



Call for evidence: information and data for the preparation of the 2020 Report on the determination of the needs of developing country Parties related to the implementation of the Convention and the Paris Agreement

Mexico welcomes the Standing Committee on Finance's call for evidence on the determination of the needs of developing country Parties related to the implementation of UNFCCC and the Paris Agreement.

Mexico's efforts to assess its means of implementation needs are exemplified through three approaches: calculating the cost and benefits of Mexico's NDC, monetizing the negative impacts of climate change, and analyzing international climate finance sources.

Calculating the costs and benefits of Mexico's NDC

In May 2016, the National Institute for Ecology and Climate Change (INECC), with the support of the Danish Energy Agency (DEA), set out to analyze the costs of implementing the indicative mitigation measures of Mexico's unconditional NDC, within the framework of the Mexico-Denmark Climate Change Mitigation and Energy Program (CCMEP).

The economic costs of implementing thirty unconditional mitigation measures across eight sectors were quantified. The full study can be consulted here:

https://www.gob.mx/cms/uploads/attachment/file/330857/Costos_de_las_contribuciones_nacionalmente_determinadas_de_Mexico_dobles_p_ginas.pdf

The results of 14 months of study are synthetically reflected in this document, which constitutes an invaluable tool for decision-making and to design better-informed mitigation policies. In the coming years, it could be the basis for additional cost analyses of the measures that arise from new technological pathways to support increased ambition of Mexico's NDC.

In order to obtain the estimated costs of the NDC's indicative mitigation measures, INECC and its partners engaged in the following activities:

- Cost analysis disaggregated by measure and sector.



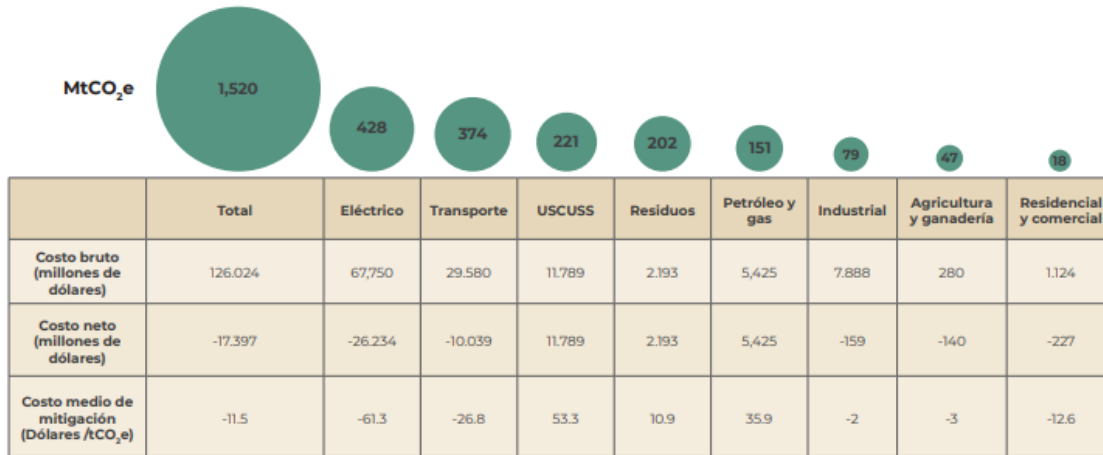
- Public-Private Dialogues (DPP) with representatives of each sector to support the definition of each mitigation measure and its implementation roadmap.
- Analysis of factors beyond economic consideration (for example, social criteria and co-benefits that contribute to the achievement of broader sustainable development goals).
- Early interaction with financing and implementing institutions to include accounting criteria in the preparation of cost analyses.

Once the costs of implementation of the NDC's mitigation measures were evaluated, the optimal investment pathways were defined, and institutional capacities were reinforced accordingly.

Some of the key conclusions were:

- The aggregate cost of the thirty sectorial measures amounts to just over 126 billion US dollars (2017), to be spent between 2014 and 2030. Their successful implementation would represent a reduction of 1,520 million tons of CO_{2e} compared to a BAU scenario.
- Even though these costs are substantial, when compared to the cost of inaction, the NDC mitigation pathway would still represent savings for more than 17 billion dollars. Furthermore, the implementation of these measures would put Mexico on an economically stable road towards decarbonization, by reducing its GDP's carbon intensity by 37% and its GHG emissions by 23% between 2014 and 2030.
- Throughout this period, in the NDC scenario, the average cost of mitigation would drop from \$55.6 USD per ton in 2014, to -22.7 USD in 2030.
- The sectors that show the highest profitability are electric generation, transportation and residential/ commercial. In these sectors, the average mitigation costs are negative or constitute savings. In contrast, the least profitable sectors are oil and gas and LULUCF, showing the highest positive average costs.





Costo bruto:
erogaciones necesarias para instrumentar las medidas

Ahorro:
asociado a la instrumentación de las medidas
(p. ej. disminución en demanda de combustibles)

Costo neto:
costo bruto menos ahorro

The following table show the total and net cost of implementing the NDC per sector – including the amount of tCO₂e reductions required per sector-, as well as the average cost of mitigation (USD/tCO₂e).

The results of these studies were incorporated into the sectorial pathways that map the implementation of the mitigation component of Mexico’s NDC:

- Waste:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/239>
- Residential and commercial:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/237>
- Water treatment:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/238>
- Transport:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/236>
- Industry (Chemical, petrochemical, food and beverage, metallurgic, glass, paper, and automotive)
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/235>
- Agriculture:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/240>





- Oil and gas:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/256>
- Industry:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/255>
- Land use, land use change and forestry:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/257>

It is important to highlight that this study covered only the cost of mitigation measures. This reflects the lack of methodologies to quantify the costs and benefits of adaptation. In this regard, Mexico recognizes the urgent need for further work. As a response to this challenge, in 2017 INECC published a report on Systematization and analysis of quantitative cost-benefit methodologies that support the analysis of adaptation measures¹.

Finally, it is important to acknowledge previous efforts to quantify the costs and benefits of climate action in the forestry and agriculture sectors:

- Beneficios y costos de la participación en los programas de desarrollo forestal relacionados con las medidas de las Contribuciones Nacionalmente Determinadas (CND):
https://www.gob.mx/cms/uploads/attachment/file/199516/1_CGCV_2016_Beneficios_y_costos_de_desarrollo_forestal_CDMEX.pdf
- Cálculo de los costos y beneficios de la agricultura de conservación y la ganadería planificada en el marco de las medidas de las Contribuciones Nacionalmente Determinadas (CND):
https://www.gob.mx/cms/uploads/attachment/file/199519/2_CGCV_2016_Costos_y_beneficios_agricultura_CDMEX.pdf

Monetizing the negative impacts of climate change

Between 2014 and 2017 the Mexican government, with the support of the

¹ <http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/45>





Canadian Government and the United Nations Development Program (UNDP), developed a series of studies and reports on the economic impacts and costs of climate change at the regional, national and subnational level, as well as its broader impact on GDP growth rates.

The studies were conducted using scientifically-based climate scenarios to 2050 and 2100, with a business-as-usual emission trajectory (RCP8.5 scenario) compared to a trajectory leading to the full accomplishment of the NDC, and where temperature increase is stabilized at 2°, 1.5° and below 1.5° (RCP6, RCP4.5, RCP2.6/RCP3PD scenarios respectively). The models also contemplate variations in development levels (SSP 1-5), different population and GDP growth tracks, and regional climate differences. Finally, the studies included a conservative estimation (R) and a more realistic version (RP). The majority of the variables were studied at the national and subnational levels, as well as contemplating rural/urban differences.

Key results include:

- On average, Mexico loses 2.15% of GDP due to fluctuations in temperature of 1°C.
- These GDP losses vary significantly at the state level. There are differentiated impacts within the country due to the states' development, GDP, and geography. This also applies to energy demand, impact on agriculture, and exposure to sea level rise and increase in precipitation.
- An increase in average temperature of 1.0°C could reduce the growth of national GDP per capita between -0.77 and -1.76 percent.
- In a BAU scenario, the cost of climate change for Mexico by the end of the century would be between \$620 (R) and \$1,618 (RP) billion USD (2005), but could reach \$3.1 trillion USD (2005). This would represent a loss of between 46% and 120% of the country's 2010 GDP.
- If the current NDC is achieved, the economic costs of climate change for Mexico could be reduced up to 23% with respect to the reference scenario. Most importantly, an international mitigation effort that met the goals of the Paris Agreement would reduce the economic costs of climate change for Mexico by approximately 58%.
- Nationally, the costs of climate change are around 2.3 times those estimated for RCP8.5 without including the heat island effect. With an NDC trajectory, this cost is 17% less, and could be 45% smaller if the goals of the Paris Agreement are met.

- The tourism and health sectors would be the most affected.
- Subnational governments should develop similar studies, as they become powerful instruments to develop more cost-effective climate policies.

The relevant studies can be consulted in the following links:

1. Estimación de los costos económicos de cambio climático para México a nivel estatal y de país bajo distintos escenarios de cambio climático (2018):
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/301>
2. Evaluación de los efectos del cambio climático en el crecimiento económico de México (2018):
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/300>
3. Elaboración de estimaciones regionales de los costos de cambio climático para México, a partir del análisis de escenarios de cambio climático y las metas señaladas en INDC de México (2017):
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/297>
4. Evaluación de los efectos económicos del cambio climático en el sector salud de México:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/298>
5. Evaluación de los efectos económicos del cambio climático en el sector turismo en México:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/299>
6. Impactos y costos económicos del cambio climático en la CDMX:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/67>

Analyzing international climate finance sources



In August 2015, the Ministry of the Environment and Natural Resources (SEMARNAT) and INECC, in collaboration with the Government of Canada and UNDP, hosted an expert workshop to analyze information on international climate finance flows to Mexico, with the objective of establishing a methodological framework to define international development cooperation activities that could be accounted for as climate finance.²

In October 2016, efforts continued in order to analyze the volume and destination of incoming international financial resources aimed at combatting climate change through the International Development Cooperation Registry (RENCID), managed by the Mexican Agency for International Development Cooperation (AMEXCID).³

The final results of this exercise can be consulted here:

- Análisis del financiamiento climático a través de la cooperación internacional en el sector ambiental de México (2017):
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/321>

In parallel, also with the support of the Canadian Government and UNDP, INECC developed a reference document on international climate finance mechanisms, systematizing information on 14 of them, including: the description of each fund, origin of the resources, thematic areas financed by that fund, executing agencies, financing amounts, fund participation requirements, information on whether Mexico is eligible and on whether INECC has had experience working with that fund, as well as the link to the official page of each fund.

The process and results of this study can be consulted in the following documents:

1. Diseño de una estrategia de financiamiento internacional que favorezca la consolidación de una Estrategia Internacional del Instituto Nacional de Ecología y Cambio Climático en materia de adaptación y mitigación del cambio climático:

² Taller de expertos para el análisis de información sobre financiamiento internacional hacia México en materia de cambio climático (2015):

<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/319>

³ Taller con el sector público sobre financiamiento internacional hacia México en materia de cambio climático: <http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/320>



<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/316>

2. Bases para la Estrategia de Cooperación Internacional del Instituto Nacional de Ecología y Cambio Climático en materia de adaptación y mitigación del cambio climático:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/311>
3. Acompañamiento técnico para la gestión de proyectos del INECC sujetos a ser apoyados por financiamiento internacional:
<http://cambioclimatico.gob.mx:8080/xmlui/handle/publicaciones/318>

Although these deliverables were intended to help define the international financing strategy of a single institution (INECC), the methodology is replicable for future needs assessments and strategy development of other relevant institutions, organizations and agencies that have a role in the design and implementation of climate policy in Mexico.

