORTH REGION	Aguascalientes	134.7	33.6	122	103	
	Baja California	87.8	78.3	N.D.	59.3	
	Baja California Sur	86.7	53.8	N.D.	44.6	
	Chihuahua	112.1	75.8	N.D.	62.9	
	Coahuila	122.2	62.4	51.9	51.5	
	Colima	92.2	30.9	N.D.	25.6	
	Durango	239	97.6	24	81.0	
	Guanajuato	139.5	208.5	N.D.	173.1	
	Jalisco	146.9	142.5	N.D.	118.3	
	Michoacan	131.3	123.7	N.D.	79.5	
	Nayarit	79.5	60	N.D.	54.7	
	Nuevo Leon	175.7	97.7	N.D.	584.7	
	Queretaro	86.1	73.2	N.D.	13.5	
	San Luis Potosí	89.0	146.8	N.D.	73.3	
	Sinaloa	143.8	87.1	N.D.	151.7	
	Sonora	111.8	94.7	N.D.	82.3	
	Tamaulipas	274.8	161.6	N.D.	124.1	
Zacatecas	197.2	69.4	N.D.	12.1		
CENTER-NORTH REGION AVERAGE						3,371
SOUTH REGION	SOUTH REGION AVERAGE					4,235
NATIONAL	NATIONAL AVERAGE					9,714

Source: In-house elaboration with information from Secretariats of State Government (2019-2023).

and Regulations that give shape and sense to the construction, design, and implementation of environmental policies in such entities. Many entities have a genuine ecological vocation, reflected precisely in regulatory and legal support. Those with the most robust support are Mexico City, Jalisco, Michoacan, Nuevo Leon, Sinaloa, Sonora, Tamaulipas, Oaxaca, Quintana Roo, and Veracruz, all of them with more than 22 binding laws. Those with the lowest number of regulations (<15) are Aguascalientes, Guanajuato, and Queretaro (ITESM, n. d).

In budgetary terms, there is a tendency for the metropolitan area (Mexico City and Mexico State) to be the entities at the national level with the highest annual allocation to environmental issues. At the same time, Nuevo Leon, Baja California, Durango, Sonora, and Tamaulipas are the entities that have shown a keen interest in green issues and have allocated a larger budget in recent years.<sup>47</sup>

THE STATES WITH THE MOST ROBUST SUPPORT ARE MEXICO CITY, JALISCO, MICHOACAN, NUEVO LEON, SINALOA, SONORA, TAMAULIPAS, OAXACA, QUINTANA ROO, AND VERACRUZ, ALL OF THEM WITH MORE THAN 22 BINDING LAWS. THOSE WITH THE LOWEST NUMBER OF REGULATIONS (<15) ARE AGUASCALIENTES, GUANAJUATO, AND QUERETARO

ITESM, N.D.

<sup>47</sup> Information obtained through the review of documents from the Secretaries of Government of the States. (2019–2023).

## OVERVIEW

In practically all sectors, the country's north is a region that could subsist independently. The region has the necessary elements, infrastructure, and equipment to be solvent in many ways. Environmentally, the area has a vast biodiversity rich in wild and marine flora and fauna. However, the excessive use of these natural elements has worn out the environment uniquely over the last 30 years. Although several different official and academic studies point out the importance of the region and its urgent maintenance, little has been achieved over time.

Mexico has been reluctant to realize both the value of its natural resources and the deterioration they suffer due to disorderly and poorly planned growth (mainly in economic and population aspects). The Mexican north has significantly declined in terms of contamination and quality of water, soil, and air, which is accelerating due to the lack of minimum policy tools to face these challenges. In many localities of these 20 entities, they are already living a catastrophic scenario in environmental matters.

While Mexico does not have optimal levels of environmental quality in at least water, soil, and air, it

would be unfair to single out one culprit. The federal government has played a determining and decisive role in the delay in consolidating a proper environmental conscience; however, other equally essential actors have a debt to pay. State governments, above all and more than municipal governments, are the ones that should play a preponderant role in the solution of environmental problems. The North American model, which many regional states have at hand, has been undervalued and ignored to fall into the same institutional lethargy where finding solutions to environmental problems is complicated.

The fact is that the northern, central, and southern regions lack a righteous path to solve the country's enormous environmental challenges. The institutional destruction experienced in this administration has been lapidary for many projects that, at the time, were and had positive results. One of the situations that Mexican society has faced is that the elimination of hundreds of government policies and programs has resulted in stagnation in the production of the solution, and an increase in problems in general, one of the most disastrous of which is the environmental problem.



The reality and environmental precariousness in Mexico not only reach the northern zone but also extends to the center and south of the country and represent a scenario of extreme vulnerability for the years to come. The fact is that many of the projects now being promoted reflect governmental inattention and inadequacy in decision-making and the prioritization of public problems. The evidence indicates that a larger budget does not necessarily reflect better performance and attention to environmental issues. The effort required to reverse the damage will likely take years of focus and attention to watersheds, land, and air. Political will is the criterion that has served as a bastion of leadership for those entities whose future depends partly on the quality and richness of their biodiversity. The country's future in environmental matters must begin to add new actors in the decision-making process that promote and attend in a regional way to the wear, degradation, or polluting effects, but also to the care, attention, and promotion of a green culture.

MANY OF THE PROJECTS NOW BEING PROMOTED REFLECT GOVERNMENTAL INATTENTION AND INADEQUACY IN DECISION-MAKING AND THE PRIORITIZATION OF PUBLIC PROBLEMS.

THE EFFORT REQUIRED TO REVERSE THE DAMAGE WILL LIKELY TAKE YEARS OF FOCUS AND ATTENTION TO WATERSHEDS, LAND, AND AIR.





# FINAL REMARKS



## FINAL REMARKS

The report on Northern Mexico provides an overview showing that the region suffers from several problems with high complexity. The lack of efficiency of the main national, regional, and local actors in solving issues has reduced the pace and direction of development, growth, and the search for prosperity in a region that had traditionally set the country's direction. Issues such as insecurity or the violation of the rule of law, health shortages and neglect, lack of education, high poverty rates in general, the fall in investment and private consumption in the region, and lags in energy and environmental management, as well as many others, are problems that continue to affect the daily lives of the inhabitants of this region.

One of the central added values of this report is precisely that of being able to contrast reality through meticulous and precise use of data and indicators against official governmental information and narrative. In a country where the production, updating, and dissemination of quantitative information is increasingly diminished and corrupted, this type of analysis could provide fresh air to support decision-

making at all levels and sectors of society. The report takes total stock of the most critical issues affecting society and its quality of life. That is why the topics addressed in the report mirror those presented in the report of the South last July.

The report presents a northern region that has been neglected regarding good management practices for achieving goals for the past 30 years. This impact on regional growth and development determines a precarious situation that, unfortunately, impacts the rest of the country as well. Despite its proximity to the United States, the northern region of Mexico has not been fortunate enough to be able to copy strategies and policies that could improve the sectorial panorama in the north. This is reflected in the states' limited capacity, in general, to adapt to regional problems and their solution and treatment.

Comparing this report with that of the South provides a much clearer picture of what is happening in the country as a whole. The reality we face as a country, specifically in the central-north region, is threaten-

ing the future of millions of people and the social co-existence of Mexicans who are increasingly distant from each other. We wish to contribute to having the best statistical information and interpretation to support the best decisions to put the country back on a path of growth, development, and prosperity.

THE REPORT TAKES TOTAL STOCK OF THE MOST CRITICAL ISSUES AFFECTING SOCIETY AND ITS QUALITY OF LIFE. THAT IS WHY THE TOPICS ADDRESSED IN THE REPORT MIRROR THOSE PRESENTED IN THE REPORT OF THE SOUTH LAST JULY.





A close-up photograph of a stack of several books. The books are open, showing their pages and spines. A bright green horizontal banner is superimposed over the middle of the stack. The word "REFERENCES" is written in large, white, bold, sans-serif capital letters on the banner. The background is slightly blurred, focusing attention on the books and the banner.

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