



GLOBAL CLIMATE CHANGE

MAY 2008



USAID/Mexico supports an environmental program that seeks to protect biodiversity, promote energy efficiency, reduce greenhouse gas (GHG) emissions, and decrease Mexico's vulnerability to climate change. The Mission's climate change activities have focused in particular on forest conservation, renewable energy, and clean production systems that mitigate GHG emissions.

BACKGROUND

Mexico is the world's fourteenth largest economy, and is a pivotal contributor to prosperity and stability in the Western Hemisphere. Mexico's adoption of the North American Free Trade Agreement (NAFTA) in 1994 links together 426 million people and produces more than \$12 trillion worth of goods and services, setting a standard for much of Latin America and the Caribbean to emulate. However, not all of Mexico reaps the benefits that trade, international visibility and close partnerships with the U.S. may offer. Poverty levels remain high, particularly in rural areas. In addition, economic growth and environmental degradation present significant challenges to the country's rich biodiversity.

The current U.S.-Mexico development agenda includes: 1) promoting sustainable environmental management and alternative energy production; 2) improving public administration, transparency and accountability; 3) increasing Mexico's economic competitiveness; 4) preventing infectious diseases; and 5) furthering higher education and competitiveness. USAID's environmental program is focused on improving the management of natural resources through improved understanding and implementation of key environmental policies, sustainable forest management, reducing forest fire impacts, and providing economic incentives for sustainable natural resource management in threatened high biodiversity areas. USAID is working with a range of U.S. and Mexican partner organizations to introduce new and improved watershed management approaches to conserve Mexico's considerable biodiversity, particularly forestry, and to generate new economic opportunities for communities in the target watershed areas through promotion of ecotourism, cacao, specialty coffee, community forestry, and non timber forestry products. To promote environmental business and energy conservation businesses, USAID is working with Mexico on economically viable, large scale renewable systems and energy efficient, non polluting clean production technologies with state and municipal water utilities in order to optimize urban water systems.

SECTOR-SPECIFIC CLIMATE CHANGE ACTIVITIES

REDUCED NET GREENHOUSE GAS EMISSIONS FROM THE LAND USE SECTOR

USAID/Mexico's efforts to reduce greenhouse gas emissions from the land use sector address improved watershed management and biodiversity conservation in four watersheds: the middle Usumacinta (Chiapas), the Pacific Coast (Chiapas), the Chimalapas (Oaxaca) and the Sierra Tarahumara (Chihuahua).

Over the past several years, USAID/Mexico has supported the consolidation of 11 protected areas, providing basic management capacity, infrastructure and financial planning. In southern Mexico, USAID/Mexico supports Conservation International's (CI) work to conserve the Lacandon Rainforest, which lies in the middle of the Usumacinta River watershed along the frontier between Mexico and Guatemala. The Lacandon is part of the larger Mayan Rainforest ecosystem that extends into Central America and is one of the most biodiverse areas in Mesoamerica. Work into 2008 is focused on consolidating the design of a shared conservation strategy for the middle Usumacinta watershed. This process includes local authorities and federal government agencies in the establishment of shared criteria and determination of key threats to be addressed through the strategy. CI also completed a tourism strategy in 2006, which was followed in 2007 by a training event and a capacity building needs assessment for indigenous communities involved in nature tourism initiatives. Additionally, CI continued to collaborate with State and federal authorities as well as local NGOs in fire prevention training workshops as well as fire prevention radio communication programs.

USAID/Mexico's support of The Nature Conservancy's (TNC) Chiapas Coast Project has helped introduce better practices of grazing and agricultural methods in critical areas in the highly degraded watersheds that lie between the bio-reserves of El Triunfo and El Encrucijada, along the Pacific coast of Chiapas. For example, in 2008, cattle ranchers were trained in fodder conservation. TNC also worked with communities in the middle and upper portions of the watersheds to establish nurseries for native palm production. The objective is to promote reforestation of degraded areas and promote the sustainable harvesting of palm as well as the strengthening of local communities in their efforts to commercialize palm fronds in local and international markets. The project has the dual impact of decreasing emissions from the expansion of poor agricultural management and helping to build more resilience in the face of natural disasters, which may increase as the climate warms.

The Chimalapas region, the largest unfragmented area of tropical forest remaining in Mexico, is almost entirely owned by two communities that have long been interested in conserving their natural resources. An attempt to develop a biosphere reserve in this area in the 1990s was halted by these communities. World Wildlife Fund (WWF) has brought together the institutions that are working in the region to develop a common vision and plan for conservation and development in this area before land use pressures fragment and convert this forest to activities that reduce the carbon content of this area and make it more generally vulnerable to fire. A major achievement in 2007 was the design and implementation of a Regional Development Master Plan for the Chimalapas region. The Master Plan is based on community level agreements and land zoning analyses aimed towards economic development and conservation of natural resources in the region. This is an important step in an area historically known for the lack of community level and state agreements to sustainably develop and conserve the area's natural resources. This Master Plan and its coordinating group provide the basis for scaling up this initiative to a regional level involving governments of three states that share common borders and forests.

In addition, USAID/Mexico supports the Sierra Tarahumara Forest Conservation program implemented by WWF to address serious watershed degradation and marginalization of its residents. This two track approach of the conservation program is working to strengthen the inter-institutional process that has developed a common land use plan that includes activities to restore poorly degraded areas, protect watersheds, and to improve forest management activities. The project is working to slow the carbon emissions from the poor management of forests and soils. Fifty five check dams on critical streams were installed to decrease erosion of community fields. Mitigation efforts were implemented in over 200 hectares in the region's upper watershed, denuded several years ago by a forest fire, including installation of contours made from natural material to stabilize hillsides for replanting native trees. The contours and trees have also further slowed the runoff of water that contributed to erosion. Additionally, WWF has been working to increase information access and awareness about the area's condition to improve land management efforts through a geographic information system (GIS) based shared information system. This activity will eventually help restore carbon to the landscape.

REDUCED NET GREENHOUSE GAS EMISSIONS FROM THE ENERGY SECTOR, INDUSTRY AND URBAN AREAS

The focus of USAID/Mexico's energy program is to mitigate greenhouse gas emissions and to improve implementation of Mexico's environmental policies through the implementation of cleaner production and renewable energy technologies. USAID/Mexico provides technical assistance to Mexican counterparts to develop national scale programs that provide real carbon dioxide (CO₂) savings while strengthening the technical and administrative aspects of these agencies.

The Clean Production and Renewable Energy (CP/RE) component of USAID/Mexico's Environment Program is based on the Mission's experience with development and current trends in Mexico's environment and energy sectors. Under the Methane to Markets (M2M)¹ Partnership, USAID/Mexico is working primarily in the three key areas: oil and gas, landfills, and animal farms. In 2007, CP/RE supported practical demonstrations of projects in these areas, yielding important emissions reductions of nearly 22,700 tons of CO₂, and in most cases energy and cost savings as well. CP/RE also worked closely with SENER, the Energy Secretariat, to design and develop a program of rural electrification using off grid renewable energy technologies. A key part of this program was the installation of a pilot project in the state of Guerrero, where the 140 homes of the 900 inhabitants were connected to a series of solar photovoltaic mini grids. This project will provide a basis for a large scale design of this program, to reach 50,000 homes. Over 200 people have been trained in rural electrification using renewable energy technologies to ensure sustainable replication of this activity. Working with the Mexico City Government, CP/RE has assisted in the implementation of initiatives, such as the Environmental Management System, that have resulted in ongoing water, energy and cost savings for the government. The solar energy standard, making obligatory the use of solar energy for water heating in new commercial facilities, is an example of a sustainable policy tool that results simultaneously in energy and cost benefits, and the reduction of both local pollution and greenhouse gas emissions. The Watergy program helped local state and municipal water utilities to become more efficient. Watergy programs now span the entire border, including Baja California (Tijuana), Chihuahua (Hidalgo de Parral), Coahuila (Monclova), Nuevo Leon (Monterrey), Tamaulipas (Matamoros and Tampico), and Sonora (Guymas and Nogales). These states have saved just under 14 million kWh of electricity (13,973,309 kWh) and US\$1,559,829 in costs in fiscal year 2007 alone.

With USAID/Mexico support, PEMEX's² Sustainable Development Program realized approximately 3.7 million tons of CO₂ emissions avoided by improving its energy and water efficiency and applying cleaner production technology projects (energy efficiency, recycling, water reuse, and waste minimization) in four PEMEX subsidiaries. USAID/Mexico supported PEMEX to reduce pipeline losses and emissions in their exploration and processing facilities, and is providing ongoing assistance to SEMARNAT³, the Inter-American Development Bank and the private sector to construct improved landfills, particularly along the border region, to capture and burn methane to generate electricity. Methane gas from landfills provides a double benefit of significantly reducing greenhouse gas emissions while providing a source of renewable energy, and providing assistance to SEMARNAT to assess the use of biomass waste from concentrated feedlot, dairy or agricultural operations to generate electricity and/or thermal energy. Additionally, USAID/Mexico has facilitated workshops with various stakeholders to discuss activities to leverage the M2M Program. Partnership funding has been leveraged to evaluate and invest in landfill methane recovery projects in the border region and in other states and identify and conduct feasibility studies for highly viable landfill methane recovery projects.

1. The Methane to Markets Partnership (M2M) is an international initiative that advances cost-effective, western methane recovery and use as a clean energy source. The M2M Partnership is collaboration between 18 developed countries and developing countries.

2. PEMEX – Petroleos Mexicanos – Mexico's state-owned petroleum extraction and refining company.

3. SEMARNAT – Mexican Ministry of Environment and Natural Resources

PARTNERS

USAID's partners in climate change activities in Mexico include:

- Chemonics International
- Conservation International
- Fondo Mexicano para la Conservación de la Naturaleza (FMCN)
- Mexican Ministry of Energy (SENER)
- Mexican Ministry of Environment and Natural Resources (SEMARNAT)
- PA Government Services, Inc.
- Petroleo Mexicano (PEMEX)
- The Nature Conservancy (TNC)
- United States Forest Service (USFS)
- World Wildlife Fund (WWF)

Because partners change as new activities arise, this list of partners is not comprehensive.

For more information, visit:
http://www.usaid.gov/locations/latin_america_caribbean/country/mexico/

REDUCED VULNERABILITY TO THE IMPACTS OF CLIMATE CHANGE

In Mexico, fire is commonly used to convert forests to other land uses that usually sequester less carbon. The predictions of climate change indicate that forests will become increasingly vulnerable to fire as they adapt to the new physiological circumstances. Managing fire is critical to ensuring that forest lands and their associated communities – both natural and human – adapt to climate variation. In conjunction with the Fire Management Program⁴, USAID/Mexico's approach is to catalyze advances in capacity, local participation and appropriate technologies based on informed strategic planning aimed at establishing integrated fire management processes throughout the country. The main components of the program are to: 1) strengthen local participation for integrated fire management, 2) support the development of environmentally sound and economically viable technologies for fire management, and 3) continued collaboration with GOM's central fire office focusing on technical assistance and capacity-building. Activities in 2007 resulted in multi-agency communication and response strengthening in the Yucatan Peninsula, and improved priority setting for State level fire management planning in Chiapas. Organizational and technical capacity in high risk areas of the Yucatan Peninsula – Yucatán and Quintana Roo – were strengthened and new fire management actors integrated into emergency response in 2008 to respond to wildland fire and other emergencies.

CAPACITY BUILDING INCLUDING ACTIVITIES IN SUPPORT OF THE U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE

The project National Enabling Environment for Mexico (NEEM) was implemented by Fondo Mexicana para la Conservación de la Naturaleza (FMCN), a working group comprised of USAID's principle NGO partners and two national level Mexican NGOs. The group identified ways to address key environmental issues at the national level that are limiting success of local work. Specifically, the working group identified and conducted studies on capacity building, particularly in watershed management and fire management, development of ecosystem services, and monitoring as key issues that needed to be addressed. Based on analyses conducted in these areas, a list of specific recommendations on how to strengthen Mexico's environmental policies were presented to all political parties in 2006. NGOs are now working with President Calderon's team to build an environmental management and sustainability agenda and these recommendations have been incorporated into the national environmental policy.

FMCN's Fire Management and Restoration Program is currently implementing the recommendations of the IAC's Integrated Fire Management project. The program is using the findings to develop its training strategy, as well as to improve the local response and involvement of community groups and practitioners regarding wildfire prevention and fire management.

4. The USAID Fire Management Program is implemented through an Interagency Agreement with the U.S. Forest Service (USFS).