

LEARNING  
*by* **DOING**

---

Scaling up Ambitious Leadership  
**Learning By Doing**  
**México**

---



**2022 ACTIVITIES**



LEARNING  
*by* **DOING**

---

Scaling up Ambitious Leadership  
**Learning By Doing**  
**México**

---

**2022** ACTIVITIES

Supported by:



on the basis of a decision  
by the German Bundestag



CIES  
consorcio de investigación  
económica y social

Construyendo conocimiento para mejores políticas

# CONTENTS

---

**1. *Baseline report***

- a. *Our (updated) 2050 Vision*
- b. *A Virtuous Circle*

**2. *Baseline – Models and Approaches***

- a. *General equilibrium model*
  - b. *Societal demand for better environment*
-

## BASELINE REPORT

---

In this document we present a brief baseline report that defines and updates the existing situation in the country in light of the project objectives.

From our initial assessment, based on interactions with specialists in multiple fields, Mexico's initial conditions are not ideal at this moment: powerful (high CO2 emitting) economic sectors; weak societal demand for lesser CO2 emissions; and, an extremely centralized authority on the national government that does not include climate policy among its priorities and, in addition, it limits local solutions and the connection between citizens and governments.

Mexico's delay in the publication of certain climate policy instruments and lack of transparency and specificity in the methodologies complicates the assessment of how the Mexican government plans to implement its policies and achieve its national and international commitments. None of the pandemic recovery measures have been environmentally sensible, and government spending on fossil fuel infrastructure has increased. The energy policy is at the center of national debate and is key for the President, who has promoted "sovereignty" and "security" measures to strengthen the state-owned companies, hindering private investments that were the only efforts towards increasing renewable energy.





In December 2020, Mexico submitted a revised version of its 2015 NDC to the Paris Agreement. However, while it included additional elements regarding gender and adaptation, it did not increase its mitigation ambition. By proposing the same mitigation goal as the one in 2015, the 2020 revision of the NDC failed to meet the principle of progressiveness expected for every update of the NDCs.

At the international level, Mexico caused disappointment among the climate community by joining the group of G20 countries whose NDCs are highly insufficient to align its GHG emissions to a 1.5°C modeled domestic pathway. Domestically, civil society successfully took the government to court through an injunction based on the non-compliance progressiveness principle. At the COP26 in Glasgow, Mexico received for the first time “the fossil of the day award” for their energy policies that favor fossil fuels above renewable energies. Within this context, the Mexican government has stated several times that it will submit a revised and more ambitious NDC in 2022 by COP27.

President Lopez-Obrador (AMLO) offered this commitment to Special Envoy John Kerry a few weeks before COP26, reiterating the promise in Glasgow. To our knowledge, Mexico is one of the few emerging economies publicly offering to present an updated and more ambitious NDC in 2022. This offer allows this project to enhance capacities, foster innovation, and strengthen coalitions to work on preparing the new NDC. The work to be carried out is based on robust technical and economic analyses.

We have identified multiple opportunities for improvement leading to a better future in which emissions are effectively reduced. In specific, we have developed, and updated, our 2050 vision on the bases of four areas of inquire:

- Good will (including political will) is not sufficient for change. In addition to economic restrictions, we need to understand the existing political and societal constraints.
- We need to create the right incentives for stronger societal demands for better environment conditions. This includes the development of attractive narratives that would incentive citizens to overcome collective action problems and be willing to invest more on change. We consider a strong societal demand as a necessary condition for reaching a 1.5°/2°C future.
- We need to formally induce much greater participation/authority from local governments on CO2 emissions mitigation policies. Framing the necessary actions for curbing emissions as needed for “saving the planet” or “for the well-being of humanity”, may actually have the opposite desired effect, which is to incentive opportunistic behavior (e.g. free-riding) or to reinforce the perception dispersed benefits and focalized costs.
- Given the existing constraints, we need to think on more effective pricing measures on CO2 emissions, especially those that are more effective to curb power asymmetries.
- Effective to curb power asymmetries.



### *Our (updated) 2050 Vision*

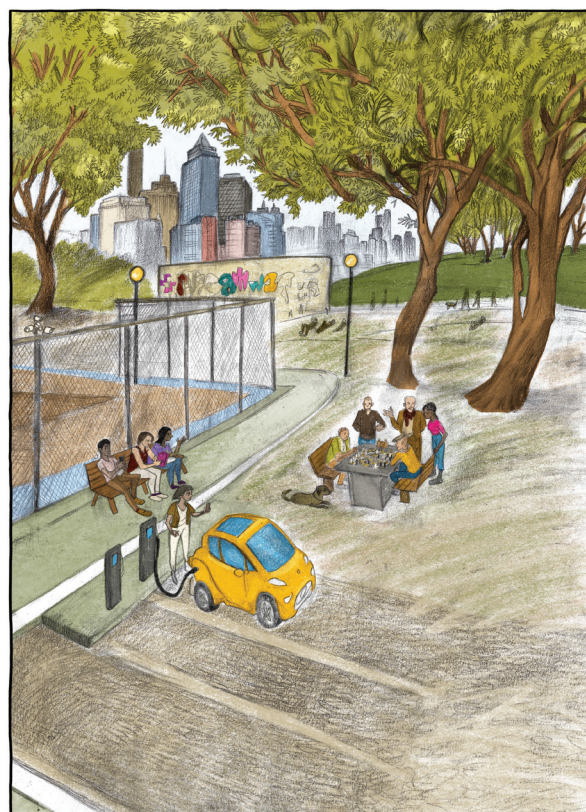
By 2050, we envision a Mexican society in which social, environmental and economic development has significantly benefited most societal groups. Progress has taken place hand-in-hand with significant CO2 mitigation and adaptation policies that have allowed the country to fulfill its emissions goals for a 1.5-2 degrees maximum global warming, and to go beyond these by adopting a 2050 net-zero greenhouse gases emissions target. Mexico's green revolution will have focused on the most emission-intensive sectors: energy, transportation, and agriculture.

Mexico in 2050 is a better country than it was three decades ago. Citizens enjoy a better life and are happier. They are physically and mentally healthier. The context has significantly changed. The air and water are cleaner; transportation is not a polluting hassle; and there are more time, information, and opportunities for high-quality living.

Mexico is also a more democratic country in which existing institutions promote governments that are more responsive to citizens, and enterprises have sufficient incentives to behave well. Economic, social, and political conflict is not absent, of course; yet, there are effective ways to solve conflict with low transaction costs.

In 2050 Mexico, communities and local governments are stronger. They have sufficient resources and incentives to minimize risks stemming from climate change---they no longer need to demand the attention of national government and of multiple intermediaries.

In this context, ambitious thinking and policies are feasible.





### *A Virtuous Circle*

In this society that we envision, all relevant actors have incentives to control their CO2 emissions at the globally-optimal level. A virtuous circle has developed between the incentives and the behaviors of governments, citizens, and industries. This has been possible not only because a change in conscience, but because, given the existing constraints, the “correct” policies were implemented.

Citizens know that they are entitled to a good life---a better one than 30 years ago. They know that they do not have to live in polluted environments and that local and sustainable consumption have significant ben-





efits. A sea change in the national culture has taken place, encouraged by significant support to local organizations that significantly reduce citizens' collective action problems for demanding better living conditions.

Policy-makers at all levels of government are significantly constrained by citizens' demands for lower greenhouse gas emissions and by subnational authorities that have incentives to have "clean" administrations. Politicians have raised their climactic ambitions and have a shared vision of a better Mexico, which is rewarded by voters.

Thanks to the policies and incentives put in place 30 years ago, carbon pricing has progressively increased from US\$3 up to US\$75 in 2050. Revenues from carbon taxes and other fiscal instruments have allowed governments to invest in just transitions that consider the prevention of climate risks, the reduction of regional inequalities, and compensations of various sorts (including retraining, unemployment benefits, and investment in community development) to individuals and communities affected by the demise high-emission industrial activities, as well as by the consequences of climate change.

Power generation is now much cleaner, transportation has significantly changed by embracing low emissions technologies, food production has implemented low-emissions best practices, and food consumption has moved towards zero emissions products.

Industries have gradually adapted to the new regulations and realities, not because of philanthropy, but because consumer preferences are now pro-environment, technological advancements have made change financially feasible, and governments have provided adequate incentives, compensations, vigilance, and sanctioning. Over time, large parts of the population and businesses have acquired a stake in the new low-emissions status quo, rendering it a stable situation from the social, economic, political, and geopolitical points of view.





## BASELINE – MODELS AND APPROACHES

---

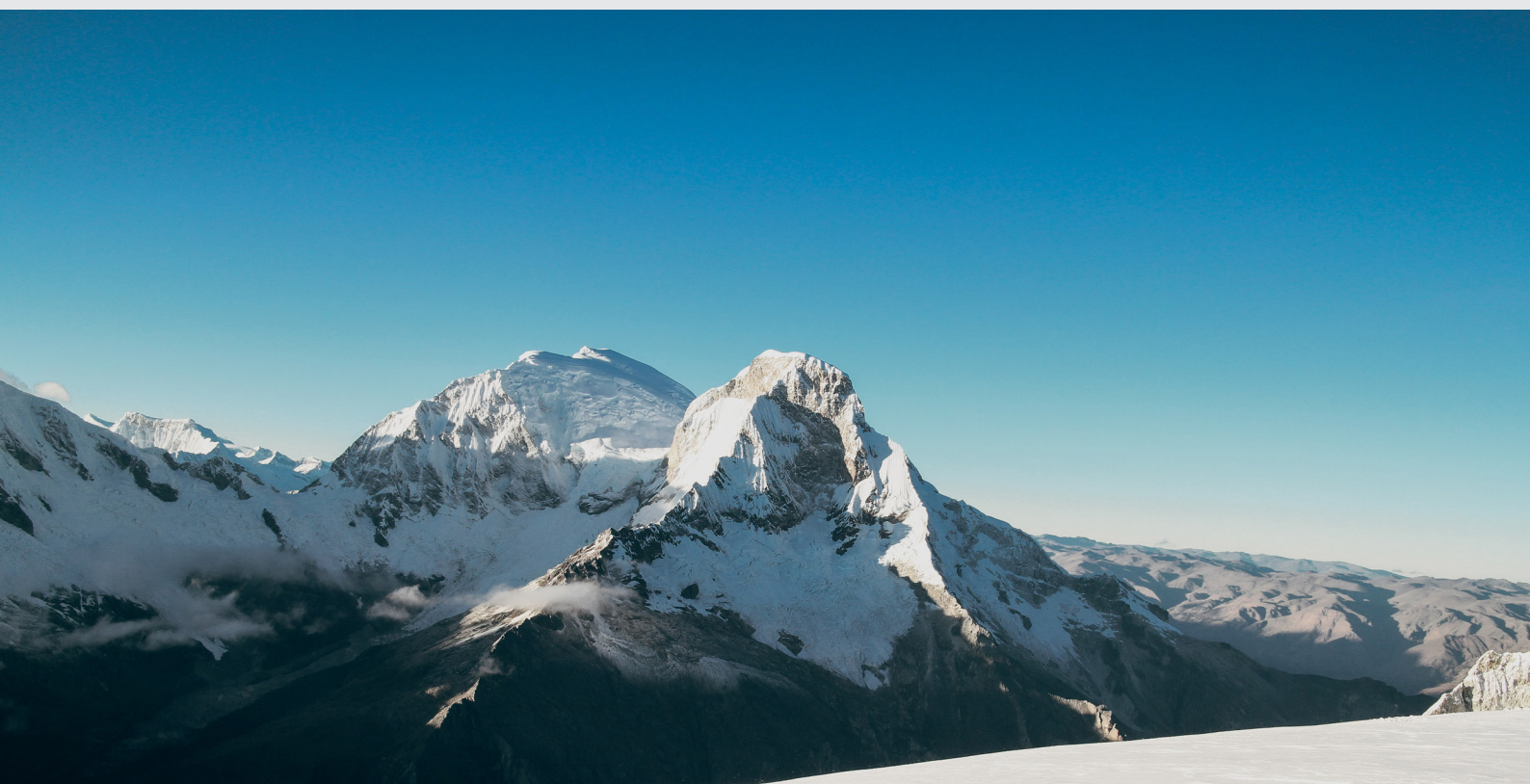
In this document we present and discuss the main approaches that we utilize for assessing the main problems and opportunities that we have identified as part of the project. In specific, we describe two complementary approaches that we have worked: first, the general equilibrium approach and, second, our political-economy approach for understanding societal demand for better environment.

### *General equilibrium model*

We continue to develop a general equilibrium model that sheds light on the sort of changes that the relevant Mexican sectors should implement to achieve the desired emissions level by 2050.

The economic simulation model is national in scope, and capable of evaluating policies directed at specific economic sectors. This “Computable General Equilibrium” (CGE) economic simulation model allows us to identify impacts to different types of households from a carbon tax. A carbon tax can have important repercussions throughout the economy. A general equilibrium analysis looks at all the sectors in the economy linked in a system where a change in any part affects prices and output economy-wide.

The use of general equilibrium analysis to calculate the impact of various economic policies dates back to the early work of Harberger (1962, 1964) and others. Our CGE model is a direct outgrowth of earlier modeling efforts and its structure is similar to that employed by Ballard et al. (1985) in modeling tax policy in the United States. This structure has the advantage of it being comprehensive, flexible, and adaptable to modeling a host of policy options.





Our model here is national in scope and Mexico's economic activity is disaggregated into fifteen production goods, four household categories, ten consumption sectors, a foreign sector, and the government (see Tables 1 and 2). Because of the importance of fossil fuels to the Mexican economy, and because so many of the policies which we analyze have involved Mexico's energy sector, this model includes a number of fuels and stresses the energy sector's linkages to the nation's economy as a whole.

The model considers a benchmark, an orderly and a disorderly case. In our first simulation we look at a case where carbon prices are driven up in an orderly fashion over an extended period of time. In this scenario we impose a carbon tax beginning in 2020 and gradually increase it to 300 dollars per ton of carbon by the year 2050 (the last year of our analysis). Because of the differing carbon content among fossil fuels the highest taxes are levied on coal and the lowest taxes are imposed on natural gas with crude oil and petroleum products being taxed at an intermediate rate. We then take all new revenues collected as a result of the carbon tax and return them to consumers lump sum so as to make the whole exercise revenue neutral.

In our second scenario we simulate a "disorderly" case. Here, instead of a slow gradual increase in carbon taxes, policy makers wait until 2030 to levy any effluent fees at all. They then increase carbon taxes from zero to 700 dollars per ton of carbon over the next 20 years. As before the simulation covers the period between 2020 and 2050 and the results reported are the percentage changes from the benchmark case we ran where no taxes we levied. Qualitatively our results here are similar to those in the first scenario since the taxes are levied on the same sectors as before. Quantitatively, however, the effects are much more severe. This is due to the fact that, unlike before, the taxes here are ramped up quickly and economy does not have sufficient time to dissipate the severity of the initial shock. Investment is complexly choked off in the latter years of the analysis the aggregate economy (as represented by GDP) stagnates and economic growth stalls.

### *Societal demand for better environment*

As part of our inquiry into the specific conditions that would allow for a successful transition to 1.5-2 societies, we have focused our research on understanding the conditions under which citizens effectively demand better environment. We are working on this topic within the Mexico's team and leading a spin-off group across all the country teams working in the LbD project.

It is an uncontroversial fact that poor environmental quality is a problem that significantly affects citizens' wellbeing. Among others, poor air quality is the first environmental risk factor causing premature deaths in the world and it is closely linked to global warming as they share significant determinants.

Poor environment quality affectations have a strong regressive component in the population. Under many circumstances, the groups more harmed are those with some biological susceptibility (kids, pregnant women, seniors, and those with chronic illnesses) that significantly increase the negative effects if they belong to vulnerable social groups, such as those in conditions of poverty.

Yet, even if we consider that there have been some steps forward in the previous decades and that there exists sufficient scientific information on the gravity of the problem, environment quality is not a priority for citizens, governments, private sectors, and societal organizations in many countries. Why?

The group's core objective is to provide answers to four specific questions around the topic of social demand for better environment:

- a) Is societal demand a necessary and/or sufficient condition for a better environment (and a "good life")?



- b) How is (effective) societal demand for better environment created?
- c) How is (effective) societal demand for better environment sustained?

Answers to these questions would help us understand how we bring about change in line with the different visions of good life in 2050 societies. That is, knowledge from this group would allow us to find feasible trajectories towards the desired end-points.

It will allow all teams to explore new ways of thinking solutions that are not limited by existing ideologies and previously implemented policies; although, these are not excluded as such.

For setting a baseline for the group's dialogue on how can societal demand for a better environment be created, we discussed some of the main potential determinants in our current knowledge, which we do not deem to be the unique explanations, yet, they work as a solid basis upon which we can construct even better answers.

(Core premise) A way to think the relevance and logic of the topic that the group is discussing, is to assume that an effective (quality) and sufficient (quantity) societal demand for a better environment is a necessary condition to achieve the 2050 visions of good life in our societies. This seems to be a plausible assumption under many circumstances.

There are various implicit mechanisms linking the two variables in the above statement.

- Societal demand incentives politicians to do something to improve the environment, as it becomes politically profitable. Lacking sufficient societal demand for better environment, politicians would rather invest their attention and resources on other topics. This should be the case in all types of regimes, but the degree of “pressure” would tend to decrease as the regime is lesser democratic.
- Societal demand is a symptom of a strong civil society that can, independently or in coordination with the state, contribute to improve the environment. In a sense, it can be argued that strong civil societies have, at least to some degree, solved its coordination problems. They agree on what is a malfunction of the state (e.g. neglecting the environment), and they can act upon it: solving the issue by themselves, demanding that the state solves the issue, or coordinating with the state for solving the issue.
- The existence of a strong societal demand for better environment generates multiple positive externalities that reinforce it, creating virtuous circles; for example, more NGOs on environmental issues, incentives for further research on environmental problems and solutions, and the topic has a relevant place in the public agenda.