

6.0 Mexico

BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (Federal Ministry for Economic Cooperation and Development) (Germany)
CATHALAC	Centro del Agua del Trópico Húmedo para América Latina y el Caribe (Water Center for the Humid Tropics of Latin America and the Caribbean)
CIA	U.S. Central Intelligence Agency
CICC	Comisión Intersecretarial de Cambio Climático (Intersecretarial Commission on Climate Change)
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (Germany)
IADB	Inter-American Development Bank
IFAD	International Fund for Agricultural Development
IMTE	Instituto Mexicano de Tecnología del Agua (Mexican Institute of Water Technology)
INE	National Institute of Ecology
OAS	Organization of American States
PEACC	State-Action Plan against Climate Change
PRM	Presidencia de la República de Mexico (Presidency of the Republic of Mexico)
RIOCC	Red Iberoamericana de Oficinas de Cambio Climático (Ibero-American Network of Climate Change Offices)
SEMARNAT	Secretaría de Medio Ambiente y Recursos Naturales (Secretariat for Environment and Natural Resources)
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USDS	United States Department of State

A large and diverse country, Mexico is considered among the most developed countries in the world, achieving a level of Gross Domestic Product (GDP) per capita of US\$13,800 in 2010 (CIA, 2011). It is also noted for being the most populous Spanish-speaking

country in the world¹³³ and was the first Latin American country to join the Organisation for Economic Co-operation and Development. However, about 44 per cent of the population continues to live in poverty (USDS, 2010) and approximately 13 per cent of Mexicans remains reliant upon the agricultural sector (CIA, 2011). Remittances are Mexico's second largest source of foreign currency, after oil (USDS, 2010).

A. Adaptation Needs and Priorities

As the largest state in Mesoamerica by far, Mexico has wide variations in climate and therefore faces a diversity of climate hazards, ranging from hurricanes to droughts and coastal erosion. On average, temperatures have increased by 0.6°C since 1960. Mean rainfall does not show any consistent trend. Projected mean warming is 1.3° to 4.8°C by 2090 according to different scenarios. For rainfall there is a broad consistency among different models that mean precipitation will decrease in the future, but there is high uncertainty around the mean (UNDP 2008). It should be noted, however, that the situation in individual areas can differ vastly from the country average.

Unsurprisingly for a large and relatively developed country like Mexico, there is a significant amount of ongoing work to increase its capacity to adapt to climate change at the national and sub-national levels. Mexico submitted its Fourth National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2009, and currently is in the process of preparing its Fifth National Communication (expected to be completed in 2012). Climate change receives ample recognition in the National Development Plan; and there is an overall climate change strategy as well as sectoral ones. Mexico's size and high level of capacity results in a need and ability to spread adaptation efforts across many sectors. Coasts, water, agriculture, fisheries and human health have received the most attention, but vulnerability studies and adaptation options are also available for other sectors, including energy, transportation, human settlements, biodiversity and tourism.

B. National Level Policies and Strategic Documents

Mexico's government recognizes the relevance of climate change for development in its six-year "National Development Plan" for 2007 to 2012 (PRM, 2007). The plan contains five strategic themes, one of which is dedicated to environmental sustainability. Under this theme, one of twelve strategic objectives is adaptation to climate change. This objective is to be achieved through four strategies: design and develop national adaptation capacities; develop regional climate scenarios; evaluate impacts, vulnerability and adaptation to climate change in different socioeconomic sectors and ecosystems; and promote the diffusion of information on impacts, vulnerability and adaptation measures.

¹³³ It is projected that the population of Mexico will reach about 113,724,000 people in July 2011. An estimated 22 million Mexicans live in Mexico City (CIA, 2011).

To specify these directions, the Intersecretarial Commission on Climate Change (CICC) developed the “National Climate Change Strategy” (CICC, 2007). On adaptation, 10 lines of action are proposed: reform the institutional risk management structure; position the current disaster response capacity as a platform to develop climate change adaptation capacities; identify opportunities for inter-sectoral convergence; design a climate modeling program as part of the National Climate Information System; promote land-use and ecological planning as a preventative tool against climate impacts; revise policies and public spending priorities to emphasize prevention; promote vulnerability reduction and adaptation within municipal, regional and national development plans; promote the use of insurance mechanisms as a tool for vulnerability reduction in different sectors; design a communications and education strategy to diffuse study results and promote participation in preventive and corrective action; and promote the formation of human resources in operative and prognostic meteorology. The strategy also identifies priority areas for adaptation studies. These are: hydro-meteorological risk management and water; biodiversity and environmental services; agriculture and livestock; coastal zones; human settlements; energy; and human health.

To implement the directions of both the “National Development Plan” and the climate change strategy, the CICC established the Special Programme on Climate Change (PECC) as its sub-national program for the years 2009 to 2012. It presents public policies for eight sectors: integrated risk management; water; agriculture, livestock and fisheries; ecosystems; energy, industry and services; transportation and communication infrastructure; land-use planning and urban development; and public health. Overall, 37 adaptation objectives and 142 adaptation targets are proposed. In the longer term, the program sees three big stages in the development of strategic capacities: vulnerability evaluation and economic valuation of priority measures in the period of 2009 to 2012, of which the main product will be an integrated adaptation system; strategic capacity development from 2013 to 2030; and consolidation between 2031 and 2050. Consistent with these objectives, a “State-Action Plan against Climate Change” (PEACC) has been developed under the guidance of the National Institute of Ecology. The PEACC seeks to conduct assessment studies on climate change impacts and vulnerabilities at the local level. Moreover, PEACC aims to identify and design appropriate adaptive measures and enhance local capacity.

In 2010, Mexico also established a Mid-term Adaptation Policy Framework. The main goal of this framework is to mainstream adaptation measures into various sectors and to establish a baseline to develop a vision for adaptation to climate change in Mexico towards the year 2030.

Mexico also has a number of sectoral policies that contain important adaptation objectives or measures, including sectoral programs on environment and natural resources; agriculture, livestock and fisheries; governance; health; energy; and communications and transport.

Table 1: Key Government Policies and Reports reflecting Adaptation Needs, Priorities and Planned Actions

Name of Policy Action		Government Division Responsible	Status	Sector(s) of Focus	Summary description
1.	Initial National Communication to the UNFCCC	Department of the Environment, Natural Resources and Fisheries	Released on December 1997	Multi-sectoral	Identifies climatic scenarios and the associated vulnerabilities of agriculture, human settlements, forests, water and coasts. For each sector, priority regions were identified. Adaptation measures were only identified to a very limited extent.
2.	Second National Communication to the UNFCCC	Secretariat of Environment and Natural Resources	Released on July 2001	Multi-sectoral	Heavy focus on mitigation; mentions only one adaptation project and recommends undertaking more vulnerability assessments.
3.	Third National Communication to the UNFCCC	Ministry of Environment and Natural Resources	Released on October 2007	Multi-sectoral	Based on climate scenarios, detailed vulnerability information is presented for water, agriculture, forestry, energy, health, biodiversity and ecosystems, and tourism. For each sector, adaptation measures are presented.
4.	National Development Plan 2007–2012	Federal Government of Mexico	Released in 2007	Multi-sectoral	The National Development Plan consists of five strategic axes, of which one is Environmental Sustainability. Under this axis, one of 12 objectives is adaptation to climate change. This objective is achieved through four strategies: • <i>Strategy 1</i> – Promote the inclusion of aspects of adaptation to climate change in planning and practice in different sectors; • <i>Strategy 2</i> – Development of regional climate scenarios; • <i>Strategy 3</i> – Vulnerability, impact and adaptation assessments for different socio-economic and ecological systems; and • <i>Strategy 4</i> – Promote the diffusion of information about impacts, vulnerability and adaptation measures.
5.	National Strategy of Climate Change	CICC	Released in 2007	Multi-sectoral	The strategy details the direction of the National Development Plan regarding climate change mitigation and adaptation. On the latter, it outlines 10 lines of action to improve adaptive capacity. It also identifies priority areas for future research. The document further outlines the country's needs to move forward on adaptive capacity building. It also acknowledges the current vulnerability of different sectors and areas, and initiates projects that will increase national and local capacity,

Name of Policy Action		Government Division Responsible	Status	Sector(s) of Focus	Summary description
					knowledge and ability to adapt.
6.	Various Sectoral Programs	Respective Secretariats	Many released in 2007	Multi-sectoral	Sectoral programs take into account the cross-sectoral aspects of climate change action.
7.	Special Program on Climate Change 2009–2012	CICC	Released in 2009	Multi-sectoral	The Program presents a wide range of measures to be implemented by the respective sectors. On adaptation, the plan proposes 37 objectives and 142 targets.
8.	Fourth National Communication to the UNFCCC	Secretariat of Environment and Natural Resources (SEMARNAT)	Released in December 2009	Multi-sectoral	The adaptation section of the fourth report explains the current government policies and programs on adaptation in different sectors, provides updated scenarios and vulnerability information on a wide range of sectors and some adaptation options for each sector.
9.	Mid-term Adaptation Policy Framework ¹³⁴	Directorate General for Climate Change Policy of SEMARNAT and the Adaptation Working Group (GT-Adapt) of the CICC.	2010	Multi-sectoral	The main goal of this framework is to mainstream adaptation measures within various sectors and to establish a baseline to develop a vision for adaptation to climate change in Mexico towards the year 2030.
10.	National Adaptation Strategy	National Institute of Ecology and Grupo de Trabajo sobre Políticas y estrategias de adaptación de la CICC	In development	Multi-sectoral	The aim of this strategy is to strengthen the capacity and design of adaptive measures to address climate change impacts on different sectors. Among its objectives it addresses variability and extreme events to reduce Mexico's vulnerability to climate change.

C. Current Adaptation Action

Within the last five years, a very high number of adaptation projects have been implemented in Mexico. This growth is in line with the vast amount of vulnerability and adaptation knowledge that has been gained, as well as the country's well-developed policy framework. While many projects are related to research and capacity building, there are a number that help the federal or regional governments to put their adaptation programs into practice. Funding for these initiatives is being provided by various donors, but the Inter-American Development Bank, the World Bank and the government of Spain are particularly active. It is also noteworthy that a majority of

¹³⁴ ALM, <http://www.adaptationlearning.net/mid-term-adaptation-policy-framework-m%C3%A9xico>

Mexico's adaptation projects have been developed specifically to meet its needs; it is less actively engaged in projects that involve other countries from within the region.

Table 2: Current Adaptation Projects and Programs in Mexico

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
National Action							
1. Adaptation to Climate Change Impacts on the Coastal Wetlands in the Gulf of Mexico ¹³⁵	The objectives of this project are to: design adaptation measures by taking into account current federal programs in Mexico in the region; promote adaptation measures in highly vulnerable wetlands such as strengthening earth barriers, reforestation and stabilization of sand bars; assess the impacts of climate change on water resources planning at a national level and in coastal wetlands; and project management of the pilot project.	Special Climate Change Fund, co-financing <i>Budget:</i> US\$21.639 million	The World Bank, National Institute of Ecology of Mexico	Policy formation and integration; Field implementation; Capacity building	2007-2011 (preparation phase) 2011-2015 (implementation phase)	Coastal zone management	Gulf of Mexico
2. Mexico Climate Change Development Policy Loan ¹³⁶	The project supports efforts to mainstream climate change considerations into public policy through reforms in three areas: (i) improved analytical basis for policy responses through the submission of a third national communication to the United Nations framework convention on climate change; (ii) the approval of the national climate change strategy by the government's Intersecretarial Commission on Climate Change and its announcement by the President; and (iii) the integration of climate change considerations in sector	World Bank <i>Budget:</i> US\$501.25 million (loan)	Government of Mexico	Policy formation and integration	2008-2011 (closed)	Government	National

¹³⁵ World Bank, <http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P100438> and GEF, <http://gefonline.org/projectDetailsSQL.cfm?projID=3159>

¹³⁶ World Bank, <http://web.worldbank.org/external/projects/main?menuPK=228424&pagePK=64283627&piPK=73230&theSitePK=40941&Projectid=P110849>

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
	programs.						
3.	Support Program for the Climate Change Agenda in Mexico–Second Operation ¹³⁷	IADB	Government of Mexico	Policy formation and integration	2009 (closed)	Government	National
4.	Development of Climate Change State Action Plan for Tlaxcala and Quintana Roo	Agencia Española de Cooperación Internacional para el Desarrollo Budget: €192.000 per state	Government of Mexico	Policy formation and integration	2009-2011	Government	Tlaxcala Quintana Roo
5.	Program in Support to the Agenda of Climatic Change of Mexico	IADB	Government of Mexico	Policy formation and integration	? - 2011 (closed)	Government	National
6.	Adaptation to Climate Change in the Water Sector Development Policy Loan ¹³⁸	World Bank Budget:	Government of Mexico	Policy formation and integration	2010–?	Government; Freshwater supply	National

¹³⁷ IADB, <http://www.iadb.org/en/projects/project,1303.html?id=me-l1058>

¹³⁸ World Bank, <http://water.worldbank.org/water/projects/adaptation-climate-change-water-sector-development-policy-loan>

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
			US\$450.0 million (loan)					
7.	Community Forest Development	Provide poor rural people in the region with the training and institutions they need to better manage their natural resources and build new businesses. The project will also focus on reducing greenhouse emissions and will provide project participants with the skills and resources they need to mitigate and adapt to the effects of climate change.	GEF, IFAD, co-financing <i>Budget:</i> US\$18.5 million	National Forestry Commission	Capacity building; Community-based adaptation	2011 - ?	Forestry	Campeche, Chiapas and Oaxaca
8.	Development of Climate Change State Action Plan for Yucatan ¹³⁹ and for Tabasco ¹⁴⁰	The proposed operation seeks to elaborate a State Action Plan against Climate Change for Yucatan and another for Tabasco. Each plan will be used by public State entities for planning, policy making and investment purposes. In addition, the plans will generate technical/scientific information that will be used in the development of the SEMARNAT-lead Special Program on Climate Change.	IABD US\$0.2 million for each state	Government of Mexico	Policy formation	2011–2013	Government	Yucatan Tabasco
Participation in Regional and Global Projects								
9.	Effective Adaptation Strategies and Risk Reduction towards Economic and Climatic Shocks: Lessons from the coffee crisis in Meso-America ¹⁴¹	This project looks at how farmers are responding to these threats, in order to develop strategies and tools for vulnerable coffee growers facing the effects of global change. A range of methods, including participatory tools, are applied to gather data.	Inter-American Institute for Global Change Research <i>Budget:</i>	Universidad del Valle de Guatemala	Research	2006–2011	Agriculture	<i>Regional:</i> Costa Rica, Guatemala, Honduras, and Mexico

¹³⁹ IADB, http://www.iadb.org/en/projects/project_1303.html?id=ME-T1119

¹⁴⁰ IADB, http://www.iadb.org/en/projects/project_1303.html?id=ME-T1171

¹⁴¹ IAI, http://iaibr1.iai.int/cgi-bin/SCI_Projects_Dynamic_Pages/CRN2/Factsheets/CRN2_60.pdf and http://www.iai.int/index.php?option=com_content&view=article&id=54&Itemid=68

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
			US\$579,987					
			In Mexico: The project involves communities in Cacahuatán and Jitotolo, southern Mexico.					
10.	Adaptation for Smallholders to Climate Change (AdapCC)	The public-private partnership supports coffee and tea farmers of Cafédirect's supply chain in developing strategies to cope with the risks and impacts of climate change.	BMZ	Cafédirect, Más Café	Research; Field implementation	2007–2010	Agriculture; Trade	Global: Kenya, Mexico, Nicaragua, Peru, Tanzania, Uganda
			In Mexico: The project looked at impacts of decreasing rainfall and related adaptation strategies in Chiapas.					
11.	Mitigation and Adaptation to Climate Change in Sustainable Forest Management in Ibero-America ¹⁴²	Part of PIACC, this project aims to generate new information and knowledge and strengthen the capacity of research institutions in the forestry sector on linking sustainable forest management with adaptation and mitigation to climate change. This includes strengthening specific research activities, developing and disseminating methodologies and case studies, strengthening human resources and fostering the representation of the forest sector in the regional and international dialogue.	Spain	INIA, CIFOR, CATIE, Polytechnical University of Madrid (UPM)	Capacity building; Research; Knowledge communication	2009–2011	Forestry	RIOCC countries ¹⁴³
			In Mexico: Further information required.					
12.	Climate Policy 2012: Extension of the global project "Capacity Development for Policy	The UNDP Regional Bureau for Latin America and the Caribbean has expanded on the global project, "Capacity Development for Policy Makers to Address Climate Change" in	Spain, UNDP	UNDP	Capacity building; Policy formation and	2009–2011	Government	LAC Region ¹⁴⁵ : Including Costa Rica, El Salvador,
	Development for Policy	Budget: US\$3.6						

¹⁴² Proyecto MIA, <http://www.proyectomia.com/>

¹⁴³ The 21 member countries of RIOCC are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Portugal, Spain, Uruguay and Venezuela.

Name		Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
	Makers to Address Climate Change ¹⁴⁴	the LAC region to provide technical support to national policy makers and its Country Offices and strengthen capacity on budgetary issues related to the post-2012 climate regime. Activities include technical backstopping for countries that begin to consider adaptation to climate change in their National Development Plans.	million		integration			Guatemala, Honduras, Mexico, Nicaragua, Panama
			In Mexico: Further information required.					
13.	Coffee Under Pressure: Climate change and adaptation in Mesoamerica ¹⁴⁶	Evaluating the impact of climate change on coffee in Central America and identifying viable adaptation options for rural communities	Green Mountain Coffee Roasters	CIAT	Assessment	2009–2014	Agriculture	Regional: Costa Rica, El Salvador, Guatemala, Mexico, Nicaragua
			In Mexico: Analysis of climate change impacts on suitable locations for coffee production; identification of adaptation options.					
14.	Regional Instruments for Adaptation to Climate Change by the Health Sector ¹⁴⁷	The project aims to create mechanisms to broaden knowledge of current and future impacts of climate on health in the population.	IADB, co-financing Budget: US\$1,202,000	IADB	Knowledge communication; Research	2010 - ?	Human health	LAC Region: Bolivia, Brazil, Colombia, Mexico, Paraguay
			In Mexico: To be determined					

¹⁴⁵ Countries include Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela

¹⁴⁴ UNDP, http://www.undpcc.org/content/act_latin-en.aspx and http://www.undp.org/climatechange/docs/EEG_Flyer_EN.pdf

¹⁴⁶ CIAT, <http://dapa.ciat.cgiar.org/cup-coffee-under-pressure-adaptacion-del-cafe-al-cambio-climatico-en-centroamerica>

¹⁴⁷ IADB, <http://www.iadb.org/en/topics/regional-integration/project-information,3072.html?id=RG-T1681>

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
15. Integrating Climate Change Adaptation into National Development Processes in Latin America and the Caribbean	Build climate resilience of vulnerable human and ecological systems in the region by integrating adaptation options into national planning processes and building the associated capacity of key regional and national institutions. The project will: undertake impact and vulnerability assessments; identify good practices and gaps in integrating adaptation into policy and plans; and support adaptation planning and its integration into national development processes. It will focus on the most vulnerable sectors and ecosystems, especially water and agriculture.	Spain Budget: US\$4,375,233	UNEP	Capacity building; Policy formation and integration	2010–2013	Government; Agriculture; Freshwater supply	LAC Region: Phase 1: 19 RIOCC countries ¹⁴⁸ Phase 2: 3-5 countries (Dominican Republic 1st country selected)
In Mexico: To be determined							

D. Proposed Adaptation Action

Although it may be assumed that Mexico is actively engaged in the development of new projects and programs to support adaptation, no specific activities in preparation have been identified.

E. Assessment

Mexico dominates the Mesoamerican region in terms of land size, population and economic production. This picture is reflected in the number of adaptation projects underway within its borders, as well as in the progress it has made in terms of devising adaptation strategies at the national, sub-national and sectoral levels, and in integrating adaptation policy into development programming. The country has already submitted four National Communications to the UNFCCC, and has elaborated its Fifth National Communication. This fifth report includes a set of plans, policies and programs that mainstream climate change into the relevant government actions.

¹⁴⁸ The 19 RIOCC countries are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

Current adaptation programming is working to put Mexico's policies and programs into practice. However, given the large size of the country and its widely varying adaptation needs, current initiatives are only partially addressing identified concerns. To identify existing gaps in intervention, a more thorough assessment on the extent of current adaptation action at different levels would be required.

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