

Nationally Determined Contributions

2020 Update









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2020 Update







PREFACE

This document constitutes an update of Mexico's Nationally Determined Contribution (NDC) in accordance with the General Law on Climate Change (LGCC, by its acronym in Spanish) and pursuant to decisions 1/CMA.2 and 1/CP.21 and Article 4 of the Paris Agreement.

The Government of Mexico hereby ratifies the commitments submitted to the United Nations Framework Convention's Secretariat in 2015 under the United Nations Framework Convention on Climate Change (UNFCCC), as well as its interest in working collaboratively with the international community in order to keep the increase in global temperature well below 2°C and to pursue additional efforts to limit to 1.5°C, by acting both on adaptation and mitigation actions on equal degrees of importance. The mitigation component considers unconditional contributions, which will be implemented with the country's own resources, and conditional contributions, which require the support of financial, technical and technological instruments, as well as capacity-building which will accelerate the implementation of mitigation actions across the country.

- **Unconditional contributions:** Consist of, alternatively: Reduction of 22% of greenhouse gas emissions (GHG) and 51% of black carbon emissions by 2030 as compared to the baseline business-asusual scenario (BAU).
- **Conditional contributions:** A reduction of up to 36% of GHG emissions and 70% of black carbon emissions by 2030 compared to the BAU scenario.

The adaptation component reflects a greater understanding of the country's vulnerability to the impacts of climate change, and it includes 5 general themes, or axes, and 27 lines of action focused on implementation.

This document features the criteria employed by Mexico to define the scope of the NDC's update, the expanded adaptation component, and the strengthened mitigation component. It also contains, as a single annex, information pertaining to 4/CMA.1 of the Katowice Rulebook on the Enhanced Transparency Framework regarding implementation and monitoring of the NDC.

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I INTRODUCTION



Adaptation in grasslands, Mapimi Biosphere Reserve, Durango. CONANP Archive.

Through this NDC update, Mexico ratifies its commitment to tackle climate change, a global effort that requires, today more than ever, the action of all countries. Our world and our civilization are facing a far-reaching crisis with multiple facets; the adverse effects of climate change which represent systemic and ecological imbalances, exacerbated by an economic growth model that has not considered the limits of the environment and the planetary ability to maintain life-supporting systems; a loss of traditions and biocultural wealth that characterize our societies, where extreme poverty is a disruptive manifestation of an exclusionary and predatory growth model; and a health crisis. which reminds us that the degradation of ecosystems and the excessive exploitation of wildlife is linked intrinsically to our health, compromising the social and economic well-being of our common home.

The SARS-CoV2 pandemic has forced nations to rethink their development models. In this context, Mexico's NDC update within the framework of the Paris Agreement establishes the basis for moving towards a responsible and sustainable recovery. The Mexican Government recognizes the close link between environmental protection and well-being of the population as a necessary condition to access other dimensions of well-being such as health, food security and employment. In light of this, Mexico has adopted the United Nations 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) as the guiding axis for this inclusive development.

Actions planned to be undertaken within the framework of the NDC consider the synergies between the adaptation and mitigation components as well as their relationship with the SDGs and other international conventions. As a result, Mexico has focused its public policies on poverty abatement with an orientation that seeks to lay the foundations for a more balanced, and equitable sustainable development, following the premise established in the National Development Plan 2019-2024 of "leaving no one behind, leaving no one out".

The adverse effects of climate change threaten the exercise of fundamental human rights: access to a healthy environment, health, food, drinking water, adequate housing, education, and culture, as well as the right to self-development and to life itself¹. With this awareness, the inseparable link between the protection of human rights and action against climate change is becoming increasingly evident. The consequences of the adverse effects of this global phenomenon are even more serious for individuals and groups in vulnerable social, economic and environmental situations, including women, indigenous and Afro-Mexican communities. children, youth, migrants, people with disabilities, sexual minorities, low-income groups, and the elderly².

Mexico is amongst the top 20 emitters of the 195 considered by the United Nations. In the last 20 years, its position has shifted between the 11th and the 13th place. While the first to ten emitters are responsible for around 66% of the total emissions, it is rather clear that Mexico has a myriad of opportunities to undertake changes leading to the diversification of its energy matrix, and to lead transformational changes in its productive sector focusing on the population's welfare and in the protection and sustainable use of its cultural and natural wealth.

The effects of climate change are already tangible in the national territory, thereby confirming that adaptation and risk reduction are tasks that cannot be postponed, so they must be integrated into socioeconomic planning and development. In the last 50 years, average temperatures in the country have increased approximately 0.85°C above the climate normal, or climatological normal, in line with the global increase reported by the IntergovernmentalPanelonClimateChange (IPCC)³.

¹ Economic Commission for Latin America and the Caribbean (ECLAC) / High Commissioner for Human Rights (HCHR). (2019). Climate Change and Human Rights: Contributions from and for Latin America and the Caribbean (LC/TS.2019/94/Corr.1), https://bit.ly/2UcqCAo

² Ibid. page 7

³ Intergovernmental Panel on Climate Change (IPCC). (2019). Global Warming 1.5°. https://www.ipcc.ch/site/ assets/uploads/sites/2/2019/09/SR15_Summary_Volume_spanish.pdf

Minimum and maximum temperatures show a trend towards an increase in warm nights and a decrease of cold ones throughout the country⁴. Regarding precipitation, observations show that the spatial and temporal distribution has changed in a differential way throughout the territory, even though the volume has remained constant. These situations have impacts on ecological and productive systems that are highly sensitive to temperature and precipitation variations, resulting in economic loss, which may increase in the future under climate change scenarios.

In order to fulfill the mandate to increase the population's engagement in the construction of the NDC, during 2020, a participatory process was conducted nationwide. This process included Ministries of State, through the Intersecretarial Commission on Climate Change (CICC, by its acronym in Spanish), as well as state governments, scholars, social organizations, the private sector, and the public. It is noteworthy to underline the participation of young generations who have shown leadership and a growing commitment in addressing climate change. Their active participation in this participatory process allowed for the inclusion of their concerns and proposals in this document. In addition, as a result of this process, the NDC enhances its means of implementation to meet the objectives of development of science and technology, encouraging research, education, training, social awareness, access to information and citizen participation within a framework of constant technological innovation in order to achieve full territorialization and engagement in adaptation and mitigation actions.

Mexico has strengthened the means and mechanisms to implement its climate policy and the NDC itself, through its incorporation into the LGCC. It has also taken strong steps to integrate and execute actions that address climate change in programs, projects, and actions at different orders of government that will serve as enhanced mechanisms for the implementation of the NDC. The Mexican Government ratifies its commitment to implement the NDC respecting human rights, integrating a gender equality approach, prioritizing the needs of vulnerable groups, and promoting the inclusion and recognition of science and traditional knowledge of native indigenous communities under the principle of intergenerational equity. Reports on the progress of the NDC's implementation will incorporate the objectives and goals of the Lima Work Program on Gender and the UNCCD Gender Action Plan. As a signatory of the Escazú Agreement, Mexico will abide by the objectives of the Universal Declaration of Human Rights, under the principle of equal rights between women and men, as well as the elimination of all forms of discrimination against women.

In this context, as a middle-income developing country, Mexico is committed to foster south-south and triangular cooperation in order to support other countries in achieving more ambitious adaptation and mitigation goals in accordance with national development priorities for each country. Mexico will focus on scientific and technological cooperation as well as the promotion of research capacity building regarding adaptation and mitigation, and considering its strategic position, will strive to develop partnerships with Latin America and the Caribbean to foster regional development.

Lastly, Mexico recognizes that cooperation and climate finance are tools that can bolster the implementation of its commitments and expresses its interest in advancing and implementing Article 6 of the Paris Agreement in order to increase its climate ambition. Therefore, the Mexican Government reaffirms the call on the international community to adopt Conference of the Parties, the required rules to make this mechanism operational and thus allow for cost-effective international cooperation, enhancing a greater participation of the private sector in global mitigation.

⁴ Instituto Nacional de Ecología y Cambio Climático (INECC) - Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT). (2018). Sexta Comunicación de México ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático. https://cambioclimatico.gob.mx/sexta-comunicacion/

II ADAPTATION COMPONENT

AL TUN

A. 5 1. 18

Laguna del Amor, West Coast of Isla Mujeres National Park, Punta Cancun and Punta Nizuc, Quintana Roo. CONANP Archive

Mexico is a megadiverse country with coastline on both the Atlantic and the Pacific oceans⁵ unique in its biological wealth at the continental, coastal and marine levels. In addition, it has a vast and diverse cultural heritage that results in a wide range of languages and cultural identities. Since the presentation of its first NDC in 2015, the country has acted upon its commitments regarding adaptation, addressing local vulnerability in order to protect its biological and cultural diversity and richness.

In recent decades, knowledge on vulnerability to climate change, thus reaffirming that adaptation and the reduction of risks to the population, ecosystems and productive sectors are not deferrable deeds.. The interaction of factors such Mexico's position, environmental and socioeconomic conditions, along with a high social inequality, results in a country that is highly vulnerable to the potential impacts of climate change.

Recent studies, as well as the analysis of the information presented in special reports by the IPCC, provide solid ground for the construction of a National Adaptation Policy (NAP) foreseen by the LGCC whose objective is to guide the implementation of this component through collaborative, multi-sectoral processes that recognize the comprehensive, complex and urgent⁶ nature of adaptation.

This component expands its scope by integrating cross-cutting elements such as Nature-based Solutions (NBS) and Community-Based Adaptation (CBA) approaches; Ecosystem-Based Adaptation (EBA); as well as Disaster Risk Reduction (DRR) based Adaptation. The NDC is strengthened by incorporating the results of a nationwide participatory process, which considered all three orders of government, specialists, scholars, productive sectors, social organizations, youth and the public. Additional elements were included to strengthen the adaptive capacity of the country's population, its ecosystems as well as its strategic infrastructure and tangible cultural heritage. Consequently, the adaptation component increases its scope of action.

While defining actions included in this component, particular attention was given to identify the necessary means of implementation. This resulted in actions pertaining capacity building, knowledge generation, scientific research and education, technological transfer and development, as well as the consolidation of financial mechanisms required by adaptation actions that will be implemented during the period leading to 2030.

Consequently, this NDC update presents a greater ambition in the actions that will be undertaken in the territory and foresees the consolidation of Monitoring and Evaluation (M&E) mechanisms which will enhance the System for Information on Advances in Transparency (SIAT) of the Nationally Determined Contribution (SI-AT – NDC). These actions will reinforce reporting mechanisms and provide further insights and transparency of the progress towards the reduction of vulnerability. This framework considers increased participation of different sectors and organizations involved in decision making and planning, thereby optimizing the use of. This, by recognizing opportunities and establishing requirements for adequate implementation with a long-term perspective.

The following sections present the five general axes included in the component and describe the 27 action lines identified in order to decrease the country's vulnerability.

⁵ Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO). (2020). México Megadiverso. https://bit.ly/36on57F

⁶ *Comprehensive* refers to the diversity of traditional, scientific, and specialized knowledge; *complex* points to the fact that not everything is measurable in adaptation matters; and *urgent* because it responds to principles of social and environmental justice.

Axis

Axis Icon

Action Lines





AXIS A. PREVENTION AND MANAGEMENT OF NEGATIVE IMPACTS ON THE HUMAN POPULATION AND THE TERRITORY

In Mexico, several social groups are particularly vulnerable to the impacts of climate change. Among them are indigenous and Afro-Mexican communities, the vast majority of whom live in impoverished, highrisk areas. On the other hand, the inequality that persists in Mexico, further stresses geographical vulnerability as well as age and gender disparities. Restricting women's access to means of production such as land, financing, training, education and information, all of which diminishes their adaptive capacity in the face of climate change.

These social and economic conditions, coupled with the increase of adverse hydro-meteorological phenomena, such as flooding and droughts, have forced people to leave their homes and seek new opportunities in other territories. These processes sometimes lead to conflicts and competition for resources that can aggravate pre-existing vulnerabilities.

Axis A is composed of seven lines of action whose main objective is to ensure the

implementation of actions in the territory. It addresses the gaps in social inequality and aims to reduce the impacts associated with climate change by raising awareness among the population, providing access to information and developing tools for decision-making. This axis considers a preventive, long-term approach.

This section contributes towards the fulfillment of strategic issues related to 15 SDGs and 45 of its goals. Amongst the most salient are the following: Cities and human settlements adopting and implementing comprehensive policy and plans for climate adaptation; resilience of personas in climate vulnerability and reduction of their exposure; preventive health, considering gender equality criteria intersectionality and human rights, to mention a few elements.

The following table features actions, highlighting new commitments, existing synergies with mitigation and, where appropriate, linkages with the SDGs.

| on the namun population and the territory | | | | | |
|--|------------|----------------------------|--|--|--|
| ACTION LINES | NEW ACTION | SYNERGY WITH MITIGATION | SDG | | |
| A1. Implement actions in 50% of munic- ipalities identified as vulnerable accord- ing to the National Vulnerability Atlas and the Special Climate Change Pro- gram 2020—2024, prioritizing those with the greatest social inequalities | | \mathbf{O} | $ \begin{array}{c} 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ 1\\ $ | | |
| A2. Implement comprehensive adapta- tion strategies that strengthen resilience in human settlements | \odot | \mathbf{O} | | | |

Axis A. Prevention and management of negative impacts on the human population and the territory

| Axis A. Prevention and management of negative impacts on the human population and the territory | | | | | | |
|---|------------|----------------------------|-----|--|--|--|
| ACTION LINES | NEW ACTION | SYNERGY WITH MITIGATION | SDG | | | |
| A3. Strengthen early warning systems and protocols for prevention and action against hydro-meteorological and cli- matic hazards in different natural and human systems at all three levels of government | | | | | | |
| A4. Incorporate climate change adapta- tion criteria in planning instruments, ter- ritorial and disaster risk management in all sectors and orders of government | \bigcirc | | | | | |
| A5. Strengthen financial instruments for disaster and risk management and attention through the integration of climate change adaptation criteria | \bigcirc | | | | | |
| A6. Implementing strategies to reduce health impacts related to diseases exacerbated by climate change | \bigcirc | \mathbf{O} | | | | |
| A7. Identify and address forced displacement of people due to the negative impacts of climate change | \bigcirc | | | | | |

AXIS B. RESILIENT PRODUCTION SYSTEMS AND FOOD SAFETY

Food is a fundamental human right that is warranted when people have timely and permanent physical, economic, and social access to food in sufficient quantity and quality for adequate consumption. This right contributes both to their well-being and to the satisfaction of their dietary and cultural needs. In Mexico, the increase in temperature and changes in rainfall resulting from climate change may result in the displacement of traditional crops, which may become unsuitable for the region where they are currently produced. Similarly, the ecological structure and functions of marine ecosystems, as well as the goods and services they provide are expected to be altered. The conservation of agrobiodiversity, the battle against desertification and the reduction of overexploitation of land and marine natural resources, represent challenges closely related to food security.

Extensive cattle farming has important social and environmental impacts. The constant increase in the demand for livestock



products accelerates the deforestation of large areas of forests and results in the pollution and depletion of water bodies. Furthermore, feeding and thermal comfort requirements for livestock, demand comprehensive strategies of sustainable management, such as the establishment of silvopastoral systems and regenerative cattle farming.

These considerations are addressed in **Axis B**, which proposes five action lines that support the fulfillment of 9 SDGs and 11 of its goals, related to the sustainability of food production systems and resilient agricultural practices that contribute to the maintenance of ecosystems and

strengthen the countries adaptive capacity. It also address the fair and equitable distribution of benefits provided by genetic diversity and species diversification, as well as the adaptation of value chains and investment plans that integrate climate change criteria, fostering traditional knowledge that favors the reduction of inequality gaps, placing the rights, needs and realities of all people in a situation of vulnerability at the center of the processes of adaptation to climate change, encouraging research, development and application of scientific and traditional knowledge. The following table highlights new action lines, synergies, and connections with the SDGs.

| ACTION LINES | NEW ACTION | SYNERGY WITH MITIGATION | SDG |
|--|------------|----------------------------|-----|
| B1. Promote sustainable production and consumption practices, conservation of genetic resources and the recovery of biocultural landscapes | \bigcirc | \mathbf{O} | |
| B2. Incorporate climate change risk into value chains and investment plans of productive sectors | \bigcirc | \mathbf{O} | |
| B3. To contribute to the prevention and management of pests and diseases in domestic animal species and vegetable crops aggravated by climate change | \bigcirc | \mathbf{O} | |
| B4. Strengthen environmental policy instruments and implement actions to ensure the protection of native crops relevant to agriculture and food security from the potential impacts of climate change | \bigcirc | | |
| B5. Promote financing mechanisms that address the negative impacts of climate change on the primary productive sector | \bigcirc | | |

Axis B. Resilient production systems and food security



AXIS C. CONSERVATION, RESTORATION AND SUSTAINABLE USE OF BIODIVERSITY AND ECOSYSTEM SERVICES

Biodiversity plays a key role in carbon sequestration and the regulation of the global climate through the ecosystem services it provides. Mexico is the 5th most diverse country in the world, home to approximately 12% of the planet's biodiversity.

A high percentage of the country's terrestrial and aquatic biodiversity is threatened by factors such as habitat destruction, over-exploitation of resources, air pollution, the presence of invasive exotic species and the adverse effects of climate change. The degradation and loss of ecosystems will increase the vulnerability of the population and biodiversity to the effects of climate change.

Human rights, such as the right to potable water and access to food, the right to health and a healthy environment are strongly dependent on ecosystems and the diversity they provide. This biodiversity is an intrinsic part of the traditions and culture of indigenous communities and, as such, it should be preserved. In this sense, Axis C integrates crucial issues for the country based on the conservation and restoration of blue carbon ecosystems, seas and oceans, forests, and key species. It also integrates actions to strengthen the management of Natural Protected Areas and increase their connectivity. Additional conservation schemes are considered based on mutual respect for the collective rights and common goods⁷ belonging to the communities that inhabit them. Through these actions, this section seeks to integrate resilience and development, ensuring synergies for the mitigation of GHGs. The following table highlights new actions, synergies, and connections with the SDGs.

| Axis C. Conservation, restoration and sustainable use of biodiversity and ecosystem services | | | | | | |
|---|------------|----------------------------|-----|--|--|--|
| ACTION LINES | NEW ACTION | SYNERGY WITH MITIGATION | SDG | | | |
| C1. Reach a zero-net deforestation rate by 2030 | | \mathbf{O} | | | | |
| C2. Strengthen environmental policy instruments and implement actions to conserve and restore continental ecosystems, increase their ecological connectivity, and promote their resilience | | \mathbf{O} | | | | |
| C3. Strengthen instruments and implement actions for the conservation of bio- diversity and the restoration of marine, coastal and freshwater ecosystems, as well as to increase and permanence of carbon reservoirs, emphasizing blue carbon | | \mathbf{O} | | | | |
| C4. Promote actions to prevent the establishment, control and eradication of invasive species, diseases and pests, whose impacts are exacerbated by the effects of climate change | \bigcirc | | | | | |
| C5. Design and implement actions that contribute to control desertification and foster soil conservation | \bigcirc | \bigcirc | | | | |

⁷ Suárez, G. (August 6, 2017). Las comunidades indígenas, custodias de los bosques y la biodiversidad, Comunicado, en Consejo Civil Mexicano para la Silvicultura Sostenible. CCMSS. https://www.ccmss.org. mx/wp-content/uploads/2017/08/Comunicado_CCMSS_Lospueblos_comunidadesindi%CC%81genas.pdf

| Axis C. Conservation, restoration and sustainable use of biodiversity and ecosystem services | | | | | | | | |
|---|------------|------------|--|--|--|--|--|--|
| ACTION LINES NEW ACTION SYNERGY WITH SDG | | | | | | | | |
| C6. Strengthen environmental policy in- struments and implement actions to conserve and restore insular systems and increase their resilience | \odot | \bigcirc | | | | | | |
| C7. Implement actions for the conservation and restoration of the seas and oceans to enhance their resilience in the face of climate change | \bigcirc | \bigcirc | | | | | | |

AXIS D. COMPREHENSIVE WATER RESOURCES MANAGEMENT WITH A FOCUS ON CLIMATE CHANGE

Water is one of the most valuable resources required for the integral and sustainable development of the country. Life and health, as well as the balance of ecosystems depend directly on water. This resource is crucial for social and economic development. Having access to water in sufficient quality and quantity is a human right that serves as a precondition for the exercise of other rights such as access to healthcare, food, a healthy environment, adequate housing and education. The adverse conditions generated by climate change can severely affect the availability of this resource.

The availability of water in Mexico is threatened. At least 14% of water basins are currently in deficit and 16% of aquifers are overexploited⁸. Constant water supply and modern sanitation in households is not universal. In rural zones, this percentage is lower than in urban areas, sharpening this situation in marginalized areas. Social asymmetries, as well as gender inequalities, affect the availability and accessibility of water in sufficient quantity and quality. Axis D proposes four action lines to promote the integrated management of water resources and the improvement in the provision of services focusing on the most vulnerable communities. These actions. which will work towards 8 SDGs and 21 of its goals, address the following issues: efficient use of water resources in all sectors and sustainability of freshwater extraction and supply against shortages; capacity-building in activities and programs related to water and sanitation: promotion of climate technologies for water collection, efficient use of water resources, wastewater treatment, recycling, and reuse; protection and restoration of water-related ecosystems, including forests, mountains, wetlands, rivers, aquifers, and lakes; value integration of ecosystems and biological diversity into national and local planning, as well as strategies for development and poverty reduction. The following table shows new actions. synergies, and connections to the SDGs.

⁸ Comisión Nacional del Agua (CONAGUA). (2018). Estadísticas del Agua en México 2018. http://sina.conagua. gob.mx/publicaciones/EAM_2018.pdf.

| Axis D. Comprehensive water resources management with a focus on climate change | | | | | | |
|--|------------|----------------------------|-----|--|--|--|
| ACTION LINES | NEW ACTION | SYNERGY WITH MITIGATION | SDG | | | |
| D1. Implement actions towards the sus- tainable use of water in all of its different consumptive uses with a focus on cli- mate change | | \mathbf{O} | | | | |
| D2. Promote hydrological environmental services, through the conservation, protection, and restoration of watersheds with special attention to nature-based solutions | | O | | | | |
| D3. Ensure the quantity and quality of water in human settlements with more than 500,000 inhabitants and increase the treatment of industrial and urban wastewater | | \mathbf{O} | | | | |
| D4. Guarantee access to water –in quan- tity and quality– for human use and consumption | | \mathbf{O} | | | | |



AXIS E. PROTECTION OF STRATEGIC INFRASTRUCTURE AND TANGIBLE CULTURAL HERITAGE

Strategic infrastructure provides the technical means, necessary facilities, and services for the development of essential activities. Furthermore, it is a fundamental framework to guarantee human rights to health, security, physical integrity, well-being, and sustainable development of the population.

Mexico has a tangible cultural heritage that includes both natural and cultural goods that, due to their natural, aesthetic, artistic or scientific value, contribute to the Mexican identity. This heritage is composed, on the one hand, of environmental weath and assets comprising that include natural areas, habitat and shelter of numerous endemic species, and on the other, of buildings, enclosures and archaeological vestiges that contain a historical legacy of societies that preceded the current one.

The conservation of infrastructure and heritage represents challenges that will be exacerbated by the adverse effects of climate change. For example, energy sector infrastructure is vulnerable to climate variability, as severe droughts or rains can affect the optimal functioning of power generation plants⁹.

The four action lines of **Axis E** promote that the planning, design, construction, maintenance, and operation of infrastructure review focused on strengthening its resistance to ensure the continuity of the provision of services. The main of this axis is to ensure the resilience of new and existing infrastructure, as well as tangible cultural heritage, going beyond the usual designs and promoting the development and incorporation of criteria for adaptation and identification of science-based risks to climate change that integrate traditional and innovation knowledge to increase the strength of the elements that make it up. These actions incorporate knowledge on the risks generated by climate change and seek to adapt to current and future

⁹ INECC – SEMARNAT. (2012). Quinta Comunicación Nacional sobre el Cambio Climático. https://unfccc.int/ resource/docs/natc/mexnc5s.pdf

realities, integrating traditional and innovative knowledge to increase the strength of the elements that comprise them.

Actions undertaken to protect tangible cultural heritage from the effects of climate change will consider the respect for spiritual or religious beliefs, as well as for the roles of women and men. They will seek to ensure the right to enjoy existing heritage and guarantee its accessibility and to promote the positive influence that culture, heritage and traditional knowledge provides for our society. Through these actions, Axis E will contribute to 9 SDGs and 21 of its goals; reliable, sustainable, resilient, high-quality, affordable and equitable infrastructure to support economic development and human well-being; resilience of infrastructure in cities and human settlements by implementing integrated policies and plans for climate change mitigation and adaptation, as well as integrated disaster risk management; protection and safeguard of cultural and natural heritage; modernization of infrastructure and converting industries to become sustainable. The following table shows new activities, synergies with mitigation and relationship with SDGs.

Axis E. Protection of strategic infrastructure and tangible cultural heritage

| ACTION LINES | NEW ACTION | SYNERGY WITH MITIGATION | SDG |
|---|------------|----------------------------|--------------------------|
| E1. Increase the structural and function- al security of current and future strategic infrastructure against events associated with climate change | | \mathbf{O} | ⁹ 3 3 3 |
| E2. Incorporate climate change adaptation and integrated disaster and risk management criteria in strategic infrastructure investment projects | \bigcirc | | |
| E3. Protect, restore, and conserve tangible cultural heritage from the impacts of climate change | \bigcirc | | |
| E4. Generate and strengthen public financing instruments, and promote private investment, for infrastructure and cultural heritage projects that incorporate adaptation criteria | \bigcirc | | |

III MITIGATION COMPONENT

San Luis Tlaxialtemalco, Xochimilco, Mexico City.

Mexico is unconditionally committed to reduce its greenhouse gas (GHG) emissions by 22% and its black carbon emissions by 51% by 2030 compared to a baseline under a business-as-usual (BAU) scenario. In addition, conditional commitments would allow for increased emissions mitigation, reaching a target of up to 36% reduction of GHG emissions and 70% of black carbon emissions by 2030 compared to the BAU. These commitments rely on the consolidation, at international level, of technology transfer mechanisms, an international price for carbon trading, adjustment of tariffs for carbon content, technical cooperation and access to low-cost financial resources, all on a scale equivalent to the challenge required to address climate change.

The projected BAU scenario to 2030, without any mitigation policy intervention, was quantified at 991 MtCO₂e. The reduction of unconditional emissions by 2030 translates into a reduction of approximately 210 MtCO₂e that year, while compliance with conditional commitments would imply reductions of an additional 137 MtCO₂e. The implementation period of this NDC ranges from 2020 to 2030 and the policies undertaken are considered based on the information for emissions in 2013.

In order to update this NDC and strengthen the country's climate action based on the best available knowledge, working groups were formed with representatives from the public, private and social sectors, each of which collaborated in the development of specific studies for each sector of the economy reflected in the NDC. As a result, taking advantage of a shared responsibility and the best interest of the sector's stakeholders, it was possible to identify the most viable initiatives for implementation,



the best cost-benefit ratio, and the greatest opportunities for reducing emissions in the short, medium, and long term. These studies, known as implementation routes¹⁰, have been fundamental in defining sectoral and programmatic action lines, as well as in assessing potential reductions in black carbon (BC) and other short-lived climate pollutants (SLCPs).

Likewise, the NDC identifies the synergies between the adaptation and mitigation components, thereby promoting the reduction of barriers to their implementation in the territory and enhancing co-benefits in the short and long term. Mexico recognizes that both adaptation and mitigation are key elements for the consolidation of more climate-resilient trajectories and that enhancing these synergies will have an end-to-end benefit for the country's development and they may generate structural changes and modifications in production and consumption patterns. Similarly, strengthening the benefits of these synergies in the short term will contribute to a better allocation of financial and institutional resources¹¹ in the implementation of the NDC. Through integral and inter-institutional projects, conceptual elements will be generated to support transparency and reporting, which will shorten the conceptual gap between mitigation and adaptation contributing to science-based decision making.

Regarding the 2030 Agenda for Sustainable Development, Mexico has dedicated efforts towards the global objectives of poverty eradication, protection of the planet, protection of environmental health and of the population to ensure that prosperity reaches everyone. Consequently, the affinity of policies and actions towards the Sustainable Development Goals (SDGs) has been evaluated. While the NDC is composed of specific measures, it is the result of a comprehensive approach that supports additional mitigation and development objectives. The results of these synergies are summarized in the following table, which highlights the sectors, focus on black carbon emissions, synergies with adaptation and connections with the SDGs.

| | Economic activities included at the NDC | | | | |
|---|---|-----------------|----------------------------|-----|--|
| | Activity | Black Carbon | Synergy with Adaptation | SDG | Section |
| | Transport | ВС | | | 1.4 1.a |
| Ħ | Power Generation | ВС | \bigcirc | | 2.3/2.4 3.6/3.9 6.2/6.3 |
| | Residential and commercial | ВС | \bigcirc | | 6.2 / 6.3 6.4 / 6.6 6.b 7.2 / 7.3 |
| | Oil and Gas | ВС | \bigcirc | | 8.2/8.4 |

¹⁰ INECC. (2018). Desarrollo de rutas de instrumentación de las Contribuciones Nacionales Determinadas en materia de mitigación de gases y compuestos de efecto invernadero: (Estudio plurianual 2017-2018). https://www.gob.mx/inecc/documentos/investigaciones-2018-2013-en-materia-de-mitigacion-del-cambio-climatico

¹¹ Vallejo, C., Chacón, M. & Cifuentes, M. (2016). Sinergias entre adaptación y mitigación del cambio climático (SAM) en los sectores agrícola y forestal. Concepto y propuesta de acción. USAID – CATIES. http://hal. cirad.fr/cirad-01426726/document

| | Economic activities included at the NDC | | | | |
|-------|---|-----------------|----------------------------|-----|------------------------------------|
| | Activity | Black Carbon | Synergy with Adaptation | SDG | Section |
| Fri | Industry | ВС | \bigcirc | | 9.1/9.4 |
| Ŷ | Agriculture and Livestock | BC | \bigcirc | | 11.1 / 11.2 11.6 / 11.b 12.2 |
| | Waste | ВС | \bigcirc | | 13.2 14.1 15.1 / 15.4 |
| and a | Land use, land-use change and forestry | ВС | \bigcirc | | 15.5 / 15.9 |

In order to increase the ambition in the implementation of the NDC, Mexico is developing a system of cross-sectoral tools to accelerate the implementation of the committed actions. Among these, it identifies policies to promote open innovation and environmental care, accelerate the adoption and transfer of environmentally sound and socially appropriate technologies for mitigation, prioritizing those that achieve the greatest social benefits. Also, training programs have been implemented addressing public servants, from all three spheres of government and the general public.

From the experience accumulated in Mexico in the implementation of climate programs and projects, as well as the results obtained in the sectoral studies of the implementation routes, it has been determined that one of the most important cross-cutting elements for achieving the committed goals is energy efficiency in all sectors, both public and non-public, nationwide. Through the progressive optimization of energy use, it will be possible to achieve efficient energy planning that contemplates a reduced energy demand.

The commitments adopted by Mexico require a timely and ample set of financing options, therefore a climate finance strategy has been designed and it includes participation of the national and international financial sector, which will allow for the coordinated targeting of resources on the country's top priorities. In addition, Mexico has made progress in the implementation of a variety of economic instruments, such as the issuance of green bonds, the establishment of a Carbon Tax and the Emissions Trading System.

Finally, with the aim of ensuring environmental integrity and transparency, a sound accounting of implemented actions will be undertaken by means of the System of Information for the Transparency Agenda or SIAT, for both the Special Program on Climate Change and the NDC. The results will be periodically evaluated by the Coordination of Evaluation of the National Policy on Climate Change, which will provide feedback on the actions that have been developed, in order to ensure that the designed transformational measures are progressive and can be gradually improved or strengthened.

The cross-sectoral approaches described in the previous paragraphs are set out in the table below and are complemented by actions and strategies that will strengthen the cross-cutting action of the mitigation component. Existing synergies with the adaptation component as well as its relationship with several SDGs are included.

| Cross-Sectoral Approaches and Actions | | | | | |
|--|------------------------------|--------------------|--|--|--|
| | Synergies with Adaptation | Connection to SDGs | | | |
| Nature-based solutions Blue Carbon and Protection of Seas and Coasts | \bigcirc | | | | |
| National Strategy for Circular Economy | \bigcirc | | | | |
| Efficient Use of Energy | | | | | |
| Emissions Trading System | | | | | |
| Climate Finance Strategy and Building Criteria for Optimization | \bigcirc | | | | |
| Environmental Education and Capacity Building | \bigcirc | | | | |
| Monitoring, Reporting and Verification of Actions | \bigcirc | | | | |

The following is a list of the activities in which it has been possible to identify opportunities to implement actions that will enable the achievement of the percentages of mitigation goals committed through the NDC. The detail of the actions will be developed in a NDC implementation roadmap and presented in the Biennial Update Reports related to the contributions set forth in the LGCC¹². The following lines present sectorial areas of opportunity identified in the studies addressing implementation routes; these were defined based on the implementation roadmap and national priorities; they were established through a participatory process conducted within the framework of the updating of the NDC with the corresponding economic sectors.

This sector is one of the largest greenhouse gas emitters in Mexico, therefore, the implementation of policies and measures in this field will considerably support the reduction of associated emissions. The implementation routes and the participatory process identified opportunities regarding the strengthening of regulations applicable to motor vehicles, the encouragement of alternative transportation systems, the promotion of clean transportation programs, the development and implementation of the National Electric Mobility Strategy and urban planning oriented towards efficient public transportation systems.

POWER GENERATION

The power generation sector is one of the most salient in GHG emissions nationally and globally due to the consumption of fossil fuels for the production of electrical and thermal energy. Through actions that increase the participation of clean energy in the national electric network, the strengthening and optimization of existing infrastructure and the promotion of innovative technologies in the areas of storage and smart grids, the energy sector will be constantly innovating to achieve the mitigation levels established by the LGCC.

RESIDENTIAL AND

The sector has been one of the most dynamic over the last few years in terms of the implementation of mitigation measures. From the actions undertaken since the presentation of the first NDC in 2015. results have been achieved in multi-sectoral projects that optimize energy consumption in buildings and reduce the impacts of new constructions. On this basis, opportunities have been identified in the design of programs and actions at all levels of government to optimize energy consumption in housing and businesses, but also to promote mechanisms and regulations that encourage the inclusion of best practices in constructions and renovations, such as the strengthening of distributed generation.



Emissions in this sector include the production, transportation, distribution, processing, and refining of hydrocarbons in the country. Based on consultation processes and the transversalities of the NDC, actions that will promote the optimization of the processes of the refining and processing systems have been identified, including the implementation of the Methane Emissions Reduction Policy.



Public and private industrial activity in Mexico is of great relevance, not only as an economic engine but also as a source of employment for a large part of the population. Through constant and close collaboration with the many chambers and industry associations, considerable opportunities were identified for reducing emissions and increasing energy efficiency. The actions consider a systemic approach to industrial activity, encompassing the entire production system to promote a circular economy by recognizing the

¹² General Law on Climate Change (LGCC), last reform published DOF 06-11-2020. (2020). www.diputados. gob.mx/LeyesBiblio/ref/lgcc.htm

externalities of the processes employed and at the same time optimizing the use of inputs and energy required. These actions will not only have an impact on the reduction of emissions, but also on the economy and competitiveness of companies.

AGRICULTURE AND LIVESTOCK

The mitigation component is reinforced in the present NDC through the traceability of synergies with the adaptation component. The agriculture and livestock sector has been strengthened considerably through the coordinated and cross-cutting action of a number of federal agencies in close collaboration with state and municipal governments. In the implementation phase, agricultural practices will be designed considering environmental and climatic variables, which will allow their territorialization in the most vulnerable areas of the country. strengthening activities based on scientific knowledge, research and its application with traditional knowledge. The foreseen actions consider best agricultural and conservation practices, the promotion of agroforestry and agroecological systems, the reduction of agricultural fires and the promotion of bio-digester technologies for a sustainable treatment of livestock residues.



In this area, the NDC addresses opportunities related to solid waste management and disposal activities. considers or foresees an increase in treatment of wastewater from both municipal and industrial sources. As well as other activities related to their final disposal, reuse, recycling, composting, and bio digestion.

LAND USE, LAND-USE CHANGE AND FORESTRY

Mexico maintains and strengthens the strategy towards a zero-net deforestation rate, which will be achieved under the National Strategy to Reduce Emissions from Deforestation and Forest Degradation (ENAREDD+, by its acronym in Spanish). Likewise, strategies for the management and administration of Natural Protected Areas are strengthened through coordinated action among the different orders of government by means of ecological restoration projects that will allow the recovery of unused and degraded soils. As with agriculture, this sector has high synergies with adaptation, its impact on the lives of rural communities and biodiversity conservation should be addressed strategically, strengthening its positive impact on sustainable development.

The lines of action previously presented are the result of a participatory process with the productive sectors aligned with the instruments of environmental policy and coordination between the three levels of government that will allow diversifying the energy matrix and making efficient use and saving of energy, as well how to lead productive transformations focused on the well-being of the population and on the protection and sustainable development. Through these actions, the mitigation component aims to promote low-carbon economic development that allows access to structural changes and less carbon-intensive forms of production and consumption. The actions will have a system of constant monitoring and follow-up to ensure their effectiveness and to comply with the commitments of the Enhanced Transparency Framework of the Paris Agreement.

In this sense, the NDC constitutes a fundamental path to articulate the climate actions that will allow the transition to a sustainable development model, which is one of the objectives of Agenda 2030 and to which the development priorities of our country are aligned. For its implementation, a roadmap is generated with those responsible, times, costs and financing options and compliance indicators.

IV ANNEX. NDC SYNTHESIS IN COMPLIANCE WITH THE KATOWICE RULEBOOK



Poza de la Becerra, Cuatro Ciénegas, Coahuila.

INFORMATION TO PROVIDE A CLEAR, TRANSPARENT AND COMPREHENSIBLE OVERVIEW OF THE 2020-2030 NDC'S UPDATE IN COMPLIANCE WITH THE KATOWICE RULEBOOK

| 1. Quantifiable information on the reference point (including, as appropriate, a base year): | | | | | | | |
|--|--|---|---------------------------------------|---------------------------|--|--|--|
| a) Reference year(s), base year(s), ref- erence period(s) or other starting point(s); | by the year 2030. NDC's implen | Mexico is committed to reduce its emissions from its projected BAU baseline by the year 2030. NDC's implementation timeframe spans from 2020 to 2030, and the undertaken policies are considered based on the information available in 2013. | | | | | |
| | The reference point was quantifi emission projections based or change policies. In this scena tions implemented after 2013 v lowing table presents the BAU | n economic rio, 991 Mt(vill be cons | c growth in CO ₂ e were | the abser quantified | nce of climate d in 2030. Ac- jation. The fol- | | |
| | Business as usual (BAU) basel | line | | | INECC | | |
| | Sector | 2013 | 2020 MtC | 2025 CO ₂ e | 2030 | | |
| b) Quantifiable information on the ref- erence indicators, their values in the | Transport | 174 | 201 | 225 | 250 | | |
| reference year(s), base year(s), ref- erence period(s) or other starting | Power generation | 149 | 166 | 174 | 186 | | |
| point(s), and, as applicable, in the tar- get year; | Industry | 124 | 149 | 173 | 199 | | |
| | Agriculture and livestock | 98 | 106 | 114 | 122 | | |
| | Oil and gas | 73 | 70 | 93 | 101 | | |
| | Waste | 44 | 50 | 52 | 56 | | |
| | Residential y commercial | 26 | 26 | 27 | 28 | | |
| | Land-use change and forestry (LUCF) (emission) | 21 | 36 | 42 | 49 | | |
| | Total gross emissions | 709 | 804 | 902 | 991 | | |
| | LUCF (absorption)) | -169 | -163 | -161 | -158 | | |
| c) For strategies, plans and actions re- ferred to in Article 4, paragraph 6, of the Paris Agreement, or polices and measures as components of nationally determined contributions where point ii above is not applicable, Parties to provide other relevant information; | Not applicable | | | | | | |
| | Unconditional Reduction | | | | | | |
| d) Mitigation contribution relative to | Mexico has committed to reduc Carbon (BC) by 2030. | e of 22% of | its GHG en | nissions an | d 51% of Black | | |
| the reference indicator, expressed nu- merically, for example in percentage or amount of reduction; | Additionally, as a conditional contribution, Mexico could increase its reductions up to 36% for GHG and 70% for black carbon. | | | | | | |
| | In order to increase the ambition, Mexico is committed to the following with a special focus in increasing the population's engagement: | | | | | | |

| Nature-based Solutions Blue Carbon and Protection of Seas and Coasts National Emissions Trading System |
|---|
| |
| National Emissions Trading System |
| |
| National Strategy for Electric Mobility |
| National Strategy for Circular Economy |
| National Cooling Strategy, as part of the compliance with the Kigali Amend- ment, which promotes HFC reduction actions |
| - Participation in the Nitric Acid Climate Action Group (NACAG) for $\rm N_2O$ mitigation |
| In addition, in terms of strengthening the means of implementation and trans- parency, the following actions will be performed: |
| Climate finance strategy |
| Technological innovation policy to combat climate change |
| International cooperation based on Article 6 of the Paris Agreement |
| Strengthening of MRV systems for GHG emissions |
| Evaluation of public policies in mitigation and adaptation |
| The emissions projection was based on the activity data and emission fac- |
| tors reported in the National Inventory Report (NIR) (see reply 5.f.i of this doc- ument). The baseline was developed by experts from each of the sectors and went through an expert consultation process. The calculation report is available at https://unfccc.int/documents/199243 |
| Mexico generates its National Inventory of Greenhouse Gases and Compounds (INEGYCEI), with IPCC 2006 the methodologies and established by the IPCC 2006 and, in accordance with the guidelines of the Convention, the country will submit its reports by means of the Biennial Update Reports. Subsequent reports will describe the advances and methodological improvements of IN-EGYCEI, as well as the baseline. Available at https://datos.gob.mx/busca/dataset/inventario-nacional-de-emisiones-de-gases-y-compuestos-de-efecto-invernadero-inegycei |
| mes and/or periods for implementation: |
| 2020—2030 |
| Single year target referred to 2030. |
| 3. Scope and coverage: |
| Mexico established an unconditional commitment to reduce its GHG emissions by 22% and 51% of its BC emissions by 2030, compared to BAU scenario. Regard- ing the conditional commitments, the reduction of GHG emissions can be in- creased up to 36% and 70% of its BC emissions if there are more resources avail- able for the implementation. |
| The NDC includes all sectors defined by IPCC Guidelines: 1] Energy; [2] Industri- al processes and product use; [3] Agriculture, forestry, and other land use; and [4] Waste. |
| Greenhouse gases included are carbon dioxide (CO_2), methane (CH_4), nitrous ox- ide (N_2O), perfluorocarbon (PFC), hydrofluorocarbon (HFC) and sulfur hexafluo- ride (SF_6). Mexico's NDC also includes actions to reduce short-lived climate pol- lutant (SLCP), with a goal for black carbon, whose mitigation improves air quality with co-benefits to human health and ecosystems. Mexico reaffirms the impor- |
| |

| b) Sectors, gases, categories, and pools covered by the nationally determined contribution, including, as applica- ble, consistent with Intergovernmen- | Regarding the land category, both in emissions and sinks, the changes and per- manence of: 3B1] forest, [3B2] cropland, [3B3] grassland and [3B5] settlements. |
|---|--|
| | In the case of energy, the sub-source [1A1a] electricity and heat production were included, as well as emissions from distributed generation power plants. |
| tal Panel on Climate Change (IPCC) guidelines; | All five carbon sinks are included: 1) aerial biomass, 2) underground biomass, 3) litter, 4) dead wood, and 5) soil organic matter. |
| c) Mitigation co-benefits resulting from Parties' adaptation actions and/or economic diversification plans, includ- ing description of specific projects, measures, and initiatives of Parties' ad- aptation actions and/or economic di- versification plans; | In accordance with Article 4, paragraph 7 of the Paris Agreement, Mexico's NDC, includes a component regarding adaptation to climate change, includes 5 axes, with 27 action lines, out of which 18 will have, during its implementation phase, benefits towards for the mitigation of GHGs. Among the most relevant issues addressed in the component of adaptation with synergies to mitigation, are protection of strategic infrastructure; integrated water resources management; conservation and restoration of marine ecosystems; soil restoration; restoration and conservation of blue carbon ecosystems and coral reefs; as well as actions to strengthen the management and conservation of forests and rainforests. |
| | It is important to stress that approaches such as Adaptation based on Ecosys- tems, Communities and Disaster Risk Reduction, as well as Nature-based Solu- tions are cross-cutting to the implementation of the commitments established in the adaptation component, thereby also supporting the reduction of GHG emissions and the establishment and permanence of carbon reservoirs in eco- systems and agro-ecosystems. |
| | 4. Planning processes: |
| a) Information on the planning pro- cesses that the Party undertook to prepare its nationally determined con- tribution and, if available, on the Par- ty's implementation plans, including, as appropriate: | Following Mexico's ratification of the Paris Agreement and its entry in force in 2016, the necessary legal adaptations were made to include the provisions of the Paris Agreement in the national legal framework, and the institutional frameworks for its application were defined. Thus, the General Law on Climate Change (LGCC) was reformed in 2018 to establish the figure of "Nationally Deter- mined Contributions" as the "set of objectives and goals, assumed by Mexico, within the framework of the Paris Agreement, in matters of mitigation and ad- aptation to climate change to meet the long-term objectives of the United Na- tions Framework Convention on Climate Change", as set out in Article 3, section X of the LGCC. In the same Law, the commitment to reduce emissions estab- lished by Mexico's NDC is stipulated as follows: "The country commits to reduce in an unconditional manner twenty-two percent of its greenhouse gas emis- sions and fifty-one percent of its black carbon emissions by 2030 compared to the baseline. This contribution, assumed as a Nationally Determined Contribu- tion, implies reaching a maximum of national emissions by 2026; and decou- pling greenhouse gas emissions from economic growth, the intensity of emis- sions per unit of gross domestic product will be reduced by about forty percent between 2013 and 2030". The Special Climate Change Program (2020-2024) is a planning instrument de- rived from the LGCC and is closely aligned with the National Development Plan (2018—2024) and the National Climate Change Strategy vision 10–20–40, as well as the sectoral programs of 14 Ministries of State. The National Climate Change Strategy, as it is described in the Law, is the basis of the Mid-Century Strategy that Mexico submitted to the Convention in 2016, which establishes the long- term approach for low emission development. One of its objectives is to identify and assess the actions of the Ministries that contribute to the reduction of emis- sions, ensuring that these measures are in line with Mexico's NDC e |

| i. Domestic institutional arrangements, public participation and engagement with local communities and indige- nous peoples, in a gender-responsive manner; | Mexico has an institutional and governance structure established by the LGCC (2012), the National Climate Change System, (SINACC), designed to operate as the permanent mechanism for consultation, communication, collaboration, and coordination on national climate policy, which includes a series of institutional arrangements for its implementation. The role of the SINACC is essential for the interaction between the National Institute of Ecology and Climate Change (INECC), which is responsible for conducting studies and research projects and providing technical and scientific support for climate policy decision-making. The Coordination of Evaluation, as the pluralistic body responsible for assessing national climate change policy; the Intersecretarial Commission on Climate Change (ICC), composed of fifteen ministries, as a space for coordinating the actions of national agencies and entities in relation to climate change; the Council on Climate Change (C3), composed of experts from the academic and social sectors who provides recommendations on mitigation and adaptation; the Federal Congress; state governments; and national associations of duly accredited municipal authorities. Several state level, some states replicate the federal scheme and included an Inter-Ministerial Commission on Climate Change. During this NDC's update, government agencies and state governments were involved, along with the private sector and social organizations. Public and private discussions were conducted with representatives of each of the sectors included in the NDC, comprising human rights, gender perspective and youth associations. In addition, online consultation procedures were implemented, in order to engage society as a whole in the process of developing climate policy and updating the NDC. The impacts of climate change affect people differently; the consequences of climate change are even more acute for people and groups in vulnerable situations. Recognizing the legacy of a structural system that has systematically placed vulner |
|---|--|
| ii. Contextual matters, including, inter alia, as appropriate: a) National circumstances, such as geography, climate, economy, sus- tainable development, and poverty eradication; | nities, under the principle of intergenerational equity. Mexico is a federal, representative, democratic and non-religious republic, com- posed of 32 states: 31 free and sovereign states, and Mexico City. The federal states, in turn, are divided into free municipalities, each governed by a city coun- cil; there are 2 457 municipalities across the country. Due to the magnitude of its gross domestic product (GDP), the country occu- pied the 12 th position among the largest economies in the world in 2017. The country produces around 1.4% of the world's energy and is the fifteenth largest producer on a global scale. It is also the thirteenth largest oil exporter, with 2.8% of world production. Due to its geographical position, in the southern part of the Northern Hemi- sphere, and surrounded by two oceans, the country is particularly affected by the impacts of climate change. The climate change scenarios estimated for the period 2015 to 2039 project annual temperatures as much as 2°C higher in the north of the country, while, in most of the territory, they could range between 1 and 1.5°C. A decrease of between 10 and 20% of precipitation is projected. Mexico is exposed to the impact of extreme hydrometeorological events that put the lives of the population, their well-being and heritage at risk. These im- pacts increase the incidence and intensity of forest fires; they endanger the con- servation of ecosystems, their biodiversity and the services they provide; it also affects the availability of water resources in terms of quantity and quality (water security). At the same time, climate change has negative consequences on the yield of corn and other key crops, putting food security at risk and it causes dam- age to infrastructure and human settlements limiting development opportuni- ties in the short and medium-term. The fight against poverty has aligned all public policies with the National Devel- opment Plan 2019—2024, whose main objective and priority is to increase so- cial well-bein |

| b) Best practices and experience relat- ed to the preparation of the nationally determined contribution; | Mexico supports its NDC by means of a solid national climate change poli- cy, framed under the LGCC, from which public policy instruments such as the SINACC, the CICC and its Working Groups derive. All of these have facilitated a broad public engagement process at the national level within the framework of updating and establishing commitments in the area of climate change mitiga- tion and adaptation. |
|--|---|
| | Mexico held a citizen consultation process at national level, regulated by law, and including specialized and key groups to improve and promote climate ac- tion through social engagement and access to information. This process includ- ed forums and workshops with citizens, specialists, private sector, federal and subnational public administration departments, as well as representatives of youth associations, who contributed with information. |
| | Mexico has the support of international cooperation agencies to share best practices and international experiences, in order to integrate the information within the national context, through capacity-building, knowledge and technological transfer. In addition, the information presented in the NDC has been updated in accordance with the latest reports published by the UNFCCC, considering the methodologies of the IPCC 2006 and the relevant updates of the information contained therein. |
| | A strengthened component of adaptation to climate change is included, which reflects the country's priority to accelerate the processes of reducing vulnerability in the territory in order to promote the well-being of the population. |
| | Mexico counts with the support of INECC, an institution responsible for gener- ating and integrating scientific and technological knowledge and for evaluating national climate change policy, in conjunction with the academic and research sector, in order to provide the best available information to the processes of de- signing and implementing climate policy. |
| c) Other contextual aspirations and pri- orities acknowledged when joining the Paris Agreement; | With the purpose of complying with the commitments established in the Par- is Agreement, beginning in 2015, Mexico proposed a comprehensive mitigation strategy that would include black carbon as a short-lived climate pollutant. Re- ducing black carbon decreases the negative impact on ecosystems and human health, strategic infrastructure, tangible cultural heritage, and productive sec- tors, including agro-ecosystems. |
| | Mexico ratifies its commitment to integrate, in both the design and implemen- tation of its NDC, gender and human rights approaches with the participation of subnational and local governments and cities, in addition to indigenous groups and local communities, social organizations, women's and youth organizations, the private and financial sectors, and other stakeholders. |
| d) Specific information applicable to Parties, including regional economic integration organizations and their member States, that have reached an agreement to act jointly under Article 4, paragraph 2, of the Paris Agreement, including the Parties that agreed to act jointly and the terms of the agreement, in accordance with Article 4, paragraphs 16–18, of the Paris Agreement; | Not applicable |
| e) How the Party's preparation of its nationally determined contribution has been informed by the outcomes of the global stock take, in accordance with Article 4, paragraph 9, of the Paris Agreement; | Mexico will utilize the results of the Global Stocktake to be issued by the UNFCCC. It also considers the emissions gap that the UNFCCC secretariat prepared and the 1.5°C Special Report of the IPCC, as well as the obligation of countries to act according to their possibilities and national circumstances, considering that developed countries should act first. |

| f) Each Party with a nationally determined contribution under Article 4 of the Paris Agreement that consists of adaptation action and/or economic diversification plans resulting in mitigation co-benefits consistent with Article 4, paragraph 7, of the Paris Agreement to submit information on how the economic and social consequences of response measures have been considered in developing the nationally determined contribution; i. The extent to which the economic and social consequences of the response measures of the response measures have been addressed in developing the nationally determined contribution; | Mexico recognizes that climate change affects different groups within a com- munity in unequal ways which often exacerbate social, economic, gender and resource access inequalities. In this sense, the country integrates adaptation and mitigation approaches across the country's strategic systems and sectors, in coordination with the three levels of government, the academia, the private sector, and social organizations. In particular, in the area of adaptation, an anal- ysis of vulnerability to climate change was performed to identify the social in- equalities and the benefits of the reduction of these problems to help decide in the design and implementation of the actions to be undertaken. This approach also responds to human rights protection. |
|--|---|
| ii. The specific projects, measures and activities to be pursued to contribute to mitigation co-benefits, include in- formation on adaptation plans that al- so produce mitigation co-benefits, which may cover, among others, key sectors such as energy resources, wa- ter resources, coastal resources, hu- man settlements and urban planning, agriculture and forestry; as well as eco- nomic diversification measures, which may cover, inter alia, sectors such as industry and manufacturing, energy and mining, transport and communi- cations, construction, tourism, real es- tate, agriculture and fisheries. | The adaptation component is integrated by five strategic axes: Axis A. Prevention and management of negative impacts on the human population and the territory Axis B. Resilient production systems and food security Axis C. Conservation, restoration and sustainable use of biodiversity and ecosystem services Axis D. Comprehensive water resources management with a focus on climate change Axis E. Protection of strategic infrastructure and tangible cultural heritage Among the most relevant issues addressed in the adaptation component are synergies whit mitigation. These include strategic infrastructure protection; integrated water resource management and wastewater treatment; conservation and restoration of marine ecosystems; soil restoration, restoration and conservation of blue carbon ecosystems and coral reefs; as well as actions to strengthen the management and conservation of forests and rainforests. For detailed information, please refer to the adaptation and synergies component of the NDC. |
| 5. Assumptions and metho accounting for anthropogeni | dological approaches, including those for estimating and c greenhouse gas emissions and, as appropriate, removals: |
| a) Assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emis- sions and removals corresponding to the Party's nationally determined con- tribution, consistent with decision 1/ CP.21, paragraph 31, and accounting guidance adopted by the CP/RA (CMA); | The methodological approach employed to estimate greenhouse gases is es- tablished by the IPCC 2006. The methodology, activity data and emission fac- tors are described in Mexico's NIR and will be further updated in subsequent Bi- ennial Update Reports. |
| b) Assumptions and methodologi- cal approaches used for accounting for the implementation of policies and measures or strategies in the national- ly determined contribution; | Refer to section 5a above. Specific assumptions and methodologies will also be applied, where appropriate, in accounting for the progress of policies and measures presented in the corresponding biennial reports. |
| c) If applicable, information on how the Party will consider existing methods and guidance under the Convention to account for anthropogenic emissions and removals, in accordance with Article 4, paragraph 14, of the Paris Agreement, as appropriate; | The methodological approach employed for the assessment of greenhouse gas- es is set out in the 2006 IPCC Guidelines, as well as subsequent updates to the IPCC Guidelines when they were technically applicable, given the availability of data, as appropriate to national circumstances. The methodology, activity data and emission factors are described in Mexico's NIR (Refer to sections 5a and 5b). |
| d) IPCC methodologies and met- rics used for estimating anthropo- genic greenhouse gas emissions and removals; | The 2006 IPCC Guidelines are used to estimate GHG emissions and removals. Future updates of the IPCC Guidelines will be used when technically possible, along with the availability of activity data according to national circumstances. |

| e) Sector-, category- or activity-specific assumptions, methodologies and approaches consistent with IPCC guidance, as appropriate, including, as applicable: i. Approach to addressing emissions and subsequent removals from natural disturbances on managed lands; | To address CO ₂ emissions and carbon sinks from natural disturbances on treated land and from reforestation, the methodology and approach of carbon pools changes are based on the variations that occur in ecosystems, mainly through CO ₂ exchange processes between the land surface and the atmosphere. Therefore, increases in carbon sinks over time will be equated to the net absorption of CO ₂ from the atmosphere, while reductions in total carbon pools will be equated to the net emission of CO ₂ . This is in accordance with the 2006 IPCC Guidelines. Methodological details for estimating carbon sink variations of 1) gains and losses and 2) differences in storage are presented in Mexico's NIR. |
|--|---|
| ii. Approach used to account for emis- sions and removals from harvested wood products; | The INEGYCEI is not able to quantify the emissions and removals coming from harvested wood products because the country does not have the necessary da- tabases for this quantification. This is an area in which Mexico needs to build ca- pacity and would benefit from international technical support. |
| iii. Approach used to address the ef- fects of age-class structure in forests; | To address the effects of age structure on forests, information from the Nation- al Forest and Soil Inventory (INFYS) is considered. The inventory establishes clus- ters or sampling units throughout the national territory, where forest mensura- tion information on the country's forest vegetation is collected. The information from INFYS is processed to perform stratified sampling by type of vegetation that allows us to know the structure and characteristics of the country's forests. The methodological details are found in the NIR and its improvements will be presented in the subsequent BUR/ BTR. |
| | According to the above baseline definition (see 3a), the BAU scenario estimates emission reaching 991 Mt CO_2e in 2030. The development of the baseline is the projection of the historical trend of key drivers of the different emission sources. For this projection, the updated methodological information of the INEGYCEI is employed. In order to include the emission trajectory at a national level, projections are developed for each sector, category and, in some cases, for each emission source. |
| | The stages of the baseline development process to 2030 are: |
| | Identification of key variables: considers the variables that characterize the generation of emissions of greenhouse gases and compounds (GYCEI); |
| f) Other assumptions and methodolog- ical approaches used for understand- ing the nationally determined contri- bution and, if applicable, estimating corresponding emissions and remov- als, including: | 2. Detection of information sources: From which the necessary activity data is obtained to estimate the projections of energy consumption, production, demand, among others. The main sources of information, for the sectors of the identified gray agenda are: The Energy Information System of the Min- istry of Energy; The Statistical Yearbook of Mexican Mining; The Prospects of the Ministry of Energy, The National Electrical System Development Program (PRODESEN) and reports and public documents developed by the different Boards and Industrial Associations; among others. |
| i. How the reference indicators, base- line(s) and/or reference level(s), includ- ing, where applicable, sector-, catego- ry- or activity-specific reference levels, are constructed, including, for exam- ple, key parameters, assumptions, definitions, methodologies, data sources and mod- els used: | As for the sectors of the so-called green agenda, the sources of information con- sulted were: Long-term perspectives for Mexico's agricultural sector 2011—2020, SAGARPA; National Agricultural Planning 2017—2030, SADER; Fertilizer Outlook 2017—2021, International Fertilizer Association; Agricultural and Fisheries Infor- mation Service (SIAP, by its acronym in Spanish), SADER. Similarly, the feedback with key factors such as industries, boards, associations and diverse dependen- cies and organizations, represents a source of relevant information for the devel- opment of this work; |
| | 3. Activity data projection to 2030: With the relevant information collected, the activity data projections are integrated by sector, category and in some cases even emission source, such as energy consumption, production, livestock, among others, that could be reported in 2030 from the base year 2013 under a BAU scenario. In this sense, for the development of the projections it was necessary to analyze the characteristics of each one, defining individually the most convenient route to estimate future values, being sometimes the result of applying an average growth rate considering a stable historical period of the activity data behavior, or, through indicators that associate the demand or production expectations, demand, growth or others with the requirements of the activity itself, always seeking to reflect, in a conservative and representative manner, the nature of each activity; |

| f) Other assumptions and methodolog- ical approaches used for understand- ing the nationally determined contri- bution and, if applicable, estimating corresponding emissions and remov- als, including: i. How the reference indicators, base- line(s) and/or reference level(s), includ- ing, where applicable, sector-, cate- gory- or activity-specific reference levels, are constructed, including, for example, key parameters, assump- tions, definitions, methodologies, data sources and models used; | 4. Emission estimates: The estimation of emissions associated with the projected data for each sector was made taking into consideration the methodological approach (emission factors, considerations, and parameters) provided in the 2006 IPCC Guidelines for National Inventories, which was used to update the INEGYCEI; 5. Integration of the baseline: Finally, with the data on emissions from the baseline scenario in each of the applicable sectors, it is possible to integrate, at the national level, the 2014—2030 emission trajectory expected under a BAU scenario, with the starting point being 2013 with data from the INEGYCEI. |
|--|---|
| ii. For Parties with nationally deter- mined contributions that contain non-greenhouse-gas components, information on assumptions and meth- odological approaches used in relation to those components, as applicable; | The methodology for estimating black carbon emissions is presented in NIR. |
| iii. For climate forcers included in na- tionally determined contributions not covered by IPCC guidelines, informa- tion on how the climate forcers are estimated; | For black carbon, the construction of the baseline is done as described in sec- tion 5.f.i. The methodology for estimating black carbon emissions is presented in NIR. |
| iv. Further technical information, as necessary; | Not applicable |
| g)The intention to use voluntary co- operation under Article 6 of the Paris Agreement, if applicable; | Mexico expresses its interest in participating in international carbon markets under Article 6 of the Paris Agreement. It is expected that these transfers will support the country in increasing the target to 36% of emission reductions. |
| 6. How the Party considers that its nationally determined contribution is fair and ambitious in the light of its national circumstances: | |
| a) How the Party considers that its na- tionally determined contribution is fair and ambitious in the light of its nation- al circumstances; | The reduction of GHG emissions that Mexico proposes to achieve by 2030 in the update of its NDC. It is ambitious since the NDC contains unconditional contributions and additional actions which take into account that Mexico is a developing country. It is appropriate to emphasize that Mexico is currently facing severe difficulties associated with the economic crisis, so endorsing our commitments and providing additional resources to implement new policies is an effort that is being made to allow more countries to join the increase in ambition. The NDC is considered ambitious since it incorporates all the recommendations regarding means of updating the NDC and adheres to the methodologies developed by the IPCC, to the effect of the registration of emissions in the INEGY-CEI. Likewise, national funding mechanisms and efforts have been developed in the context of the guidelines and recommendations of the UNFCCC and other relevant international organizations on the subject. |
| b) Fairness considerations, including reflecting on equity; | differentiated in terms of early attention to the most affected sectors. Even though Mexico is not one of the countries that contributes the most green- house gas emissions to the atmosphere, the National Development Plan 2019— 2024 establishes the premise of "Leave no one out, leave no one behind" and defines "We advocate for a development model that respects the inhabitants and the habitat, equitable, aimed at correcting rather than exacerbating in- equalities, a protector of cultural diversity and the natural environment, sensi- tive to regional and local economic modalities and singularities, and aware of the needs of the country's future inhabitants, to whom we cannot inherit a ter- ritory in ruins". |

| b) Fairness considerations, including reflecting on equity; | Mexico has incorporated the NDC in its legislation and planning processes, en- suring ways and processes for its implementation. This NDC is a considerable ef- fort undertaken by the country and it demonstrates the highest degree of am- bition considering the current possibilities. Thus, the NDC is considered fair and ambitious. Through the coordinated action of society, Mexico is convinced that it will be able to achieve the goals, and through the solidarity of the international com- munity it will be possible to reach the conditional commitments, contributing to the accomplishment of the Paris Agreement. | |
|--|--|--|
| c) How the Party has addressed Article 4, paragraph 3, of the Paris Agreement; | Mexico presented its Intended Nationally Determined Contributions (INDC) and its unconditional mitigation commitment considering national circumstances in 2015, which are updated in this document. The NDC represents the highest level of ambition possible for the country at this time, given its level of develop- ment. It is considered to be fair, since Mexico's contribution to global emissions is 1.3% of the global total, with per capita emissions of 3.7 tons, which is below the global average of 5 tons per capita, that is, 4.4 times less than that of our main trading partner, the United States of America with 16.5 tons per capita and half of the world's largest emitter, 7.5 tons per capita. | |
| d) How the Party has addressed Article 4, paragraph 4, of the Paris Agreement; | Mexico, as a middle-income developing country, which is among the 20 largest emitters, recognizes its role in the global responsibility for mitigation and has established commitments that cover all sectors considered by the 2006 IPCC Guidelines, with goals set for 2030. In defining these commitments, it adheres to IPCC reports and guidelines, takes into account the country's level of develop- ment, poverty reduction priorities, the need to integrate policies on Short-Lived Climate Pollutants, and other promising policies under development, such as the first Emissions Trading System in Latin America. It also considers the cur- rent state of climate policies in developed countries, the possibilities of climate finance and current technology transfer. Other considerations include the anal- ysis and strengthening of public policy on carbon pricing and policies in other government levels. | |
| e) How the Party has addressed Article 4, paragraph 6, of the Paris Agreement; | Not applicable | |
| | 7. How the nationally determined contribution contributes towards achieving the objective of the Convention as set out in its Article 2: | |
| a) How the nationally determined con- tribution contributes towards achiev- ing the objective of the Convention as set out in its Article 2; paragraph 1(a) | Mexico's NDC is consistent with the objective of the Paris Agreement to keep the increase in global average temperature well below 2°C from pre-industri- al levels. Likewise, economic, and national circumstances have been considered both for the construction of the foundations and for the possible pathway of the mitigation potential. In particular, the objectives consider the need to acceler- ate action to achieve peak emissions as soon as possible and decarbonization by the second half of the century, as Article 2 notes for developing countries. | |
| How the nationally determined con- tribution contributes towards Article 2, paragraph 1(a), and Article 4, para- graph 1, of the Paris Agreement; | Mexico's NDC is consistent with the objective of the Paris Agreement to keep the increase in global average temperature well below 2°C from pre-industrial levels. Mexico's emissions represent 1.3% of global emissions, in such a way that the reduction of 22% in its emissions in 2030 translates into avoiding the emission of around 210 MtCO ₂ e in that year to contribute to the global goal. In addition, the country could reduce up to 36% if the following conditions are met: 1) The Paris Agreement as a whole achieves greater global ambition led by the countries with the highest emissions and the greatest economic development; 2) Mexico obtains additional financial resources to increase ambition on a scale that allows for implementation projects and not only studies addressing technical or institutional issues; 3) the transfer of available technology is facilitated through international cooperation; and 4) progress is made at the international level on policies to establish an international price for carbon and adjustments on tariffs for carbon content. These actions could help reduce an additional 137 MtCO ₂ e by 2030 and would support the implementation of a more accelerated decarbonization pathway in the country. | |

LIST OF ACRONYMS

| APF | Public Federal Administration |
|----------|---|
| BAU | Business-as-Usual |
| BC | Black Carbon |
| C3 | Council on Climate Change |
| СВА | Community-based Adaptation |
| CICC | Intersecretarial Commission on Climate Change |
| DRR | Disaster Risk Reduction-based Adaptation |
| EBA | Ecosystem-based Adaptation |
| ENAREDD+ | National Strategy to Reduce Emissions from Deforestation and Forest Degradation |
| GDP | Gross Domestic Product |
| GHG | Greenhouse Gases |
| GyCEI | Greenhouse Gases and Volatile Organic Compounds |
| HFC | Hydrofluorocarbon |
| INDC | Intended Nationally Determined Contributions |
| INECC | National Institute of Ecology and Climate Change |
| INEGyCEI | National Inventory of Greenhouse Gases and Compounds |
| INFyS | National Forest and Soil Inventory |
| IPCC | Intergovernmental Panel on Climate Change |
| LGCC | General Law on Climate Change |
| M&E | Monitoring and Evaluation |
| NACAG | Nitric Acid Climate Action Group |
| NAP | National Adaptation Policy |
| NBS | Nature-based Solutions |

| NDC | Nationally Determined Contribution |
|----------|---|
| NIR | National Inventory Report |
| PECC | Special Climate Change Program |
| PFC | Perfluorocarbon |
| PND | National Development Plan 2019—2024 |
| PRODESEN | National Electrical System Development Program |
| SDGs | Sustainable Development Goals |
| SIAP | Agricultural and Fisheries Information Service |
| SIAT-NDC | Transversal Agenda Information System |
| SINACC | National Climate Change System |
| SLCPs | Short-Lived Climate Pollutants |
| UNFCCC | United Nations Framework Convention on Climate Change |
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