



# SPINNING THE WEB:

THE COBENEFITS APPROACH TO AN INTEGRATED  
IMPLEMENTATION OF THE 2030 AGENDA  
AND THE PARIS AGREEMENT IN MEXICO

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*Executive Summary*

This Executive Summary presents the main results of the *Study on the Cobenefits of the implementation of Mexico's Nationally Determined Contribution for the accomplishment of the Sustainable Development Goals*, which was elaborated by MGM Innova Mexico.

Its contents were developed under the coordination of the Office of the Presidency (Oficina de la Presidencia de la República), the Ministry for the Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales), and the projects “2030 Agenda Initiative” and “Mexican-German Alliance on Climate Change” of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

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**MÉXICO**  
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für internationale  
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# Introduction

In September 2015, the United Nations General Assembly unanimously adopted the 2030 Agenda for Sustainable Development, a roadmap to comprehensively achieve the world's main aspirations in terms of social justice, inclusive economic growth, and environmental protection. Mexico adopted the 17 Sustainable Development Goals (SDGs) and the cross-cutting principles of the 2030 Agenda as a State commitment. In December of that same year, the Paris Agreement was adopted at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC). Through the Paris Agreement, the international community crystallized its determination to limit the increase in global average temperature to 2°C by the end of the century and reduce the impacts of climate change. By ratifying the Agreement in September 2016, Mexico committed to contribute to its fulfillment through a series of mitigation

and adaptation goals, condensed in its Nationally Determined Contribution (NDC).

Despite having been negotiated in differentiated processes, the two multilateral frameworks are deeply interconnected. On the one hand, climate change threatens to hinder and even reverse the development achievements of recent decades. On the other hand, unsustainable development models are the underlying cause of climate change, as well as of the structural vulnerability that limits the capacity of countries and communities to face its consequences. Therefore, no future sustainability model can be successful if it does not contemplate the decoupling of economic growth and environmental degradation, or if it fails to integrate resilience-building as a *sine qua non* condition for development. Moreover, climate action will not be ambitious enough to safeguard the well-being of present and future generations if its focus and scope continue to



be exclusively environmental. The only way to effectively advance both agendas, and avoid trade-offs and duplications, is to promote their integrated implementation at the national level.

To contribute to this purpose, the Office of the Presidency (OPR) and the Ministry for the Environment and Natural Resources (SEMARNAT), in collaboration with the “2030 Agenda Initiative” which is implemented by the GIZ at the request of the German Ministry for Economic Cooperation and Development (BMZ), commissioned a study on the cobenefits that could derive from the implementation of Mexico’s NDC that would be relevant to the achievement of the SDGs. The objective was to highlight the opportunities that an integrated implementation of both agendas would bring to multiple sectors. This document summarizes the main contents of the referred study, particularly its recommendations on promoting policy coherence between climate action and the 2030 Agenda.

This Executive Summary is structured in four parts. The first section presents basic information on the 2030 Agenda and the Paris Agreement, as well as their implementation processes in Mexico. The second section provides details of the methodology with which the study was carried out, some of its main results, and a summary of the recommendations emanating from it. The third section highlights the main messages derived from the study, and the fourth presents a brief conclusion.

## KEY FINDINGS

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### CLIMATE CHANGE IS CROSS-CUTTING IN THE 2030 AGENDA

- Connections to climate action in the 2030 Agenda can be found well beyond SDG 13 (Climate Action). According to the analysis, almost 40% of the SDG targets are directly related to mitigation and/or adaptation.
- The SDGs with the highest number of interconnections to climate cobenefits are SDG 11 (Sustainable Cities and Communities), SDG 12 (Sustainable Consumption and Production) and SDG 6 (Clean Water and Sanitation).
- According to the study’s methodology, the targets with the most connections to climate cobenefits were 2.4 (sustainable and resilient agricultural systems), 6.4 (efficient use of water resources), 7.2 (renewable energy), and 11.2 (sustainable transport systems). The dispersion of these targets in different SDGs reaffirms the need to implement the 2030 Agenda in a comprehensive manner, in order to maximize its potential contributions to the fight against climate change.
- Focusing on cobenefits contributes to the mainstreaming of climate action in the development agenda, which in turn enables the engagement of different sectors and actors.

### THE IMPLEMENTATION OF NDC MEASURES WILL PRODUCE MULTIPLE COBENEFITS FOR THE ACCOMPLISHMENT OF THE 2030 AGENDA

- Although their main objective is to reduce greenhouse gas (GHG) emissions or increase resilience to the impacts of climate change, virtually all climate actions will have additional social, economic and environmental benefits that are relevant for other sectors.

- The five cobenefits most recurrently related to the implementation of Mexico's NDC are the adoption of technological change, reduced vulnerability, improved quality of atmospheric basins, improved public health, and improved public management.
  - Only one cobenefit, relating to improved building standards, was found to have no connections to the NDC measures. However, this could change as Mexico's NDC implementation plan is developed, since it will most likely articulate existing measures in the construction sector.
  - The NDC sectors with the best performance (number of potential cobenefits in relation to the total number of possible cobenefits) are the Livestock and Agriculture sector, and the Land Use, Land Use Change and Forestry (LULUCF) sector, both with the potential to generate thirteen cobenefits out of the twenty-five listed in the study.
  - Ten NDC mitigation measures were found to have a strong connection with ten SDG targets. Of these mitigation measures, the ones with the highest number of potential cobenefits are those related to urban planning and the elimination of methane emissions in the waste sector.
  - Practically all NDC adaptation measures have links to the SDGs, but a strong connection was found for twenty-three targets. Of all the adaptation measures considered in the NDC, the one that has the greatest number of potential cobenefits is the one related to incorporating gender perspective and a human rights approach to all actions taken to implement Mexico's climate commitments.
- positive effects of NDC implementation for the fulfillment of the SDGs is an essential step to break sectoral silos and advance in the formulation of coherent policies.
- Some NDC measures and SDG targets are intimately related, and form interconnection clusters that represent a practical guideline for planning purposes. The identification of these clusters should help determine the priorities for the integrated implementation of both agendas.
  - The international calendar from 2018 to 2020 will present important opportunities to foster synergies between the 2030 Agenda and the Paris Agreement. However, the greatest area of opportunity lies in national implementation processes. Most countries, including Mexico, are in time to generate a comprehensive strategy for the fulfillment of both commitments in a mutually-reinforcing manner, and to systematically introduce it in their national planning.
  - An integrated implementation process is crucial to increase the impact and reduce the cost of actions on both fronts, as well as to avoid duplications and tradeoffs.

**THE NATIONAL IMPLEMENTATION  
OF BOTH AGENDAS IS AN  
OPPORTUNITY TO PROMOTE  
POLICY COHERENCE**

- Cobenefits are a starting point to strengthen policy coherence. Evidencing the multiple



# 1

## The 2030 Agenda and the Paris Agreement: from global construction to local implementation

The 2030 Agenda for Sustainable Development and the Paris Agreement on climate change are historic achievements for the international community. Both instruments offer a clear mandate in terms of principles and are crystallized in a series of concrete commitments. In the case of the 2030 Agenda, these commitments take the form of 17 Sustainable Development Goals (SDGs), comprising 169 goals, and reinforced by a global monitoring framework that has more than 230 indicators. In the case of the Paris Agreement, each country is responsible for establishing its own climate goals, strategies, policies and measures through its Nationally Determined Contribution (NDC).

### **1.1 THE 2030 AGENDA AND THE SUSTAINABLE DEVELOPMENT GOALS (SDG)**

The 2030 Agenda builds on the lessons learned from the implementation of the Millennium Development Goals (MDGs). Discussed over two years of multilateral negotiations that in-

cluded the participation of a broad array of stakeholders worldwide, it is a long-term roadmap that reflects the shared priorities of the international community for an inclusive and sustainable future.

The 2030 Agenda represents a paradigm shift in several ways. Firstly, it promotes the interdependence of the three dimensions of sustainable development: social, environmental and economic. Unlike the MDGs, which had an eminently social focus, the 17 SDGs reflect a balance between the three dimensions and are meant to be implemented as a comprehensive and indivisible agenda. The principle of integrality implies that efforts to achieve any of the goals must address synergies, compensations and possible indirect effects.

Secondly, the 2030 Agenda was built and must be carried out under the mandate to “leave no one behind”. This means that all implementation measures must prioritize population groups that have traditionally been

Figure 1. The 17 Sustainable Development Goals of the 2030 Agenda.



excluded from the development process, and address the structural causes of their marginalization.

Finally, unlike the MDGs which were intended for developing countries to implement, the 2030 Agenda has a universal approach, applicable to all countries. Among other things, the principle of universality implies that in complying with the SDGs, countries must take into consideration the impacts that their own development process may have on that of other countries.

These principles govern the 2030 Agenda, which is comprised of 17 Sustainable Development Goals and 169 targets.

#### 1.1.1. Implementation of the 2030 Agenda in Mexico

The 2030 Agenda is a consensus of global aspirations on sustainable development. Since it was agreed to by 193 countries, it cannot reflect

the specificities and priorities of each of them. That is why countries must integrate the principles and goals of the 2030 Agenda into their national planning, and establish context-appropriate institutional mechanisms and strategies to ensure compliance.

Mexico is in the process of building a solid, transparent and participatory institutional architecture for the implementation and monitoring of the 2030 Agenda. Its main mechanism is the National Council for the 2030 Agenda, installed in April 2017. This Council is the multi-stakeholder entity in charge of analyzing Mexico's situation in each of the SDGs, as well as identifying and proposing solutions for their achievement and coordinating all implementation efforts. It is chaired by the President and composed of 18 Ministries, as well as representatives of the Legislative and Judicial Powers, state and municipal governments, the private sector, civil society and academia.

Additionally, local governments are in the process of establishing their own mechanisms to follow up on the implementation of the 2030 Agenda.

On the other hand, Mexico has a solid statistical system to measure progress on the 2030 Agenda, a legacy of its experience with the monitoring of the MDGs. In November 2015, the Specialized Technical Committee on the Sustainable Development Goals (CTEODS) was established. It is chaired by the Office of the Presidency with the support of the National Statistics and Geography Institute (INEGI) and the National Population Council (CONAPO). The CTEODS coordinates the conceptual, methodological, technical and operative work that allows for the generation and periodical updating of information on SDG indicators.

This institutional framework will focus on the implementation of a National Strategy for the 2030 Agenda, which is currently being developed through broad consultations. This Strategy will define a series of national goals

and should guide the formulation of the next two National Development Plans (2019-2024 and 2025-2030). The mandate to integrate the 2030 Agenda in the national planning system is supported by a recent reform of Mexico's Planning Law, through which fundamental provisions were incorporated to adapt the legal framework to the new paradigm of sustainable development. This has also reflected in efforts to integrate the 2030 Agenda in the design and expenditure of the Federal budget. In 2017, the Office of the Presidency and the Ministry of Finance and Public Credit (SHCP) carried out a budgetary alignment exercise, through which budgetary programs were associated to the different SDG targets that they contribute to. This exercise informed the process to elaborate the 2018 Federal Expenditures Budget (PEF), and should be taken into account for subsequent budgeting processes, in order to guarantee that the PEF is an effective means of implementation for the achievement of the SDGs.

Mexico is in the process of building a solid, transparent and participatory institutional architecture for the implementation and monitoring of the 2030 Agenda.

## 1.2 THE PARIS AGREEMENT AND THE NATIONALLY DETERMINED CONTRIBUTIONS (NDC)

The Paris Agreement is a binding instrument, adopted under the United Nations Framework Convention on Climate Change (UNFCCC), which establishes the commitments agreed upon by 197 countries<sup>1</sup> on three main issues: mitigation of greenhouse gas (GHG) emissions, adaptation to the already inevitable effects of climate change, and means of implementation to transition towards low carbon and resilient societies. Unlike its predecessor, the Kyoto Protocol, the Paris Agreement does not prescribe the emissions reduction targets that a group of countries must comply with. Instead, it generates the common framework so that all countries, regardless of their development level, adopt commitments according to their own capabilities towards the same objective: to limit the increase in global average temperature to 2°C by the end of the century with respect to pre-industrial levels, with efforts to keep it below 1.5 °C, and to achieve neutrality of emissions towards the second half of the century, in the context of sustainable development and of efforts to eradicate poverty.

In order to meet this objective, countries' Nationally Determined Contributions (NDC) reflect their commitments and the actions they plan to carry out to combat climate change. With the ratification of the Paris Agreement, each NDC becomes a binding commitment for the country that presented it. The measures contained in an NDC should represent the highest possible level of ambition for a country to reduce GHG emissions and contribute, in accordance with national circumstances, to the achievement of the 2°C goal. NDCs are thus composed of mitigation commitments that can

take different forms (for example, an economy-wide emissions reduction target with respect to a base year, a carbon intensity reduction target, or a compilation of mitigation policies in specific sectors). NDCs can also include an adaptation component, and another that considers the means of implementation (financing, technology and support for capacity building). The Paris Agreement mandates each country to submit a new NDC every five years, which should always increase the level of ambition with respect to previous NDCs.

### 1.2.1. Implementation of the Paris Agreement in Mexico

Mexico was the first developing country to submit its intended NDC to the UNFCCC in March 2015. The commitments that Mexico assumed in its NDC are in line with the objectives, priorities and mandates established in the General Law on Climate Change. NDC measures are structured in two components: one for mitigation and one for adaptation.

Under the **mitigation component**, Mexico committed to reducing 22% of GHG emissions and 51% of black carbon emissions<sup>2</sup> by 2030 with respect to the baseline. Subject to the availability of international finance, support for capacity building and mechanisms to facilitate technology transfer, the national mitigation target could be raised to a 36% and 70% reduction respectively within the same period.

At the request of the Ministry for the Environment and Natural Resources (SEMARNAT), the National Institute of Ecology and Climate Change (INECC) identified a set of 30 measures to be carried out in the eight sectors that represent the country's main emission sources.

<sup>1</sup> As of May 20th 2018, a total of 176 countries have ratified the Paris Agreement out of the 197 that signed it in December 2015. The United States is the only country that has expressed its intention to withdraw from the Agreement.

<sup>2</sup> Black carbon is part of the so-called short-lived climate pollutants (SLCPs), which have a shorter life span in the atmosphere than carbon dioxide, the main GHG. Black carbon deteriorates air quality and has been associated with serious negative effects on human health, as well as damage to various ecosystems and urban infrastructure.

Under the mitigation component, Mexico committed to reducing 22% of GHG emissions and 51% of black carbon emissions by 2030 with respect to the baseline.

The implementation of these measures is expected to ensure that the emissions reduction targets foreseen in the NDC are met (Table 1).

Under the **adaptation component**, Mexico committed to improving resilience and reducing vulnerability to both extreme hydrometeorological phenomena and long-term environmental degradation processes. The component includes measures in three main

areas: adaptation of the social sector, ecosystems-based adaptation, and adaptation of strategic infrastructure and productive sectors. Among other measures, the component includes goals to increase resilience in 50% of Mexico's most vulnerable municipalities, protect the population through early warning systems, and achieve a zero rate of deforestation (Table 2).



Table 1. Mitigation measures for the implementation of Mexico's NDC.

Sector NDC	Measures	
Electricity generation		<ul style="list-style-type: none"> <li>• Generate 35% of electricity with clean sources<sup>3</sup> by 2024, and 43% by 2030</li> <li>• Modernize generation facilities</li> <li>• Reduce technical losses in the electricity network</li> <li>• Replace heavy fuels with natural gas, clean energy and biomass in the national industry</li> </ul>
Oil and gas		<ul style="list-style-type: none"> <li>• Reduce leaking, venting and controlled burning of methane by 25%</li> <li>• Reduce fugitive emissions</li> <li>• Participate in the clean energy generation and self-supply goals (cogeneration)</li> <li>• Capture and store carbon dioxide (CCUS)</li> <li>• Replace heavy fuels with natural gas</li> </ul>
Commercial and residential		<ul style="list-style-type: none"> <li>• Use water-saving equipment to reduce the energy demand for heating</li> <li>• Replace conventional heaters with efficient heaters (instantaneous and solar)</li> </ul>
Transportation		<ul style="list-style-type: none"> <li>• Implement an efficiency standard for light vehicles</li> <li>• Implement an efficiency standard for heavy vehicles</li> <li>• Implement an urban planning program and integrated transportation systems</li> <li>• Promote modal transition to rail</li> <li>• Promote interurban passenger trains</li> <li>• Restrict the import of used cars</li> <li>• Improve the vehicle performance of light vehicles</li> <li>• Promote public transport ran with natural gas</li> </ul>

<sup>3</sup> Clean energy includes renewable sources, efficient cogeneration with natural gas, and thermoelectric plants with CO<sub>2</sub> capture.







Sector NDC	Measures
<p data-bbox="266 520 461 546">Industrial processes</p> 	<ul data-bbox="846 520 1321 701" style="list-style-type: none"> <li>• Implement the cement sector NAMA</li> <li>• Participate in the clean energy generation and self-supply goals</li> <li>• Use agricultural yields as fuel</li> <li>• Replace oil with cleaner fuels such as natural gas</li> </ul>
<p data-bbox="266 821 331 846">Waste</p> 	<ul data-bbox="846 821 1305 905" style="list-style-type: none"> <li>• Achieve zero methane emissions in landfills by 2030</li> <li>• Achieve zero open burning by 2030</li> </ul>
<p data-bbox="266 1003 509 1029">Agriculture and livestock</p> 	<ul data-bbox="846 1003 1338 1184" style="list-style-type: none"> <li>• Reduce open-field burning of crop residue on agricultural surfaces, with technical assistance</li> <li>• Install and operate biodigesters for excreta from stabled livestock</li> <li>• Substitute nitrogen-based synthetic fertilizers for crops, by incorporating bio fertilizers</li> </ul>
<p data-bbox="266 1394 526 1451">Land use, land use change and forestry (LULUCF)</p> 	<ul data-bbox="846 1394 1321 1476" style="list-style-type: none"> <li>• Achieve a zero-deforestation rate by 2030</li> <li>• Promote sustainable forest management and increase forest productivity</li> </ul>

Table 2. Adaptation measures for the implementation of Mexico's NDC.

Sector NDC	Measures	
Adaptation of the social sector		<ul style="list-style-type: none"> <li>• Increase the resilience of 50% of the most vulnerable municipalities in the country</li> <li>• Incorporate climate considerations, gender perspective and a human rights approach in all instruments for territorial planning and risk management</li> <li>• Increase financial resources for disaster prevention and response</li> <li>• Establish land use regulations in risk areas</li> <li>• Guarantee food security and access to water through integrated watershed management, as well as biodiversity and soil conservation</li> <li>• Ensure training and participation of all stakeholders, including local communities, indigenous groups, women, youth, civil organizations and the private sector, in the planning of national and subnational climate change policy</li> <li>• Reduce the population's vulnerability and increase its adaptive capacity through early warning and risk management systems, as well as hydrometeorological monitoring systems, in all levels of government</li> </ul>
Ecosystems-based adaptation		<ul style="list-style-type: none"> <li>• Achieve a zero rate of deforestation by 2030</li> <li>• Reforest the upper, middle and lower basins, with special attention to riparian zones, considering their native species</li> <li>• Increase ecological connectivity and carbon capture through conservation and restoration</li> <li>• Increase carbon sequestration and coastal protection through the conservation and recovery of marine and coastal ecosystems</li> <li>• Substantially increase the number of Action Programs for Species Conservation to strengthen the protection of priority species facing the negative impacts of climate change</li> <li>• Promote synergies between actions to reduce emissions from deforestation and forest degradation, to promote the sustainable management of forests, and to preserve and increase carbon stocks in forests (REDD+)</li> <li>• Promote integrated water management in its different uses (agricultural, ecological, urban, industrial, domestic)</li> </ul>

## Sector NDC

## Measures

Adaptation of strategic infrastructure and productive sectors



- Install early warning and risk management systems
- Guarantee and monitor the treatment of urban and industrial wastewater in human settlements larger than 500,000 inhabitants
- Ensure the safety of strategic infrastructure
- Incorporate climate change criteria in agricultural and livestock programs
- Apply environmental protection standards and specifications for adaptation in coastal touristic and real-estate developments
- Incorporate adaptation criteria in public investment projects that include infrastructure construction and maintenance



# 2

## **Study on the cobenefits of the implementation of Mexico's NDC for the achievement of the SDGs: methodology, key messages and recommendations by sector**

The multiple and complex links that exist between the climate agenda and the sustainable development agenda, as well as their implications for policy formulation, can only be fully understood when analyzed in a concrete national reality. The study contributes to this purpose by identifying how compliance with Mexico's NDC could produce cobenefits that help achieve the SDGs, thus highlighting the opportunities that an integrated implementation of both agendas would bring to multiple sectors. Based on this analysis, the study presents a series of recommendations to foster policy coherence. Additionally, the study proposes a set of criteria to prioritize measures according to their potential cobenefits, as well as to plan for their implementation.

### **2.1. METHODOLOGY**

The study is based on an extensive literature review, 18 interviews with relevant national stakeholders, and a strategic dialogue with

government officials and representatives from the private sector, civil society and academia in Mexico City. Its main goal was to formulate recommendations that would be useful to the Mexican government in the development of a comprehensive strategy for the implementation of its NDC and the 2030 Agenda.

The methodology was developed in two parts:

- First, the characterization of the link between Mexico's NDC and the SDGs, through the identification of cobenefits and the mapping of their interrelationships.
- And second, the development of a catalog of criteria for the evaluation of existing and future government plans, programs and projects to address climate change, with respect to their impact on the SDGs.

#### **2.1.1. Characterization of the link between Mexico's NDC and the SDGs**

For the purposes of this study, climate cobenefits



are defined as the direct or indirect benefits that result from an NDC action or project, in addition to reducing GHG emissions or increasing resilience to the impacts of climate change. In other words, although the main objective of an NDC measure is to produce a mitigation and/or adaptation outcome, it can generate positive effects<sup>4</sup> in other fields and sectors, which are in turn related to the achievement of the SDGs.

The characterization of the link between NDC measures and SDGs targets was carried

<sup>4</sup> Although they were not the subject of the study, it is important to recognize that mitigation and adaptation measures can also generate negative impacts for other sectors. Climate policy must be implemented under broad sustainability and inclusion criteria, considering gendered impacts and human rights, in order to avoid potential tradeoffs.

out in three stages: definition of key cobenefits, identification of relationships, and network analysis to produce recommendations by sector.

#### 2.1.1.1. Definition of key cobenefits

As a result of the literature review and the inputs obtained in the interviews, a group of twenty-five cobenefits associated with climate action was identified. The proposed list is not intended to be exhaustive, but rather to account for those cobenefits that are most recurrently mentioned in the literature, and that have the greatest amount of empirical evidence. For better reference, these were classified according to the three pillars of sustainable development: social, economic and environmental.

Table 3. Collection of cobenefits.

 <b>SOCIAL COBENEFITS</b>			
	CS1. Reduced vulnerability		CS6. Improved public management
	CS2. Increased resilience		CS7. Strengthened governance
	CS3. Improved infrastructure for better quality of life		CS8. Strengthened social cohesion
	CS4. Improved building standards for better quality of life		CS9. Improved public health
	CS5. Promotion of corporate social responsibility (CSR)		CS10. Contributions to food security
			CS11. Contributions to political stability
<hr/>			
 <b>ECONOMIC COBENEFITS</b>			
	CE1. Increased productivity		CS6. Improved public management
	CE2. Adoption of technological change		CE5. Transition to effective subsidies
	CE3. Business creation		CE6. Contributions to energy security
<hr/>			
 <b>ECONOMIC COBENEFITS</b>			
	CA1. Conservation of abiotic resources		CA5. Improved condition of atmospheric basins
	CA2. Incentives for a circular economy		CA6. Improved management of ecosystem services
	CA3. Improved condition of water resources		CA7. Improved management of biodiversity
	CA4. Improved condition of soil		CA8. Improved management of noise





## SOCIAL DIMENSION

Social cobenefits refer to improvements in people’s quality of life, both at individual and community level. Such improvements can derive from different kinds of climate actions, including “hard” measures (e.g. the installation of technologies or infrastructure) and “soft” measures (e.g. the promotion of changes in

social behavior). Vulnerability reduction and resilience building are also covered in this dimension, regardless of the fact that they are fundamental elements of adaptation, because they can also derive as cobenefits of certain mitigation actions.



### CS1. REDUCED VULNERABILITY

Vulnerability is understood in the study as the propensity of people and systems to be affected by climate-related hazards, namely hydrometeorological events with adverse effects on the state and availability of natural resources, and on the economy, housing and human health. The degree to which a person or system is vulnerable is determined by three variables: exposure, sensitivity, and adaptive capacity (defined as the ability to resist and recover from a given hazard). Soft measures to reduce vulnerability are associated with the anticipation

of impact, that is, with *ex ante* attention to the factors that make populations vulnerable. Hard measures are related to infrastructure. A community’s geographical location and development level (including factors such as economic and social inequality) can determine its vulnerability to the impacts of climate change.

In the case of adaptation measures, reducing vulnerability is not a cobenefit but rather the main objective. However, there are also mitigation measures (particularly those related to the protection and expansion of carbon sinks and those related to infrastructure) that can reduce vulnerability as a cobenefit.



**Action:** modification of productive processes or social behaviors



**Climate benefit:** reduced GHG emissions



**Cobenefit:** reduced vulnerability of people and systems



### CS2. INCREASED RESILIENCE

Resilience is defined as the ability of a social or ecological system and its components to anticipate, reduce, and recover from the effects of an adverse event in a timely and effective manner (IPCC, 2014). Since strengthening resilience is the main objective of most adapta-

tion measures, it would not be considered a cobenefit in this case. However, mitigation measures can also strengthen resilience as a cobenefit, especially when they lead to income diversification and/or increase people’s agency, as well as their ability to innovate and solve problems in a participatory manner. Soft measures are associated with building and strength-

ening people's capacities, while hard measures are related to infrastructure and equipment,

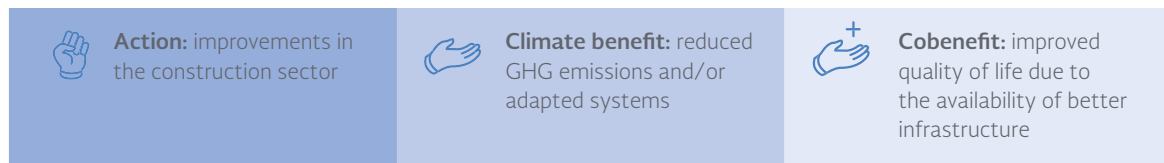
but they both refer to actions taken to accelerate recovery after a hazard (*ex post*).



### CS3. IMPROVED INFRASTRUCTURE FOR BETTER QUALITY OF LIFE

Infrastructure is understood as the set of physical elements that allow for the proper functioning of human settlements. Climate measures that require the creation and/or improvement of infrastructure, either to reduce its GHG emissions or increase its resilience to

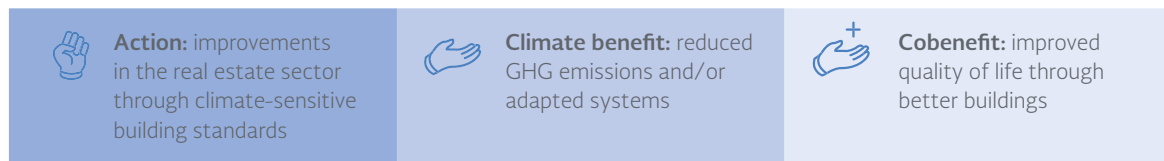
the impacts of climate change, can also lead to improvements in people's quality of life. This cobenefit includes improved access to energy and water, to nearby and safe public spaces, and to safe, non-polluting and better-connected means of transportation. It also includes access to green areas and spaces that encourage physical activity (WHO, 2011).



### CS4. IMPROVED BUILDING STANDARDS FOR BETTER QUALITY OF LIFE

Building standards are an important tool both to reduce emissions from buildings and to decrease their vulnerability to the impacts of climate change. Improving buildings and facilities promotes a better quality of life when it implies introducing technology that simplifies processes, thus allowing users to

improve their health, comfort and safety (Palomba, 2002). Comfortable buildings are those that provide adequate protection against changing weather conditions and that have access to basic services (water, energy, sanitation, etc.). In addition, they favor health through technologies that ensure good indoor air quality, and adequate temperature and humidity conditions (WHO, 2011).



### CS5. PROMOTION OF CORPORATE SOCIAL RESPONSIBILITY (CSR)

CSR refers to the voluntary integration of social and environmental considerations in companies' business operations and their

interaction with stakeholders (Mandl, 2009). Climate action, particularly mitigation policies, can generate incentives for companies to move towards more responsible business models that benefit society and increase the

generation of decent work opportunities. This cobenefit derives from actions that expand the market for companies that adopt sustainable practices, increasing their competitiveness.

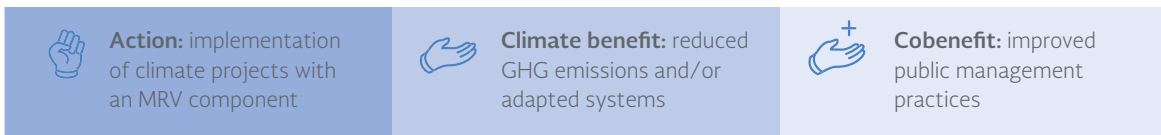
The creation of emissions trading systems, for example, can incentivize deep transformations in companies' productive processes in multiple sectors.



### **CS6. IMPROVED PUBLIC MANAGEMENT**

Improvements in public management are positive changes in the way bureaucracy deals with public affairs, as a result of the design and implementation of more effective management instruments. Monitoring, reporting and verification (MRV) systems associated with climate projects have the potential to promote transparency in the procedures, operation and performance of public agencies involved in

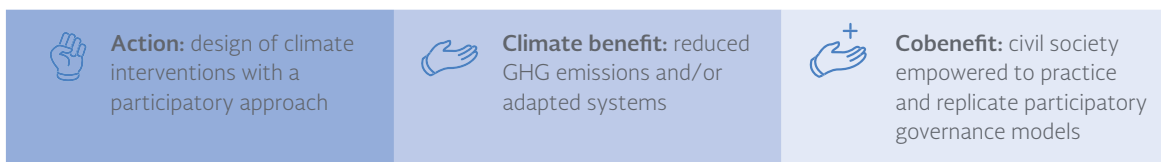
their implementation. In addition, when climate action programs involve various sectors, they can also promote collaboration among government units (ECLAC, 2015). This cobenefit derives from compliance with the MRV requirements of both mitigation and adaptation projects, particularly those financed with international funds, and includes improvements in the management of public expenditure (e.g. evidence-based budgeting), as well as its level of transparency and accountability.



### **CS7. STRENGTHENED GOVERNANCE**

The concept of governance relates to the way in which decision-making processes are structured. Governance is stronger when (1) a process begins by defining the group that will be affected by the implementation of an action or measure, and (2) this group has decision-making power (Arnstein, 1969). Governance considerations are present in almost all

mitigation or adaptation measures that are designed with a participatory approach. This cobenefit refers to the social empowerment that derives from the participation of citizens in the design of climate policy instruments. This type of citizen involvement triggered by climate action can create a precedent and build capacities that are necessary for participatory governance models to be replicated in other areas of public life.





### CS8. STRENGTHENED SOCIAL COHESION

Social cohesion is defined as the existence of a structure of social bonds and the willingness of individuals to maintain and renew them, as well as the identification of individuals with the community and the presence of shared values (CONEVAL, 2015). Given that climate

change has the potential to prompt conflicts that disrupt social order, actions to combat it can promote social cohesion as a cobenefit. This cobenefit also refers to the potential of mitigation and adaptation actions designed with a participatory approach to promote community ties, as people work together to achieve shared objectives.



**Action:** design of climate interventions with a participatory approach



**Climate benefit:** reduced GHG emissions and/or adapted systems



**Cobenefit:** strengthened social cohesion in communities



### CS9. IMPROVED PUBLIC HEALTH

There are multiple impacts of climate action on public health. A more detailed description of the mitigation and/or adaptation measures would be required in order to associate them with specific improvements in public health conditions. However, the best known and most direct health cobenefits of climate action refer to the decrease of adverse effects by exposure to extreme temperatures, preventing the ex-

pansion of vectors that can transmit infectious diseases among humans, and reducing the incidence of non-communicable diseases associated with poor air quality (cancer, chronic respiratory problems, etc.). Improvements in public health can also be indirect; for example, climate measures that encourage people to reduce their meat consumption also promote positive changes in diet that reduce the incidence of cardiovascular diseases and diabetes.



**Action:** modification of productive processes or social behaviors



**Climate benefit:** reduced GHG emissions and/or adapted systems



**Cobenefit:** improved public health



### CS10. CONTRIBUTIONS TO FOOD SECURITY

Food security exists when all people at all times have sufficient physical and economic access to safe and nutritious food to meet their dietary needs and food preferences, in order

to lead an active and healthy life (FAO, 2006). Considering that climate change will have negative effects on agricultural productivity, mitigation and adaptation actions in the agricultural sector will contribute to improving food security as a cobenefit.



**Action:** modification of productive processes or social behaviors



**Climate benefit:** reduced GHG emissions and/or adapted systems






**Cobenefit:** strengthened food security

 **CS11. CONTRIBUTIONS TO POLITICAL STABILITY**

Political stability is understood as the condition in which the risk that violent events will occur is low. The inability of governments and communities to respond to events that affect food security, water security and human health, aggravated by climate change, can threaten social peace. On the other hand,

competition for natural resources in an environment of political instability can prompt the emergence of conflicts (United Nations, 2009). Therefore, measures to combat climate change and control its adverse effects contribute to national and regional political stability. This is an important, albeit more indirect cobenefit, deriving from climate action as a whole.

 <b>Action:</b> modification of productive processes or social behaviors	 <b>Climate benefit:</b> reduced GHG emissions and/or adapted systems	 <b>Cobenefit:</b> strengthened political stability
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 **ECONOMIC DIMENSION**




Climate cobenefits in the economic dimension show the positive effects of climate action on the economic system, whether national or lo-

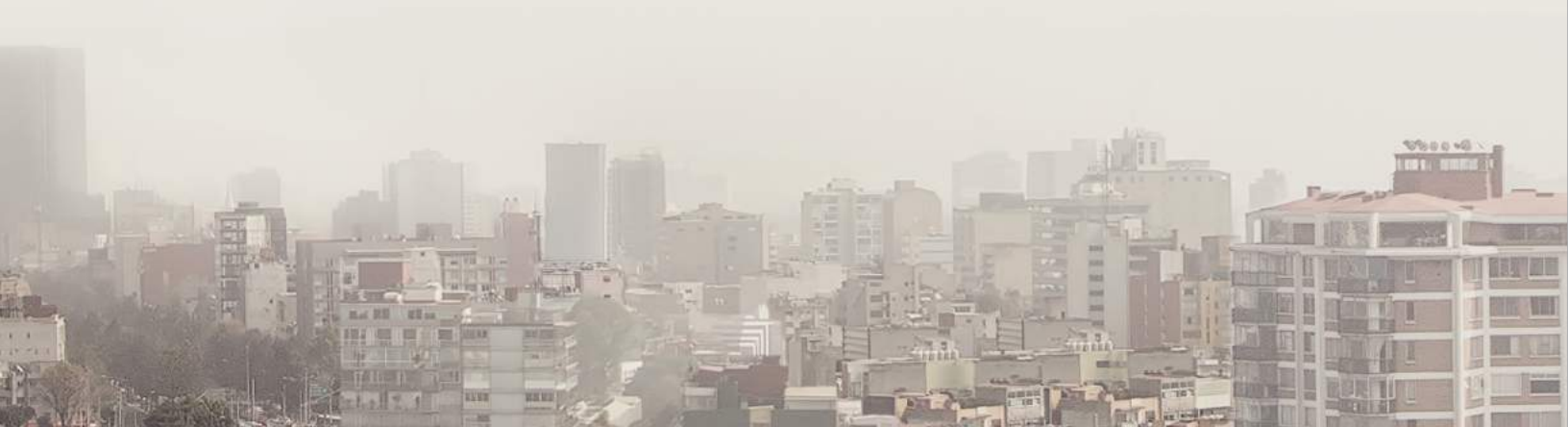
cal, and are related to the increase of competitiveness, innovation and inclusiveness.

 **CE1. INCREASED PRODUCTIVITY**

For the purposes of the study, increasing productivity means the improvement of processes to obtain more production or less waste from the same inputs. This cobenefit

derives from a more efficient use of resources -including energy, water, soil and labor- that can result from the implementation of climate actions, particularly mitigation and ecosystems-based adaptation measures.

 <b>Action:</b> modification of productive processes	 <b>Climate benefit:</b> reduced GHG emissions and/or adapted systems	 <b>Cobenefit:</b> increase in production with equal or less inputs
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## CE2. ADOPTION OF TECHNOLOGICAL CHANGE

Technological change is necessary for the transformation of productive processes, be it through the modification or substitution of materials and equipment, or through changes in the *modus operandi*. Effective mitigation and adapta-

tion will require technological solutions whose impacts could go beyond reducing emissions and increasing resilience. This cobenefit refers to changes, regardless of the scale or degree of innovation, in industrial instruments and procedures of a certain sector or product that have a positive effect on the system.



**Action:** modification of productive processes



**Climate benefit:** reduced GHG emissions and/or adapted systems



**Cobenefit:** technological improvement that can be replicated by others



## CE3. BUSINESS CREATION

Investments on climate action open up multiple market niches that can be exploited by entrepreneurs and investors from other sec-

tors. This cobenefit refers to the multiple business opportunities that can arise from both mitigation and adaptation measures, with benefits to the local and national economy.



**Action:** development of climate-friendly products and services



**Climate benefit:** reduced GHG emissions and/or adapted systems



**Cobenefit:** new companies that promote competitiveness



## CE4. EMPLOYMENT CREATION

Although the correlation is not always direct, mitigation and adaptation actions can promote the creation of employment opportunities (Clarke L., 2014) through investments that have an impact on different value chains. This

cobenefit refers specifically to the potential of climate actions to create green jobs, defined as decent jobs that contribute to preserve or restore the environment, usually in companies whose operation complies with environmental, social inclusion and gender equality criteria (ILO, 2016).



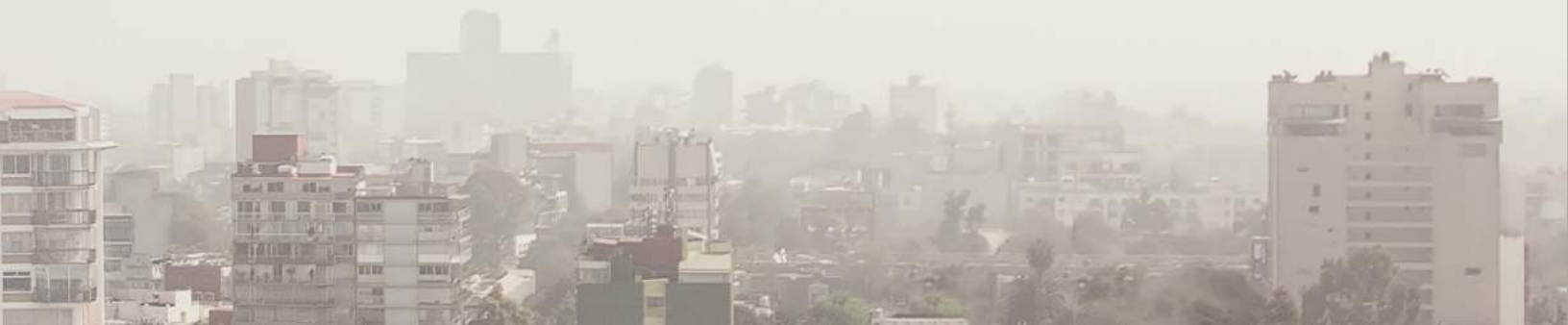
**Action:** modification of processes and/or creation of new companies



**Climate benefit:** reduced GHG emissions and/or adapted systems



**Cobenefit:** new green jobs available





### CE5. TRANSITION TO EFFECTIVE SUBSIDIES

Subsidies can be used to encourage productive processes and consumption habits that are more consistent with sustainable development. However, subsidies can also work against sustainable development; certain types of subsi-

dies are considered ineffective because the benefit they generate in one sector implies losses in others. This cobenefit refers to the elimination of ineffective subsidies as a result of climate action, particularly those that incentivize the production and consumption of fossil fuels.



**Action:** review of the subsidies policy, with a climate approach



**Climate benefit:** reduced GHG emissions and/or adapted systems



**Cobenefit:** subsidies aligned with the sustainable use of natural resources



### CE6. CONTRIBUTIONS TO ENERGY SECURITY

Mitigation actions, particularly those related to investments in energy efficiency and renewable energy sources, help to diversify and strengthen the energy matrix. Therefore, they can contribute to energy security by reducing different types of risks: geological (availabil-

ity of fuels), geopolitical (accessibility), economic (reasonable prices) and acceptability (environmental and social). In the short term, this cobenefit refers to an increase in the energy sector's ability to react in a timely manner to sudden changes in the balance between supply and demand of different energy sources (IEA, 2014).



**Action:** technological changes in the national energy system



**Climate benefit:** reduced GHG emissions and/or adapted systems



**Cobenefit:** improved energy security



## ENVIRONMENTAL DIMENSION

The group of environmental cobenefits refers to the positive impact of climate action on the condition of water resources, the soil and the atmosphere, as well as on the conservation of

ecosystems, the environmental services they offer and the species that inhabit them. They also include contributions to the reduction of different kinds of pollution.



### CA1. CONSERVATION OF ABIOTIC RESOURCES

Mitigation actions as a whole can discourage investments in the extractive sector, when they are aimed at reducing the use of fossil fuels or other subsoil materials. The reduction of ex-

traction levels, or the adoption of more environmentally sustainable extraction patterns, facilitate the conservation of abiotic resources. This cobenefit particularly refers to avoiding the extraction of fossil resources, as well as virgin metals and minerals.



 <p><b>Action:</b> modification of productive processes or social behaviors</p>	 <p><b>Climate benefit:</b> reduced GHG emissions</p>	 <p><b>Cobenefit:</b> reduction in the rate of extraction of abiotic resources and consequent loss of habitat</p>
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### CA2. INCENTIVES FOR A CIRCULAR ECONOMY

Mitigation actions in the waste sector are usually associated with the promotion of integrated waste management schemes. This can include measures to reduce waste generation,

as well as the use of waste to produce energy. This, in turn, allows for the reduction of different sectors' demand for virgin natural resources, and contributes to the consolidation of circular economy systems.




 <p><b>Action:</b> modification of waste flow management processes in any system</p>	 <p><b>Climate benefit:</b> reduced GHG emissions</p>	 <p><b>Cobenefit:</b> reduction of waste generation and more efficient use of natural resources</p>
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### CA3. IMPROVEMENT IN THE CONDITION OF WATER RESOURCES

Both mitigation and adaptation measures can be directly linked to adjustments in the characteristics and operation of the water system (including to the technical systems that control extraction, distribution, consumption and recycling), or indirectly generate improvements

in it, by impacting on related elements such as soil and vegetation. Some adaptation measures even focus explicitly on promoting the integral management of watersheds. This cobenefit refers to improvements in water management resulting from climate action, which contributes to ensuring both its quality (adequate for human consumption) and its availability.

 <p><b>Action:</b> modification of water management processes and/or their connected elements</p>	 <p><b>Climate benefit:</b> reduced emissions and/or adapted water systems</p>	 <p><b>Cobenefit:</b> higher quality water resources available</p>
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#### CA4. IMPROVED CONDITION OF SOIL

Some mitigation and adaptation actions, particularly those related to the land use and forestry sector, have positive impacts on the condition of the soils, by reducing their deterioration from the use of intensive agricultural and livestock methods. This cobenefit is particularly important because soils are the

base of the world's food systems and a basic element of multiple ecosystems. Moreover, increasing the amount of organic matter in the soil allows for better carbon absorption, both in the soil itself and in the biomass associated with it. Additionally, the soils' connection to aquifers makes improving their condition important for ecosystem services and functional water systems.





 <p><b>Action:</b> modification of soil management processes and/or their connected elements</p>	 <p><b>Climate benefit:</b> captured carbon and/or adapted systems</p>	 <p><b>Cobenefit:</b> improved soil condition</p>
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#### CA5. IMPROVED CONDITION OF ATMOSPHERIC BASINS

Improving air quality is the most cited cobenefit of mitigation actions. This cobenefit refers

especially to the reduction of NO<sub>x</sub>, SO<sub>2</sub> and black carbon emissions deriving from mitigation measures, with positive health effects both for people and ecosystems.




 <p><b>Action:</b> modification or elimination of combustion processes</p>	 <p><b>Climate benefit:</b> reduced GHG and short-lived climate pollutant emissions</p>	 <p><b>Cobenefit:</b> improved air quality</p>	 <p><b>Indirect cobenefit:</b> improved public health</p>
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#### CA6. IMPROVED MANAGEMENT OF ECOSYSTEM SERVICES

Actions to combat climate change can contribute to the conservation of ecosystems and the goods and services they provide. Ecosystem services are benefits derived from the natural functioning of ecosystems, including both the benefits of biogeochemical cycles (e.g. aquifer recharge through the water cycle), and non-

material benefits such as aesthetic, cultural and recreational values (CIFOR, 2016). This cobenefit refers to the improved management of these services through mitigation and/or adaptation actions that foster an integrated landscape approach, i.e. comprehensive planning based on each territory's natural elements (water, soil, atmosphere and biodiversity), human activities and production processes.




 <p><b>Action:</b> incorporation of an integrated landscape approach into territorial planning</p>	 <p><b>Climate benefit:</b> captured carbon and/or adapted systems</p>	 <p><b>Cobenefit:</b> improved management of ecosystem services</p>
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### CA7. IMPROVED MANAGEMENT OF BIODIVERSITY

The benefits associated with biodiversity are considered apart from ecosystem services because of their natural importance. Biodiversity management is understood as the conservation of species of flora and fauna through measures for their protection and sustainable use. This cobenefit refers to improvements in biodiversity management through mitigation and/or

adaptation actions that promote an integrated landscape approach, particularly territorial planning measures relating to the creation of ecological corridors and the promotion of different varieties of local food crops. These, in turn, have a positive impact on the conservation of species and create new business opportunities that enhance the multifunctionality of agricultural and forestry products.



 <p><b>Action:</b> incorporation of an integrated landscape approach into territorial planning</p>	 <p><b>Climate benefit:</b> captured carbon and/or adapted systems</p>	 <p><b>Cobenefit:</b> improved management of biodiversity</p>
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### CA8. IMPROVED MANAGEMENT OF NOISE

Although the relationship is more indirect, climate action can result in a reduction of noise, which has a positive impact on human communities and animal species. From an anthropocentric approach, this impact is mainly related to mitigation measures in the transport sector, which can reduce noise and

thus have positive effects on health by reducing stress (WHO, 2011). With regards to animals, noise reduction can enhance the conservation of biodiversity -considering, for example, that the noise caused by maritime traffic affects species such as cetaceans, whose communication depends on the transmission of sound waves.

 <p><b>Action:</b> modification of products, processes and/or social behaviors</p>	 <p><b>Climate benefit:</b> reduced GHG emissions</p>	 <p><b>Cobenefit:</b> improved human and animal health through the reduction of noise</p>
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### 2.1.1.2. Identification of relationships

Once the key cobenefits of climate action were identified, those that could potentially be associated with Mexico's NDC measures and the SDGs were registered. Regarding the former, the link between potential cobenefits and the NDC was made by sector, and not by individual measure<sup>5</sup>. Although the study recognizes that not all measures generate the same cobenefits (neither in type nor magnitude), this approach allows for the identification of the main sectoral linkages and opportunities for synergy. Regarding the latter, all 169 SDG targets were analyzed for possible connections with mitigation and/or adaptation to climate change, based on the evidence provided by the literature review. The 64 SDG targets that were found to have an impact on mitigation and/or adaptation were then linked to their potential cobenefits.

### 2.1.1.3. Network analysis

In order to graphically represent the numerous interconnections between both agendas, the data was modeled in a [network generation software](#) which allows for the identification of linkages between NDC measures and SDG targets through their associated cobenefits. The resulting network accounts for all the one-to-one relationships between NDC measures and SDG targets.

The network allows for a more detailed visualization of the intersections between NDC measures and SDG targets, showing multiple overlaps of the two agendas. The following standard metrics were used to analyze the network:

- *Degree of connectivity*: number of connections that an element has in the network.

<sup>5</sup> The measures contained in Mexico's NDC are still of a general nature, since a detailed implementation plan is in the process of being developed. Therefore, the linkage with cobenefits is identified at the sector level. However, as these measures become better characterized in the implementation plan (including information on the specific policies and projects that will be carried out to comply with them, as well as their sectoral scope and geographic coverage), their association with cobenefits can be identified with greater precision.

- *Proximity*: distance between an element and other elements in the network that have a high degree of connectivity.

The values produced by the modelling software help identify the most important nodes, thus facilitating planning processes with an integrated vision for the implementation of the 2030 Agenda and the Paris Agreement.

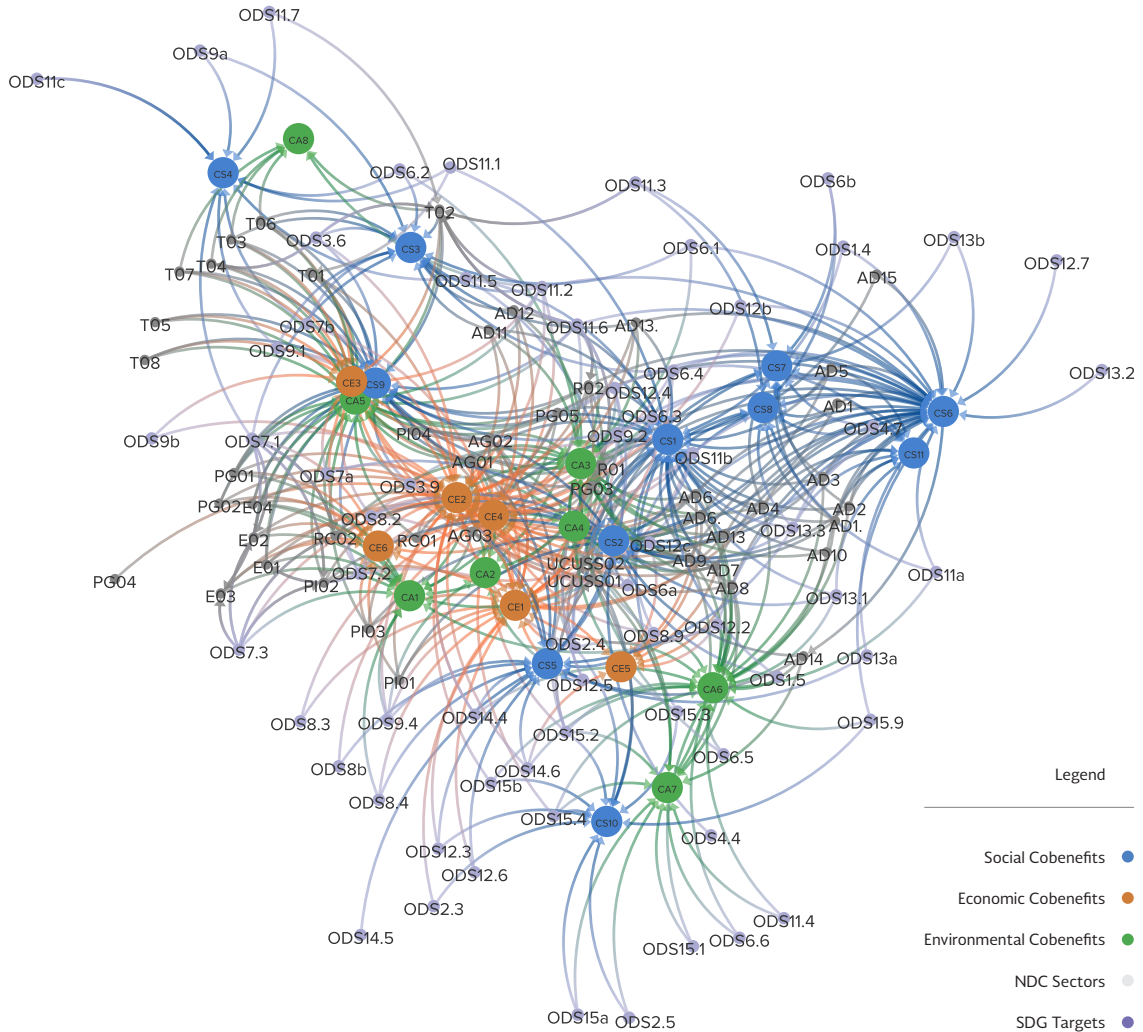
### 2.1.2. Catalog of criteria for the evaluation of plans, programs and projects

In order to translate the results of the study into practical guidelines for public officials in relevant sectors, a catalog of criteria was developed to evaluate government actions or interventions according to their potential cobenefits. This catalog is flexible and adapts to the requirements of different contexts and users.

The catalogue contains a set of criteria and methodologies to facilitate the prioritization of NDC measures according to their cobenefits, as well as to identify elements of a favorable institutional framework for their effective implementation and the innovation functions that can improve the performance of each intervention.

The most important part of the catalogue consists of a multicriteria analysis tool to prioritize NDC measures according to their impact on cobenefits, which can be weighted with different degrees of importance. The process to assign different weights to each cobenefit is ideally carried out through discussions with multiple stakeholders. One such weighting exercise was conducted in the aforementioned strategic dialogue that took place in Mexico City in June 2017, in which experts from government, private sector, civil society and academia participated. [Figure 3](#) shows the prioritization of NDC measures that resulted from this exercise. It should be noted that this prioritization could change if the same exercise was carried out with different actors.

Figure 2. Modelled network of interconnections between NDC measures and SDG targets.



The catalogue includes guidelines for the use of a strategic planning tool called *backcasting*, through which a group of relevant stakeholders defines a desirable future, and then identifies the steps and instruments that are needed to reach it. A *backcasting* exercise was also carried out at the strategic dialogue, in order to get actors from different sectors to imagine future scenarios in which both the NDC and the SDGs have been met, and then

use the interconnection clusters identified by the study to define joint actions to reach them. Participants in this exercise were also encouraged to make use of other guidelines in the catalogue, including the innovation functions proposed by Hekkert *et al* (2007) and the elements for a favorable institutional framework for development, as proposed by economists Acemoglu and Robinson (2012).

Figure 3. Prioritization of NDC measures through the multicriteria analysis tool, as calibrated by the group of experts who participated in the strategic dialogue of June 2017.



More than a third (38%) of SDG targets could contribute to the mitigation of GHG emissions and/or the adaptation of people and communities to the impacts of climate change.

## 2.2. MAIN RESULTS

### 2.2.1. Cobenefits associated with Mexico's NDC

NDC measures and SDG targets were first analyzed separately to identify their potential cobenefits. The five cobenefits that have the greatest number of connections to NDC measures are the adoption of technological change (CE2), reduced vulnerability (CS1), improved condition of atmospheric basins (CA5), improved public health (CS9) and improved public management (CS6). There was only one cobenefit that could not be associated to any of the NDC measures, namely improved building standards (CS4). However, this will change once the NDC implementation plan is finalized, since it will probably articulate existing actions in this area.

Details of the cobenefits associated to the NDC measures (by sector) and their justification can be consulted in the full study.

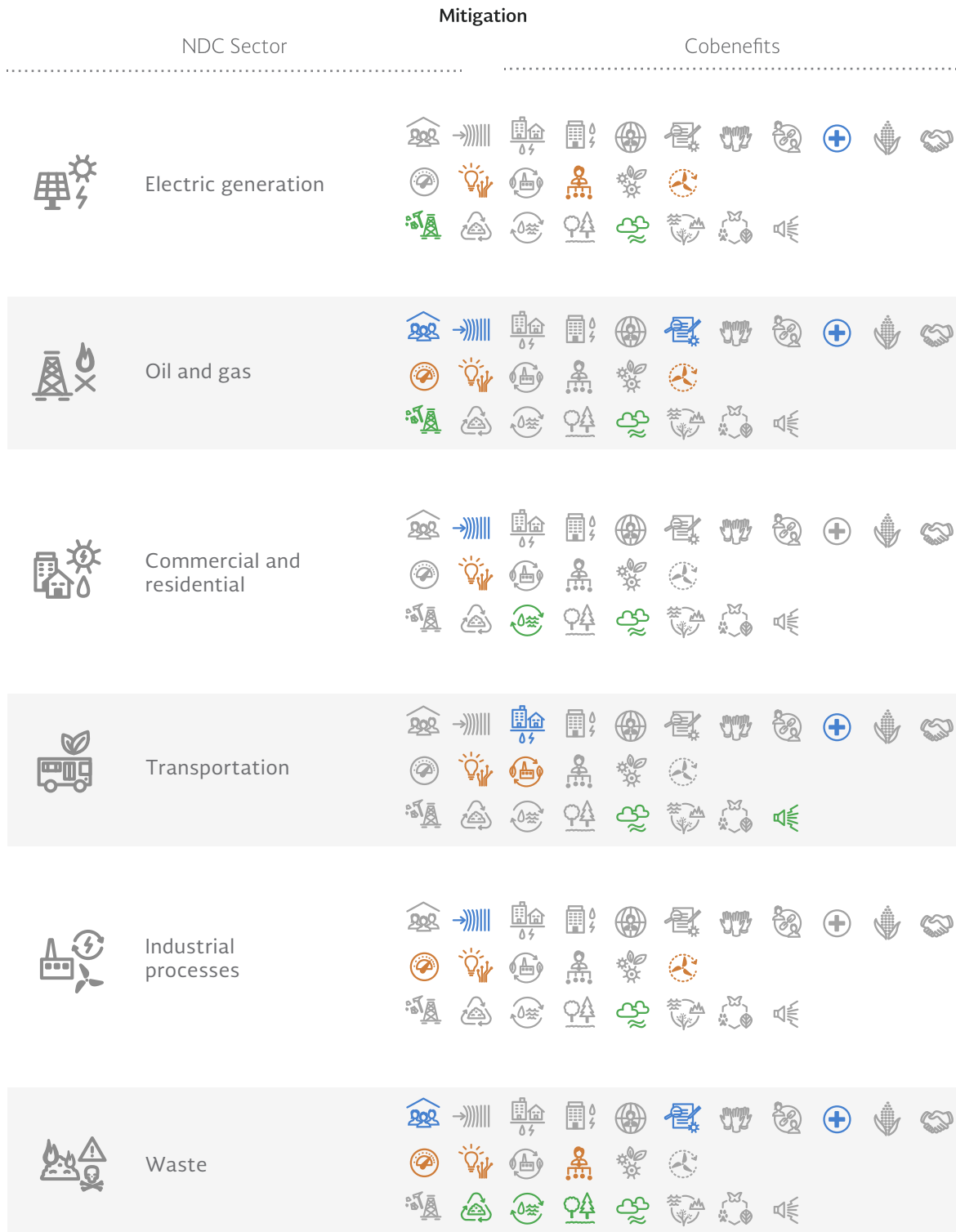
The analysis shows that the sectors with the best performance (number of potential cobenefits in relation to the total number of cobenefits) are the Livestock and Agriculture

sector and the Land Use, Land Use Change and Forestry (LULUCF) sector, both with the potential to generate thirteen cobenefits out of the twenty-five listed. The sector with the least connections to cobenefits is the Commercial and Residential sector, with only four potential cobenefits. This is because the measure contemplated in the sector (transition to efficient heaters) has a limited impact.

### 2.2.2. Cobenefits associated with the SDGs

64 SDG targets were found to be related to climate action. An analysis of these targets showed that the SDGs with the greatest number of associated cobenefits were SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Production and Consumption), SDG 6 (Clean Water and Sanitation), and SDG 7 (Affordable and Clean Energy). This shows that the implications of the 2030 Agenda for the fulfillment of climate commitments go far beyond SDG 13 (Climate Action). More than a third (38%) of SDG targets could contribute to the mitigation of GHG emissions and/or the adaptation of people and communities to the impacts of climate change.

Figure 4. Potential cobenefits of the implementation of Mexico’s NDC (by sector).



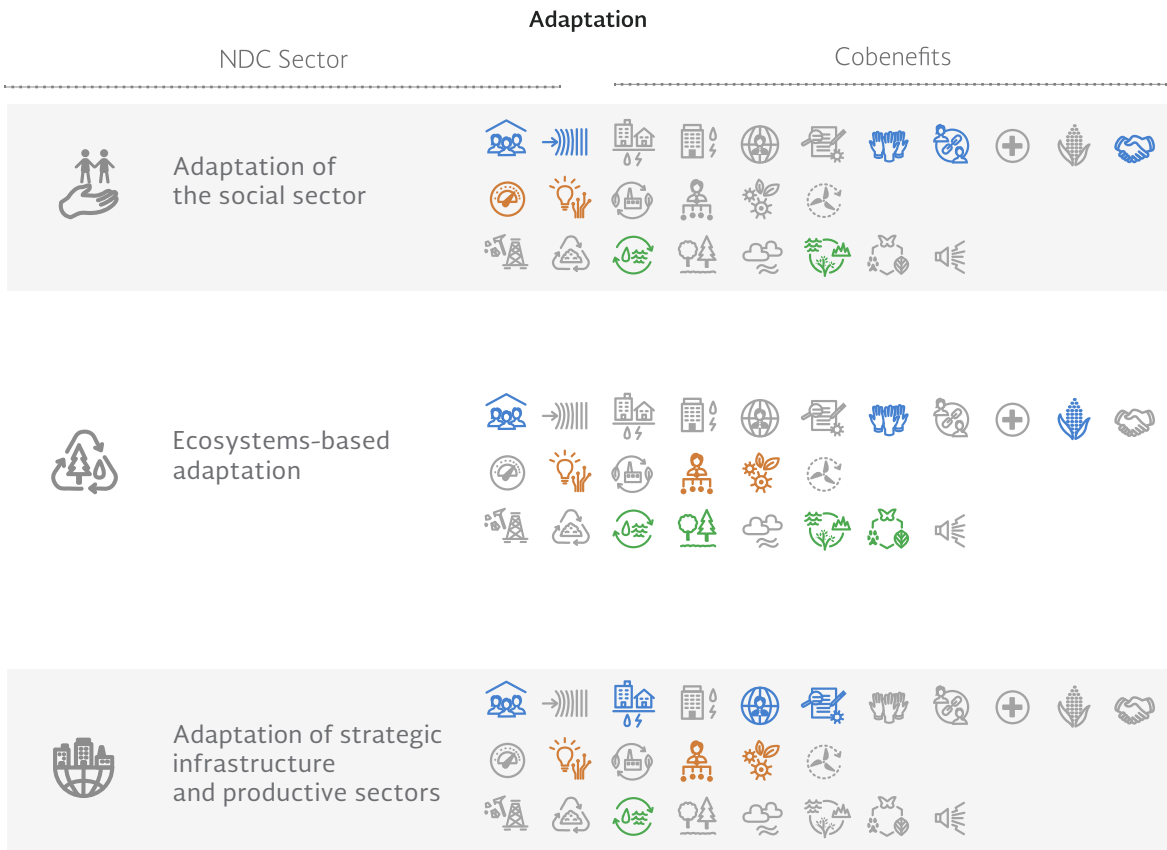
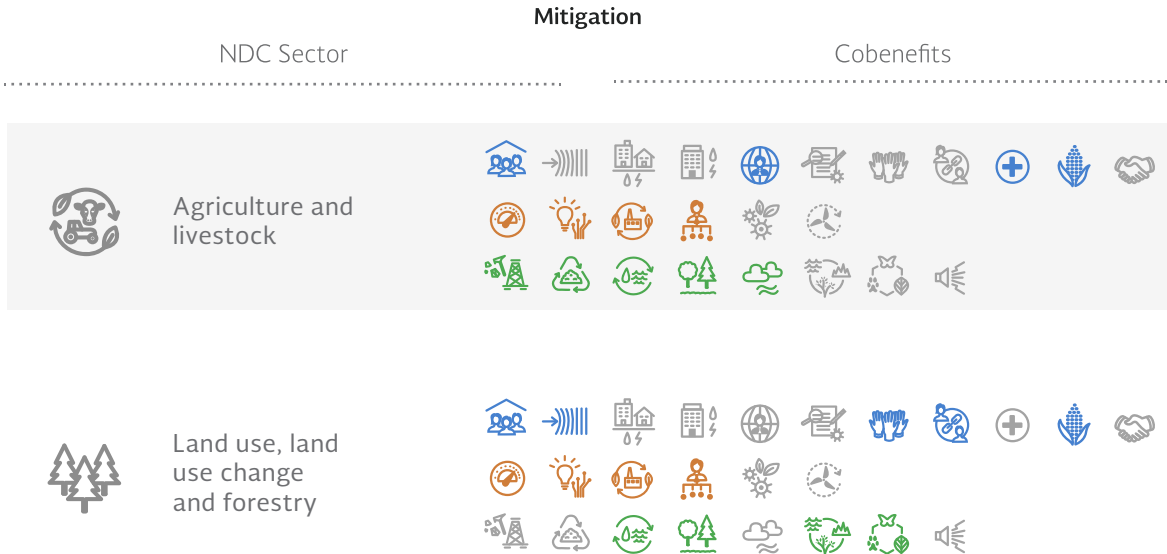


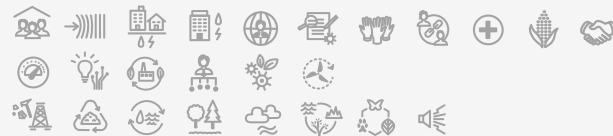
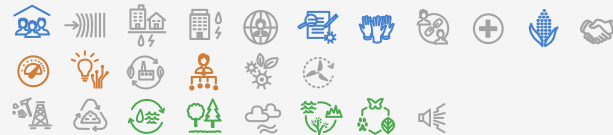
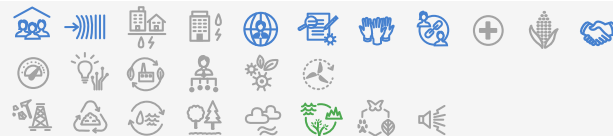
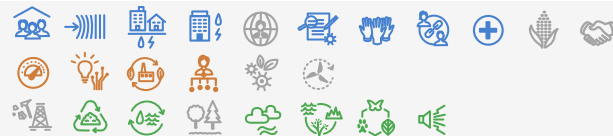


Figure 5. Potential cobenefits of the implementation of the 2030 Agenda (by SDG).



SDG

Cobenefits



There is a greater potential to generate cobenefits if the SDGs are implemented together, than if individual targets or SDGs are prioritized and implemented individually.

A methodological note may be required to understand why four SDGs (SDG 5 Gender Equality, SDG 10 Reduced Inequalities, SDG 16 Peace, Justice and Strong Institutions, and SDG 17 Partnerships for the Goals) seem to have no specific relationship with climate cobenefits. The reason for this is that the analysis seeks to reflect concrete mitigation and/or adaptation potential rather than a perspective or instrument to implement a measure. Although there is a clear link between these issues and climate change (e.g. inequality increases people's vulnerability to its adverse effects), the implementation of these SDGs would have an indirect and much more contingent impact on the fulfillment of climate goals (e.g. women's empowerment in political decision-making processes could increase their communities' adaptive capacity). Therefore, the targets contained in these SDGs cannot be directly associated to climate cobenefits in their own right. It must be noted, however, that the study recognizes the cross-cutting importance of gender equality, human rights, the reduction of inequalities, the Rule of Law, and the creation of multi-stakeholder partnerships for the effective implementation of each and every one of the NDC's mitigation and adaptation measures.

Similarly, the limited number of cobenefits assigned to SDG 13 could draw attention. This is due to the content of SDG 13, which does not provide specific mitigation objectives, but rather focuses on the importance of climate action as an essential element of sustainable development. This generality can be explained by the fact that the 2030 Agenda was adopted four months before the Paris Agreement, so specific commitments were purposefully not included under SDG 13 in order not to bias the COP 21 negotiations. SDG 13 is in fact the only one that explicitly recognizes the competence of another forum, the UNFCCC, to establish global agreements on this issue. Therefore, this SDG focuses mainly on adaptation, integration of climate measures in national policies and plans, capacity building and international financing, instead of more specific mitigation goals.

Another important observation is that the targets with the most potential cobenefits are not always within the SDGs that have the highest number of intersections as a whole. This confirms what some studies (Le Blanc, 2015) have claimed, in that there is a greater potential to generate cobenefits if the SDGs are implemented together, than if individual targets or SDGs are prioritized and implemented individually.

Table 4. SDG targets with the potential to generate the greatest number of climate cobenefits.

Target  
**2.4**

By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

Target  
**6.4**

By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.

Target  
**7.2**

By 2030, increase substantially the share of renewable energy in the global energy mix.

Target  
**11.2**

By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.



### 2.2.3. Linking the NDC and the SDGs through their shared cobenefits

Once the NDC measures and the SDG targets were individually associated to their potential cobenefits, both data sets were uploaded to the network-modelling software in order to identify relevant connections. The network analysis showed that both agendas share 82% of the collection of twenty-five cobenefits listed (the two exceptions are the cobenefit referring to subsidies, and the one referring to noise management). The analysis also allowed for the identification of the NDC measures that have the greatest potential to contribute to the achievement of the 2030 Agenda.

The cobenefits with the most connections in the system are the adoption of technological change, improved public management and improved condition of water resources. These three cobenefits connect two SDG targets related to water (6.3 and 6.4) to seven NDC measures, only one of which belongs to the mitigation component:

- Achieve zero methane emissions in landfills by 2030
- Increase ecological connectivity and carbon capture through conservation and restoration
- Increase carbon sequestration and coastal protection through the recovery of marine and coastal ecosystems
- Promote synergies between REDD+ actions
- Promote integrated water management in its different uses (agricultural, ecological, urban, industrial, domestic)
- Guarantee and monitor the treatment of urban and industrial wastewater in human settlements larger than 500,000 inhabitants
- Incorporate climate change criteria in agricultural and livestock programs

The network analysis shows that ten of the NDC's mitigation measures contribute to the achievement of ten SDG targets. Out of these, the ones with the most potential cobenefits are the ones related to urban planning and the elimination of methane emissions in the waste sector. The network shows a myriad of cobenefits of mitigation actions which, if properly communicated, could significantly reduce the perceived costs associated with the transition to a low carbon economy and maximize their potential to generate positive returns in the economy.

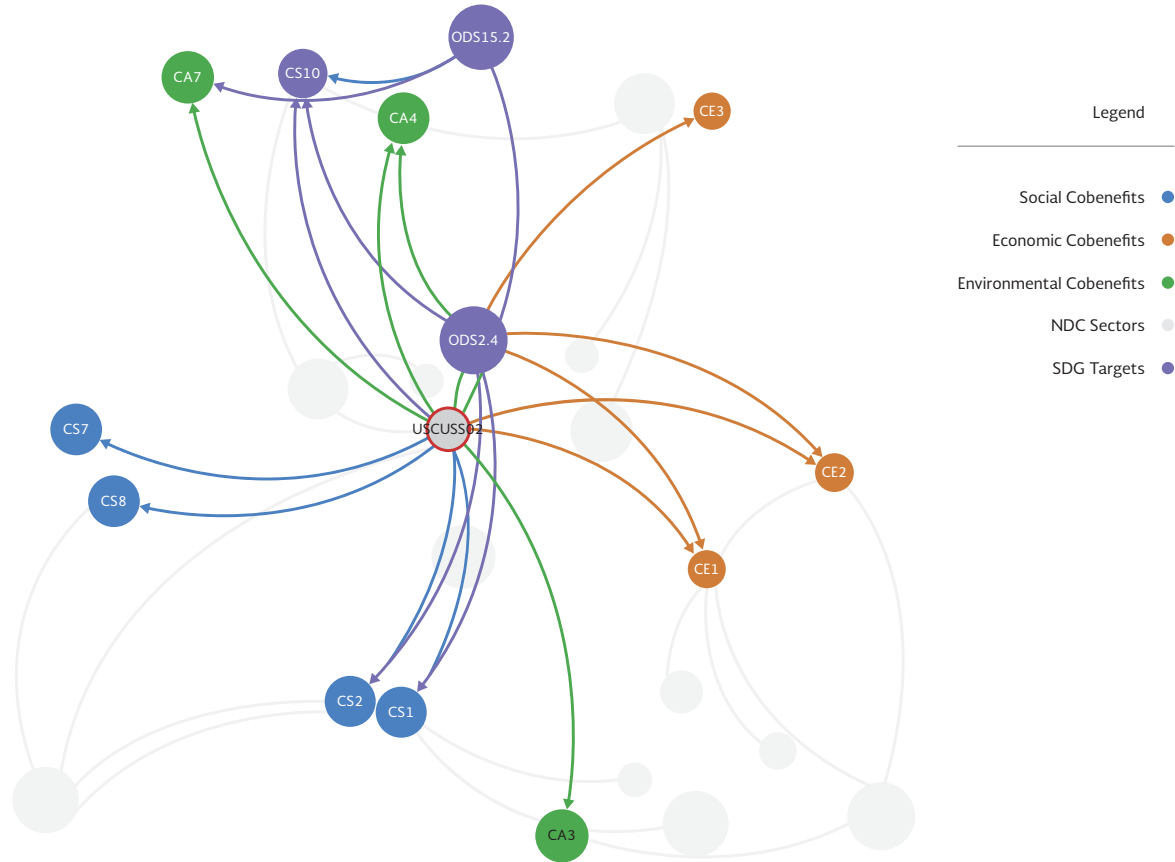
On the other hand, practically all of the NDC's adaptation measures are related to the SDGs, but a strong connection was only found for twenty-three targets. Out of all the adaptation measures in the NDC, the one with the most potential cobenefits is the one aimed at incorporating gender perspective and a human rights approach to the implementation of climate commitments. Greater attention to the cobenefits of adaptation actions can significantly expand the impact of the NDC on fundamental development objectives, such as poverty reduction.

### 2.3. RECOMMENDATIONS BY SECTOR

Modeling the interconnections in the system helped identify the NDC sectors that have the most potential cobenefits. A more detailed analysis then allowed for the identification of "clusters" of NDC measures and SDG targets that, if implemented coherently, could maximize results on both agendas.

For example, Figure 6 shows the connections for one of the measures in the LULUCF sector (Sustainable forest management and increased forest productivity). A close-up to this particular measure shows that its implementation could generate eleven cobenefits that contribute mainly to two SDG targets.

Figure 6. Example – Cluster of connections for a measure of the LULUCF sector.



**SDG 2.4**

By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.



**SDG 15.2**

By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.



**Social Cobenefits**

- Reduced vulnerability
- Increased resilience
- Strengthened governance
- Strengthened social cohesion
- Contributions to food security



**Economic Cobenefits**

- Increased productivity
- Adoption of technological change
- Business creation



**Environmental Cobenefits**

- Improved condition of water resources
- Improved condition of soil
- Improved management of ecosystem services

This visualization helps identify connections between a land use related mitigation measure and issues such as food security, and therefore design more comprehensive solutions that might contribute to the achievement of both NDC commitments and SDG targets. In this case, for example, the introduction of agroforestry innovations in the implementation of the NDC measure could help enhance its positive impact on the achievement of SDG target 2.4.

These cluster analyses allowed for the systematization of a series of recommendations to produce the largest possible number of co-benefits through the implementation of the NDC, thus contributing to the accomplishment of the SDGs. These considerations are summarized below.

#### **ELECTRICITY GENERATION**

- Accelerate investment in renewables and disinvestment in conventional thermo-electric, coal and other fossil fuel technologies.
- Increase electric generation through bioenergy and promote innovation for the multi-functionality of agricultural and forestry resources.
- Enhance energy efficiency to obtain the maximum possible benefit from the fossil resources that continue to be exploited.

#### **WASTE**

- Strengthen the institutions that ensure the proper management of all residual flows to the atmosphere, soil and water.
- Complement the measures for the commercial and residential sector to make them more comprehensive, taking SDG 12 as a reference.
- Establish measures to encourage the circular economy, promoting the commercialization of services versus products, and reducing residual flows as much as possible.

#### **URBAN MANAGEMENT, INFRASTRUCTURE AND TRANSPORTATION**

- Strengthen and complement the regulation that mandates industries in the construction sector to include climate considerations in their choice of building areas, materials and designs.
- Introduce more ambitious measures to strengthen the connectivity and multi-modal nature of transportation, prioritizing public electric and non-motorized means of transport.
- Ensure that new infrastructure projects consider climatic implications (both adaptation and mitigation) and are evaluated under pre-defined sustainability and resilience criteria.

#### **AGRICULTURE AND FOREST MANAGEMENT**

- Ensure that agricultural and forestry project planning in rural areas is carried out with an integrated landscape management approach.
- Install monitoring systems to track the state of natural resources associated with rural agricultural and forestry production units.
- Identify and systematize sustainable agricultural and forestry practices, institutionalize them, and enforce them through regulations and incentives.
- Correct failures in the subsidies granted to rural producers, especially the ones given to agricultural producers for irrigation activities.
- Include the fishing sector in the mitigation and adaptation objectives.

#### **ADAPTATION AND RESILIENCE**

- Associate the main tasks identified by region in the National Atlas of Vulnerability to Climate Change with the SDGs, so that adaptation priorities are aligned with development priorities at the subnational level and implemented in a coordinated manner.

**AWARENESS AND COMMUNICATION**

- Include measures in the NDC to incentivize changes in behavior and social standards that have a high potential for emissions reduction, e.g. to discourage diets with high consumption of meat products or associated with long supply chains.

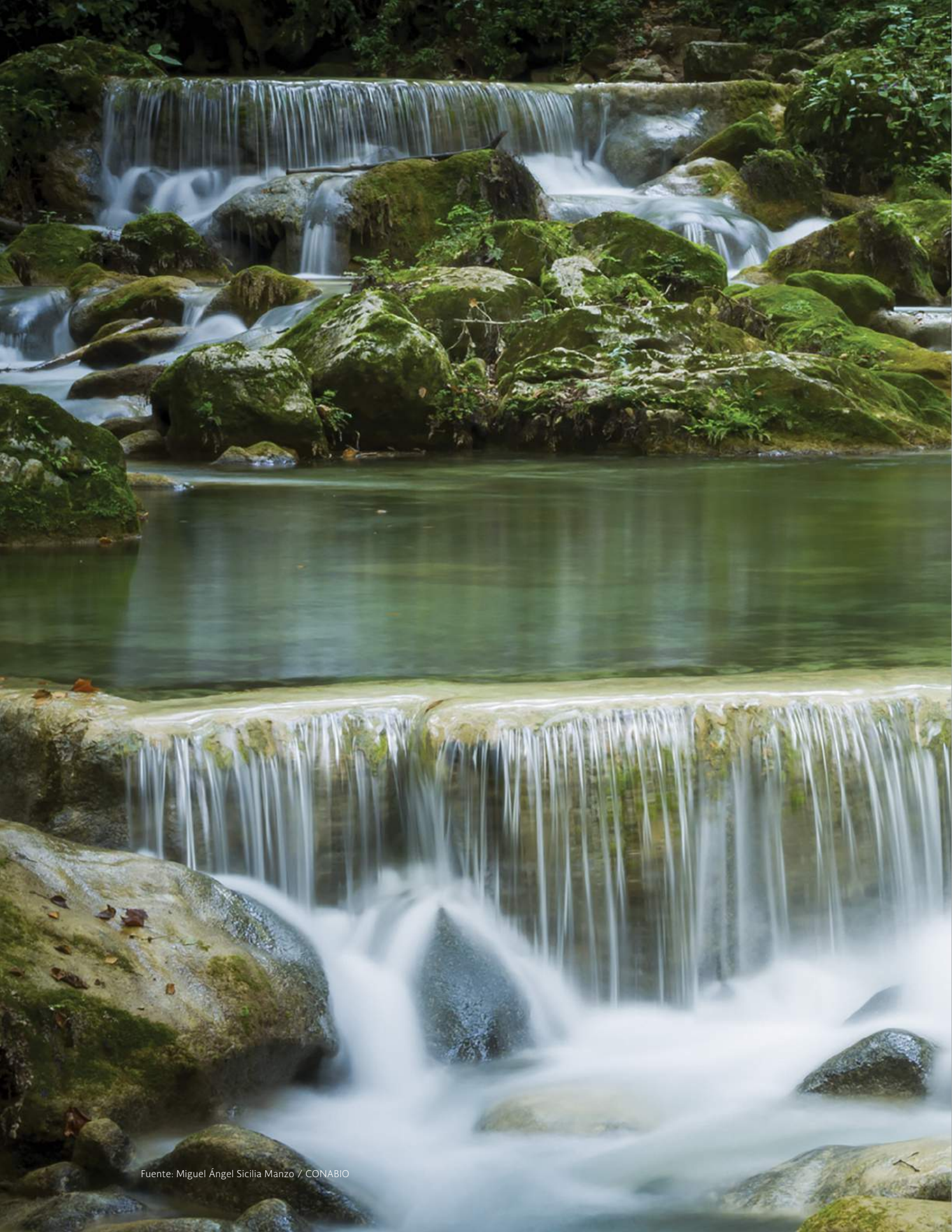
**INSTITUTIONAL STRENGTHENING AND LEGISLATIVE HARMONIZATION**

- Strengthen the National Institute for Ecology and Climate Change (INECC) and its collaboration with universities and research centers throughout the country, in order to

identify concrete synergies between programs and public policies in the fields associated with the NDC-SDG clusters.

- Strengthen the institutionalization of climate goals in environmental legislation, and empower the Federal Attorney for Environmental Protection (PROFEPA) and the Agency for Safety, Energy and Environment (ASEA) to ensure the enforcement of environmental regulations.
- Harmonize the subsidies granted by public institutions, eliminating or adjusting those that contradict or hinder the achievement of the NDC and/or the SDGs.





# 3

## Key messages derived from the analysis

### **THE CHALLENGE LIES IN NATIONAL IMPLEMENTATION**

At the global level, the connection between the 2030 Agenda and the Paris Agreement has been increasingly recognized. Between 2018 and 2020, the calendars of both international processes present multiple opportunities to strengthen the interrelation of the two agendas. In 2018, Mexico will present its second Voluntary National Review before the High Level Political Forum (HLPF) on Sustainable Development, while in the UNFCCC negotiations, a Facilitative Dialogue will prompt countries to raise the ambition of their NDCs. In 2019, the HLPF will meet for the first time at Head of State level under the auspices of the UN General Assembly, and SDG 13 – Climate Action, will be part of the thematic approaches for that year's edition. In 2020, countries will prepare to start the validity of their NDC and its review every five years.

However, despite their deep interrelation, both international processes continue to operate independently within the United Nations system. Therefore, the key to their integration lies in their national implementation processes. For Mexico, the government transition that will follow after the July 2018 elections, and the formulation of the new administration's National Development Plan (NDP), represent an invaluable opportunity to ensure the coordinated and coherent implementation of both agendas from the national planning process, with its corresponding budgetary impact.

The fulfillment of both agendas compels governments to explore comprehensive solutions and adopt a systemic approach that considers a broad array of actors involved. This represents a major challenge for national governments that usually operate through planning processes fragmented by sector. In this context, the preparation of Mexico's next NDP is a valuable

opportunity to integrate traditionally isolated sectors through a planning process focused on common benefits.

According to one of the most frequent findings during the study's interview phase, it is crucial that synergies between the climate agenda and the 2030 Agenda translate to congruent actions within the sectoral programs derived from the NDP, in order to minimize difficulties in budget allocation and facilitate inter-agency coordination. Ideally, they should also be reflected in integrated evaluation and monitoring processes.

**THE INTEGRATION OF NATIONAL IMPLEMENTATION PROCESSES IS CRUCIAL TO INCREASE IMPACT, REDUCE COSTS, AND AVOID DUPLICATION AND TRADEOFFS**

The development of a comprehensive strategy for the accomplishment of the SDGs and the NDCs is fundamental for all countries for two main reasons.

The first is that governments, particularly in developing countries, operate with limited capabilities and resources. In this context, it is crucial to ensure that all public interventions and investments have the greatest possible impact at the lowest possible cost. The analysis of potential synergies between climate and sustainable development actions motivates governments to design and implement public policies that are complementary and mutually-reinforcing, in order to obtain the greatest possible number of benefits. This includes eliminating or merging policies and programs that duplicate functions or designing and executing policies from different sectors with a view to maximize complementarities.

The second is that tradeoffs can also arise between actions to accomplish the NDC and the SDG. Only with a comprehensive vision of both agendas and their implications for national policy can governments ensure that public action in all sectors is consistent with the achievement of the two sets of commitments.

**FOCUSING ON COBENEFITS FACILITATES THE MAINSTREAMING OF CLIMATE ACTION IN THE DEVELOPMENT AGENDA, AND THEREFORE THE INVOLVEMENT OF DIFFERENT SECTORS AND ACTORS**

The environmental sector often finds resistance for the adoption of policies that require the consistent and permanent participation of other sectors. Climate change continues to be considered as an exclusively environmental problem, despite its multiple sectoral links, and public officers lack a general understanding of the implications of climate change in other policy areas. The focus on cobenefits is therefore strategic in order to appeal to the interests and needs of other sectors, changing the narrative of climate action from a necessary burden to an untapped opportunity. In other words, it allows for climate action to be understood as a lever that facilitates the achievement of the SDGs. Focusing on cobenefits also fosters the development of policies that simultaneously consider the global problem of climate change and local problems such as air pollution, thus helping solve local development needs such as clean transportation (Clarke, et al., 2014).

In Mexico, this has been taken up in the General Law on Climate Change (LGCC) which, in Article 64 on the national mitigation policy, mandates the prioritization of actions that have the greatest potential, mandates the prioritization of actions that have the greatest potential for reducing emissions at the lowest cost, and at the same time produce social, environmental and economic benefits. This is also the case of the National Climate Change Strategy, which mandates the prioritization of mitigation actions that generate health cobenefits for the population. Social and environmental cobenefits are also considered in the list of criteria for the prioritization of climate actions, thus going beyond the basic considerations of mitigation potential and marginal cost of abatement.

Furthermore, highlighting the cobenefits of the NDC and their relationship with the SDGs could increase certain stakeholders' willingness to undertake climate action. Translating climate measures into avoided costs or potential gains could also increase the political acceptability of certain policies and improve inter-ministerial coordination, both at the federal level and with state governments.

Finally, the narrative of cobenefits has a higher awareness-raising power, since the listed cobenefits are more tangible to the general public than reduced emissions. In terms of communication, this approach can represent a common language among sectors and actors, both governmental and non-governmental, which facilitates the joint implementation of the climate and development agendas.

**COBENEFITS ARE POTENTIALITIES; IT IS NECESSARY TO INTEGRATE THEM IN THE NATIONAL PLANNING PROCESS SO THEY CAN MATERIALIZE IN REALITY**

Through experiences and case studies from other countries, the study confirms that mitigation and adaptation policies can generate the listed cobenefits. However, while some policies will naturally generate certain cobenefits (e.g. investments in renewable energy will almost certainly lead to job creation), what is most commonly found in project reports is that most cobenefits only materialize under certain conditions. There is a high potential for cobenefits to be maximized in Mexico in the future, but only if the next NDP and derived sectoral programs recognize and incorporate them explicitly.

It should be noted that the generation of cobenefits depends on the scope of the project, standard or program and on the particularities of the area where they are implemented, as well as on the type of technology used. For example, any mitigation or adaptation measure could promote governance if it is designed and

implemented with a participatory approach, but for this to actually happen, this cobenefit must be considered in the design and execution of the measure itself. It is essential to systematically visualize and consider the generation of cobenefits in Mexico's NDC implementation plan.

**A PENDING RESEARCH AGENDA REMAINS**

The study intends to be a first analysis of potential relationships between the 2030 Agenda and the Paris Agreement for the specific case of Mexico. This analysis does not cover the interrelationships between the commitments specified within each agenda, nor the possible risks and contradictions between them (tradeoffs). This is, however, an important pending agenda for future research on the subject.

Another pending issue is to refine the methodology when a more specific implementation plan is finalized, or if additional, more ambitious actions are established when Mexico's NDC is reviewed as mandated by the Paris Agreement. Once more concrete information on the implementation of the NDC measures is available -including scope and coverage of measures, as well as planning processes and methodological approaches to account for GHG emissions- it will be possible to present more accurate recommendations.

Finally, since the connections presented in the study derive mostly from an association of statements, supported by evidence from the literature, the next step would be to actually quantify the listed cobenefits for the specific case of Mexico. Producing concrete data on the impacts of climate action on the SDGs will facilitate the engagement of new sectors and actors in the implementation of the NDC.



# Conclusions

Climate action is usually thought of as a purely environmental issue and as a burden in terms of resources and efforts. However, the opportunities it brings are rarely considered. Highlighting the multiple cobenefits that could derive from the implementation of the NDC for the fulfillment of the SDGs is an essential step to break with sectoral silos and advance in the formulation of coherent policies for sustainable development. On the other hand, translating climate action into potential benefits increases the political profitability of certain projects, helps improve intersectoral coordination for their implementation, and broadens the involvement of different relevant actors. Aside from what the literature suggests, empirical evidence will confirm the importance of linking both agendas in the national development planning process.

The study summarized here analyzes climate action through its cobenefits in order to make its positive impacts evident beyond the environmental sector. It shows that a systematic consideration of the cobenefits of mitigation actions could maximize their potential to generate positive returns in the economy, while a greater attention to the cobenefits of adaptation actions can significantly broaden their impact on fundamental development objectives, such as poverty reduction.

The study identifies multiple connections between both agendas and offers tools to promote synergies. However, most cobenefits are

only potential. In order for this potentiality to effectively materialize, a strategic and integrated planning is required to prioritize actions according to their cobenefits. Said planning must establish the necessary regulations and incentives, as well as the corresponding budgetary allocations, to promote a greater coordination within the public sector, and between the public sector and other actors. Although it is not always explicitly recognized, there is a shared responsibility between all stakeholders for the design, implementation, monitoring and evaluation of mitigation and adaptation actions that can in turn contribute to the achievement of sustainable development.

Mexico has a unique opportunity to consolidate its climate change policy and take up the leadership of the issue from the President's Office, under the umbrella of the 2030 Agenda and one of its main pillars, the Paris Agreement. The current political juncture allows for an objective evaluation of progress in the outgoing administration, and a thorough preparation to incorporate climate change and sustainable development as a priority for the next one. Promoting the integrated implementation of the NDC and the SDGs will broaden the impact and reduce the cost of actions, while avoiding duplications and tradeoffs in the implementation processes. Only in this way will Mexico be able to comply with the two major international commitments it has acquired for 2030, and beyond.

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This Executive Summary presents the main results of the Study on the Cobenefits of the implementation of Mexico's Nationally Determined Contribution for the accomplishment of the Sustainable Development Goals, which was elaborated by MGM Innova Mexico.

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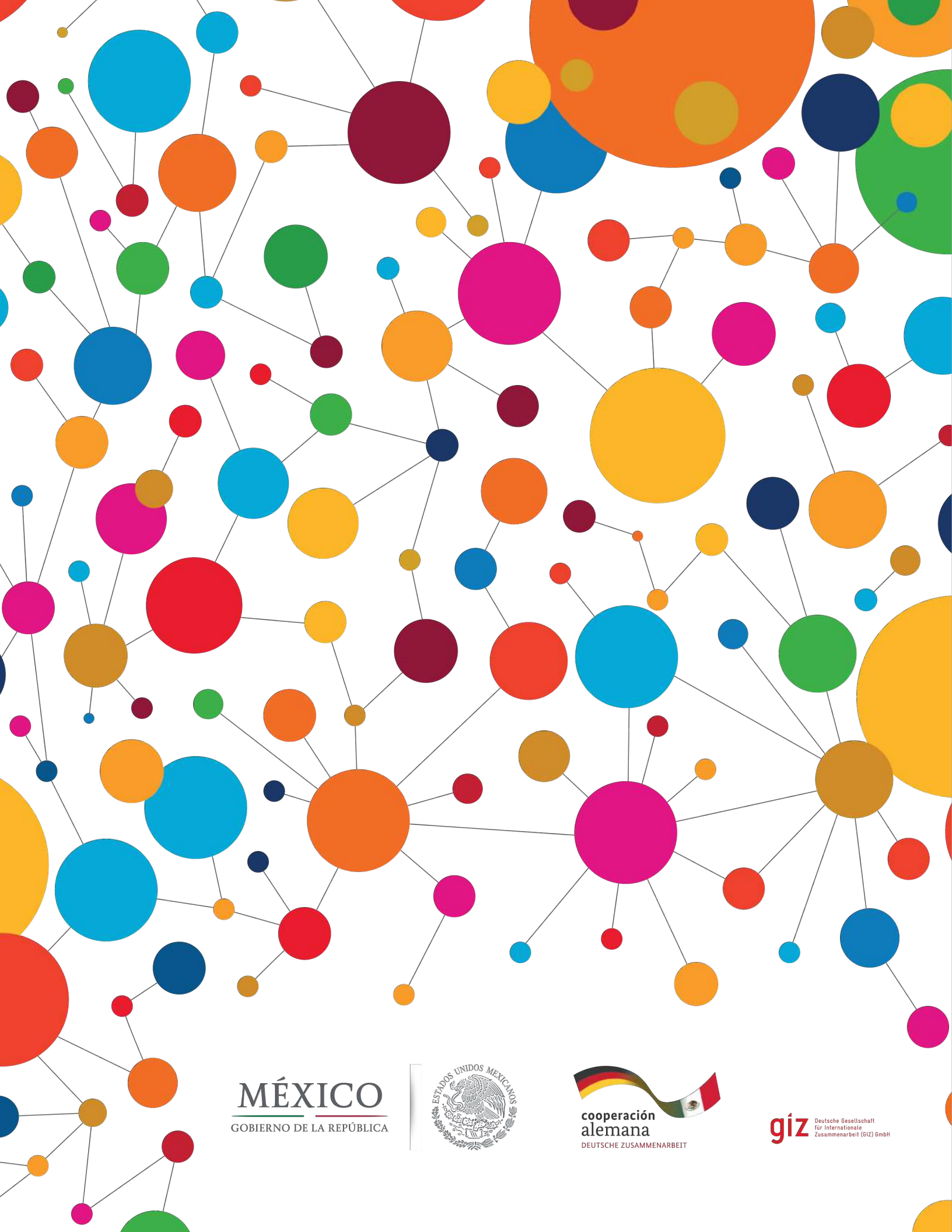
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