



# **Independent Regional Assessment of climate change**

# Key opportunities for climate ambition or implementation



- Monitoring and assessment tools and capacities must be strengthened to determine the impact of adaptation measures on vulnerability reduction and resilience increase.
- The government should design an NDC Implementation Pathway to meet its climate commitments, as well as a strategy to achieve net zero emissions by 2050.
- The government should direct the public budget towards projects that contribute to a low-carbon and equitable development that protects and empowers the most vulnerable people.

Mexico has updated its mitigation commitments, nevertheless, the country has yet to implement a climate policy with a justice perspective that reduces inequalities between large emitters and the impacted population and focuses on both addressing vulnerability to climate change, especially regarding the most at-risk population, and accelerating the reduction of GHG emissions.



#### **Climate Justice**

## **Climate policy instruments**

In compliance with the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, parties have developed policy instruments and institutional and budgetary arrangements to address the effects of climate change at the national level. The following is a list of some of the instruments that frame climate action in Mexico.

NDC	1st NDC, 2016; 1st NDC update, 2020; 1st NDC update, 2022					
2030 and 2050 Target	Unconditional 2030 target to reduce emissions by 30% compared to BAU (which translates into not exceeding the 468 MtCO $_2$ e level) Conditional 2030 target to reduce emissions by 40% compared to BAU 2050 target not to exceed 320 MtCO $_2$ e					
BUR	BUR¹ 2015; BUR² 2018; BUR3 2022					
LT-LEDS	Mexico's Climate Change Mid-Term Strategy, 2016					
NC	6 National Communication (1995, 2001, 2006, 2010, 2012, 2018).					
NAP	1st Adaptation Communication, 2022					
Laws relevant to climate change	General Law on Climate Change General Law for Sustainable Forest Development General Law of Ecological Balance and Environmental Protection Energy Transition Law Electric Industry Law, the Geothermal Energy Law, and the National Waters Law Special Tax Law on Production and Services (carbon tax and credits)					

<sup>1</sup> Business as ussual

<sup>2</sup> Biennial Update Report





### Context

#### **DEMOGRAPHIC**



Population of 130 million (2021). Source: World Bank, 2022



**19.4%** of the population recognize themselves as belonging to or descending from native people. 2% are Afro-Mexican or Afro-descendent.

Sources: INEGI, 2021, INPI 2020.





#### **SOCIOECONOMIC**



78.8%



**Population lived** in Source: CEPAL, 2022



Regional average

81.2%

0.76%



**Human development** index 2021



0.75%

USD\$ 9,926



GDP per capita in 2021 Source: World Bank, 2022

usps 8,340

37.4%

Poverty, 2020



32%

0.45



Gini index in 2021 Sources: World Bank; CEPAL, 2022

0.46

#### HABITAT AND ENVIRONMENT



**Deaths** attributed to air **pollution** 28.6 🕦 23 🕥 per **100,000** people Source: IHME, 2022



The area of **native** forests represents **34.8%** of the total area of Mexico. (**746,000 km²** in 2021) Sources: SEMARNAT; INECC, 2022





# Adaptation and vulnerability

With the signing of the Paris Agreement, the parties committed to increasecapacity to adapt to the adverse effects of climate change and build climateresilience, as well as to promote low GHG development.



About 68% of the population and 71% of Mexico's GDP are highly vulnerable to the direct adverse effects of climate change (INECC-SEMARNAT, 2022).



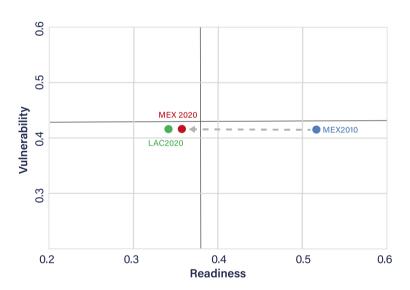
Incorporating a preventive and inclusive approach in the climate change adaptation instruments of the different levels of government and sectors.

#### 3.1 Vulnerability and Readiness

According to the methodology developed by the University of Notre Dame (ND-GAIN Country Index <sup>3</sup>) to establish the degree of vulnerability of countries in relation to their degree of readiness, Mexico shows intermediate levels in both aspects, with a regression in its level of readiness from 2010 (blue dot in the graph) to the present (red dot) (ND-GAIN, 2023).

The green dot indicates the average vulnerability and readiness for the 15 LAC countries analyzed in this report and illustrates that they are highly vulnerable but lack adequate readiness to address adaptation needs.

Figure 1. Comparative resilience, 2010-2020 period.



Source: Own elaboration based on ND-GAIN, 2023.

<sup>3</sup> The ND-GAIN Country Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. It aims to help governments, businesses, and communities to better prioritize investments for a more efficient response to the immediate global challenges ahead. According to this methodology, vulnerability measures a country's exposure, sensitivity, and adaptive capacity to the negative effects of climate change, considering six life-supporting sectors: food, water, health, ecosystem services, human habitat, and infrastructure. On the other hand, readiness measures a country's capacity to leverage investments and convert them into adaptation actions, considering three components: economic readiness, governance readiness, and social readiness.

The vertical axis shows the vulnerability value, while the horizontal axis shows the country's readiness value. The graph is divided into four quadrants delimited by the vulnerability and rea-

diness median values, considering the values of all the countries. The index ranges from 0 (low readiness/vulnerability) to 1 (high readiness/ vulnerability).

Figure 2. Examples of changes observed in Mexico.



The average annual temperature increased by 0.85°C over the last 50 years, according to IPCC data. In a 1.5°C scenario, the average annual number of heat stress days is expected to increase from 4 to 25 days, and to more than 50 days in a 3°C scenario.



In the southeast, there has been a notable decrease in precipitation during the 1961-1990 period, with a high confidence level.



Between 20% and 60% of the country faced abnormally dry conditions in the period from 2016 to 2021.

Up to 50% of agricultural and livestock production has been lost due to droughts, especially basic grains such as corn, sorghum, wheat, rice, and soybeans.

Source: Own elaboration based on INECC-SEMARNAT, 2022.

Figure 3. Projected impacts

#### **POPULATION**



Indigenous and Afro-Mexican peoples living in high-risk areas and situations of poverty and marginalization are particularly vulnerable to the impacts of climate change.

Gender inequality gaps diminish the adaptive capacity to climate change.

#### **HEALTH**



Dengue cases show an increasing trend; in 2019, 142,476 cases were recorded.

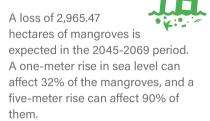
Heatstroke-related illnesses may increase by 47%, gastrointestinal illnesses by 18% and vector-borne illnesses by 44%.



#### **BIODIVERSITY**

For the 2045-2069 period, it is estimated that the proportion of Mexico's natural protected areas (NPAs) with low levels of connectivity will increase by 17% due to climate change.

#### **SEA LEVEL**



#### **COASTAL** ZONES



of the national island surface would be submerged in sea level rise scenarios of 1 m and 5 m, respectively.

Between 16.5% and 68.3% of the island population will be affected in sea level rise scenarios of 1 m to 5 m.

#### **CITIES AND HUMAN SETTLEMENTS**

Of the total number of municipalities in Mexico's 32 states, 58.6% (1,448) have high and very high current vulnerability.



Sources: Own elaboration with information from OECD, 2013; INECC-SEMARNAT, 2022; SEMARNAT, 2022.

#### 3.2 Adaptation policies and measures

Mexico was the first developing country to submit an adaptation component in its NDC, which proved to be a reference for other countries in the region. It has also made progress on technical capacity assessments and planning for the three

means of implementation of the Paris Agreement—finance, technology, and capacity building—and has focused its efforts on quantifying the costs and savings of implementing adaptation measures.

**Table 1.** Sectors with adaptation measures according to Mexico´s 2022 Updated Nationally Determined Contribution (NDC) and the Climate Change Adaptation Communication.

Sectors with measures		Degree of implementation (identified priorities / initiatives / flagship projects) <sup>4</sup>				
	Institutional / sectoral plans / finance	Sectoral and special programs detail 105 climate change adaptation measures which is triple compared to the 2012-2018 period.				
		A proposed climate finance architecture for adaptation and a measurement, reporting, and verification (MRV) system are in place.				
		The Transversal Annex on Climate Change (AT-CC) is the national financing instrument for compliance with the national climate change policy.				
	Ecosystems / biodiversity / forests	Ecosystem-based adaptation projects in the tourismsector with pilot measures for forest conservation and capacity strengthening in two priority tourism destinations.				
		Strengthening the management and increasing the resilience of 17 NPAs to protect the biodiversity threatened by climate change within 78 million hectares.				
	Agriculture / food sovereignty	The Secretariat of Agriculture and Rural Development (SADER) trains officials, producers, and field technicians on sustainable agricultural and livestock alternatives and measures.				
		The Sembrando Vida Program <sup>5</sup> seeks to establish agroforestry systems in communities of 20 states.				
:01	Production / industry / private sector / circular economy	The National Entrepreneurial Fund (FNE) allocates resources to small businesses affected by climate disasters.				
		The guide for investments adapted to climate change of the Secretariat of Tourism (SECTUR) incorporates climate change criteria and adaptation solutions in the planning of a tourism real estate investment.				
	Water resources	Drought prevention and mitigation measures programs have been developed for 22 of the country's main cities. The Inter-Secretariat Commission for Drought and Flood Attention (CIASI) was created.				
		Biweekly drought monitoring and development of a drought action alert protocol.				
		There are municipal maps showing the drought situation, in five categories, in each of the municipalities				

- 4 Information obtained from Mexico's First Adaptation Communication to the United Nations Framework Convention on Climate Change. The initiatives included are only a few applicable examples. This list is not exhaustive of all actions implemented or under development.
- 5 Although Sembrando Vida is one of the nine priority programs of the Federal Government, according to the National Council for the Evaluation of Social Development Policy (CONEVAL), there are some technical and administrative weaknesses that prevent reaching the basic food needs of beneficiaries, such as the lack of specific indicators, the limited implementation of interleaved cornfields in fruit trees (MIAF) and agroforestry systems, the use of crops poorly adapted to the water conditions of the regions, and users 'concerns about the water demand pressure.

4	

There is a Risk Information System of the National Center for Disaster Prevention (CENAPRED), which integrates maps of the National Risk Atlas (ANR). Risk management

> Implementation of early warning systems for tropical cyclones (SIAT-CT), floods, and cold fronts (among others)



Mapping of information on natural hazards and investment projects of the Secretariat of Finance (SHCP), to incorporate Integrated Disaster Risk Management (IDRM) in the country's investment projects.

Emerging Land-Use Planning Programs (POTE), which identify areas affected by a natural disaster and guide the implementation of programs or projects.



Health

Conservation of six coastal watersheds to preserve biodiversity, restore environmental hydrology, and implement nature-based solutions



Integrated Dengue Surveillance System of the National Center for Preventive Programs and Disease Control (CENAPRECE)

Climate change adaptation strategy of the Federal Commission for Protection against Sanitary Risks



The Secretariat for Agrarian, Land, and Urban Development (SEDATU) develops and implements programs related to cities and climate change and sustainable development of urban coastal regions by integrating ecosystem services and biodiversity.

The SEDATU developed guidelines to support municipalities and cities in integrated risk management and to promote resilience.



**Evaluation and** monitoring

Efforts to integrate economic methods in the evaluation of adaptation measures at the micro and macro scales.

The INECC developed a monitoring and evaluation tool for adaptation measures that includes courses, workshops, trainings, and forums with key stakeholders.





# **Mitigation**

With the signing of the Paris Agreement, the parties committed to keep theglobal average temperature increase well below 2°C above pre-industrial levels and to continue efforts to limit it to 1.5°C.



Mexico generates 75% of its energy from fossil sources (Obtren, 2023) and committed in its NDC to integrate 40 GW of clean energy capacity.



Ensuring that the costs and benefits of the transition are distributed equitably, with green jobs that guarantee respect for human rights, and that present, past, and future impacts are addressed.

committed in its NDC to integrate 40 GW of clean energy capacity (INECC, 2022). However, the country currently still generates 75% of its energy from fossil sources (Obtren, 2023), and it is estimated that approximately 37% of households live in energy poverty (García-Ochoa, 2016). This is a problem that aggravates inequalities and climate vulnerability and especially affects women. It is imperative to promote actions that recognize these climate inequalities and vulnerabilities while ensuring respect for human rights and a progressive transition towards the reduction of fossil fuel use However, considering its fair share<sup>6</sup> —according and subsidies in energy generation.

#### 4.1 Mexico's contribution to emissions

Mexico's total emissions were 736.63 MtCO<sub>3</sub>e without considering emissions from land use, landuse change, and forestry (LULUCF) reported by

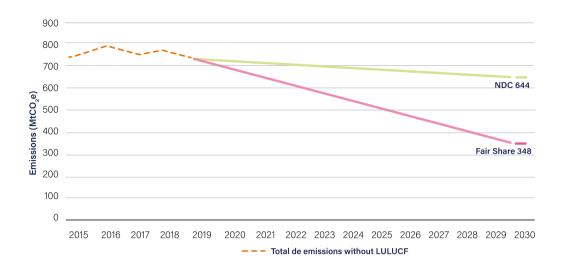
In compliance with the Paris Agreement, Mexico the country in 2022 (SEMARNAT, 2022; INECC, 2022).

> The latest update of Mexico's 2022 Nationally Determined Contribution (NDC) established an unconditional target of reducing greenhouse gas (GHG) emissions by 35% with respect to the baseline scenario for the same year, which was estimated at 991 MtCO<sub>2</sub>e (SEMARNAT, 2022). Therefore, the target is to reduce 347 MtCO e gross to reach the limit of 644 MtCO<sub>3</sub>e by 2030.

> to the Stockholm Environment Institute Calculator (SEI, 2023)—Mexico should limit its emissions to 348 MtCO<sub>2</sub>e by 2030, without taking into account emissions from land-use change and forestry (LULUCF).

<sup>6</sup> The fair share represents the fraction of emissions that each country should emit atmost (in this case by 2030) in order not to exceed the 1.5°C average global temperature increase. In order to estimate this contribution, the contribution developed by the SEI is used because it provides information for all the countries of Latin America and the Caribbean. Considerations used for the calculation (SEI): historical responsibility since 1850. Mitigation path: 1.5 °C standard (excluding LULUCF) Capacity: \$0 development threshold, 50% Responsibility - 50% Capacity.

Figure 4. Mexico's NDC target and fair share without LULUCF

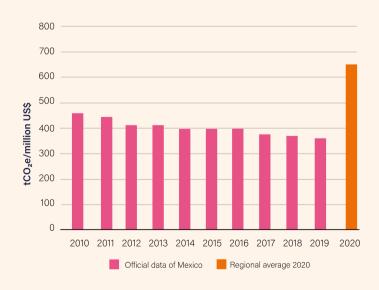


Source: Own elaboration based on SEMARNAT, INECC, 2022; SEMARNAT, 2022; SEI, 2023.

The path towards meeting the NDC (644 MtCO<sub>2</sub>e) presents a gap of 296 MtCO<sub>2</sub>e to reach the fair share measure by 2030.

Emissions intensity data for Mexico's economy quantifies the power used per million dollars (USD) and is closely related to the level of decarbonization, efficiency achievements, climatic conditions, or geography. The emissions intensity of Mexico's economy is below the regional average.

Figure 5. Carbon intensity of the Mexican economy (tCO<sub>2</sub>e/million USD)



Source: Own elaboration based on SEMARNAT, INECC, 2022; FAO, 2022; World Bank, 2022).

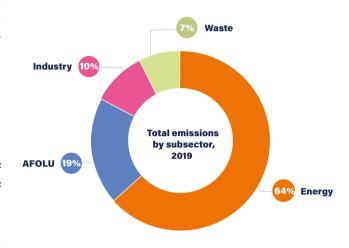
#### 4.2 Emissions by sector

According to official data from Mexico, the energy sector is the largest contributor to the country's emissions, with a 64% share, followed by the agriculture and forestry sectors, accounting for 19% (SEMARNAT, INECC, 2022).

#### **Energy**

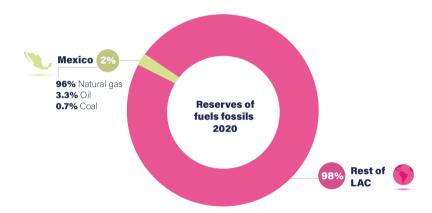
Mexico's fossil fuel reserves—gas, oil, and coal—are significantly lower compared to the rest of Latin America and the Caribbean in terms of energy (OLADE, 2022; British Petroleum, 2022; Our World in Data, 2022). In 2020 Mexico's reserves were: 178,070 kTep <sup>7</sup> of gas (96%), 6,346.78 kTep of oil (3.4%), and 1,211 kTep of coal (0.7%).

Figure 6. Total emissions by subsector, 2019.



**Source:** Own elaboration with data from SEMARNAT, INECC, 2022.

Figure 7. Mexico's fossil fuel reserves and their share of total LAC reserves 8

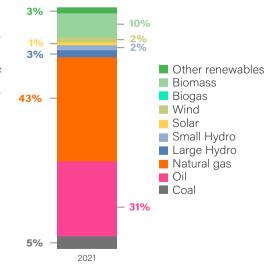


Source: Own elaboration based on OLADE, 2022; British Petroleum, 2022; Our World in Data, 2022.

In 2019, the primary power mix showed a 74% dependence on fossil fuels (SENER, 2021), which exceeds the regional average of 66% in 2021<sup>9</sup>. Although a greater number of renewable projects were incorporated in 2017, these have been slowed down in recent years (Figure 8).

Figura 8. Primary power mix 2021.

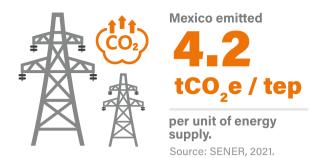
**Source:** Own elaboration based on SENER, 2021. This mix shows the primary energy resources. If the country imports secondary fuels, they will be reflected in the sector's emissions but not in this primary power mix.



- 7 kTep, kilotonne of oil equivalent.
- 8 The lower calorific values obtained from the Energy Statistics Manual, OLADE 2011 were used for the conversion of fossil fuel reserves to energy units, OLADE 2021.
- **9** Mexico uses IPCC methodologies in its National Communications, which results in some discrepancies with the calculations produced with EDGAR and FAO methodology.

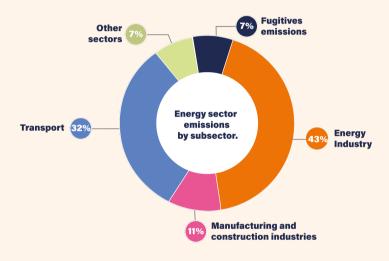
Figure 9. Mexico's carbon intensity

Carbon intensity indicates how much CO, is emitted per unit of energy supply.



The energy industry is the subsector that contributes most to the emissions of the energy sector, with a 43% share in 2021, followed by the transport subsector with 32% (SEMARNAT- INECC, 2022).

Figure 10. Energy sector emissions by subsector.



Source: Own elaboration based on SEMARNAT, INECC, 2022.

#### **Power generation**

Energy generated through clean sources<sup>10</sup> constituted 29.5% (70,563.43 GWh) of Mexico´s total generation (PRODESEN, 2022).

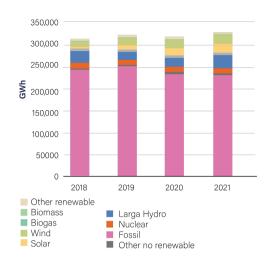
The share of renewable clean energy<sup>11</sup> has increased in recent years, with an increase of 7.4% in the period from 2018 to 2021. In the current mix, 42% of

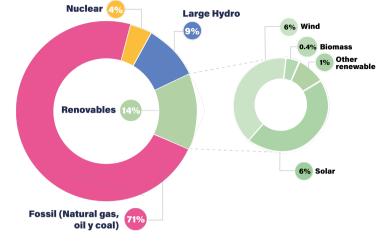
electricity is generated from hydroelectric power, 26% from wind, 35% from solar, and there is a smaller share of bioenergy (Figure 11).

**<sup>10</sup>** The clean energy category includes non-renewable clean energies, such as nuclear generation, efficient cogeneration, and regenerative brakes (PRODESEN, 2022).

**<sup>11</sup>** Clean renewable energy generation (CREG) in Mexico includes energy generated from hydroelectric, wind, geothermal, photovoltaic, and bioenergy plants, as well as Photovoltaic Distributed Generation (PRODESEN, 2022).

Figure 11. Power generation mix and share percentages by technology in 2021.

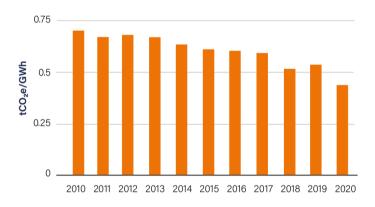




Source: Own elaboration based on SENER, 2021.

Figure 12. Carbon intensity of power generation (ktCO2e / GWh).

The emissions intensity of electricity generation in Mexico has decreased by 37.5% in recent years, due to the gradual incorporation of renewable energies into the mix and the decrease in the share of oil and coal (EDGAR, 2022; IRENA, 2022) (Figure 12).



Source: Own elaboration based on EDGAR, 2022; IRENA, 2022.

#### **Transport**

Emissions from the transport sector have not maintained a linear behavior, although they show a decline between 2010 and 2019 (ICM, 2022). In 2021, the transport sector contributed 22% of national emissions (INECC, 2022).

Figure 13. Transport Emissions 2010-2021.

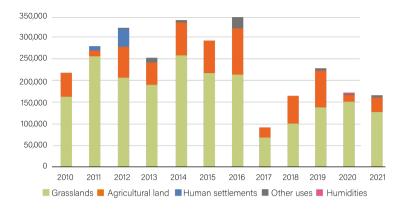


Source: Own elaboration based on SEMARNAT - INECC, 2022.

# Agriculture, forestry, and other land uses (AFOLU)

Forest lands in Mexico recorded a continuous loss in the decade 2010-2020; the National Forestry Commission estimates an annual gross deforestation rate of around 208,000 hectares for the 2001-2021 period (CONAFOR, 2022), which includes the permanent loss of forest vegetation resulting from land-use changes to agricultural lands, grasslands, human settlements, wetlands, or other lands.

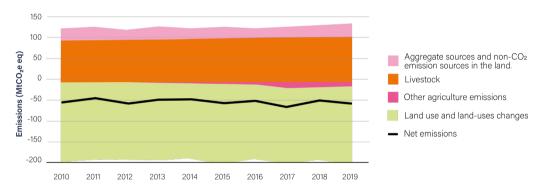
Figure 14. Annual deforestation rates in the 2010-2021 period



Source: Own elaboration based on CONAFOR, 2022.

The AFOLU sector presents negative net emissions in the 2010-2019 period, i.e., a net capture of 61 MtCO<sub>2</sub>e (SEMARNAT, INECC, 2022).

Figure 15. AFOLU emissions by subsector



Source: Own elaboration based on official data from SEMARNAT, INECC, 2022.

**Table 2.** Mitigation measures in the energy and transport sectors according to Mexico's 2022 Updated Nationally Determined Contribution (NDC).

Sectors with measures		Degree of implementation (identified priorities / initiatives / flagship projects)				
	National Strategy for Electric Mobility	As of June 2023, a draft proposal for the National Strategy for Electric Mobility was presented.				
	Strengthening vehicle energy efficiency regulations	NOM 163 for vehicle efficiency and emission reduction of light vehicles is currently being updated, with a series of flexibilities that may represent a lower reduction in emissions <sup>12</sup> .				
Transport	Rehabilitation of the railway network	The National Railroad Program commits 15 freight, passenger, and tourist railroad projects for the construction, rehabilitation, and modernization of railroads.				
	National Remote Work Strategy	NOM 037-STPS is in place, which regulates safety and health conditions in the remote modality.				
	Urban planning with climate change criteria	No information.				
	Lithium As A Strategic Mineral Decree	In February 2023, the Presidential Decree to nationalize lithium was signed <sup>13</sup> .				

Energy	CFE Hydroelectric Power Plant Modernization Plan	The Federal Electricity Commission (CFE) will modernize and repower nine hydroelectric power plants, which will start operating throughout 2023 and early 2024.
	Increase in generation capacity with photovoltaic, wind, and geothermal power plants.	No information.
	Promoting renewable distributed generation	No information.
	Sonora Plan	The first phase of the Puerto Peñasco Solar Plant was inaugurated in February 2023, with a capacity to generate 120 megawatts (MW) and more than 12,000MW with battery backup. The second phase is scheduled for June 2024 <sup>14</sup> .

Table 3. Mitigation measures for the Agriculture, Forestry, and Other Land Use sector according to Mexico's 2022

#### Updated Nationally Determined Contribution (NDC). Degree of implementation (identified priorities / initiatives / **Sectors with measures** flagship projects) In 2023, the Sembrando Vida program reported more than 1 million hectares planted Promoting sustainable with agroforestry and interleaved cornfields in fruit and timber trees, under an agronomic practices agroecological system without the use of chemicals. aimed toward soil carbon sequestration. SADER's Sector Program includes compensation schemes for avoided emissions in agroforestry systems, communities, ejidos [communally held lands], and economic Promotion of organizations of producers in the sector, but its results need to be evaluated. agroforestry and interleaved cornfields **AFOLU** SADER's Program for the Promotion of Agriculture, Livestock, Fisheries, and in fruit trees (agriculture) (Sembrando Vida). Aquaculture specifies support for the "Change of cultivation or planting of multi-crops (genetic material and inputs)", as well as support for coffee and cocoa crops, which can be grown in agroforestry systems. 21 states in Mexico stated that both deforestation and/or degradation of forest land is Avoiding deforestation an ongoing problem, with 84% of the country affected. Between 2015 and 2020, and increasing the arowth of existing deforestation has increased with a net annual average of 127,800 hectares. In the forests implementation of 2001-2021 period, the annual gross deforestation rate in Mexico was 208,850 the National Strategy for hectares15. the Reduction of Emissions from Deforestation and **AFOLU** Forest Degradation (Forests) The federation announced that FONATUR's 16,000 hectares of land will be declared Increase in federal Natural protected natural areas and will provide detailed information on which and how Protected Areas much land will become protected reserves, with the aim of decreeing more than one million hectares of conservation land. As part of the Tren Maya megaproject, the creation of new natural protected areas with an estimated surface area of 44,000 hectares has been announced. In addition, the country's largest terrestrial reserve

Incremento de Áreas Destinadas

Voluntariamente a la Conservación

As part of the Tren Maya megaproject, the creation of new areas voluntarily destined for conservation has been announced. In section II of the Tren Maya, Escárcega-Calkiní, it is estimated that more than 48,000 hectares will be included in conservation.

and the second-largest tropical forest reserve in the Americas will be created,

12 Government of Mexico. 2023. Decree on lithium nationalization, February 18, 2023. https://www.gob.mx/ presidencia/articulos/version-estenografica-decreto-sobre- nacionalizacion-del-litio/.

covering 1.5 million hectares.

- 13 CFE, 2023. More clean energy from CFE for Mexico: the first stage of the Puerto Peñasco Photovoltaic Power Plant begins operations.
- 14 CDP & Mexican Climate Community, 2023. Resilience to climate change: advances in adaptation and actions to prevent deforestation in Mexican states. https://cdn.cdp.net/cdp-production/cms/reports/documents/000/006/787/ original/Fact sheet Mexico v3-2.pdf/.
- 15 CONAFOR. 2023. National Forest Monitoring System. https://snmf.cnf.gob.mx/deforestacion/.





# **Finance**

Under the Paris Agreement, the Parties committed to making sure that financial flows will be consistent with a scenario towards low GHG emissions and resilient climate development.



Over the last decade, Mexico has increased fossil fuel subsidies to the equivalent of 1.84% of the GDP in 2021.



The allocation of public and private resources requires the incorporation of climate change criteria. The amount of 7.6% of the GDP that goes to fossil fuel subsidies should be redirected to low-or zero-emission activities and the progressive promotion of a just energy transition.

#### **5.1** The role of the public sector

The distribution of the federal budget makes it possible to identify government priorities in the development planning of Latin American and Caribbean countries.



Source: Own elaboration with information from GFLAC, 2021.

In 2019, the budget directed to hydrocarbons represented 11.07% of the total Public Sector budget, i.e., 221 times higher than the sustainable budget, made up of spending labeled for climate change, energy efficiency, renewable energy, and natural disasters (GFLAC, 2021).

In March 2023, Mexico's Secretariat of Finance and Public Credit (SHCP) published the Sustainable Taxonomy of Mexico, which aims to mobilize and redirect public and private financing towards economic activities with positive environmental and social impacts (SHCP, 2023).

Figure 17. Comparison of sustainable budget versus carbon-intensive budget.

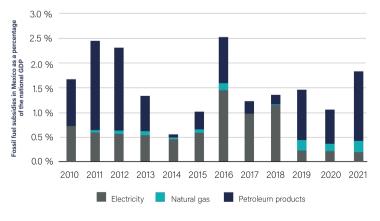


Source: Own elaboration with information from GFLAC, 2021.

Mexico has maintained fossil fuel subsidies in the last decade, up to an amount equivalent to 1.84% of the GDP in 2021<sup>16</sup>, which reached the amount of 23.79 billion dollars, of which 17.92 billion went to oil (FossilFuelSubsidyTracker.org, 2022).

Mexico has had a carbon tax since 2014, which was launched in a pilot phase and does not include natural gas (Our World in Data, 2022). The tax covers 44% of the country's greenhouse gas emissions, with a price of 4 USD per tCO<sub>2</sub>e for kerosene, and 0.14 USD per tCO<sub>2</sub>e for petroleum coke, representing earnings of 239 million USD in 2023 (World Bank, 2023).

Figure 18. Fossil fuel subsidies in Mexico as a percentage of the national GDP.



Source: Own elaboration based on Fossil Fuel Subsidy Tracker, 2022.

#### **5.2 International Cooperation**

Mexico receives international cooperation for mitigation and adaptation projects from different international organizations. These resources include non-reimbursable support and loans.

Table 4. List of projects and amounts approved for Mexico from different international cooperation agencies.

Agency / Institution	Scope of the project	Amount approved, 2016-2022 period (Million USD)			Approved projects 2016-2022 period			
		Non-refundable	Loan	Co-financing	Mitigation	Adaptation	Others	Readiness
Green Climate Fund (GCF)	Only Mexico	10,62		1,00			1	4
	Multiple countries	8,24	53,61	264,90	3	2	2	3
Global Environment Facility (GEF)	Only Mexico	69,10		489,74			10	
	Multiple countries	13,35		111,17			2	
UN Climate Technology Centre and Network (CTCN)	Only Mexico	0,19			1		1	
	Multiple countries							
Inter-American Development Bank (IDB)	Only Mexico		4.237,00		23	10	13	
	Multiple countries							

Source: Own elaboration based on CTCN, 2022; IDB, 2022; GEF, 2022; GCF, 2022.





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