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I. General information on targets and goals	5	Chapter 5 - Reducing Emissions from Deforestation and Degradation (REDD)	51
A. Evolution of Technical Areas	5	1. Policy Development	53
B. Targets and Indicators	6	A. Shaping Mexico's Institutional Framework for REDD	53
C. Behind the Numbers	6	Outputs and Results	53
II. Impact of Mexico competitiveness program assistance	7	B. Contributing to Vision REDD	54
Component 1: Environmental Management	8	Outputs and Results	57
1. Monitoring and Reporting Climate Change Actions	8	2. REDD Pilots	55
2. Implementing the National Climate Change Law	8	A. Ocote Biosphere Reserve and Plan Vivo	55
3. Saving Energy and Money in Mexico City's Government	9	Outputs and Results	56
4. Generating alternative incomes in high biodiversity areas	9	B. Carbon Capture in Ejido Felipe Carrillo Puerto	58
5. Turning REDD into reality	10	Outputs and Results	58
Component 2: Economic Governance	10	Chapter 6 - Strengthening Competition Policy	61
6. Strengthening competition policy	10	1. Technical Guidelines	63
7. Promoting employment for vulnerable young people	11	Market dominance	64
8. Strengthening economic regulation within state governments	11	Relevant Market Definition	65
Component 4: Clean Energy	11	Statistical Methods for Surveys	66
9. Creating opportunities for local suppliers	11	2. E-Government and Transparency	67
10. Municipal Public Private Partnerships for Clean Energy Projects	12	Electronic Notification System (ENS)	68
III. Implementation problems and lessons learned	12	Microsite for Competition Rulings	67
A. Reliance on private sector approval	12	3. Civil Society Network on Competition	69
B. Public sector commitment	13	Three annual conferences on regulation and competition	71
C. Responsiveness to new priorities	14	Competition Network Outputs	71
Chapter 1 - Electronic Monitoring and Reporting System for the Special Program on Climate Change (PECC)	17	Chapter 7 - Promoting Youth Employment	75
Context	19	Context	77
Outputs	20	Leveraging a Local Evaluation to Reform National Policy	78
Results	20	Outputs	79
Chapter 2 - Implementing Mexico's Pioneering Climate Change Law	23	Results	80
Context	25	Chapter 8 - Legislative Reform of State Government Procurement and Economic Regulation	81
Outputs	25	Bid-Rigging in State Government Procurement	83
Specialized training on climate change	25	Economic regulation	84
Climate Change Network	26	Outputs	84
Policy Research and Proposals	26	Model State Government Procurement Law	84
Judicial Capacity-Building	27	Results	85
Results	27	State regulation model law	85
Chapter 3 - Mexico City Environmental Management System (EMS)	29	Chapter 9 - Promoting Local Suppliers in Baja California's Wind Energy Sector	87
Activities	31	Outputs	90
Outputs	33	Results	91
Increasing efficiency in city buildings	33	Chapter 10 - Municipal Clean Energy	93
Promoting car-pooling	33	Outputs	96
Results	34	Capacity Building for Energy Regulatory Commission (CRE) Officials	98
Chapter 4 - Generating Alternative Incomes in High Biodiversity Areas	35	Dissemination of Information about Renewable Energy in Mexico	98
A. PES Mechanisms	37	Mexico City Zoo Biogas Feasibility Study	97
Valle de Bravo Watershed	38	Municipal Clean Energy Public Private Partnerships	96
Pixquiac Watershed, Veracruz	40	Small-scale business plans	96
Lessons Learned About PES Mechanisms	41	Results	98
B. Producing Sustainable Goods and Services in High Biodiversity Areas	43		
Ejido Galacia Eco-Lodge Canto de la Selva	43		
Sustainable Fisheries in the Encrucijada Biosphere Reserve	45		
Chamaedorea Palm Production in El Triunfo, Chiapas	46		
Developing Value Chains in the Mesoamerican Biological Corridor	47		
Producing Honey in the El Triunfo Biosphere Reserve	48		

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I. General information on targets and goals

A. Evolution of Technical Areas

The Mexico Competitiveness Program began operation on October 1, 2008 and ended on August 31, 2013. The prime contractor was Abt Associates, Inc. The Competitiveness Program started with three technical components, as listed below, each with specific focus areas (sub-components), as well as earmarks for bio-diversity (50%), water, access to capital and renewable energy. First-year activities addressed:

- Component 1: Environmental Management, with a focus on public policy and bio-diversity protection;
- Component 2: Economic Governance, particularly small business development and competition policy; and
- Component 3: Precursor and Factor Markets, targeting water utility management, access to capital through micro-finance, and renewable energy.

Beginning in the second project year, USAID increased the Mexico Competitiveness Program's annual obligation with "fast start" climate change funding, and directed the Program to initiate activities that addressed mitigation aspects of the global climate change agenda. At the same time, the bio-diversity earmark was scaled back and the other earmarks were reduced or eliminated.

In the third project year, USAID made Global Climate Change (GCC) a central priority, and included major earmarks for (1) Sustainable Landscapes—climate change public policy and Reduced Emissions from Deforestation and Degradation (REDD)—and (2) Clean Energy (including energy efficiency and renewable energy). During Year 3, the Competitiveness Program modified its technical focus around four main components:

- Component 1: Environmental Management
 - o Sub-component 1. Public policy on climate change and bio-diversity protection
 - o Sub-component 2. Alternative income generation in high bio-diversity areas (income transfers, sustainable or higher value added production)
 - o Sub-component 3. Sustainable Landscapes REDD pilots
- Component 2: Economic Governance
 - o Sub-component 1. Innovation and competitiveness (focused on SMEs)
 - o Sub-component 2. Strengthening competition policy (focused on the Federal Competition Commission)
- Component 3: Precursor and Factor Markets
 - o Water management
- Component 4: Clean Energy
 - o Sub-component 1. Clean energy investment at the sub-national (municipal) level
 - o Sub-component 2. Cross-border energy agenda (US-Mexico)
 - o Sub-component 3. Sustainable buildings

Significant changes adopted and consolidated in the second half of the Mexico Competitiveness Program include:

- Continued prioritization of climate change;
- Bio-diversity work focusing less on policy and more on alternative income generation;
- Continued prioritization of competition policy under economic governance, with the competitiveness agenda targeting small firm innovation and promotion of high-growth potential enterprises;
- Gradual phase-out of Component 3: Clean Energy transferred into a new stand-alone component (see below), access to capital activities ended, and water management scaled back (but not eliminated);

- Creation of new Component 4, Clean Energy. Most of this component promoted investment for efficiency and renewable energy generation at the subnational level.

B. Targets and Indicators

Following significant technical changes to the original work plan, indicators and targets from the Performance Management Plan (which measures results of the Mexico Competitiveness Program) were also changed in the first, second and third year. Measurement of overall impact became complicated because the Competitiveness Program received numerous and highly distinct policy areas. As the Mexico Competitiveness Program received significant additional funding as well as instructions to carry out new technical activities, the targets themselves changed and grew over time.

At the beginning of the third year, Abt Associates and the USAID Contracts Office Representative agreed to consolidate measurement within a single USAID governance indicator: *Number of laws, regulation, rules and administrative procedures proposed or implemented with USG assistance*. This remained the Competitiveness Program's central indicator throughout the rest of the project life. The Competitiveness Program also continued to measure and report capacity building. The consolidated governance indicator makes monitoring and reporting a relatively simple and straightforward exercise. On the other hand, the raw "number" is not particularly effective in conveying the scope or importance of Mexico Competitiveness Program's achievements.

The main reason this core indicator does not convey actual impact of USAID resources is that the Competitiveness Program's mission was to *improve governance*. While it is possible to count anticipated governance actions and to meet a formal numerical target, the significance of those actions is not easily subject to quantification.

For that reason, the Competitiveness Program has consistently submitted detailed narratives in monthly, quarterly and annual reports. Most of this Final Report consists of an annex that describes the most important policy areas in which we worked, our related activities, and meaningful changes in governance achieved by the Program.

C. Behind the Numbers

As discussed, PMP indicators for the Mexico Competitiveness Program changed several times, as did related targets for achievement. During the second and third year, the Competitiveness Program received a significantly greater budget than in the first and fourth years, in addition to a mandate to carry out new climate change and clean energy activities. As of November 2010, the beginning of our third year, the Competitiveness Program had a target of 76 "laws, regulations, rules and administrative practices proposed or adopted as a result of U.S. Government assistance." By the close of the Program, the total target was 72 (see [Annex A](#)). The reduction was the result of: (1) consolidating several independent activities under a single activity for reporting purposes (meaning total work remained unchanged); cancellation of several activities because of changes in government personnel or lack of government response (in which case no substantive work was carried out); and the addition of several new activities in response to explicit requests for new technical assistance from counterparts.

According to the language of the core governance indicator, the Mexico Competitiveness Program fulfilled 72 "laws, regulations, rules and procedures proposed or adopted as a result of USG assistance." This large number of governance improvements indicates the enormous amount of work carried out by the Mexico Competitiveness Program over almost five years and demonstrates the considerable technical versatility of project staff. On the other hand, there is an obvious difference between "proposed" and "adopted." Moreover, even the technical adoption of a governance action reveals little about its actual impact in the real world. The Mexico Competitiveness Program consistently provided detailed narratives in its quarterly and annual reports to describe results in practical terms.

Annex A provides a summary of all 72 activities carried out by the Competitiveness Program, indicating whether a specific governance proposal was adopted by a counterpart as a result of our technical assistance. Detailed narra-

tives of achievements, as well as goals not achieved, are provided in activity summaries in Annex B. These narratives describe not only the degree of impact of our technical assistance initiatives, but also explain cases resulting in little or no impact. Focusing on the 72 activities, 50 (70 percent) were adopted while 22 (30 percent) were not.

When interpreting these figures, three important caveats are in order: First, failure to adopt a proposal was invariably the result of counterpart considerations, not poor quality. Governance change can ultimately happen only because of an action taken by a governmental organization, not a foreign assistance program. The final section of this report summarizes the main reasons for activities that did not result in proposal adoption.

Second, it should be noted that proposals that were not adopted required fewer financial resources than did successful activities. When “return-on-investment” seemed unlikely, the Competitiveness Program closed out activities quickly with USAID approval. The right-hand column of the Annex A table indicates 22 “multi-year” efforts that consumed proportionally more consultant, subcontractor and staff level of effort. Only one of these projects did not result in adoption (see Sustainable Building discussion below). We estimate that activities/proposals eventually adopted accounted for approximately 90 percent of total resources allocated.

Third, and most importantly, the summary table in Annex A does not convey which activities resulted in the greatest and most enduring impacts. This qualitative assessment requires a narrative. In most cases, high-impact initiatives of the Mexico Competitiveness Program included a set of activities that were carried out over several years. Section II below provides a summary of eight technical areas in which USAID technical assistance achieved results that improved Mexican governance in a significant way that will extend well beyond the life of the Mexico Competitiveness Program.

II. Impact of Mexico competitiveness program assistance

Almost all Mexico Competitiveness Program activities undertaken since the Year 3 modified PMP were efforts to expand or deepen the impact of activities already initiated. Twenty-six of the 72 Competitiveness Program activities were carried out during more than one fiscal year. In most cases, these continuing activities covered three or four years. The time span made it possible for the relevant counterpart(s) to assess both achievements and remaining needs. It also made it possible for the Competitiveness Program to respond to requests for additional technical assistance in areas such as capacity building to implement new laws, and refinement of program operation or design.

In addition to increasing the scope or effectiveness of ongoing activities, achieving *sustainability* emerged as a high priority when USAID extended the Competitiveness Program from an end-date of November 2012 to August 2013. The extension meant that instead of closing out just before the inauguration of Mexico’s new president, the Competitiveness Program would operate during the first nine months of the new national administration (as well as the new Mexico City administration). This created a golden opportunity for USAID and the Mexico Competitiveness Program to present key achievements to new leaders and encourage them to continue implementation of governance changes achieved under the previous administration through USAID assistance.

While the project’s governance indicator target number changed slightly during the fourth and fifth years, actually dropping by six, the Competitiveness Program achieved extremely important governance results over that period. The work covered a large number of specific activities resulting in impact in eight core areas:

Component 1: Environmental Management

1. Monitoring and Reporting Climate Change Actions

Building on work carried out for the U.S. Environmental Protection Agency, Abt Associates created a unique state-of-the-art online system that enables the Ministry of Environment (SEMARNAT) to monitor and report progress in achieving public sector actions and investments included in the federal government's Special Program on Climate Change 2006-2012 (PECC). Abt's technical assistance included proposing and working with stakeholders to agree on carbon-equivalent calculation methodologies, software development and testing, production of usage manuals, and extensive capacity-building of government officials in diverse federal organizations that have PECC commitments.

As a result of our work, Mexico was able to reliably report achievements of the 2006-2012 PECC, including estimated reductions of CO₂ emissions resulting from public sector actions. The PECC monitoring and reporting system (SIAT-PECC), which was subsequently developed further by Abt into CarbonCounts (www.carboncounts.com), has become a benchmark in the developing and developed world, with several countries expressing interest in replicating or adapting the tool. By improving the reliability of data and estimates of GHG reduction, SIAT-PECC has improved Mexico's credibility in global climate change negotiations and resource allocation mechanisms. The new administration endorsed the monitoring and reporting system and will use it to monitor progress in the 2012-2018 PECC, ensuring the sustainability of USAID-financed assistance for years to come.

During the Competitiveness Program's final year, the government of Mexico City (GDF) requested technical assistance to adapt CarbonCounts for use in tracking achievements of the city's Climate Change Action Program (PACC). The Competitiveness Program built the system for Mexico City's PACC and trained GDF officials to use it. The Secretariat of Environment under the Mancera administration also endorsed the system and directed city officials to use it.

2. Implementing the National Climate Change Law

During much of the Calderon administration, civil society experts, legislators and cabinet leaders debated the content of a new national law that would define the country's commitments and obligations to address climate change. In June 2012, the General Law on Climate Change went into effect. While the path-breaking legislation made Mexico one of the world's climate change pioneers, its implementation requires significant legal and regulatory changes, such as the creation of a national greenhouse gas registry and an inter-ministerial National Climate System. Government officials lacking experience in climate change legal compliance need capacity-building to build their understanding and awareness about new requirements.

Anticipating the law's eventual approval, beginning in 2010 the Mexico Competitiveness Program contracted as a partner the U.S. NGO Environmental Law Institute (ELI) to provide training, opinions and technical assistance to the Mexican government. Over three years the Competitiveness Program provided:

- Washington D.C. study tour in for Mexican officials;
- Book and several working papers that identify and propose solutions for implementation challenges created by Mexico's new law;
- Capacity-building for Mexican judges and judicial staff on how to incorporate scientific evidence and data into environmental rulings;
- Independent legal and technical opinions on key aspects of implementation; and
- Assessment of international best practices on building a national GHG registry and proposals for adaptation in Mexico.

To institutionalize availability of these resources, the Mexico Competitiveness Program created the Bi-National Network for Environmental Law, composed of highly experienced environmental lawyers working in the U.S. and Mexico, and offering *pro bono* counsel from the Cyrus R. Vance Center for International Justice. As a result of Competitiveness Program support, the Mexican government has access to high-quality information and legal counsel needed to implement its climate change legislation.

3. Saving Energy and Money in Mexico City's Government

The Mexico Competitiveness Program supported a multi-year effort of the government of Mexico City (GDF) to design and implement its Environmental Management System (EMS), rules and practices that reduce energy and water usage, while promoting recycling and the purchase of sustainably produced goods. The Competitiveness Program produced technical manuals in each area and trained GDF officials from over 40 city organizations. As of 2013, the 27 GDF agencies (and their corresponding buildings) had formally implemented the EMS, with significant cost savings and GHG reductions. Significantly, the Mancera administration enthusiastically supported continuation of the EMS throughout governmental operations. The Competitiveness Program supported training of agency liaisons, ensuring sustainability of the initiative over the course of the six-year term. In April 2013 Mexico City's mayor and Secretary of Environment formally endorsed the Mexico Competitiveness Program's final contribution to the EMS: a car-pooling initiative to reduce commuter time and reduce fuel use among City employees.

4. Generating alternative incomes in high biodiversity areas

Mexico is classified as one of the top five biologically "megadiverse" countries in the world. However, the country's unique ecosystems face threats such as urbanization, infrastructure, tourism, small-scale farming and poor forest management. Establishing protected areas was costly and ineffective. Because local communities own much of this land (as *ejidos*), biodiversity conservation efforts had to address the needs and priorities of producers. In this context, the Competitiveness Program worked with federal institutions, NGOs and local communities to improve local livelihoods and establish economic incentives for biodiversity conservation. Our activities included policy and project-level initiatives to strengthen value chains for sustainably produced goods and services, as well as to foster the development of local Payment for Environmental Services (PES) mechanisms. The Mexico Competitiveness Program supported value chains in ecotourism, honey production, chameadora palm, and sustainable fisheries in high-biodiversity areas in Chiapas and Oaxaca. A particularly noteworthy effort supported training of communities to enable them to develop, launch and operate the "Canto de la Selva" eco-lodge in the Lacandona Rainforest, inaugurated by President Calderon. In addition, the Competitiveness Program worked with Mexico's National Commission for Biodiversity Knowledge and Use (CONABIO) to design US \$11.7 million project funded by a grant awarded by the Global Environmental Facility (GEF) to foster sustainable, competitive production systems consistent with the conservation of biodiversity.

The Competitiveness Program also had major results in promoting Payment for Environmental Services, working with NGOs in Pixquiac, Veracruz and Amanalco, Mexico, to design funding mechanisms, develop resource allocation rules, and train communities on conservation practices. Both mechanisms developed used Competitiveness Program funding to leverage additional resources from the National Forests Commission (CONAFOR) and other governmental and non-governmental sources, promoting sustainability. In response to a request from CONAFOR, the Competitiveness Program also evaluated more than 30 local PES mechanisms throughout Mexico to inform improvements in official funding programs. The Competitiveness Program's evaluation included recommendations that CONAFOR adopted in its operational rules, including modifications to the selection criteria for the allocation of funds favoring proposals that include community-based monitoring and evaluation frameworks, clearly define investment plans for 50% of requested resources, and demonstrate that beneficiaries of ecosystem services provide resources that help fund local PES mechanisms.

5. Turning REDD into reality

The Mexico Competitiveness Program was a major contributor to Mexico's agenda on Reduced Emissions from Deforestation and Degradation (REDD). Because REDD is still largely a conceptual and normative effort, our technical assistance focused on practical implementation challenges at the policy level and for community projects. We supported production of the policy reference document, "Application of Mechanisms for REDD in Ejidos and Communities," which addressed inter-sectorial coordination, and basic elements of community agreements, such as safeguards, property rights issues, and risk management. The Competitiveness Program supported other policy proposals on the linkage between REDD and sustainable rural development and lessons from early REDD pilots. Two central recommendations emerged from this body of work: 1) recognize the role that landowners play in actively managing forests and the importance of obtaining economic value from forest activities; and 2) emphasize community level capacity-building to make REDD projects sustainable. Recommendations were incorporated directly into Mexico's blueprint policy document *Vision REDD+*.

The Competitiveness Program also used a multi-year grant to support one of Mexico's most advanced REDD pilots, undertaken with a group of *ejidos*, or community-owned lands, in the Ocoté Biosphere Reserve in Chiapas. Our work contributed to a better understanding of participatory land-use planning, community-led environmental monitoring, and the management of financial resources derived from forest protection. Beyond local accomplishments in the Ocoté Reserve, the Competitiveness Program had major impact on the National Forestry Commission (which is replicating safeguard and monitoring lessons in other REDD projects), the National Commission on Natural Protected Areas (which is adopting Ocoté mechanisms for its sustainable livelihood initiative in protected lands) and the government of Chiapas (which is incorporating Ocoté pilot recommendations into its state REDD strategy).

Component 2: Economic Governance

6. Strengthening competition policy

Throughout four years of close collaboration, the Mexico Competitiveness Program provided technical assistance to strengthen the capacity and effectiveness of Mexico's Federal Competition Commission (CFC). By supporting transparency, technical expertise and civil society participation, we helped promote CFC's core mission of curbing monopolies and anti-competitive practices. We had a significant impact in:

- **Civil society mobilization:** By using a multi-year grant to support the Mexican Network on Competition and Regulation, the Competitiveness Program kept competition in the public eye in the years leading up to legal reform. The Network produced many of the country's most important independent reform proposals, testified before Congress, held numerous public events and generated media coverage that kept competition policy front and center.
- **Transparency:** The Competitiveness Program supported the creation of technical guidelines on the definition of *relevant market*, determination of market dominance, and opinion survey methodology. These guidelines—available on CFC's website, where they've generated thousands of hits—make explicit the analysis and data CFC use when litigating cases, and boost the credibility of its rulings. In addition, the Competitiveness Program supported the creation of a dedicated micro-site containing all CFC cases and rulings issued since the agency's inception in 1998; this micro-site won an international award for public sector transparency and was lauded in publications such as the Economist.
- **Information forensics:** Following amendments to the national Competition Law in 2012, the Competitiveness Program provided essential technical assistance to strengthen CFC's capacity to implement enhanced authority it received under the reform: in particular, obtaining and analyzing electronic evidence from corporations under investigation for anti-competitive practices.

7. Promoting employment for vulnerable young people

As part of U.S. government assistance to help Ciudad Juárez confront a wave of drug-related crime and violence in 2009, USAID supported numerous initiatives to strengthen communities and promote socio-economic welfare in the city. As part of this effort, the Mexico Competitiveness Program carried out an evaluation of a local employment promotion program aimed at young people who neither work nor study—so-called *NiNis*. Organized by civil society and government leaders, and funded with state and federal resources, the program consisted mainly of workshops to develop social skills valued by employers. While the workshops were popular, the evaluation revealed that the program did little to actively promote linkages between job-seekers and the labor market. So in 2011, the Ministry of Labor (STPS) requested assistance from the Competitiveness Program to design a national employment program for *NiNis*. Core principles included private sector participation in capacity-building content and internship development. With the end of the Calderon administration close at hand, STPS did not take action to implement the proposed program in 2012. However, shortly after the Peña Nieto administration took office, the Undersecretary for Labor Inclusion requested assistance to design and implement a pilot program in Monterrey to demonstrate the potential of a national program and seek broad federal funding. As a result, USAID assistance will leverage a significant amount of GOM public resources to improve opportunities for youth employment.

8. Strengthening economic regulation within state governments

While Mexico's federal government collects most of the country's taxes, state and municipal government spending, through fiscal redistribution to states, accounts for over one-third of total government spending. However, state government procurement in Mexico is often dominated by rent-seeking interests. The purchase of basic goods and services is typically not governed by a transparent and objective bidding process that promotes competition. Collusion, bid-rigging and price manipulation among competitors are common. Working with the Federal Competition Commission, the Mexico Competitiveness Program carried out research to determine the quality of procurement legislation in every Mexican state (including the Federal District), and produced a "model law" on state government purchases of goods and services. The model law proposes basic guidelines for state procurement legislation, including simplicity, flexibility and transparency. During the lifetime of the Competitiveness Program, the state congress of Nuevo Leon formally adopted the law, while the governor of the state of Mexico sent a version of the law to the legislature for approval. CFC continues to use the model law to encourage other states to reform their procurement legislation.

Component 4: Clean Energy

9. Creating opportunities for local suppliers

The Mexico Competitiveness Program helped the Baja California (BC) state government promote wind energy supply chain integration by creating linkages between local businesses and global original equipment manufacturers (OEMs). The Program supported the development of a business-to-government and business-to-business portal (www.bajaeolico.net) to identify firms with capacities and experience required to supply goods and services to OEMs. Supplemented by high-profile events bringing global wind sector firms to the table, the portal enabled BC's State Energy Commission to identify opportunities in the metal-mechanic sector. Although OEMs have not responded quickly, at least one local firm in this sector (Grupo Industrial Persal) is pursuing business leads with Tier 1 and 2 wind energy component suppliers. More broadly, the portal and state government support ensure the sustainability of future efforts to link local suppliers to global value chains. In addition, BC's 2012 Renewable Energy Law incorporated lessons from Competitiveness Program assistance to formally promote local supplier opportunities in renewable sectors. Finally, the Competitiveness Program supported the creation of Mexico's first *diplomado* (certified technical course) on renewable energy project development, graduating 34 Baja California professionals in June 2013.

10. Municipal Public Private Partnerships for Clean Energy Projects

Mexican federal legislation, and most state government laws, allow for private sector participation in energy generation. However, because electricity has long been provided by a public monopoly, local governments have no experience with alternative energy. For over three years, the Mexico Competitiveness Program was Mexico's principal promoter of state and municipal public-private partnerships (PPPs) to develop renewable energy and energy efficiency projects. A key contribution was the development of a path-breaking analytical tool: The website www.energiamunicipal.mx gives legal and administrative guidance to local government authorities and project developers about contract mechanisms to leverage private investment for clean energy projects—especially for “self-supply” of government operations—while minimizing financial risk and avoiding public debt. The online tool and a public education campaign raised awareness about PPP opportunities among municipal officials throughout Mexico and encouraged developers to pursue the first generation of municipal PPP clean energy projects. One important result is a renewable energy PPP in Chiapas, conceived by developers who learned about opportunities through the Competitiveness Program. In addition, shortly before the Competitiveness Program closed, the National Commission for Energy Efficiency (CONUEE) worked with us to integrate the PPP model into the national municipal lighting efficiency program.

III. Implementation problems and lessons learned

The Mexico Competitiveness Program consistently produced high-quality deliverables because we had direct control over the development of proposals to improve public sector (and some private sector) programs and policies. However, as an external stakeholder lacking institutionalized influence, we could not ensure the adoption and implementation of proposals by other organizations. This led us to adopt the standard practice of identifying and verifying the commitment of counterparts before dedicating staff time or USAID resources. The practice was instrumental in achieving our core results.

Notwithstanding our cautious approach, in numerous cases, our proposals did not have the hoped-for impact on governance. Of the 72 distinct activities we undertook over almost five years, 22 were not implemented fully by counterparts. This section describes significant examples, suggests lessons learned from the experience, and proposes recommendations to increase the likelihood of effective adoption and implementation in other USAID-financed initiatives. Non-adoption resulted from three main implementation constraints: the need for private sector approval, lack of public sector commitment, and USAID responsiveness to changing priorities.

A. Reliance on private sector approval

NAMAs: The Mexico Competitiveness Program supported the development of Nationally Appropriate Mitigation Action (NAMA) proposals for the cement and iron/steel sectors—the first of their kind in Mexico. The NAMA approach, conceived in United Nations negotiations, remained in 2010 a completely hypothetical mechanism to support national efforts to reduce emissions. Without significant global funding, emissions cuts depend on a combination of domestic government spending and private sector investment. These innovative NAMAs, developed with Competitiveness Program financing, designed a roadmap for reducing emissions in two high-carbon sectors, and will serve as a benchmark for future efforts. However, given the government's unwillingness to channel resources to highly profitable private industries and the lack of international financing, adoption required private sector industry to make heavy investments in equipment. Despite rhetorical support for the NAMAs, neither the cement nor the iron/steel industry made that commitment. The experience reveals the risk of being a “first mover” in policy-making. It also suggests the limitations of investment proposals that lack clear sources of public sector or external funds.

Sonora Land Use Plan: At the request of the government of Sonora, the Competitiveness Program supported the creation of a technically sound and highly participatory Ecological Land Use Plan (Spanish acronym POET). A team of skilled researchers identified the suitability of Sonora's natural resources and ecosystems for developing

key economic activities and convened stakeholder workshops with civil society, business and government officials in seven cities to discuss findings. The final POET was strongly endorsed by civil society as well as state government officials. Nevertheless, the mining sector was reluctant to support the POET out of concern that its adoption would reduce opportunities for obtaining concessions in areas where no significant mineral resources had been identified. In the face of private sector opposition—and in the political context of an election year—the land use plan did not become law. The experience suggests that governmental commitment to reforms might be limited to broad, socially desirable principles, and that government support can wane when reforms include detailed requirements that imply costs. In Sonora, though the mining sector’s concern was based mainly on perceptions, the state government was unwilling to explain to stakeholders the technical data supporting the POET— risk-averse behavior likely accentuated by upcoming elections.

River pollution regulation: The National Water Commission (CNA) requested Mexico Competitiveness Program assistance to test water purity levels of Rio Lerma, an important river crossing three economically important states. The Competitiveness Program was also to produce an independent cost-benefit analysis of needed investment in water treatment or production changes in industrial and agricultural sources of contamination to improve and sustain the quality of river water. Based on those finding, CNA would then issue a “*declaratoria*,” a formal decree mandating those investments and changes over a certain period of time. The Competitiveness Program delivered high-quality laboratory and economic analyses and organized a series of dialogues that included CNA, civil society and local producers. Despite consensus over the quality of the findings, CNA did not translate the recommendations into the expected *declaratoria*. Doing so would have involved confrontation and possibly political mobilization from powerful stakeholders in the region. At the end of the day, the Competitiveness Program helped CNA fulfill an administrative requirement to develop a cost-benefit analysis; however, the expected decree was not forthcoming. An important lesson from the experience is to fully understand the scope and limitations of an institution’s mandate. When an institution is not compelled to pursue implementation, a deeper analysis of counterpart commitment and political risk should be carried out to assess the likelihood that real action will be taken.

B. Public sector commitment

CONANP legal reforms: One of the Mexico Competitiveness Program’s first activities was the development of proposals to reform the management of National Protected Areas. The activity began with firm commitment from CONANP leaders as well as SEMARNAT legal counsel. Unfortunately, the main CONANP “champion” was moved to a different position outside of Mexico City while the proposals were still being developed. Given the need for congressional review and approval, the loss of our main executive liaison to the legislature led to a stalled proposal. The experience suggests that governance reform efforts requiring actions that originate outside the implementing agency—especially Congress—should be contingent on an institutional commitment rather than the enthusiasm of a particular official. Gauging institutional commitment remains a challenging task, as changes in public administration are common and new officials are usually given significant discretion to disregard actions taken by predecessors. More reliable indicators of institutional commitment could include the inclusion of the proposed reform in the institutional work plan, or support by a network comprising various officials from different areas and/or organizations.

Lerma PES mechanism: In response to a request by the National Water Commission (CONAGUA), the Competitiveness Program conducted economic and legal analysis needed to establish a Payment for Environmental Services (PES) mechanism in the Lerma–Chapala Watershed. CONAGUA’s request was based on an agreement signed between the President of Mexico and the governors of states that are part of the watershed. The agreement instructed CONAGUA to propose the PES mechanism to improve distribution of surface water in the watershed. The studies conducted by Competitiveness Program consultants were presented in numerous meetings, including events organized by the watershed council. CONAGUA articulated commitment throughout the process by facilitating high-level meetings, providing data, and discussing findings in detail.

However, institutional commitment evaporated after the proposed PES mechanism was unveiled. The underlying cause was lack of internal institutional incentive. CONAGUA was legally obligated to propose a PES mechanism but not to actually implement it. Once the Mexico Competitiveness Program enabled CONAGUA to comply with the requirement, the Commission had little interest in advocating for the PES mechanism. The experience indicates that public officials may be more concerned with meeting legal mandates than with improving governance.

MFI regulation: The Mexico Competitiveness Program supported two efforts of the National Banking and Securities Commission (CNBV) to promote micro-finance institutions (MFIs) as sources of private sector credit—1) modifying the definition of micro-finance as a step toward making regulations more flexible for lenders, and 2) encouraging unregulated MFIs to voluntarily become regulated institutions. Both activities would have boosted the ability of MFIs to attract capital and lend to small businesses. The Competitiveness Program produced the deliverables requested, and CNBV officials endorsed and approved all of them. Unfortunately, CNBV did not take further actions to promote regulatory changes promoted by the Competitiveness Program’s work. The key lesson here is the importance of an institutional mandate. While specific individuals were enthusiastic about the project, the President of CNBV was not involved and the Commission was not directed either by the executive or the legislature to promote regulatory reform. In short, while organizational champions are necessary for pushing governance improvements, personal support alone is not sufficient for adoption.

Sustainable Buildings: In parallel with our work supporting the implementation of Mexico City’s highly successful Environmental Management System, the Competitiveness Program also supported the city’s Sustainable Building Certification Program (PCES) to encourage investment in energy and water-saving features in large buildings. Incentives included positive public visibility and modest fiscal concessions. The city requested Competitiveness Program assistance to improve the certification process, which was confusing and so bureaucratized that participants were discouraged to even try. The Competitiveness Program carried out a cost-benefit analysis calculating potential economic benefits and created a technical certification manual to improve PCES’ reliability and objectivity. Unfortunately, internal divisions and differing priorities within the city government resulted in inaction. Because this was the only multi-year activity that did not result in implementation, the lesson was a hard one. In the future, such problems could be anticipated and mitigated by convening regular meetings among institutions that are expected to cooperate.

C. Responsiveness to new priorities

When the Mexico Competitiveness Program began in October 2008, half of the budget comprised Congressional earmarked funds for biodiversity protection. Smaller but significant earmarks focused on urban water management, micro, small, and medium enterprise access to finance, and renewable energy (a set-aside). During the second year, climate change began to emerge as a key policy priority for both Mexico and the United States. As a consequence, the biodiversity earmark was scaled back and the other targeted funding in the contract was eliminated, while fast-start climate change funds were obligated, increasing the Program’s overall budget. By the third year, most of the budget was dominated by Global Climate Change funding, divided roughly between Sustainable Landscapes and Clean Energy.

Before USAID’s Mexico Low Emissions Development (MLED) and Mexico Reduced Emissions from Deforestation and Degradation (MREDD) programs were launched at the end of 2011, the Mexico Competitiveness Program was USAID’s major initiative addressing economic and environmental policy. USAID/Mexico therefore turned to the Competitiveness Program to address priority climate change areas in addition to the Program’s economic governance and environmental management activities. The Competitiveness Program responded quickly, achieving key results and having a sustainable, transformative impact on Mexico’s climate change agenda as well as on other environmental management and economic governance issues, as described earlier in this report.

In the context of changing USAID priorities and directed funding, the Competitiveness Program successfully shifted focus and resource allocations. USAID guidance and funding priorities enabled the Competitiveness Program

to achieve major impacts in previously lower profile areas, especially clean energy, forest protection (REDD+), low emission development analysis and tools, and the climate change legal framework. To allow for this change of priorities, certain policy areas that were earmarked in Year 1 funding lost their directed funding in subsequent years. This was especially evident in two sub-components of efficient precursor markets: water utility management and SME access to capital through micro-finance.

Meanwhile, USAID channeled half of the Program's obligated climate change funding into the other sub-component of precursor markets —renewable energy— resulting in a stand-alone Clean Energy component beginning in Year 3. That Component achieved major positive impact in the promotion of energy efficiency and renewable energy investments, especially among local governments, while the Environmental Management Component achieved significant governance improvements in REDD+ policy and implementation, mainstreaming legal aspects of climate change within government operations, and biodiversity protection.

Component 2 (economic governance) also effected positive change and had important outcomes that resulted from USAID prioritization, support and funding. Strengthening competition policy had tremendous support from the Federal Competition Commission and received significant attention from USAID and the U.S. Embassy's economic section. Similarly, while the Competitiveness Program youth employment activity began as an experiment that responded to the U.S. Embassy's priority of supporting Ciudad Juarez, that initiative was upscaled to the national level and was eventually endorsed by Mexico's new undersecretary for labor inclusion.

In conclusion, USAID effectively used funding decisions to direct the Mexico Competitiveness Program toward emerging counterpart and USG priorities. In this regard, the Competitiveness Program demonstrated considerable agility and flexibility in responding to changing Congressional earmarks, allocating resources as necessary and carrying out multi-year activities in close collaboration with the U.S. Embassy and Mexican governmental organizations. As a result, the Competitiveness Program achieved significant, long-lasting, transformative impacts in areas not originally envisioned.

Chapter 1

Electronic Monitoring and Reporting System

for the Special Program on Climate Change
(PECC)

Chapter 1

Electronic Monitoring and Reporting System for the Special Program on Climate Change (PECC)

Context

Mexico is the first developing country to commit to specific, voluntary goals to combat climate change. Its Special Program on Climate Change (PECC in Spanish) includes 105 mitigation and adaptation objectives, to be achieved through almost 300 actions carried out by 20 federal government agencies. Achievement of PECC goals would reduce emissions by 51 billion metric tons of CO₂ per year by 2012. According to the Ministry of Environment's (SEMARNAT) Progress Report on PECC, published in 2012, the Government of Mexico was expected to exceed this goal by 4% by the end of 2012.

SEMARNAT is responsible for gathering and processing data produced by all agencies with climate change commitments. Before USAID's Mexico Competitiveness Program provided technical assistance, SEMARNAT collected data in a highly *ad hoc* manner, using spreadsheets from all participating agencies, periodically revising assumptions used to calculate CO₂ emissions reductions, and requesting public officials from other parts of government to submit data on time.

Given these challenges, SEMARNAT was convinced the development of a web-based system could help other agencies report their progress in implementing the PECC in a more efficient and consistent manner. Moreover, such a system would help SEMARNAT itself to collect, consolidate, analyze and present that information to the president's office and eventually to the public. SEMARNAT also recognized the importance of the system for Mexico's continued leadership in international climate change negotiations. In this context, the system had to provide reliable information about Mexico's progress in achieving its voluntary GHG mitigation goals, thereby enhancing credibility on the country's efforts, setting the foundations for a national Monitoring, Reporting and Verification (MRV) system, and improving prospects for obtaining international funding from donors.

Two major tasks loomed: developing a functional online reporting system to be used by numerous and diverse public sector institutions, and facilitating a high degree of coordination among institutions required to submit data. None of the software programs available in the market met Mexico's needs, and in fact, Mexico had relatively few examples to follow, since no other developing country had achieved a similar level of progress in implementing a national climate change program with quantifiable goals. SEMARNAT and Competitiveness Program staff considered two options: customizing an existing system developed to monitor greenhouse gas emissions mitigation projects, or building a tailored system that incorporated elements of project management and environmental management programs.

With support from the Mexico Competitiveness Program, they opted for a custom system, building on Abt Associates' extensive, in-house experience developing reporting systems for the U.S. Environmental Protection Agency. USAID agreed Abt could work closely with Competitiveness Program and SEMARNAT staff to effectively adapt that work to Mexico's institutional environment.

Before developing the system, Competitiveness Program staff met with SEMARNAT and other agencies participating in the PECC, who indicated that the system should build synergies with reporting platforms already being used by the Government of Mexico. They also stressed that the system should add value by helping them to do their job more efficiently, rather than simply becoming one more of numerous tasks that they needed to complete.

After initial discussions, SEMARNAT and the Competitiveness Program agreed that the system would be web-based, and handle multiple users with different levels of access. These characteristics would help to ensure that only pre-approved users would be able to report the data for which they were responsible. In addition, profiles would be created for reviewers who would ensure that the submitted data met agreed reporting standards.

Outputs

The Competitiveness Program developed and transferred to SEMARNAT a functional online monitoring system, whose main functions included:

- Registering, updating and processing information from all governmental agencies that had responsibilities for PECC implementation.
- Generating automatic on-demand reports tailored to different information needs. The reports helped evaluate the progress and performance of the PECC by general and specific objectives and by lines of action.
- Incorporating methodologies, algorithms and formulas to calculate reduction of CO2 equivalent emissions based on the captured values necessary for each calculation. This enabled government agencies to report their progress using metrics most familiar to them. For example, government agencies working on reforestation projects would report the number of reforested hectares, rather than the CO2 sequestered as a result of this activity.
- Storing documentary evidence to enhance the reliability of progress reported by each government agency.
- Full integration with SEMARNAT's Information System for Cross-Cutting Agendas (SIAT), which was the ministry's first effort to mainstream environmental actions in other sector's activities, including many related to climate change. Unlike PECC, these agendas were not integrated into a comprehensive program and did not contemplate quantitative targets. However, government agencies were still required to submit periodic reports on their progress through SIAT, so they often reported the same information twice: once for PECC's purposes and another for SIAT's. The PECC system was developed to automatically communicate with SIAT and populate the fields contained by both systems.

In addition, the Competitiveness Program produced a comprehensive [training manual](#) for users of the electronic monitoring system.

Results

The Competitiveness Program developed custom-made software to create an electronic monitoring and reporting tool, and tested the software, methodologies, and GHG conversion factors. The Program also facilitated public sector consultations and trained public sector officials on how to use the system by writing a manual and conducting training sessions in which each user could run the system and input data for activities under their supervision. The training also elicited users' comments on the system.

In addition to generating a technical benchmark for developing countries, USAID's Program catalyzed unprecedented intra-governmental cooperation for data reporting and progress evaluation. As a neutral third party, the Program was able to convene multiple agencies, question methodological assumptions, and deliver technical solutions to make reporting progress easier.

The reports generated with the system now inform high-level public officials—including the President's Office—about progress in implementing Mexico's climate change goals. Having this information enables the President's Office to identify "leaders" and "laggards" in PECC implementation, as well as communicate to the general public the results of Mexico's efforts to tackle climate change. In addition, information generated by the system is informing the development of Mexico's medium-term climate change strategy.

The Mexican Government can now systematically produce and document key information on its climate change goals, a capability that enhances its credibility within the international community. As new international cooperation instruments emerge to tackle climate change, the development of Monitoring, Reporting and Verification (MRV) systems are becoming increasingly important to assess the degree to which countries are meeting their

climate change commitments. In developing countries, MRV systems have the potential to demonstrate that donor funds are being effectively used to meet climate change goals. In this regard, the system developed by the Competitiveness Program offers a reliable platform on which Mexico can build a robust MRV system to enhance its access to international funds.

SEMARNAT climate change official Jose Antonio Urteaga summarized the importance of the system: “We all have responsibilities as countries and as individuals. The only way to show that we are actually making progress is to measure, follow up on and evaluate compliance with objectives, goals, and strategies.” The PECC monitoring system demonstrates how the U.S. Government works with developing countries to support the achievement of their climate change goals.

In addition to creating the system, the Competitiveness Program improved its functionality over time to enable SEMARNAT to add or delete goals—a crucial feature that ensures the system’s continued usage after the 2012-2018 PECC is adopted by the current federal administration. The Competitiveness Program also delivered three technical manuals for data enterers, validators and SEMARNAT officials who authorize system usage by other government agencies.

Chapter 2

Implementing Mexico's Pioneering Climate Change Law

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Implementing Mexico's Pioneering Climate Change Law

Mexico has been a leader among developing nations in designing climate change policy, with pioneering achievements in economic analysis, public policy reform, and the use of information tools. However, these achievements have outpaced the legal and regulatory capacity of Mexico's public sector, which has little experience in climate change-related legal analysis, design and implementation of legal and regulatory initiatives, or drafting bills and regulatory changes. Scaling up mitigation and adaptation projects—and implementing broader low-carbon development policies—means modernizing and strengthening the government's regulatory and legal framework with respect to climate change imperatives.

In 2009, the Mexican Congress began discussing proposals to modify the country's legal framework and determined neither Mexico's executive nor its legislative power had the experience or skills to assess potential implications of alternative climate change legislation or regulation. Domestically, they needed to discuss any mandatory instrument with the private sector and other stakeholders, as some had legitimate concerns about impacts on their competitiveness. Internationally, major negotiations were underway to craft a new climate regime, so Mexico needed to ensure its adopted instruments are consistent with international agreements.

In June 2012, Mexico adopted a General Law on Climate Change (GLCC), which created a number of responsibilities related to climate change for the federal, state, and municipal governments. However, the law was considered a "programmatic instrument," focused on the process to develop, implement, monitor and evaluate climate change strategies and programs at different jurisdictional scales. The law also provided a legal mandate to create new regulatory instruments, such as a greenhouse gas (GHG) registry. However, these more specific instruments were not defined by the law and would require further regulatory developments.

The Ministry of the Environment and Natural Resources (SEMARNAT) requested technical assistance from the USAID/Mexico Competitiveness Program to conduct activities to identify best legal and/or regulatory options on key climate change issues and build the capacity of public officials to assess the implications of such options for the government, the private sector, and the country in general.

Outputs

Specialized training on climate change

This activity evolved over time, in response to the growing needs of SEMARNAT and other stakeholders. The Program began with tailored training to Mexican government lawyers on the legal implications of climate change and its responses. The five-day training course was structured to: 1) build high-level legal capacity in identification of legal and regulatory barriers and opportunities to develop climate change policies; 2) involve high-level Mexican officials in the analysis and development of legal and regulatory proposals and approaches for the design, implementation and operation of a climate change regime conducive to low carbon development; and 3) conduct research, academic analyses and discussions on legal and regulatory barriers to climate change in Mexico compared to the U.S. and other key countries.

Eighteen legal officials from the Legal Counsel of the Federal Executive, the Secretariat of Natural Resources, the Secretariat of Energy, the Office of Senator Alberto Cárdenas Jiménez, the Foreign Secretariat, and the Secretariat of Interior traveled to Washington, D.C. for the training course, August 23-27, 2010. Prior to the participants' arrival in D.C., each Mexican official participant selected a topic of focus, which enabled participants to think through relevant issues during the week and to ask relevant questions of expert lecturers.

Training participants, SEMARNAT and key legislators indicated that the course had been highly relevant and immediately resulted in richer dialogue on the climate change law being discussed in Congress at that time.

At the same time, these stakeholders indicated the need for continued support to foster climate change law and regulation formulation in Mexico. The Competitiveness Program also produced a [report summarizing the training course](#).

Climate Change Network

In line with this request, the Competitiveness Program also promoted the creation of the U.S.-Mexico Climate Law Network, composed of experts in fields of law relevant to climate mitigation in the United States and Mexico, to facilitate collaboration and knowledge sharing around climate law and policy developments for Mexico and North America. The Network brings together interdisciplinary legal experts in each country to develop relevant and timely recommendations, legal tools, and initiatives to combat climate change.

To strengthen the network's convening power and reach out to private sector lawyers, the Program partnered with the Cyrus R. Vance Center for International Justice, a philanthropic organization linked with the New York City Bar. By August 2013, the Network had nearly 20 members, including lawyers from private firms, public organizations, academia, and think tanks. All of them participated on a *pro bono* basis, and Program subcontractor ELI was the Network's technical secretariat.

After the change of federal administration in December 2012, ELI and the Network held meetings with new administration members to understand their priorities and perspectives on further development of Mexico's climate change legal and regulatory framework. SEMARNAT requested further support for analysis on regulatory options for creating a GHG mandatory registry in Mexico—a pressing concern because the GLCC mandated the executive branch to issue regulations governing the registry before the end of 2013.

The Program and SEMARNAT organized the workshop *“La Ley General de Cambio Climático, ¿Cuáles son los Sigui- entes Pasos? Propuestas para su Instrumentación,”* on August 15, 2013. During the workshop, experts from ELI and the Network offered independent perspectives on how to advance GLCC's implementation in three areas: 1) the National Climate Change System, integrated by federal, state and municipal authorities; 2) cross-sectoral collaboration; and 3) incentives to promote private sector participation.

Policy Research and Proposals

The Network's first white paper *“Market Readiness Legal Assessment for Mexico,”* completed in May 2011, focused on market readiness in general, assessing its relevance, potential linkages between competitiveness and the establishment of caps on GHG emissions, and steps taken globally to advance creation of carbon markets. The white paper also compared dispositions related to a carbon market in climate change laws adopted by the states of Veracruz and Chiapas, and Mexico City, as well as those included in several bills proposed by the Mexican Federal Congress. In addition, the white paper assessed existing legal, regulatory, and policy frameworks related to GHG emissions, including the legal capacity of different agencies to integrate emissions registries, record transactions, and issue permits or certificates. It discussed key technical issues from a legal perspective, including sources to be included in a potential new system for market readiness, the reference or baseline year, different instruments that could be adopted (e.g. a cap and trade regime or a fee), the allocation of emission permits, and the Monitoring, Reporting and Verification system. Finally, the paper proposed options for the establishment of a legal domestic carbon trading market.

The Network's book *“What are the Next Steps? Legal Perspectives on Mexico's General Law on Climate Change”* included specialized translation to English of Mexico's General Law on Climate Change. Each Network member elaborated a brief opinion on the main challenges and opportunities created by the law, and recommended next steps for the Government of Mexico to strengthen the legal framework on climate change. The book was presented in November 2012 in an event co-chaired by the Presidents of the Environmental Commissions of the Congressional Lower and Upper Houses, as well as by the Under-secretary of Environmental Policy and Planning from SEMARNAT. After the first printing of 100 books, the Program received frequent requests

for more and produced a second edition of 300 books, including new opinions from high-level officials from the new federal administration distributed during the August 15 workshop.

The second white paper was entitled “[Step-by-Step Guide to Regulatory Alternatives for the Design of a National GHG Registry](#).” It focused on best practices for the establishment of voluntary and mandatory greenhouse gas registries. ELI reviewed 13 existing registries: two from Mexico, six from the U.S, two from Canada, and one each from the European Union, Australia, and New Zealand. The analysis compared these registries and assessed whether they met the requirements established by Mexico’s GLCC. As a step-by-step guide for policy makers it focused on: 1) goals and scope, 2) structure, 3) regulations for measuring and estimating emissions, 4) reporting requirements, 5) quality control and verification, and 6) key elements to ensure the registry’s effectiveness (such as capacity building). The analysis was presented during the August 15 workshop.

Judicial Capacity-Building

The Competitiveness Program also worked with the Mexican judiciary to build the capacity of judges who decide cases related to climate change. Mexico’s Federal Judicial Institute requested support to help judicial staff understand the main issues associated with climate change, how judges could incorporate scientific evidence to support their rulings, and experiences from the United States’ environmental tribunals regarding the application of the precautionary principle to reach decisions such as how to regulate greenhouse gases (GHG). The Program’s week-long training event for the judiciary, February 18-22, 2013, was attended by almost 650 people, 200 in person and more than 400 through videoconferencing.

Results

USAID support had a tangible impact on the development of Mexico’s new climate change law. The Program’s white papers informed definition of the National GHG Inventory, the Registry, and economic instruments for climate change mitigation. The Competitiveness Program’s contribution was recognized in a [letter sent to the USAID Mission Director by Senator Ninfa Salinas](#), who led the preparation of the bill and consensus-building efforts for its approval by both Congressional chambers. Mexico’s GLCC is recognized as one of the most comprehensive climate change laws worldwide—and the only of its kind in the developing world.

In addition, the Program’s white papers and workshops created inputs and recommendations that helped Mexico’s executive branch consolidate the country’s climate change legislation, including specific inputs for the regulations of the National GHG Registry. The final workshop, held on August 15, 2013, featured presentations by experts that contributed to an agenda outlining main actions and responsibilities for units within SEMARNAT. (See [press release](#).) The executive, legislative and judicial branches each recognized the Program’s contributions, and expressed interest in continuing the initiative to institutionalize legal aspects of climate change within regular government operations. USAID’s Mexico Low Emissions Development (MLED) Program is anticipated to continue support in this area.

Chapter 3

Mexico City

Environmental Management System (EMS)

Chapter 3

Mexico City Environmental Management System (EMS)

Government agencies often generate a significant environmental footprint due to inefficient water and energy use, consumption of goods produced in an unsustainable manner, and inadequate waste management (especially neglect of recycling). To address the environmental and economic costs of these public sector practices, the Mexico City Government (*Gobierno del Distrito Federal* or GDF) began developing its *Sistema de Administración Ambiental* (Environmental Management System or EMS) in 2001 with USAID support.

EMS goals are to increase energy and water savings in local government offices, encourage “green procurement” (purchase of environmentally sustainable goods and services), and promote separation and recycling. By September 2006, 30 buildings in 17 GDF agencies had incorporated EMS recommendations—with impressive resource savings—and reduced CO₂ emissions. However, due to a change in administration, efforts to develop and implement the EMS were discontinued in 2007.

In October 2009, the Mexico City Secretariat of Environment (SMA) requested technical assistance from the Mexico Competitiveness Program to reactivate, strengthen and implement the EMS as a standard practice in government offices. Broad goals were to reduce greenhouse gas emissions from city operations and save money by promoting more efficient energy and water use, reducing consumption of goods and waste generation, and mainstreaming recycling.

These activities had be aligned with the city’s Climate Action Program (2008-2012), which sought to lower emissions and heighten adaptation to the effects of global warming. In addition, the GDF requested assistance to develop a program to reduce the number and distance of employee commutes, anticipating these would result in decreased congestion, reduced emission of greenhouse gases and other pollutants, and improved productivity.

The GDF’s goals were extensive and ambitious. Mexico City is at the heart of one of the world’s largest metropolitan areas, and the city government has over 110,000 workers and more than 30 agencies. When the Competitiveness Program accepted their challenge, we knew it would involve a multi-year activity, a team of highly skilled consultants, and constant consultations with SMA leadership. The EMS stands out as one of the Competitiveness Program’s flagship programs, achieving significant results during and after our assistance.

Activities

In October 2009, GDF environmental officials and Competitiveness Program staff met to identify opportunities to strengthen the city’s “greening government” efforts. The GDF Ministry of Environment (SMA) articulated three main objectives of EMS.

1. Be a visible example to influence attitudes and behaviors of Mexico City’s population. Even marginal changes among millions of people can add up to a big difference.
2. Save money and prove cost-effectiveness.
3. Change the behavior and daily practices of more than 100,000 city employees, with the potential of reaching the nearly 90,000 additional employees that work in the city’s *delegaciones* (districts).

During the first phase of technical assistance, consultants assessed the status of the EMS across GDF organizations and updated technical manuals—produced with USAID support in 2001—on efficient water and energy use, waste reduction, and procurement of environmentally friendly goods. These revisions helped simplify procedures for public officials with diverse backgrounds, and to incorporate new technologies, such as water-saving toilets or more efficient lamps.

During the second phase, consultants carried out analyses to implement the EMS in 15 city buildings.⁵ They evaluated existing practices and the efficiency of equipment that use water or energy and recommended ways to improve environmental performance—as well as legal and administrative reforms needed to institutionalize EMS actions.

The third phase carried out reforms on the ground. In July 2010, the city created an inter-agency high-level committee (*Comité del Sistema de Administración Ambiental*) to oversee EMS implementation. The committee was launched in a public event in which Mayor Marcelo Ebrard and U.S. Ambassador Carlos Pascual expressed their mutual commitment to achieve Mexico City's green government goals. The Committee includes working groups for each area (water, energy, solid waste, and green procurement) in each of the participating buildings or agencies.⁶

During this phase, consultants also carried out a market assessment of environmentally friendly office supplies that could be purchased by GDF organizations and began training courses for each working group. The Competitiveness Program eventually trained more than 250 public officials on how to implement the EMS, including establishment of a baseline, monitoring progress and benefits obtained from the implementation of the EMS, and how to report progress to SMA, which is responsible for integrating information on the EMS.

During 2012, Competitiveness Program support expanded the number of agencies participating in the EMS, provided analytical work to inform development of a program to reduce commuter trips, and developed an online reporting system to replace the current method of Excel spreadsheets submitted by email. On October 25, 2012, the inter-agency committee held its last session under the Ebrard administration, during which Mexico City's Secretary of Environment presented achievements from the EMS implementation and awarded 14 institutions for their outstanding performance. The USAID Mission Director was present when the Secretary said EMS implementation would not have been possible without USAID's support through the Competitiveness Program.

In December 2012, Mexico City's newly elected mayor, Miguel Ángel Mancera, designated Tanya Muller as the new Secretary of Environment. On February 1, 2013, Competitiveness Program staff met with Muller and briefed her on previous and ongoing USAID support, including EMS implementation and development of an electronic monitoring and reporting system for the city's climate change action program. The Secretary expressed her support for continuing EMS implementation, and requested immediate assistance in two new initiatives: promoting carpooling among Mexico City employees and undertaking a feasibility study to develop a biogas project at the city zoo.

On March 15, 2013, the Competitiveness Program delivered to Mexico City officials the first version of an online system for monitoring and reporting EMS achievements, which was then modified to incorporate City representatives' feedback. On March 21, the new administration convened the first meeting of the EMS working group, including representatives from more than 40 Mexico City agencies, to learn about planned 2013 actions from the Competitiveness Program. In June 2013, Muller instructed her staff to evaluate preliminary results of the new phase of the EMS, which demonstrated that some organizations were not implementing the EMS, due to two factors: 1) lack of commitment of new secretaries and 2) lack of knowledge about operational standards of the new maintenance directors.

The Secretary took two actions to remedy these: First, by organizing a meeting with the GDF cabinet to present EMS activities to be undertaken for during the rest of 2012, as well as to describe the legal framework requiring implementation of the system. Second, SMA organized training sessions for the maintenance staff of the GDF buildings. In July 2013, Competitiveness Program consultants carried out five trainings for over 150 employees of GDF responsible for EMS compliance, focusing on preparation of diagnostics on water use, energy use and waste management at the building level, as well as procurement of office supplies at the ministry level. Competitiveness Program consultants then responded to specific questions or challenges faced by particular ministries during the preparation of their diagnostics.

⁵ The buildings that participated in this first phase were selected because the EMS had continued working in them after 2007, at least partially, with at least two working groups.

⁶ Water, energy and waste management are managed at the building level, while procurement is done at the ministry or agency level.

Outputs

USAID support for EMS implementation spanned almost four years. The Competitiveness Program’s work included capacity-building, diagnostics and production of technical materials needed to mainstream EMS implementation. Crucial outputs were simplified, updated training manuals for [water](#), [energy](#), [wastes](#), and [office supplies](#), which help ensure EMS sustainability after USAID support and give GDF staff the basic tools to carry out future diagnostics themselves. In addition, the Competitiveness Program created detailed catalogues of sustainably produced goods and services available in the market to inform purchasing decisions about [electrical equipment](#), [water saving devices](#) and [office supplies](#).

Increasing efficiency in city buildings

With the Program’s support, 37 city agencies completed over 80 diagnostics, which highlighted the vast potential of the EMS. Findings indicated that participating agencies could reduce water consumption by 12 percent and energy consumption by 20 percent for an investment of about US \$200,000, an extremely modest sum given the scale of Mexico City’s budget. Moreover, the investment could be recovered in just over two years thanks to cost savings from reduced water and electricity bills. The Competitiveness Program trained more than 400 officials during two cycles on each topic for energy, water, and procurement of office supplies. The GDF requested two trainings on waste during each cycle due to higher demand and because regulations required each GDF building to prepare and execute a solid waste management plan.

The Competitiveness Program also identified legal and administrative reforms needed to institutionalize environmental management systems, including a dedicated unit within the SMA to lead EMS implementation and give technical support to participating agencies. The Competitiveness Program also made recommendations to overcome key barriers to EMS implementation, including lack of resources and information to change equipment or practices, competition of the EMS with other priorities, and lack of incentive to change behavior.

During July 2013, the Competitiveness Program carried out five trainings for over 150 GDF employees responsible for compliance with the EMS. Capacity-building focused on the preparation of diagnostics on water use, energy use and waste management at the building level, as well as procurement of office supplies at the ministry level. The diagnostics identify opportunities for investments and changes in behavior that reduce negative environmental impacts from day-to-day operations.

Promoting car-pooling

On April 22, 2013 the Mexico City Government officially kicked-off a pilot to promote carpooling among city employees within five secretariats. Supported by the Mexico Competitiveness Program, the program was implemented by Aventones, a Mexican startup that offers an online service to help match individuals and routes within large organizations through a private social network. The Aventones service also gives administrators usage data making it possible to estimate reduction in CO₂ emissions. Working closely with city leaders, Aventones is also developing an internal outreach campaign as well as a system of incentives to foster behavior change among thousands of employees. The site for Mexico City employees is live at www.aventonesgdf.com. Aventones was





Figure 2. Mexico City Mayor Miguel Ángel Mancera inaugurates ride-sharing program.

the runner-up of the USAID-supported Cleantech Challenge Mexico 2011 and has since set up systems in over 30 organizations in Mexico and Chile. The kick-off was hosted by Mexico City Mayor Miguel Ángel Mancera, and featured a keynote speech by U.S. Ambassador Earl Anthony Wayne. The Competitiveness Program also prepared an animated video to explain the Aventones-GDF initiative and is available at: youtube.com/RbYZCKUD18Q.

Results

Active implementation of Mexico City's Environmental Management System, after two changes of administration, is the most important result of Competitiveness Program support. The City's official public record (*gazeta*) for July 26, 2010 included the publication of the agreement under which then Mayor Marcelo Ebrard established and legally institutionalized the EMS.

During 2011 and 2012, the Competitiveness Program supported implementation of measures in all participating agencies, which resulted in economic savings of around US \$500,000 from reduced water and energy consumption. Moreover, increased efficiency resulted in savings of 2,134,731 m³ of water, 9,276,592 kw/h of energy, and 35,821 tons of CO₂. Improved solid waste management practices promoted by the EMS—including recycling and recovering of wastes with economic value (e.g. organic waste for compost, aluminum cans)—decreased solid waste by 3,816 tons. On June 19, Competitiveness Program subcontractor Aventones presented the progress report for May on the Mexico City Government car-pooling pilot. As of that date, the system had 573 registered users with 319 confirmed car-pools and estimated emission reductions of 248 kg of CO₂.

On June 24, 2013, Secretary Müller organized a meeting with the Mexico City cabinet to present the activities that would be undertaken as part of the Environmental Management System for the rest of the year. During the meeting of cabinet officers, the Secretary announced that the first results of the EMS would be presented to Mayor Mancera later in the year. She also stated that the Secretariat of Environment was committed to continuing implementing the EMS after the Mexico Competitiveness Program ended in August 2013. After numerous consultations and planning meetings with USAID staff and partners, technical assistance is expected to continue in some form under the USAID Mexico Low Emissions Development (MLED).

Chapter 4

Generating Alternative Incomes

in High Biodiversity Areas

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Generating Alternative Incomes in High Biodiversity Areas

Mexico is classified as one of the top five biologically “megadiverse” countries in the world, yet the country’s unique ecosystems face threats from urbanization, infrastructure, tourism, small-scale farming and poor forest management. Because local communities own much of this land, biodiversity conservation efforts must address the needs and priorities of producers. The Mexico Competitiveness Program worked with federal institutions, NGOs and local communities to improve local livelihoods and establish economic incentives for biodiversity conservation. Our activities included on-the-ground projects to develop and implement local Payment for Environmental Services (PES) mechanisms, as well as to strengthen value chains for sustainably produced goods and services.

A. PES Mechanisms

Ecosystems provide four services: (1) **supply**: water, food, fibers, genetic resources; (2) **regulation**: hydrological and carbon cycles, climate, diseases; (3) **cultural**: spiritual and religious values, recreation, natural heritage; and (4) **support**: soil formation, nutrient cycles. Yet despite these social and economic benefits, many ecosystems are threatened because they do not have a universally recognized economic value.

On the supply side, landowners do not benefit directly from most of the ecosystem, so they do not incorporate those services in land-use decisions. For example, converting forests into agricultural fields can increase short-term economic gains, but speed deterioration of environmental services the ecosystem provides. On the demand side, beneficiaries of such services are typically located far from the ecosystems that provide them, and have traditionally received benefits at no cost. It is difficult to impossible to exclude individuals from certain ecosystem services, such as climate regulation, so users lack incentives to pay for such services. The significant loss of forest ecosystems (Mexico’s net deforestation rate is 155,000 hectares per year), along with increased conflict over water resources, indicate that environmental services are already under stress in many parts of the country. Without a substantive instrument to induce behavior change, the situation will worsen and spread.

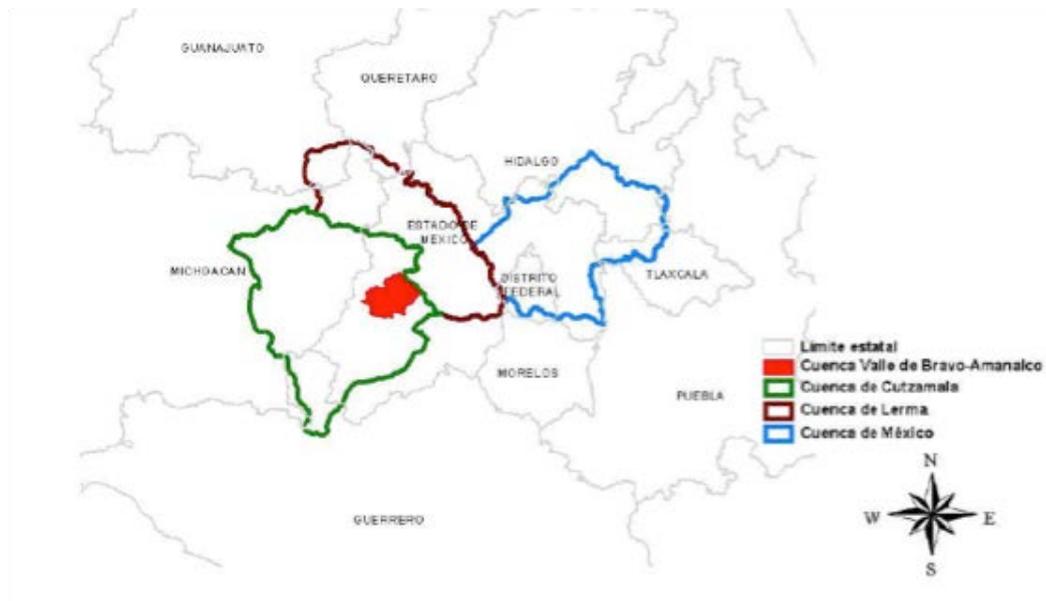
A number of governmental and non-governmental organizations support creation of Payment for Environmental Services (PES) mechanisms to link environmental service users and providers, facilitating payments from the former to the latter, in exchange for the adoption of practices that preserve or improve environmental services.

The National Forestry Commission (CONAFOR) spearheaded the establishment of PES mechanisms in 2003, with an initial nationwide program to pay forest-owning communities that commit to practices like maintaining fire breaks and inspecting trees for diseases. While successful in reducing deforestation rates, the program had serious limitations: Its sustainability was threatened by perpetual dependence on a government subsidy, and it had difficulties adjusting to the wide social, environmental and economic differences across Mexico. For example, opportunity costs of forested land are higher in areas with faster urban and tourism development than in remote communities. The Mexico Competitiveness Program supported several PES projects designed to address sustainability, as well as a major research initiative to gather lessons learned on PES mechanisms throughout the country.

Valle de Bravo Watershed

Valle de Bravo-Amanalco is a subwatershed of the Cutzamala watershed and provides 40% of the water consumed in the metropolitan area of Mexico City and Toluca (Figure 3). The Valle de Bravo dam supplies 38 percent of the water of the Cutzamala System (6 m³/second) and has become an important asset for tourism and real estate development. The watershed faces severe environmental challenges, including a serious soil erosion problem of approximately 67 ton/ha/year, resulting in damages to the Cutzamala infrastructure and sediments in the dam, which has diminished its storage capacity by 21 percent since its construction in 1947.

Figure 3. Map of the Valle de Bravo – Amanalco Watershed



Environmental degradation had led to loss of livelihoods for the rural communities who live in the watershed and own the majority of the surrounding forests. Low profitability and changing regulations of the forestry sector have diminished incentives to manage forests, and sound, traditional agricultural practices have been abandoned or substituted by modern ones that boost yields in the short run, but erode the natural resource base, reducing long-term harvests.

The *Unión de Ejidos Emiliano Zapata*, supported by the Competitiveness Program partner *Consejo Civil Mexicano para la Silvicultura Sostenible* (CCMSS), initiated establishment of a PES mechanism to reward landowners who adopt good practices to manage soil, water, forestlands, agricultural lands and landscapes—improving different hydrological ecosystem services along the watershed while supporting the economic and institutional development of the rural areas. The Competitiveness Program supported research and outreach with communities in the Valle de Bravo-Amanalco region to design a locally responsive PES mechanism, including:

Three-tiered mechanism for individual households: The Program team identified best practices for household plots—including terracing, rotating crops, substituting agrochemicals for natural products, and adopting better watering technologies (such as drip and aspersion)—and assigned a number of credits for each activity. Each household was given the option of adopting the practices they wanted, and based on the total number of credits, they would be eligible to participate at a basic, advanced or organic level of the PES mechanism. At each level, the household would receive a payment (which increased at each progressive level), as well as technical support, basic inputs and assistance to monitor the effects of the adopted practices.

Community mechanism: To promote collective action in shared lands, including forests, rivers, and urban centers, communities were encouraged to adopt a land use plan. Good practices include erosion control in roads and

gullies, waterbed conservation and restoration, soil and water conservation in forested lands, and adoption of community regulations to manage agricultural land and infrastructure development.

Local social and environmental monitoring system: The Program and CCMSS developed a rigorous monitoring system to assess changes in key variables resulting from the adoption and implementation of the PES mechanism, including: (1) the land’s functional stability; (2) local governance; (3) land management and its environmental impacts; (4) social impact and incidence of the PES mechanism; and (5) economic impact. A baseline was given for all five areas at the beginning of the project, including both a control and an intervention group.

The Competitiveness Program facilitated technical assistance from USDA soil conservation and management expert Dr. Jerry Lemunyon, who provided a range of low-cost tools being used in the U.S. to monitor relevant variables, such as erosion and soil quality, and trained local communities and technicians on conservation planning and management (Figure 4). The Program team helped *ejidos* incorporate best land management practices in the annual operating plans that guide their forest management efforts, aligning natural resource conservation efforts with economic activities.



Figure 4. Training in local communities

The final report, “*El Programa de PSA en la Cuenca Amanalco-Valle de Bravo y su Sistema de Monitoreo y Evaluación*” described: (1) the design of the PES mechanism developed for the region; (2) best practices adopted by land-owners between 2009-2011, (3) the local monitoring and evaluation system for the watershed, (4) a preliminary carbon stock account; (5) operational plans adopted by *ejidos* to improve management of their natural resources.

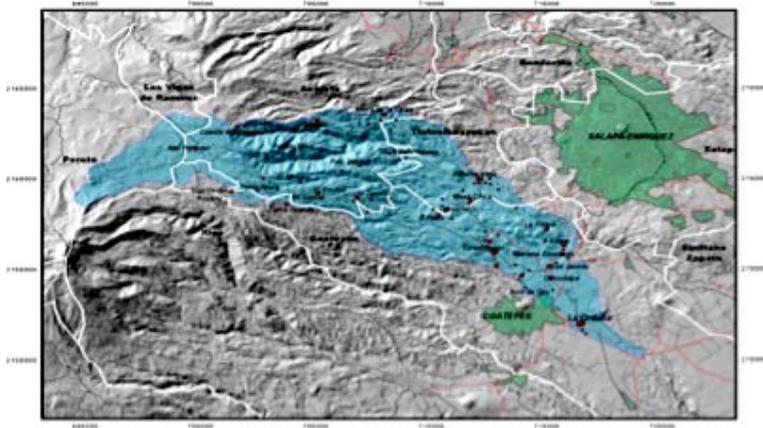
By the end of 2012, nine *ejidos* had formally adopted their land use plans and four *ejidos* had adopted new regulations which formally defined their rules and decisions on how to manage lands to promote sustainable use of natural resources. In addition, 37 households with a total area of 148 hectares were participating in the PES mechanism.

The Program leveraged 2.5 million pesos (USD \$200,000) to invest in forest restoration, and promote adoption of best agricultural practices on 140 hectares. In 2012, USAID awarded CCMSS a grant to continue working in Amanalco, extending this effort beyond the term of the Competitiveness Program. In 2013, the United Nations Convention to Combat Desertification awarded CCMSS second place in the “Land for Life” contest for its Amanalco work.

Pixquiac Watershed, Veracruz

Half the water used by the City of Xalapa, capital of the state of Veracruz, comes from the Pixquiac River Watershed. It owned mostly by rural communities, and 70 percent is covered with trees and other woodland plants. However, while landowning communities have not destroyed their natural resources, the Pixquiac watershed faces other threats to its provision of hydrological and other ecosystem services, including urbanization, unsustainable agriculture and deforestation.

Figure 5. Pixquiac River Watershed.



In 2006, the environmental NGO SENDAS proposed creation of a PES mechanism and developed a public-private fund (PROSAPIX) to finance watershed conservation activities, as well as a watershed management committee comprised of community leaders (COCUPIX). The NGO also envisioned engaging communities to improve conservation of the land and promote sustainable productive activities.

While SENDAS had secured funding for hydrological and other technical studies, the NGO still required resources to finance the implementation of the PES. In November 2009, the Competitiveness Program awarded SENDAS a small grant to carry out this project, which due to outstanding results

was renewed by the Program in FY 2011. SENDAS secured Mexican government funding for five additional years.

Program resources supported research to develop a PES strategy and mechanism:

- *PROSAPIX Sustainability.* Documents gave local and federal policy makers data to support the PES Mechanism Fund (PROSAPIX), including economic analysis to estimate the opportunity cost of forested areas, analysis of the legal framework for water resources in the State of Veracruz, and the role of PES mechanisms in it.
- *Strengthening the COCUPIX.* Training of the watershed committee (COCUPIX) to prepare the group to manage and be accountable for the PES fund, as well as to understand the basic functioning of the watershed and trust funds.
- *Building Awareness.* A survey of urban water users assessed information gaps on water use and supply in the city of Xalapa and the communities on the watershed. Based on this assessment, the team designed a broad communications and education campaign to promote more sensible use of water by the people of Xalapa.

Figure 6: COCUPIX members gather to talk about improving the watershed



In addition to a comprehensive [Final Report](#), the Program team produced the following documents and events to implement the Pixquiac River Hydro-PES and ensure its sustainability:

- Management plan and operations manual for the Pixquiac River Watershed, presented to the municipality and local water authority: [manual of rules and operation for compensating environmental services](#); management plan for the Pixquiac watershed (“[Plan de Manejo de la Cuenca del Río Pixquiac](#)”).

- Opportunity cost analysis of economic activities by communities in the Pixquiac (“Análisis del costo de oportunidad en el cambio de uso de suelo en la Cuenca del Río Pixquiac”).
- GIS and database of conservation activities in the Pixquiac River watershed.
- Legal framework analysis of the Antigua River Watershed. (“Marco Jurídico e Institucional de la Cuenca Alta del Río La Antigua”).
- Education campaigns at local schools on watershed conservation and educational materials, including radio ads, games for children, posters and short videos.
- Eight workshops to build the capacity of local communities to develop alternative livelihoods aligned with watershed management goals, including ecotourism, organic flower agriculture and sustainable forest management.

After two years, the PES funding mechanism was adopted in line with the design and rules of operation proposed by SENDAS. The [mechanism](#) consists of three elements: First, the municipality of Xalapa and the local water authority (CMAS) contribute yearly to the Pixquiac PES fund. Second, CONAFOR created a [concurrent fund](#), operated by the COCUPIX, to provide PES funds until 2014. Third, the *Fondo Mexicano para la Conservación de la Naturaleza* has provided additional resources under its “Cities and Watershed” program.

Contributions from these three sources give the fund an annual budget of one million pesos (about USD \$80,000). About 80 percent of available funds have been invested in forest conservation, and the remaining 20 percent in sustainable productive activities and restoration. Participating communities committed to preserving around 1,100 hectares of woodlands, and set aside an additional 130 hectares for restoration.

Beyond its local impact, one of the most important results of the Pixquiac Watershed PES is the demonstration that a viable funding mechanism is indeed possible and effective. A 2012 Competitiveness Program evaluation of local PES mechanisms, at CONAFOR’s request, found that this mechanism a national best practice and better structured than other mechanisms in terms of building alliance with funders, clarity about goals, completion of studies to inform decision-making (legal analysis, opportunity costs, etc.), existence of clear rules, and a solid monitoring and evaluation framework.

Lessons Learned About PES Mechanisms

In 2008, CONAFOR initiated a PES matching funds mechanism called the “Program to Promote Local Mechanisms for Payments for Environmental Services,” which provided matching funds up to 500,000 pesos/year (about USD \$40,000) for organizations that establish or operate local PES mechanisms. After five years of experience with the matching funds scheme, CONAFOR partnered with *Fondo Mexicano para la Conservación de la Naturaleza* (FMCN), Forest Trends (FT) and USAID’s Mexico Competitiveness Program to:

- Systematize initiatives for local PES mechanisms by establishing and updating an inventory
- Strengthen capacities of local partners who operate local PES mechanisms; and
- Disseminate Mexico’s PES experiences through communications about projects

On July 13, 2011, the Competitiveness Program met with CONAFOR, FMCN and FT, and agreed systematize experiences, lessons learned, achievements and challenges faced by the local PES Implementing Agencies (IA), including NGOs, public utilities, and sub-national governments. The group agreed the assessment should include participants of CONAFOR’s matching funds mechanism, as well as those of FMCN’s Cities and Watershed Initiative, which in many cases funded the same organizations. (The Competitiveness Program requested the participation of two of its grantees: AMBIO and FONCET, both of which had relevant experience.) The group rec-

ognized an assessment of IA capacity would be useful to support CONAFOR's implementation efforts and that strengthening IA's capabilities is necessary to ensure sustainability of local PES mechanisms.

The Competitiveness Program developed an online survey to collect IA information and be regularly updated by participating agencies; CONAFOR and FMCN requested IAs that received funds from them to respond to the survey. The assessment's scope, methodology and progress were communicated through numerous channels, including seminars sponsored by CONAFOR and FMCN for members of the PES community of knowledge.

The Competitiveness Program also financed participation of a CONAFOR staffer in the training course "Governance for forests, nature and people: managing multi-stakeholder learning in sector programs and policy processes," hosted by the University of Wageningen and the Center for International Forestry Research (CIFOR) in Indonesia. The training was particularly relevant for local PES mechanisms given that these are multi-stakeholder initiatives sometimes hampered by weak governance and difficulties in coordinating diverse stakeholders.

The Competitiveness Program's [report "Sistematización y Documentación de Mecanismos Locales de Pago por Servicios Ambientales en México"](#) published in May 2013, included a final assessment based on data provided by 35 IAs, located in 23 states. Key findings included:

- The per-hectare amount paid to suppliers of environmental services is based primarily on CONAFOR's national PES program. Economic and market studies are seldom used.
- More than 40 percent of IAs do not have a monitoring and evaluation framework, one of the most technically complex and costly components of the PES mechanism.
- Only a third of IAs plan to expand the geographic coverage of PES mechanism, mainly due to staff shortages, as many IAs still rely on CONAFOR staff or extension services to carry out basic tasks.
- Three-quarters of IAs had under five years' experience working with PES mechanisms.
- Most local PES mechanisms focus on provision of hydrological services, followed by biodiversity protection and carbon sequestration.
- 81 percent of IAs perceive PES mechanisms as important to protect ecosystems, but only about 30 percent believe they can promote sustainable rural livelihoods.

Interestingly, Program grantee Ambio was the only organization that initiated a PES mechanism without grants or subsidies. The organization developed its carbon capture projects to sell bonds in the international voluntary markets and has financed its work through sales of bonds to private companies located outside of Mexico. This model remains an important example for other IAs, as 78 percent of IAs indicated they would continue to operate even if CONAFOR suspends its matching funds scheme.

Key recommendations of the assessment included:

- Modify CONAFOR's operational rules so that funding can help build the capacity of IA staff.
- CONAFOR should develop tools that IAs can adopt to improve targeting of PES mechanisms to critical ecosystems, so that scarce resources are used to protect those ecosystems that provide more important services and face higher risks.
- Strengthen IAs capacity establish and maintain M&E systems that gauge whether PES mechanisms meet their conservation goals.
- Help IAs develop plans so that direct beneficiaries of environmental services (e.g. water users) participate in the PES mechanisms, particularly by providing sustainable funding.

Based on the assessment, CONAFOR proposed reforms to its matching funds scheme for PES local mechanisms. IAs can now fund training of community technicians with CONAFOR’s matching funds. In addition, selection criteria for allocation of matching funds now favor proposals that:

- Lead to the adoption of M&E frameworks, particularly those based on the work of community members.
- Clearly define investment plans for at least 50% of resources requested from CONAFOR, including in conservation activities that exceed CONAFOR’s minimum standards, strengthen community organizations, and train community technicians.
- Demonstrate that beneficiaries of ecosystem services will provide resources that help fund the local PES mechanisms.

B. Producing Sustainable Goods and Services in High Biodiversity Areas

Agricultural communities and ejidos own most of southern Mexico’s rainforest, one of the world’s most biodiverse areas. Rainforests have been devastated since the 1970s by government colonization programs that converted land for crops and cattle-raising. Further deforestation continues today as poor communities burn or cut down trees to generate income. Meanwhile, general threats remain: urbanization, infrastructure, tourism, small-scale farming and poor forest management.

Establishment of protected areas has proved costly and inadequate to address these threats. Because poverty is widespread and forests can be cleared for productive activities, preservation of biodiversity requires alternative sources of income for landowners. In other words, there is an opportunity cost to protecting forests. Conservation efforts in Mexico now involve much more than zoning and compliance. Government leaders, civil society organizations and community members share a common understanding that protecting biodiversity will only be achieved when forest-dwelling communities use their land to create economic opportunities and improve living standards. The Mexico Competitiveness Program worked with several NGOs to produce goods and services that depend on the preservation of natural resources.

Ejido Galacia Eco-Lodge Canto de la Selva

The Ejido Galacia owns over 100 hectares of the Lacandona jungle. In 2009 Galacia cleared around one hectare to create a field for jalapeño peppers. Because the income generated was so meager, more of the surrounding forest was under imminent threat. Working with grantee Natura y Ecosistemas Mexicanos, A.C. (“Natura”), the Mexico Competitiveness Program supported a multi-donor effort to create a high quality eco-tourism hotel on the jalapeño field, conserving the tropical forest of the Lacantun river bank “El Jolochero” and generating income. *Ejido* members requested assistance to learn how to operate and manage the hotel,



and the Competitiveness Program spent two years building capacity to ensure the hotel offers the necessary quality to attract national and international tourists who have a range of options in the region. The business model creates a perpetual incentive to preserve surrounding natural resources: Because the jungle is the main attraction for tourists, the community recognizes the Lacandona as “capital” for its long-term business.



The Program also teamed with the municipality Marques de Comillas, which covers over 200,000 hectares (or about 10 percent) of the entire Lacandona jungle (including Galacia), to establish a formal land-use plan for eco-tourism in the region. This plan allows other ecotourism projects to be established consistent with recognized ecological principles. The plan will also minimize environmental and economic negative impacts resulting from unregulated construction. Because the Competitiveness Program worked at both the community and municipal level, over 200,000 hectares of rainforest under the municipality's jurisdiction are now governed by a sustainable land use plan.



Figure 8. Mexican President Felipe Calderón formally inaugurates the Canto de la Selva eco-lodge.

The Competitiveness Program leveraged resources from several other donors who contributed to construction and purchase of equipment, including Pemex (Mexico's state oil company), Banamex (Mexico's largest bank) and a private foundation working with the World Wildlife Fund.

The hotel "Canto de la Selva" formally opened for business on May 26, 2012. It includes 14 double-occupancy cabins, a full-service restaurant and bar, and common space for group events and relaxation (<http://www.cantodelaselva.com/>). The kitchen and guest rooms receive energy from photovoltaic solar panels connected to a bank of automobile batteries. The hotel offers a broad range of ecotourism services, including

guided nature hikes, river kayaking, and butterfly and bird watching. [The final report](#) provides a comprehensive technical, administrative and social history of the pioneering achievement. The eco-lodge was formally inaugurated by Mexican President Felipe Calderón.

The opening was delayed by a number of factors, including floods that affected the eco-lodge. However, these events showcased the ejido's determination and ownership. Instead of waiting for outsiders to help them recover, ejidatarios led reconstruction efforts and demonstrated their capacity to work together as a team. In the aftermath of the floods, Don Juan, the ejido's leader and General Manager of the eco-lodge, highlighted the importance of the training provided with Program support: "Once the training began, we realized this was a different type of project. This really was our project. Many other have come before and given us stuff. But this was the first time they invested in us. That is why we know this project is ours."

The replication potential is excellent and is already being fulfilled. Natura is working with other donors to create a low-cost youth hostel called Flor de Marques, which is aimed at a market of backpackers and adventure tourists, located about 30 km from Galacia. This project, which also secures community commitment to protect hundreds of hectares of rainforest, replicates the Galacia model supported by the Competitiveness Program, because it works directly with a local ejido (Flor de Marques) to establish a formal business and ensure sustainability through extensive capacity-building.

The Competitiveness Program’s contribution validated the model of local-ownership in the true sense of the word. While hotel development is authorized by local government, business conceptualization, design and implementation are carried out by community members. The initiative provides substantial income gains that benefit the people who live on the land, rather than real estate developers or investors. Long-term natural resource protection is ensured because the economic success of the business requires the continued health of the surrounding rainforest. As ecotourism guide Fausto Marroquin Perez stated, “At the beginning we worked in agriculture and livestock production, we cleared 1 or 3 hectares every year for agriculture, or 10-15 for livestock production. But when this ecotourism project arrived, we started to think different. What I had in livestock production I put it for the ecotouristic center”.

Sustainable Fisheries in the Encrucijada Biosphere Reserve

La Encrucijada Biosphere Reserve in Chiapas is home to the one of the most important mangroves in Latin America and one of the largest fish spawning grounds in Mexico. The reserve is also a natural bridge between the bio-geographical regions harboring the northern and southernmost extensions of numerous species. Many local communities rely on its natural resources for their livelihoods, especially through fishing. Yet the reserve’s wetlands provide a range of ecosystem services, including regulation of the water cycle, protection against storms and filtering of pollutants (Parks in Peril Report, TNC/USAID, 2008).



Figure 9. Fisherman in the Encrucijada mangroves.

Fishermen in the Encrucijada have seen incomes fall as excessive and unorganized extraction has reduced the availability of fish and shrimp in the swampland. The priority of improving and sustaining the long-term supply of fish and shrimp led communities to seek help from the National Commission for Natural Protected Areas (CONANP) and from the environmental NGO CASFA, which has championed successful projects to commercialize organic cacao and coffee in other areas.

In November 2009, CASFA asked the Competitiveness Program to develop a responsible fisheries value chain in the Encrucijada Reserve that would help communities adopt practices to support the recovery of fisheries, such as prohibiting fishing in spawning areas, fishing only adult species, and adopting fishing quotas. By adopting these practices, communities also sought to receive a better price by selling their products to consumers of sustainable goods.

The first phase of Program support introduced fishing cooperatives to the concept of sustainable fisheries, including lessons from other communities in Mexico (particularly, in the Baja California and Yucatan Peninsulas). Six workshops helped develop, through a participatory process, a diagnostic of the fisheries sector in Mexico,



Figure 10. Fishermen work on a rulebook for responsible fishing.

each of the six participating co-ops so that they could all participate in the *integradora* and support efforts to develop and implement a business plan. The Program supported participating communities' efforts to adopt internal procedures so they could monitor their progress towards achieving certification status. [The final report](#) focuses on how participating communities overcame obstacles to creating an integrated enterprise

The six fishing cooperatives are still in the process of becoming an *empresa integradora*, but each of the co-ops has gained a better understanding of their strengths and needs. They have also become aware of their linkages as a community that shares a culture and valuable resources. Project Coordinator Jose Adrian Caballero said, "We need to understand that the market can be a powerful tool to improve the fishermen's quality of life and protect our eco-



Figure 11. Chamaedorea palm growers show off their product grown in the forests of the Sepultura reserve.

particularly in the coast of Chiapas, and a manual was drafted with guidelines and regulations for sustainable fisheries. Governmental agencies (CONANP and CONAPESCA), as well as research institutions (ECOSUR), provided technical support and information to participating communities, including six fishing co-ops.

The second phase involved four workshops to estimate the quantity and types of fish and seafood that could be commercialized. Program support helped create the legal structure *empresa integradora* (integrated enterprise) to enable fishermen to sell sustainably produced fish products in the market; a restaurant in nearby Tapachula also expressed interest in supporting these efforts. Communities learned to improve management of products, for example, by reducing the time fish were exposed to the sun or away from the cold chamber, helping improve compliance with health standards and the products' quality.

The third phase focused on strengthening the participating communities' business skills and with participating communities' efforts to develop and implement a business plan. The Program supported participating communities' efforts to adopt internal procedures so they could monitor their progress towards achieving certification status. [The final report](#) focuses on how participating communities overcame obstacles to creating an integrated enterprise

However, in order to take advantage of it, we need to strengthen our organizations and focus on accessing those markets that reward social and environmental responsibility."

Chamaedorea Palm Production in El Triunfo, Chiapas

La Sepultura and El Triunfo, protected areas in the Sierra Madre of Chiapas, are home to over 25,000 people and contain several types of primary vegetation, including evergreen pine forest, evergreen forest, mesophyte mountain forest, low deciduous rainforest, medium semi-evergreen and semi-deciduous rainforest, foggy chaparral and savannas. The inhabitants' livelihoods are based on the ecosystem's resources.

Chamaedorea palm (parlor palm) is an ornamental plant with a lucrative international market that local producers have exploited for decades. Sustainable production of this palm is compatible with forest conservation, since the palm grows under the shade of the rainforest trees. However, over-exploitation led to crop reduction and lower profitability. As part of a broader management plan for the Sepultura and Triunfo Reserves, the National Commission for Natural Protected Areas (CONANP), the environmental NGO Pronatura Sur and local communities initiated in 2007 a plan to build nurseries to re-introduce and sustainably harvest *chamaedorea* palm with authorization of the Ministry of Environment (SEMARNAT) and a wildlife management unit (UMA). Local communities were then able to sell palm to a few U.S. religious congregations that used the palm to decorate churches during Easter.



Figure 12. ORPASMCh members select their first national direct sale to Mérida, Yucatán.

Despite this progress, project stakeholders faced a number of challenges, including limited administrative and commercial skills, lack of quality control needed to obtain better prices, and dependence on a single intermediary who could unilaterally manipulate prices. Pronatura Sur requested a grant from the Competitiveness Program to strengthen the palm growers' organization and commercialization skills. This USAID support led to the formal creation of the Regional Organization of *Chamaedorea* Palm Growers of the Sierra Madre, Chiapas (ORPASMCh), which allowed incorporation of other producer organizations that obtained legal permits from SEMARNAT. The Program helped ORPASMCh develop its internal rules and organizational procedures and spurred the creation of an advisory council of representatives of SEMARNAT, CONANP, CONAFOR and the state forestry commission, which provided institutional support.

The Program also built ORPASMCh's commercialization skills, training management on existing and potential domestic and U.S. markets and visiting buyers in Merida, Mexico City and Cuernavaca. Harvesters were trained in quality control, key to delivering better products in a shorter timeframe. The training also raised awareness on the importance of meeting the terms of their commercial agreements, which they previously seldom did.

As a result of Competitiveness Program support ORPASMCh significantly improved the ability of its members to commercialize *chamaedorea* palm in international and domestic markets. In May 2010, ORPASMCh signed a large contract to sell its product directly to a new Mérida based intermediary, which will buy almost all year round, as well as an agreement for future commercialization to Uniflora Overseas Florida Inc. through an intermediary in Cancun in 2010. Pronatura's [final report](#) describes activities undertaken and results achieved as a result of Competitiveness Program support.

Developing Value Chains in the Mesoamerican Biological Corridor

In 2010, Mexico's National Commission for Biodiversity Knowledge and Use (CONABIO) was awarded a US \$11.7 million grant from the Global Environmental Facility (GEF) to implement the project "Fostering sustainable and competitive production systems consistent with the conservation of biodiversity." The Mexican Government, through SAGARPA, CONAFOR and CONABIO, would provide an additional US \$21.4 million, increasing the project's total budget to US \$30.9 million. The award was contingent on CONABIO expanding its brief concept note to the GEF into a solid and detailed project proposal.

The project seeks to conserve and protect biodiversity in Mexico by improving and mainstreaming sustainable management practices in priority ecological zones that are part of the Mesoamerican Biological Corridor-Mexico (MBCM). CONABIO requested Competitive Program technical assistance to carry out several studies to inform the design of the project; in particular, to assess six value chains: [coffee and cacao](#), [wildlife and sustainable cattle husbandry](#), [honey](#), and [ecotourism](#). The Program supported the design of a [monitoring and evaluation framework](#) that would help to gauge progress in meeting the project's biodiversity protection objective. In addition, it produced a [Territorial Information System](#) to map out value chain opportunities in the region.

SEMARNAT funded an additional study for timber and non-timber forestry products, while the GEF supported the project's due process via preparation of social and environmental assessments. The Program thus leveraged resources in helping to identify priority products and areas that the grant should support. Value chains were selected based on: (1) the potential of adopting alternative production systems compatible with biodiversity conservation; (2) the existence of markets, particularly in the United States, Canada, and Europe, for goods and products with sustainability attributes; (3) the availability of necessary natural resources in the MBCM region; and (4) previous successful experiences with these products that could be replicated and scaled up.

The studies led to the identification of the specific geographic areas where each of the value chains could be developed, based on the areas' natural and social capital, as well as with the potential linkages to biodiversity conservation. Other aspects considered in the studies included technologies being used, market structure, and specific products being offered. The studies also identified obstacles to value chain development, including lack of organization, skills, information and technology; limited access to markets; absence of finance, and few standards to ensure these products and services actually contribute to biodiversity conservation. In addition, the Program designed a monitoring and evaluation framework, incorporating social, environmental and economic indicators in geo-referenced areas.

CONABIO used Competitiveness Program studies to prioritize investments made with the GEF grant, including the specific goods and services that the project would support, the geographic areas where project resources would be made, and the main obstacles that the project would address. All findings, as well as the proposed monitoring and evaluation framework, were incorporated into the Project Appraisal Document (PAD), which describes how the GEF grant will be spent over a five-year period. The Program's relatively small contribution leveraged the Mexican Government's resources and defined how a US\$ 30.9 million project will support sustainable livelihoods and the conservation and sustainable use of Mexico's unique biodiversity.

During National Biodiversity Week in May 2013, CONABIO presented the project, and Pedro Alvarez-Icaza, Director General of the MBC-M credited the Program for recognizing the important role of markets in generating incentives for biodiversity conservation, previously absent in previous initiatives in the region and across Mexico.

Producing Honey in the El Triunfo Biosphere Reserve

The El Triunfo Biosphere Reserve in the state of Chiapas protects the last large remnant of cloud forest in Mexico and provides valuable ecosystem services, including regulation of the hydrological cycle of the Grijalva watershed, where 40% of Mexico's hydropower is generated. El Triunfo is also a refuge for endangered species, such as the jaguar and the quetzal, and is home to thousands of people in marginalized communities.

Since 2007, the NGO *Fondo de Conservación El Triunfo A.C.* (FONCET) has worked in close collaboration with the National Commission for Natural Protected Areas (CONANP) to address threats to El Triunfo. Local communities contribute heavily to ecosystem degradation and deforestation, as they rely on agriculture, cattle ranching, illegal extraction of plants and timber to make ends meet. Coffee farming is their main economic activity, generating about 60% of their total income, yet it is a highly seasonal and labor-intensive product. Local authorities and communities recognized that forest conservation would depend on an income-generating activity that didn't require significant land use conversion.

In 2009, FONCET conducted a participatory assessment of sustainable economic alternatives in the Reserve, which identified honey as a high-potential product due to community interest, low seasonality compared to coffee, and availability of suitable small plots of land. Starting in January 2010, the Competitiveness Program awarded FONCET competitive grants to train communities in the El Triunfo Reserve to produce and commercialize honey, strengthen producer organization capacity, include women, and eventually obtain organic certification.

Sixty producers were trained in beekeeping through a mentoring approach. A group of young producers learned how to raise bee queens, a necessary input for all bee hives, which could be used by themselves (thus eliminating the need to buy them from someone else) or be sold to other producers. Program support also strengthened the organizational dynamics and legal incorporation of the honey producers as “*Grupo de Apicultores Orgánicos de El Triunfo*” (SPR), which integrates producers of Ejido Laguna del Cofre, Ejido Llano Grande and Ejido Nueva Colombia from the State of Chiapas. USAID sponsored best practice exchange programs for the honey producers to visit Mexico’s most productive communities in the Yucatán Peninsula in July 2011, and to the national honey fair in September 2012, in Cuernavaca, Morelos.

Competitiveness Program support reflects real economic gains. Honey production was practically nonexistent in the region in 2009—yet in less than three years, these 60 rural entrepreneurs have commercialized eight tons per year, with increases likely. Producers have now begun to target niche markets that demand special qualities (e.g., honey from a particular flower) and have sold directly to Sistema Producto Apícola. In Piedra Blanca, women’s organizations signed a contract to sell 300 honey soaps.

The Program also promoted important changes in the communities, such as inclusion of women and youth. In rural Mexico, women tend to have a secondary role in productive activities in rural Mexico and are often not recognized for their labor. Program support helped them organize into groups to carry out productive activities. Honey production on rented land has become particularly attractive for young people, who typically do not own land and have few economic opportunities other than low-wage labor. Said Armando Roblero, the community’s youngest trainee, “These projects create self-employment opportunities for young men who are eager to learn... Many of my friends have gone up north [to the U.S.] to get ahead in life.” Activities and achievement are described in [FONCET’s comprehensive project report](#).



Figure 13. A beekeeper from El Triunfo carries out routine a routine hive inspection.

Although organic honey certification was not finished at the close of the Competitiveness Program, the process had begun, and the community knew the importance of its added value. While income obtained from honey is lower than that of coffee, both activities are compatible, and the former has helped community members to improve total earning and weather income interruptions due to seasonality. The project also builds awareness about the importance of biodiversity conservation. In the words of honey producer Eladio Muñoz: “I have learned how the bees are organized and how they work for us. Now I know what I have to do: Take care of the flowers and trees so the bees can produce more honey.”

Chapter 5

Reducing Emissions from Deforestation and Degradation (REDD)

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Deforestation and forest degradation cause 10 percent of Mexico's national greenhouse gas (GHG) emissions. Besides contributing to climate change, these harmful events lead to loss of valuable local ecosystem services, and threaten biodiversity and livelihoods, particularly for poor landowners who depend on forests.

In response to these challenges, the Government of Mexico, under the leadership of the National Forestry Commission (CONAFOR), initiated efforts to design and implement a country-wide strategy to Reduce Emissions from Deforestation and Degradation (REDD), as part of its broader efforts to address climate change. REDD creates financial value for the carbon stored in forests, generating an incentive for land-owners to preserve trees. REDD has gained much attention in recent years because of its potential to significantly contribute to climate change mitigation at a comparatively low cost. REDD can provide other benefits, including biodiversity conservation and income generation for forest dwellers, including indigenous groups.

The Mexico Competitiveness Program provided two kinds of technical assistance to help the Mexican government design and implement REDD: (1) development of a national REDD policy to be replicated at the local level through federal programs (2) piloting REDD projects on the ground to gather practical information about community-level implementation. In the policy realm, CONAFOR requested Competitiveness Program support to provide lessons and develop basic guidelines for the institutional framework governing REDD, and to contribute to the government's foundational policy document *Vision REDD*.

1. Policy Development

A. Shaping Mexico's Institutional Framework for REDD

Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create financial value for the carbon stored in forests, thus creating an incentive for land-owners to preserve trees. REDD can significantly contribute to climate change mitigation at a comparatively low cost, as well as to biodiversity conservation and income generation for forest dwellers, including indigenous groups.

However, complex problems undermine REDD's potential to achieve these goals, including difficulties integrating forestry, agricultural and rural development policies at odds with conservation efforts. Communities and *ejidos* that own and manage collective forest land also face legal and cultural obstacles to implementing REDD. And is unclear how REDD agreements to protect forests would promote opportunities for landowners to pursue their own economic and social goals.

The *Centro Interdisciplinario para Biodiversidad y Ambiente* (CEIBA), a Mexican environmental policy think tank, presented a proposal to the Mexico Competitiveness Program grant initiative to identify the main elements of any long-term REDD+ agreement, and assess whether such instruments existed, or could be adapted within Mexico. The proposal was endorsed by SEMARNAT, CONAFOR and CONABIO, and accepted by the Competitiveness Program in November 2009. For Mexican authorities, the analysis would provide key information about policy and institutional reforms needed to enable REDD+ projects.

Outputs and Results

CEIBA first reviewed literature to prioritize the institutional challenges that could hamper REDD+ implementation, including: (1) differences between sectoral agencies in priorities, hierarchies, authorities and leadership; (2) complexities of instruments to formalize cross-sectoral coordination; and (3) difficulties of operationalizing cross-sectoral coordination on the ground, where other levels of government and multiple stakeholders interact. CEIBA also identified key challenges to ensuring that communities entering into long-term agreements fulfill their commitments; in addition to a general lack of compliance with environmental laws and regulations in Mexico

(including those protecting forests), the Mexican government routinely signs agreements with landowners entailing subsidies, which are not performance-based, usually last only one year, and do not include any sanction for breaking the contract.

CEIBA convened two workshops (in March and June 2010) with public officials, academics, NGOs and other stakeholders to discuss key findings and then identify key elements for an improved formal agreement between a federal government agency and landowners for REDD+. These elements included a multi-year timeframe with clearly defined responsibilities and enforcement mechanisms for governmental agencies, landowners and potential third parties (for example, to carry out monitoring and verification), safeguards to protect communities and ecosystems, and insurances and bonds for accidental and voluntary non-compliance.

CEIBA's final report, "[Application of Mechanisms for Reduced Emissions from Deforestation and Degradation in Ejidots and Communities](#)" highlighted findings and recommendations in several high-profile fora, including an international workshop on REDD+, Forest Governance and Decentralization, organized with the Competitiveness Program support in September 2010, the ExpoForestal organized by CONAFOR in October 2010, and the 16th Conference of the Parties of the United Nations Framework Convention on Climate Change in December 2010. The report recommended ways to strengthen inter-sectoral coordination, and identified characteristics that should be part of any agreement signed by communities participating in REDD+, including safeguards, property rights issues, and managing risk from factors such as intentional or accidental land conversion. Specific recommendations included:

- Establishing clear contractual obligations, especially penalties in case of non-compliance by landowners. Sanctions had never been part of official operational rules.
- Responsibilities for landowners should include actively monitoring carbon stocks, with appropriate technical assistance. Government would continue programs that address land use change resulting from factors beyond the landowner's control (e.g., controlling fires started by other people).
- Developing an "early warning system" to identify factors that may affect land use, such as changes in food prices or raw materials that may alter the opportunity cost of forested lands.
- Recognizing different responsibilities for different types of land ownership. For example, communities would assume collective responsibilities for REDD+, while *ejidos* with legally distributed land could allocate responsibilities to individual owners.
- Including mechanisms for previous informed consent by indigenous groups, before they enter into a formal agreement on REDD+.

CEIBA's and the Competitiveness Program's findings and recommendations were incorporated into Mexico's *Vision REDD+*, the country's first formal document outlining the goals, guiding principles, and key elements of REDD+ in Mexico. CEIBA's work was later expanded, with CONAFOR funding, to provide inputs for Mexico's National REDD+ Strategy.

B. Contributing to [Vision REDD](#)

Mexico's principal advisory mechanism on REDD is the Technical Advisory Council (CTC), an institution comprising a broad range of federal and sub-national government officials, landowners, researchers, NGOs, and donor agencies. The Program provided technical inputs for three broad areas of the *Vision*, based on a review of secondary information: 1) linkages between REDD+ and sustainable rural development, 2) lessons learned from development of pilot REDD+ projects, and 3) Mexico's participation in negotiations for an international climate change regime. These inputs were incorporated into the final *Vision*, presented by President Calderon at the 16th Conference of the Parties (COP16) of the United Nations Framework Convention on Climate Change (UNFCCC), in Cancun, December 2010. Mexico's Inter-Secretarial Commission on Climate Change (CICC), including numer-

ous governmental agencies (including SEMARNAT, the Ministry of Foreign Affairs, and the Ministry of Agriculture, Livestock, and Rural Development-SAGARPA), discussed and endorsed the revised Vision.

Outputs and Results

The Competitiveness Program contributed the following to Mexico's *Vision REDD*:

Linkages between REDD+ and Sustainable Rural Development: The influential policy brief "Institutional and Programmatic Arrangements for REDD+ Implementation," argued that REDD+ in Mexico should focus exclusively on forests, but should foster cross-sectoral coordination, particularly with the agricultural and livestock sectors. Why? (a) most drivers of deforestation and forest degradation are part of other sectors, such as expansion of agricultural and livestock activities, urban development and mass tourism; (b) resources allocated to those sectors are significantly higher than those allocated to the environment sector—and international funds to support REDD+; (c) landowners tend to manage their land by combining agricultural, livestock and forestry activities to diversify income and risks; and (d) organizations already exist that focus on development of agricultural and livestock activities that could help operationalize REDD+. The policy brief advocated for an "active" rather than "passive" approach to protecting Mexico's forests. It recommended adoption of Sustainable Forest Management (SFM) to create economic incentives for forest conservation, rather than promoting a ring-fenced approach, such as paying communities to avoid touching their forests. This approach explicitly recognizes the key role that forest-owning communities should play in Mexico's REDD+ efforts and emphasizes the "+" side, or efforts to conserve and enhance forest carbon stocks.

Lessons Learned from the Development of Pilot REDD+ Projects: The Program summarized key lessons from the pilot REDD+ project developed with USAID support in the Biosphere Reserve of El Ocote in Chiapas. The document stressed the importance of working with communities to develop a local, efficient monitoring mechanism to assess changes in carbon stocks within a specific area. The cost-effective mechanism helps build the capacity of small rural communities to organize themselves and take advantage of their natural resources. It also highlighted the advantages and difficulties of building REDD+ bottom-up through communities facing poverty and low human development indicators.

Mexico's Participation in Negotiations for an International Climate Change Regime: The Program document, "International Context for REDD+, Definitions and Background on Mexico's International Stance," assessed Mexico's past participation in international negotiations to develop an international climate change regime to ensure the Vision was consistent with Mexico's previous positions.

2. REDD Pilots

A. *Ocote Biosphere Reserve and Plan Vivo*

The "Selva El Ocote" Biosphere Reserve, managed by the National Commission of Natural Protected Areas (CONANP), covers 101,288 hectares in northwestern Chiapas. One of Mexico's most important centers of biological diversity, its ecosystems are also home to rural, struggling communities. For decades, government efforts to improve livelihoods there have promoted converting forests into agricultural and pasture land, which has devastated ecosystems and contributed to increased CO² emissions. In addition, fires intentionally set to clear land for cultivation frequently spread out of control.

The region's highly marginalized population has very limited access to basic social services, infrastructure and markets. Various indigenous groups inhabit the region, largely as a result of the Mexican government's colonization programs of the 1970s. Principal groups include the local Zoques, as well as Tzeltals and Tzotzils, which migrated from other areas of Chiapas and brought with them their traditional agricultural practices, which were not compatible with the new ecosystem and resulted in increased deforestation and degradation. The main challenge is then to enable landowners to improve their lives without damaging the remaining forest.

In line with the growing interest in REDD within Mexico and abroad, in 2007 CONANP supported the preparation of four Project Identification Notes (PINs) to assess developing REDD+ pilots in natural protected areas to simultaneously improve local communities' living standards and reduce pressures on valuable ecosystems; El Ocote was determined to have the highest potential (Table 1). The PIN proposed the use of Plan Vivo, a participatory community land use planning methodology proven effective in prior forest protection work in Chiapas.

Table 1. Project Identification Note on Deforestation Drivers in the Ocote Reserve

Project features and requirements	Status
Project carbon potential	6 million t CO ₂ e
Initial est. investment requirement	US\$280,000
Cost of carbon	US\$3 - 7 per tonne CO ₂ e
Certification standard	Plan Vivo
Eligibility of proposed activities to certification standard	Proposed forest conservation and agroforestry activities are compatible with Plan Vivo Standards
Land ownership	Clear land ownership - ejidos and smallholder owners
Evidence of land use change	Yes - trend of land use change from 1980's
Additionality	Yes
Communities willing to participate	Yes - according to representatives
Communities able to organise	Yes - indicators of community cohesion and evidence from other projects
Supportive government institutions	Yes - CONANP supportive
Carbon finance administration capability	Yes - Fondo Bioclimatico
Technical support capability	Yes - Ambio and ECOSUR

Based on the PIN, CONANP partnered with Ambio, a grassroots environmental NGO, and ECOSUR, a local university, to prepare a proposal for financial and technical support to begin pilot REDD implementation in El Ocote. In 2009, USAID's Mexico Competitiveness Program awarded a grant to Ambio for this work.



On July 13, 2013, the National Forestry Commission (CONAFOR) awarded the annual National Prize for Forest Merit (Premio Nacional al Mérito Forestal) in the Civil Society Organization category to Ambio. The prize was presented personally by President Enrique Peña Nieto. Through the prestigious award CONAFOR recognized Ambio's groundbreaking work, a great deal of which was made possible by Competitiveness Program support, to enable communities and small producers to promote sustainable rural development.

Outputs and Results

CONANP, Ambio, ECOSUR, and Mexico Competitiveness Program staff selected the four participating communities using several criteria: existence of a solid community organization, large forest area, consensus on the *ejido's* participation in the project, biological connectivity to the Reserve, proximity to the Reserve's core area, previous experience with controlling wildfires, and demonstrated willingness to participate in CONANP-endorsed projects. Each selected community signed an agreement volunteering to participate in the pilot project.

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The Program team worked with families in each community to develop an individual “Plan Vivo,” a participatory process that creates a map of current and future land use. Individual plans are compiled and consolidated to form a community plan that is discussed with the local authorities; individual and community plans are corroborated with GIS. The exercise helped households and communities plan how they will use land to meet their needs, as well as identify areas where carbon uptake could be promoted, either by protecting existing forests or by allowing previously converted areas to become forests again. Land use plans were developed during the first year and updated two years later to assess changes, both in terms of regenerated forestry areas and areas converted to agricultural or pasture lands. The Program team also worked with households to include lands they owned or rented outside the *ejido*, with the aim of reducing land use and deforestation that occur in another part of the forest.

The Program team also established a robust carbon baseline against which results could be compared. ECOSUR conducted field work to estimate carbon in biomass, organic matter and soil, and trained communities in monitoring biomass growth—complemented by satellite and radar images from the National Forests Commission (CONAFOR). ECOSUR also developed a tailored allometric equation to determine the site’s net carbon capture. Ambio created and trained community brigades to protect their forest against fires, poaching, and pests, all causes of deforestation and degradation.

In 2009-2010, the Program team focused on building the capacity of local communities to monitor carbon stocks, empower the community by teaching skills that could be used for other activities, and developing a sustainable and low-cost monitoring system to increase the economic feasibility of the REDD project. In 2011, surveys calculated costs of monitoring activities in the communities, helping assess the price at which carbon bonds would have to be sold in the international voluntary market. In 2012, the Program team identified additional low-carbon activities that could improve livelihoods, including no-till practices, improved seed selection, and crop rotation.

In addition to promoting socio-economic progress, this Ocote project reduced incentives to clear more land for agricultural purposes. The Program team trained communities, through on-site capacity building workshops and exchange programs, in best practices for cultivation of honey, coffee, and other agricultural products. To better inform this work, in 2011 the team identified activities that would yield the highest economic returns, including: increasing productivity of bean and corn cultivation for self-consumption, integrating silviculture (fruit, wood, fodder) into existing grazing areas, and sustainably producing non-timber products with demonstrated demand, such as the edible flower of the local palm *chapaya*.



Figure 15. Community members use accesible technology for measuring carbon sequestration.

The Ocote project supported development of Mexico’s broader REDD policy to ensure institutional support for the project, while also facilitating the flow of information from on-the-ground implementation to policy formulation. Program team members participated in meetings of the REDD Technical Advisory Council, a group created by CONAFOR to engage diverse stakeholders in the development of Mexico’s REDD Strategy. Discussions in this forum highlighted the need to develop safeguards to ensure that REDD projects did not result in a deterioration of social and environmental conditions in implementation areas. The Program developed a methodology to assess different types of capital in participating communities— social, human, financial, physical, and natural—and reviewed *ejido* governance by verifying internal rules and agreements, creating a baseline to measure communities over time.

Four communities from the Biosphere Reserve “El Ocote” developed Plan Vivo land use plans, useful not only for a project seeking to sell carbon in voluntary offset markets but for landowners to improve planning to meet current and future economic needs. The project also developed several replicable tools and methodologies that are critical for a REDD project, such as: (1) an allometric equation; (2) REDD guidelines for carbon bonds using best

practices implementation on traditional slash-and-burn agriculture, cultivation of *chupaya* palm, livestock production, coffee and apiculture, (3) environmental and social safeguards for REDD projects. The project established 82 permanent plots to quantify carbon sequestration: 20 in the *ejido* Tierra Nueva, 20 in Armando Zebadúa, 21 in Veinte Casas and 21 in Nuevo San Juan Chamula, in secondary vegetation and conserved forests.

The innovative Ocote REDD Pilot Project had a major impact on creation of empirical knowledge about REDD implementation, which, in turn, helped shape Mexico's broader national REDD policy framework. Ocote was the first project in Mexico designed to meet a REDD standard (Plan Vivo) and demonstrated the importance of engaging local communities, civil society organizations, academia, government and an international funder, as each provides different elements needed to get a highly innovative project off the ground. Finally, the Ocote project built the capacity of communities in a way seldom done in Mexico, as official support is primarily based on subsidies, rather than development of social and human capital.

The project did not succeed in selling carbon bonds in the voluntary market, mainly related to lack of definition of key elements of Mexico's institutional framework (for example, unclear ownership of carbon). In addition, prices in the international carbon markets plummeted when Ocote reached the capacity to sell bonds, due to the absence of an international agreement to set mandatory emission abatement goals and saturation of existing voluntary markets.

Notwithstanding disappointing results in sustainable financing, the Ocote project was an important step toward REDD implementation, particularly in community empowerment. In 2012, participating *ejidos* presented proposals to receive governmental subsidies to grow crops selected through the Plan Vivo process—a historical shift, as communities had always requested subsidies only to grow their usual corn. The proposals were prepared by community technicians trained through the Program team, who now have several years of GIS experience and other necessary skills. Building the capacity of local community members eliminated the need for external advisors and strengthened the sustainability of local future REDD efforts. Communities continue to improve agricultural practices, key to their commitment to protect forested land and enable re-vegetation of previously cleared land.

The Ocote project also informed the development of *Vision REDD*, produced in 2010, as well as of the draft National REDD Strategy, expected to be adopted in early 2014. Both documents explicitly refer to the Ocote project as an example of Mexico's experience working with communities to generate carbon bonds to be sold in the international voluntary market.

B. Carbon Capture in Ejido Felipe Carrillo Puerto

The National Forestry Commission (CONAFOR) identified the Yucatan Peninsula as the region in Mexico with the most alarming deforestation rate in the past decade. Most land there is owned by communities organized within *ejidos*, a communal farming system. In 2009, the members of the Felipe Carrillo Puerto *ejido* decided to allocate most of their rainforest land for conservation and created the Much Kanan K'aax Reserve (Together Taking Care of the Jungle, in Maya). The reserve has received limited government funding but provides valuable ecosystem services, such as carbon capture and an extended habitat for wildlife from the neighboring Sian Ka'an Natural Protected Area. However, the opportunity cost of keeping this reserve is very high for *ejidatarios*, who have limited productive alternatives, and are threatened by the real estate and resort developers from the nearby Mayan Riviera.

Carbon finance creates an opportunity to involve local communities in the fight against climate change and provides complementary income to sustain their efforts. In 2010, the Competitiveness Program gave a grant to the environmental NGO Uyoolch'e to develop the technical requirements for Ejido Felipe Carrillo Puerto to produce and commercialize carbon bonds from the Much Kanan Ka'ax Reserve in voluntary markets.

Outputs and Results

The Program team developed a carbon sequestration methodology under the Plan Vivo standard for the Much Kanan K'aax Reserve. *Ejidatarios* and U'yool'ché technicians measured carbon content in trees, mulch and soil to create an allometric equation for carbon sequestration. The project will monitor permanent plots every 10 years and land use opportunities in the whole area through satellite images every five years. Landowners and U'yool'ché chose the Plan Vivo standard because it was the easiest to implement among those assessed, enabling communities to play a key role in monitoring efforts and reducing associated costs. Plan Vivo also prioritizes communities' benefits—for example, it provides a larger share of carbon bonds payments during the project's early years while other standards save payments until the end of the project cycle. This latter option arguably ensures long-term commitment, but strains struggling communities, such as those in Carrillo Puerto.

Community members also measured project collateral benefits, such as biodiversity enhancement, by making inventories of flora and tracking fauna with GIS. U'yool'ché then created a Project Idea Note (PIN) and a Project Description Document (PDD), presented to the Plan Vivo Foundation in Edinburgh, UK. During COP 16, U'yool'ché raised funds to pay the project's enrollment for Plan Vivo certification through a study tour to the Reserve. The Program team disseminated the methodology developed at Felipe Carrillo Puerto to nearby communities in the Sian Ka'an-Calakmul Biological Corridor. Other *ejidos* in the region approached U'yool'ché for technical assistance to assess the possibility of developing their own carbon sequestration project, although they required different technical specifications for carbon sequestration. U'yool'ché then developed three guidelines for REDD+ carbon bonds for communities focusing on mangrove ecosystems, sustainable apiculture and sustainable community forest management.

The Program team created a business plan for carbon bonds and piloted a commercialization strategy to sell forest carbon bonds to hotels and resorts in Cancun and the Mayan Riviera together with MARTI (Mesoamerican Reef Tourism Association). Some of these hotels were willing to pay for the carbon bonds even

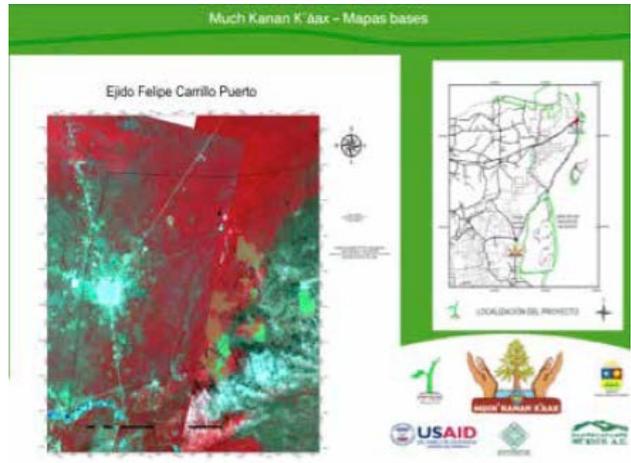


Figure 16. Satellite map of the Much Kanan Reserve.



Figure 17. Tree growth measurement.

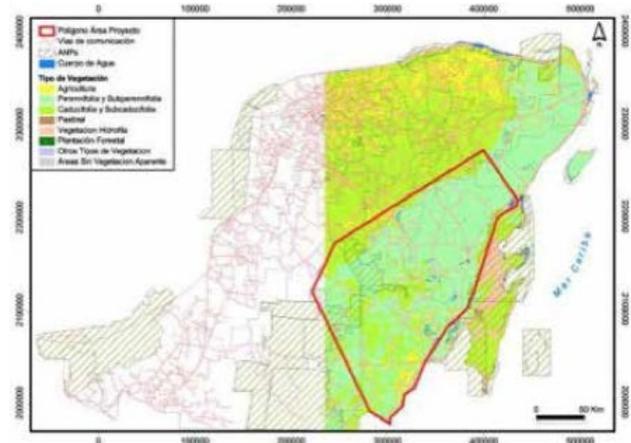


Figure 18. The Sian Ka'an Calakmul Corridor.

before the project received Plan Vivo certification, as they were more interested in benefiting local communities through sustainable projects, rather than in obtaining certified emissions reductions. However, U'yool'ché always considered this a temporary mechanism to obtain resources to continue funding the project until they could officially sell bonds in the voluntary market.

Finally, the Program team held three forums with 13 local NGOs to share best practices on carbon sequestration and to generate local knowledge on REDD in the SKCC. In 2011, CONAFOR identified the SKCC as one of three pilot areas in the Yucatán Peninsula early action REDD+ site.

The Competitiveness Program also facilitated technical exchanges between community members and U'yool'ché staff with people involved in a REDD+ project developed in the Ocote Biosphere Reserve, Chiapas, by Competitiveness Program grantee Ambio.

Program team member Uyoolché headed creation of the Sian Kaan-Calakmul Corridor Alliance, a grassroots network comprised by 13 NGOs, landowner associations and other local actors within the corridor that protects two national reserves and includes Mexico's largest block of forested areas. The SCKC alliance is formally recognized by the governments of Yucatán, Quintana Roo and Campeche as a civil society dialogue mechanism that gives inputs and feedback from the states and regional Climate Change Mitigation Strategy.

Administrative outputs included the legal incorporation of the Much Kanan Ka'ax reserve as "Cooperativa Servicios Ecosistémicos de la Selva Maya S.C. de R.L de C.V.," necessary to legally enable landowners to sell bonds in the voluntary market. To enhance local ownership of the project, U'yool'ché translated key project and climate change information into Mayan and disseminated it among community members.

The first phase of this project was very successful, attracting the attention of other *ejidos*, local NGOs and state governments. When the Yucatán Peninsula was declared a pilot site for REDD+ by CONAFOR at COP 16, Program team member U'yool'ché was the only NGO in the region that had successfully implemented a forest carbon bond project.

MARTI allowed the *ejido* to work with 54 hotels in the region interested in purchasing carbon bonds. Hotel Maya Koba was the first to award a grant to this project, with which the *ejido* and U'yool'ché completed their submission to be accredited by the Plan Vivo standard.

At the end of the Competitiveness Program's support, Much Kanan Ka'ax was still in the pipeline of the Plan Vivo Foundation. However, it has been highlighted at diverse fora because there are few projects worldwide that have been able to integrate local communities into carbon sequestration and monitoring. Efforts to integrate a local alliance from the bottom-up have also been unique, at least in Mexico. The project's model has been highlighted at various international forums including COP 16, Forest Day 4 and the Workshop on Forest Governance, Decentralization and REDD+ in Latin America, as well as in the FAO's Global Survey of Agricultural Mitigation Projects.

Chapter 6

Strengthening Competition Policy

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Strengthening Competition Policy

Mexico's Federal Competition Commission (CFC) was created in 1993 to curb monopolistic and uncompetitive behavior. Notwithstanding CFC's highly qualified staff and institutional autonomy, monopolies still prevail throughout Mexico's economy, including in sectors providing basic goods and services. As a result, Mexican businesses and consumers purchasing these products often pay higher prices and/or receive inferior quality. A 2009 study by the *Instituto Tecnológico de Monterrey* (ITESM) concluded that Mexicans overpay by an average of 40 percent in monopolistic sectors.⁵ Several factors contribute to the persistence of monopolies in Mexico, including:

- Constitutional provisions protecting state monopolies in sectors like electricity and oil
- Powerful firms who use legal procedures and experienced attorneys to overturn or endlessly tie up CFC rulings against them
- Weak consumer advocacy groups and/or associations
- Absence of strong mechanisms and rules to protect consumers (e.g., class action lawsuits)
- Weak institutions, as with the national Consumer Protection Agency (PROFECO), an agency that works on a case-by-case basis but only for tort redress.⁶

Finally, even though competition affects everyone, the issue has not been particularly discussed in the media or in Mexican public opinion. Most citizens lack awareness about the extent to which monopolies affect their welfare. The USAID/Mexico Competitiveness Program took three different approaches in its effort to improve competition in Mexico.

1. Improve the transparency and clarity of CFC technical criteria to assess corporate practices and behavior.
2. Strengthen CFC institutionally to improve its investigative ability and litigation effectiveness of its rulings, especially when contested in the courts.
3. Support a civil society effort to organize experts to contribute to the policy dialogue on competition and regulatory issues, creating awareness about the importance of competition among decision-makers and the general public.

1. Technical Guidelines

The former President of the U.S. Federal Trade Commission, William Kovacic, said a key determinant of success of an antitrust authority is transparency in adjudication of cases and public accountability. Members of the Mexican Network on Competition and Regulation, a civil society organization supported by the Competitiveness Program, articulated the same priority in advocacy efforts to protect consumers from monopolistic practices. The criteria CFC uses to evaluate practices of private enterprises are vital to this transparency.

CFC requested technical assistance from the Mexico Competitiveness Program to develop and publish technical guidelines on three core analytical tools the Commission routinely uses before issuing findings or rulings about corporate practices. Increased transparency of CFC's decision-making criteria not only helps private sector firms understand the government's determination of appropriate (and prohibited) economic behavior, but also enhances the credibility

⁵ Urzúa Macías, Carlos Manuel. "Efectos sobre el bienestar social de las empresas con poder de mercado en México." *Finanzas Publicas*. México. pp: 79-118. Junio 2009.

⁶ Until 2009, Mexico did not have class action legislation. The tort redress legislation came after years of civil society organizations, such as *Al Consumidor*, pressuring Congress. However implementation of the law has been slow and difficult since there is no previous experience on the subject.

of the Commission among business stakeholders and citizens. These guidelines ultimately provide a high degree of predictability about CFC investigations, arguments and litigation, and a reliable rationale for CFC rulings and decisions.

While not required for private parties who present their own evidence in defense of practices, the guidelines provide those under investigation with the methodological baseline the CFC uses to assess evidence to better structure and develop their defense. Guidelines increase transparency of CFC processes, the predictability and reliability of evidence presented, and legitimacy in final rulings. And, because they are based on international best practices, the guidelines have withstood challenges to their methodological robustness.

Market dominance

Market dominance enables firms to charge customers more or offer goods and services with lower quality than would be found in a competitive market. Firms with dominant market power have both the incentive and ability to undermine competition (e.g., by raising barriers to market entry for competitors). That power undermines productivity and economic growth, and raises prices for consumers and businesses that rely on goods and services produced by dominant firms. For this reason, the Mexican Federal Competition Commission (CFC) reviews cases of market dominance, and issues appropriate rulings to curb anti-competitive practices.

Determining the existence and degree of market dominance, however, is complex. The first step is to evaluate the extent to which a product, brand or firm controls a well-defined market category in a given geographic area—usually by calculating a company’s market share. However, this is not always a reliable or revealing metric; factors such as client-base profile, the structure of the supply chain, the number and quality of natural competitors, and government regulation can influence market power. In other words, quantitative evidence of market dominance does not necessarily constitute proof of anti-competitive practice.

Another approach to determine market dominance is to build an index: The “concentration ratio” calculates the proportion of total output produced in a sector by a given number of firms. Two established methods include the “four firm ratio,” which measures the concentration of four leading firms, and the Herfindahl Index, which measures the size of leading firms relative to the industry as a whole. Whichever method is used, determining market dominance requires a careful assessment not only of company characteristics, but also exogenous factors related to industry structure, the consumer base and public sector interventions.

Because of the complexity of measuring market dominance, CFC requested technical assistance from the Competitiveness Program to produce a technical guideline to be used internally by the agency’s investigators, and made available to the public. It would help the Commission refine the criteria for determining the existence and degree of market dominance, and to enforce the Federal Law on Economic Competition effectively and predictably. A broader purpose of the guideline was to improve understanding among economic agents and the general public about the methodology underlying CFC analysis and rulings when determining dominance and concentration. Finally, CFC envisioned the guideline as a reference source for the Mexican Judiciary, because firms under investigation may request judicial review of CFC criteria to evaluate market dominance.

The Competitiveness Program produced a [reference report](#), including a technical guideline on market dominance based on best international practices, and an expert opinion on CFC’s existing procedures to determine market dominance. The research focused on four key issues: 1) effects of dominance; 2) framework for assessing market power; 3) measurement of market share and 4) other factors and entry barriers that affect dominance, such as poor access to key inputs, government regulation, economies of scale and network effects. The guideline and opinion were based on international best practices in the context of Mexican competition law.

The report provides a “framework for evaluating the existence of market power, describe the tools that can be used for collecting and analyzing evidence on market power, and discuss practical issues that arise in applying the framework and tools to actual cases.” To do this, the guideline proposes legal, economic and regulatory analysis of market share, demand and supply, barriers to entry, exit and expansion. It also proposes established quantitative approaches to evaluate the existence of market dominance, including:

1. Level of a firm's share within a relevant market determined through a separate inquiry (an approach commonly used by courts and competition authorities)
2. Quantitative measures of pricing power, such as price-cost margins or profitability over time.

The report stipulates that “none of these three broad types of inquiry can be implemented mechanically and lead to reliable answers. Each must be undertaken with careful consideration to avoid false findings of the presence or absence of significant market power. In practice, a combination of all these approaches is commonly employed in any given matter.” The guideline's recommendations are broad and flexible, and call for a combination of approaches to increase robustness of findings. View it here:

<http://www.cfc.gob.mx/images/stories/Documentos/guias/ultdoctopodersustmercado.pdf>

Professor Evans presented the guideline on April 4, 2011 during “Competition Day,” an annual event sponsored by CFC and the Mexico Competitiveness Program. Following, CFC President Eduardo Pérez Motta announced that the guideline would become a key element to promote transparency and predictability of future rulings made by the Commission. Mexico's amended Law on Competition directs the Commission to create guidelines to explain its rulings. As the guideline was completed even before the amended law was approved, Competitiveness Program technical assistance enabled CFC to comply with the law as soon as it took effect. USAID's contribution to regulatory transparency represents implementation of an internationally recognized best practice—and a benchmark for other Mexican regulatory agencies.

In early 2012, CFC denied a multinational corporation's request for merger authorization based on the market dominance guideline. Despite appeals, the ruling was upheld. By laying out clear, objective criteria to calculate market dominance, the guideline is likely to head off many proposed merger requests and collusive actions because private sector actors anticipate a strong and credible response by CFC.

Relevant Market Definition

Determining whether a company's operations infringe on fair competition depends on the definition of its market of operation. Competition experts measure market share to establish the presence and degree of market dominance of a firm. However, to determine market share (or the expected market share of a proposed merger) the relevant market must first be defined.

For example, determining the impact of a merger between two brands of gourmet potato chips depends on the market definition: Is it general snack food, potato chips or premium potato chips? If it is the first, a merger is unlikely to have much impact on competition. If the latter, a merger within such a specialized market would have a much greater effect on competition.

Given the importance of defining a relevant market consistently and systematically, CFC requested technical assistance from the Mexico Competitiveness Program to create a formal guideline establishing criteria for the definition. This step is typically the first the Commission takes when investigating a complaint. The guideline: 1) provides explicit guidance on how the Federal Law on Economic Competition should be applied; and 2) improves understanding among economic agents and the general public on CFC processes and methods for reaching a decision.

The guideline reflects a basic consensus among competition authorities around the world on how to approach relevant market definition. It acknowledges a “general agreement that market definition is not an end in itself but rather a process that is helpful for assessing whether business practices harm consumers or the competitive process, or whether proposed concentrations involve a risk of such harm... [and the consensus that] mechanical approaches to market definition can lead to significant error.” For this reason, the guideline proposes a flexible approach that weighs all available evidence, including definition of relevant market, product market, geographic market, evidence to be gathered to define a relevant market, calculation of market share, market definition for af-

terminals,⁷ and other issues concerning relevant markets. The technical guideline to define a relevant market can be found at: <http://www.cfc.gob.mx/images/stories/Documentos/guias/doctoreferenciadefmercrelevant.pdf>

The guideline was presented via video-conference by the main author, Massachusetts Institute of Technology economics professor Richard Schmalensee, on April 4, 2011, at CFC's annual "Competition Day" ("Día de la Competencia"), co-organized by CFC and the Competitiveness Program. In his keynote speech, CFC President Eduardo Pérez Motta stated that the guidelines for Relevant Market Definition and Market Dominance had significantly improved the transparency and predictability of the Commission's decision-making processes.

The Guideline's most significant impact is the establishment of a broadly accepted methodology to define market relevance. This crucial consensus ensures the legitimacy and credibility of CFC rulings. As of June 2013, no civil society or private sector representative has disputed CFC rulings drawing on the guideline's definition of market relevance.

Statistical Methods for Surveys

CFC receives many complaints from enterprises alleging that competitors are behaving in an uncompetitive manner. One way to assess the validity of such claims—especially when there's no *a priori* evidence of dominance in the relevant market—is to survey business owners within a given sector, who can share valuable insights about the presence and degree of such practices. For CFC to prove these practices are taking place, the Commission must either demonstrate explicit collusion, or prove competitors were excluded from a given market. The latter entails circumstantial evidence that is difficult to procure.

Business surveys enable CFC to gather data to detect and identify the presence of anti-competitive practices—yet they had not been administered using appropriate statistical methods or a uniform methodology. Given this limitation, CFC's General Directorate for the Investigation of Relative Monopolistic Practices requested technical assistance from the Mexico Competitiveness Program to develop a guideline with proven statistical survey methods. The guideline's main purpose was to help authorities and plaintiffs clarify the rationale underlying assertions of anti-competitive practices that violate the law, based on a robust and proven methodology.⁸ The guideline also improves transparency in CFC procedures and increases certainty for parties involved in investigations

The final output is a [20-page statistical guideline](#), delivered in March 2011, and divided into five main sections:

1. *Introduction*: Overall proposal, sector focus and rationale
2. *Survey design* (selection criteria and procedures): Criteria for selecting firms to be included in the survey, sample design protocol, fieldwork protocol, measurement instruments or questionnaires, and information analysis protocol
3. *Data collection*: Capacity-building of survey personnel, pilot test, and supervision structure
4. *Data analysis*: Systematization of procedures, and statistical analysis
5. *Results and reporting*: Delivery of final results, appropriate supporting documentation

View it at http://www.cfc.gob.mx/images/stories/Documentos/guias/referenci_encuestas.pdf

CFC applies the survey methodology in when investigating cases in which empirical economic data is scarce or inconclusive. As CFC's Director of Regulatory Evaluation Fernando Miño said:

⁷ Secondary markets that supplies accessories, spare parts, second-hand equipment, and other goods and services used in repair and maintenance. <http://www.businessdictionary.com/definition/aftermarket.html#ixzz2aCg9cfEt>

⁸ These guidelines apply to Sections III, IV, V, and VIII of Article 10 of the Competition Law, referring to atomized markets in which a small number of observations cannot determine the presence of unilateral misconduct.

“The Guideline incorporates best international practices in CFC survey, including establishing the minimum criteria or requirements a survey must satisfy in order to be considered in a CFC case or investigation. In this context, I am grateful for USAID’s support in the development of this Guideline, a document that contributes to the efforts of promoting competition policy in Mexico; this, in turn, promotes more efficient and competitive markets and greater well-being for society.”

The guideline has been used in investigations of relevant market definition for an international airport, as well as in the market dominance investigation of a company that supplies to the government a nutritional product distributed under a prominent social protection program. The statistical guideline and an independent expert opinion became important evidence used by CFC to obtain a ruling of relative monopolistic practices against the company.

2. E-Government and Transparency

The Mexico Competitiveness Program effectively promoted transparency at the Federal Competition Commission (CFC) through electronic systems. E-government improves efficiency and streamlines transactions between citizens and public sector institutions. It also makes it possible for complex organizations to organize and make publicly available massive amounts of information. Over several years, USAID supported CFC’s pioneering efforts to use e-government tools to strengthen organizational effectiveness and accountability to citizens. Competitiveness Program technical assistance made possible two products: a dedicated **microsite** that provides public access to all CFC rulings, and an **electronic notification system** that boosts speed and reliability of formal CFC communication to litigants and other stakeholders involved in merger or anti-trust cases.

Microsite for Competition Rulings

Since its creation in 1993, Mexico’s Federal Competition Commission (CFC) has ruled in over 4,000 competition cases. Information on these rulings became public in 2002 after the enactment of the Mexican Freedom of Information Act, and ruling information is published on the CFC’s website. Nevertheless, searching a file or a particular case was a cumbersome process, even for experienced researchers, as newly digitalized electronic files on competition cases were not well organized or readily accessible. Moreover, civil society organizations, such as the Network for Competition and Regulation, complained CFC was not following best international practices on transparency.

In June 2010, CFC requested the British Government and USAID to co-finance a new “microsite” —a dedicated website accessible from the organization’s homepage— to improve public access to information about its rulings. The project entailed customized software that offered different levels of disclosure and access. Mexican competition law requires regulators to keep all case information confidential until the final ruling and case disclosure to the public after the ruling. Software architecture had to therefore allow both open and privileged access, to be a usable tool for CFC researchers working on ongoing cases, as well as a platform for public consultation.

CFC requested assistance from the U.K. government to finance migration of data and documents to a public server. It also requested technical assistance from the USAID Mexico Competitiveness Program to finance creation of the microsite to provide access to this integrated database. Technical requirements included the ability to (1) extract and present documents on public rulings from CFC’s main database, (2) safeguard the system’s security and ensure non-disclosure of confidential documents, and (3) classify and search key case information: ruling status, date, sector, sanction, etc.

Over two months, the software company Exagono worked closely with CFC and Competitiveness Program staff to develop, test and launch the microsite. The microsite beta was delivered to CFC in September 2010 and went live in October 2010. View it here: <http://www.cfc.gob.mx/index.php/publicacionesinformes>

The user-friendly search engine allows searches by keyword, file number, type of firm, type of practice under investigation, period of investigation, and economic sector. Users can review (1) investigation reports, (2) mergers and

concentration findings, (3) bidding and concessions findings, (4) rulings (*declaratorias*), (5) appeals, and (6) CFC opinions about proposed legislation at the federal or state level, including the amended Federal Competition Law.

The CFC microsite gives the public access to over 4,000 files related to the Commission’s rulings since its creation in 1993. Since going live, microsite traffic volume has been significant, averaging about 1,000 unique visitors per year. Visitors return two to three times a year, and consult three to four pages each visit (see table below); 61 percent of visitors return to the site, and spend almost seven minutes browsing per visit. Approximately 84 percent access the microsite from a Spanish-language browser, while 16 percent access it from an English-language browser, suggesting that the microsite has a broad audience.

Table 2

Visits to the CFC’s Opinions & Resolutions Microsite, (average number of visits per month, by year)					
	2010 (2-mo. period, launch)	2011 (12-mo. period)	2012 (12-mo. period)	2013 (6-mo. period)	Average No. of Users/Visits, per year**
Number of unique users (by IP adress):	955	796	798	580	1,174
Number of visits to the website (including repeat visits by a same user):	2,053	1,852	1,900	1,756	2,835
Number of website pages visited:	8,062	6,336	6,148	6,406	10,107

** Average in a 12-mo. period, estimated by averaging the number of visits by the 32 months of microsite operability and multiply this monthly average by 12 for an annual average.

CFC General Secretary Ali Haddou said the microsite is transforming how CFC conducts its investigations, since more agency and external experts have access to files and can easily discover criteria used by commissioners to make rulings on similar past cases. The microsite also provides the Mexican judiciary with a better understanding of CFC rulings and the ability to trace the evolution of CFC decisions. Two major law firms have reported to CFC that the microsite has become an important resource for ruling consultation.

In 2010, the microsite received an international transparency award, the *Premio a la Innovación en Transparencia para la Gestión Gubernamental*, organized by the World Bank, Mexico’s National Transparency Institute, the National Institute of Public Administration and the Ministry of Public Administration. CFC President Eduardo Pérez Motta affirmed that the microsite, following best international practices, makes CFC one of the most transparent competition agencies in the world. Agustin Ros, an independent analyst at NERA Consulting Group, even said, the CFC microsite is better structured and more user-friendly than that of the U.S. Federal Trade Commission. This microsite significantly improves CFC’s accountability and transparency, establishes predictability and fairness for Mexican firms, and deepens citizens’ trust in the Commission.

Electronic Notification System (ENS)

CFC is responsible for preventing monopolistic practices and mergers that undermine consumer choice, price, and/or quality of goods and services. As part of its institutional obligations, the Commission must formally notify all relevant parties about its decisions and rulings. It must also provide written responses to requests for information from citizens and corporate representatives. These official procedures are established under the Federal Competition Law and its administrative regulation (*Reglamento de la Ley Federal de Competencia*). Most common communications include general information requests, acceptance or rejection of merger applications, and final administrative rulings. All require formal notification.

To carry out this process, CFC had to use scarce resources and highly qualified personnel (economists and competition analysts) to travel to the physical address of notification recipients. When the address is outside Mexico City, CFC relies on the federal branches of the Ministry of Economy to deliver notifications. Not only was the pro-

cess administratively costly and very slow, but also subject to manipulation and further delay by individuals and companies seeking to slow down or halt CFC’s decision-making process.⁹ So CFC decided to create an electronic notification system (ENS) to streamline the process, ensure the validity of its notifications, and use the time of qualified personnel more effectively.

CFC sought to create and implement a notification system that is user-friendly, efficient and provides security to all interested parties and CFC authorities, including these features:

- Linkage to CFC validation system. Secure registration and certification for authorized company representatives. Validation of registration must demonstrate a highly reliable security mechanism based on electronic signature, validation of Power of Attorney at relevant governmental offices.
- Administration of internal processes. System requirements to allow CFC to (1) configure electronic notification processes by type of process, (2) register internal CFC users authorized to use the system and access different processes, (3) create a module for classifying notifications: (simple e-mail and automatic generation of acknowledgement of receipt), (4) “Traffic light” feature in which classification triggers a progress report about notification status.¹⁰
- Notification retrieval and system log. Enables registered parties to retrieve notifications related to their processes. Users must also be able to search for documents, previous notifications and/or notification dates related to their case or file. Access to the electronic board must be code-based, and the system also must enable CFC officials and external registered parties to review and generate activity reports.

The ENS system was completed and delivered to CFC in December 2012, including automatic and instantaneous registration of receipt of a notification. Under the terms of merger application submission to CFC, the filing party must accept the obligation to check notifications and abide by rulings. Even if the e-mail is not opened, receipt signature is delivered on connection with a computer server. In other words, the ENS provides legal proof of notification delivery regardless of the recipient’s actions.

The impact of the Electronic Notification System on CFC effectiveness has also been significant: Notifications are delivered faster, more reliably, and with much less administrative cost. CFC’s Director of Evaluation, Fernando Miño, reports a significantly lower rate of notification rejections. While the ENS is not yet compulsory—the option of in-person notification is still available for those who file their requests non-electronically—it enables CFC to comply with notification requirements in an efficient manner, thereby increasing the effectiveness of the amended competition law.

3. Civil Society Network on Competition

Competitiveness Program support of the Mexican Network on Competition and Regulation represents a unique effort to enhance the voice of civil society in Mexico’s highly technical policy dialogue on competition policy. The Program awarded a grant to the Mexican think tank Center for Development Research (CIDAC) to propose and promote reforms within an amended competition law through participation of independent professionals and academics. CIDAC had previously established the Network, which primarily produced technical studies and seldom interacted with either decision-makers or the public. However, it did enjoy a solid institutional home at an established NGO, as well as access to some of the country’s top independent experts on competition issues.

The Network enabled CIDAC to bring together diverse professionals, such as economists, lawyers, and political

⁹ Tactics used to evade notifications by companies expecting an unfavorable ruling, or with access to confidential information, include: removing the company’s logo and address number from the buildings; positioning a team of bouncers and lawyers at the building entrance to deny access to CFC personnel (on the basis of protecting private property); firing company personnel; or even moving the corporate offices to a different location.

¹⁰ **Traffic lights include:** 1: Notification under review. 2: Notification ready to be sent. 3: Notification sent. 4: Notification received. 5: Acknowledgement of receipt.

scientists, working in academia, government and business. The main criterion for Network membership was a strong personal commitment to participate in efforts to foster competition in Mexico to improve its development. During its most active phase, the Network had about 150 active members, and distributed its newsletter and policy briefings to around 3,000 policy experts and government officials.

Over three years of Competitiveness Program support, Network members conducted policy research, organized seminars, produced and disseminated specialized publications on competition, organized meetings with stakeholders, and fostered interaction among academic and professional experts, as well as with regulation authorities about competition and regulation issues. Activities were financed by the Competitiveness Program through an initial grant and two renewals.

The Network was organized by María Cristina Capelo, a senior policy analyst at CIDAC. As a think tank, CIDAC focused on economic policy issues and worked extensively with researchers, professionals and government officials who had expressed a public opinion or written on competition. These experts became core members of the Network. While members met periodically to discuss specialized topics of interest, CIDAC's annual competition conference, which was supported by the Competitiveness Program, was the most important occasion to gather the entire group.

Leveling the playing field and curbing anti-competitive practice is a slow, grinding process that entails change in law, regulation, regulatory capacity, and even culture. The process itself cannot be precisely measured, much less the impacts of different institutional actors. In this sense, the impact of Network activities does not translate neatly into price reduction or change in industrial structure. There was certainly a significant lag time between Network activities and institutional change, and of course even more lag time between such change and actual economic impact. Moreover, the Network was simply a single institutional actor in a policy process involving CFC, Congress and the private sector.

However, while quantifying its impact is not possible, the Mexican Network on Competition and Regulation undoubtedly played an important, unique role in pushing for change within this process. The Network gave citizens unprecedented voice in the highest levels of policy dialogue and development. Repeated testimony to the Competition Committee in Congress by Network participants, given at the request of elected legislators, can be considered the Network's most direct contribution to policy change. In addition, over the three years the Network operated with USAID funds, no other institution in Mexico made as much substantive and analytical material available to the public, helping raise awareness about the issue and maintain pressure on decision-makers to take action.

One of the Network's most important impacts was on the passage of an amendment to the Federal Law on Competition in 2011, principally in these areas of reform:

- Improving investigations by adding technical personnel to the CFC
- Increasing fines, in line with international best practices, to provide the regulator with a credible threat when dealing with firms that violate the law
- Authority to carry out unannounced visits ("dawn raids") to obtain and extract relevant evidence from firms under investigation
- Authority to suspend a suspected monopolistic behavior or practice before proceeding with an investigation (preventative measures)
- Improved transparency and public disclosure on how rulings are given and enforced

In addition, by producing videos that explain in accessible language the benefits of competition, the Network reached a broad public audience that was largely unaware of how monopolies affect everyone's economic welfare. For example, by showing the video "Why does competition matter?" on the Metrobus, one of Mexico City's larg-

est public transportation services, the Network reached a large number of citizens from all socio-economic levels.

Perhaps the Network's most enduring impact was to bring a complex, abstract issue directly into the public dialogue about good government. With three years of support from the Competitiveness Program, the Network became a prestigious, respected civic institution whose information, analysis and proposals are seriously considered by decision-makers.

Competition Network Outputs

During three years of Competitiveness Program support, the Competition Network produced an impressive body of work, including briefings, books, public outreach materials and events. A full list follows.

Three annual conferences on regulation and competition

- Third annual conference on competition regulatory challenges following the 2009 economic crisis. November 4, 2009.
- Fourth annual conference on competition: Strengthening Mexican regulators, including the Federal Competition Commission (CFC), the Federal Telecommunications Commission (FTC), and the Energy Regulatory Commission. October 27, 2010.
- Fifth annual conference on competition: Removing caps in trade, increasing foreign investment, and eliminating price controls and subsidies. September 7, 2011.

Original research and policy proposals

- Policy Brief: "Obstacles to free competition in the importer cadre." *"Obstáculos a la libre competencia en el padrón de importadores."* Javier Cortés, CIDAC. Mexico, D.F.: August 24, 2009.
- Policy Brief: "Economic Crisis and Competition Policy in Mexico." *"Crisis Económica y Política de Competencia en México."* Víctor Pavón Villamayor, CIDAC. Mexico, D.F.: July 30, 2009. http://reddecompetencia.cidac.org/briefs/Crisis_Economica_Internacional_y_Politica_de_Competencia_en_Mexico.php
- Policy Brief: "Toward an Effective Fine Scheme for the CFC." *"Hacia un régimen efectivo de multas para la Comisión Federal de Competencia."* Víctor Pavón Villamayor, CIDAC. Mexico, D.F.: August 28, 2009.
- Policy Brief: "Reform to the Federal Law on Competition." *"Reformas a la Ley Federal de Competencia."* Víctor Frías, CIDAC: October 1, 2009. http://reddecompetencia.cidac.org/briefs/Reformas_a_la_Ley_Federal_de_Competencia_Economica.php
- Policy Brief: "Foreign Investment in Shipping, Courier and Parcel Services and Freight: Resistance or Rule of Law?" *"Inversión extranjera en paquetería, mensajería y transporte de carga: ¿Resistencia o estado de derecho?"* Alejandro Faya, CIDAC. Mexico, D.F.: March 31, 2010. http://reddecompetencia.cidac.org/briefs/Inversi_n_extranjera_en_paqueter_a_mensajer_a_y_transporte_de_carga_resistencias_o_estado_de_derecha.php
- Policy Brief: "Competition or Celerity?: The New State of Affairs in PEMEX Tenders, Following the New Administrative Rulings on Contracting." *"¿Competencia o Celeridad? El Nuevo estado de licitaciones de Petróleos Mexicanos, a partir de las nuevas disposiciones administrativas de contratación."* Miriam Grunstein and María Cristina Capelo, CIDAC. Mexico, D.F.: June, 30 2010. http://reddecompetencia.cidac.org/briefs/Competencia_vs_celeridad_El_nuevo_estado_de_licitaciones_de_Petr_leos_Mexicanos_a_partir_de_las_nuevas_Disposiciones_Administrativas_de_Contratati_n.php
- Policy Brief: "Market Dominance in a Joint Market." *"Poder sustancial de mercado conjunto."* Víctor Pavón Villamayor, CIDAC. Mexico, D.F.: September 13, 2010. http://reddecompetencia.cidac.org/briefs/Poder_sus

tancial_de_mercado_conjunto_en_M_xico.php

- Policy Brief: "A Proposal to Reduce the Risks in the Pension System Based on AFORES (Pension Saving Funds)." "*Propuestas para reducir los riesgos del sistema de pensiones basados en afores.*" Dario Ibarra, CIDAC. Mexico, D.F.: September 30, 2010. http://reddecompetencia.cidac.org/es/uploads/1/Propuestas_de_reforma_para_el_sistema_de_pensiones.pdf
- Policy Brief: "Subsidies to Liquefied Petroleum: Expensive and Inefficient." "*Subsidio al gas LP: caro e ineficiente.*" María Cristina Capelo y María José Contreras, CIDAC. Mexico, D.F.: September 30, 2011. http://reddecompetencia.cidac.org/briefs/Subsidio_al_gas_LP_caro_e_ineficiente.php
- Book: Strengthening Regulators: Changing the Rules of the Game in Mexico. *Fortalecer a los Reguladores: Cambiando las reglas del juego en México.* Alejandro Faya, September 22, 2010. http://reddecompetencia.cidac.org/libros/Fortalecer_a_los_reguladores_en_M_xico.php
- Book: From the Cave to the Market: Around the World for Oil Contracting. *De la caverna al mercado: Una vuelta al mundo de las contrataciones petroleras.* Miriam Grunstein, CIDAC. Mexico, D.F.: March 8, 2011 http://reddecompetencia.cidac.org/libros/De_la_caverna_al_mercado_una_vuelta_al_mundo_de_las_negociaciones_petroleras.php
- Book: Three Regulators, Three Challenges. *Tres reguladores, tres retos.* Alejandro Faya, Miriam Grunstein y Victor Valdés, CIDAC. Mexico, D.F.: September 30, 2011. http://reddecompetencia.cidac.org/libros/Tres_Reguladores_Tres_Retos.php
- Book: [Crucial Actions in Competition and Regulation](#). *Acciones cruciales en competencia y regulación.* CIDAC. Mexico, D.F.: September 30 2011. <http://accionescruciales.cidac.org>

Testimony at CFC public hearings on transparency; and testimony to reform the Federal Law on Competition and the institutional structure of Mexican regulators

- Hearing of the Competitiveness Committee, Congressional Lower House (*Camara de Diputados*) to Reform the Federal Law on Competition. Participants: Víctor Frías (Network representative) and Eduardo Pérez Motta (President of CFC). March 24, 2010.
- Hearing convened by CFC to improve transparency. Network participants: Andrés Blancas, Alejandro Faya, Víctor Frías, Miriam Grunstein, Bosco Labardini, Víctor Pavón Villamayor, Adriaan ten Kate, Víctor H. Valdés, Jorge Velázquez Roa. April 9, 2010. http://reddecompetencia.cidac.org/es/uploads/1/Respuestas_a_la_consulta_publica_para_mejorar_la_transparencia_de_la_labor_de_la_Comision_Federal_de_Competencia.pdf
- Hearing convened by the Competitiveness Committee, Congressional Lower House (*Camara de Diputados*) to Reform Mexican Regulators. Network participants: Víctor Frías, Víctor Valdés, Víctor Pavón Villamayor, Alejandro Faya, Jorge Velázquez Roa, Bosco Labardini. May 25 and 27, 2010.
- Hearing convened by the Competitiveness Committee, Congressional Lower House (*Camara de Diputados*) to Reform Mexican Regulators. Network participants: Víctor Frías, Víctor Valdés, Víctor Pavón Villamayor, Alejandro Faya, Jorge Velázquez Roa, Bosco Labardini. June 1 and 8, 2010.

Short videos on competition issues to reach the general public

- Why does competition matter? (¿Por qué la competencia importa?) 11/09/2009¹¹ http://reddecompetencia.cidac.org/videos/Por_qu_la_competencia_importa.php
- The Rules of the Game. (Las reglas del juego) 11/15/2010 http://reddecompetencia.cidac.org/videos/Las_reglas_del_juego.php
- Collusion or Competition? (¿Colusión o competencia?) 11/14/2011 http://reddecompetencia.cidac.org/videos/Colusi_n_o_Competencia.php

¹¹ This video was shown in Mexico's public system of bus transportation called Metrobus from April 26, 2010 for two months. At the time Metrobus had an estimated 325,000 passengers, and potential video viewers, per day.

Chapter 7

Promoting Youth Employment

Chapter 7

Promoting Youth Employment

Context

Many cities in Mexico include a sizable population of young people (officially defined as 15 to 30 years old) who neither study nor work. Not surprisingly, youth unemployment is especially prevalent in poor neighborhoods that lack job and training opportunities, as well as educational and social services. These so-called “NiNis” (*ni estudian, ni trabajan*) not only represent unfulfilled productive potential, but in certain high-risk urban areas are more susceptible to criminal recruitment. Youth employment in Mexico is thus an economic and security challenge.

Employment programs targeting marginalized or at-risk people are administered by the Ministry for Social Development (SEDESOL). However, initiatives such as SEDESOL’s Temporary Employment Program serve as stop-gap relief mechanisms to inject income into rural or indigenous households facing imminent poverty. They do not address the needs and social circumstances of urban NiNis, who typically lack essential skills for employment and are in need of sustained employment opportunities.

Following the explosion of drug-related violence that began in early 2009, Ciudad Juárez became a focal point of government efforts to address youth unemployment and under-employment. In December 2009, the federal government launched the strategy “*Todos Somos Juárez*” (We all are Juárez), which institutionalizes direct citizen participation within public sector programs. The employment pillar of “*Todos Somos Juárez*” was led by the Ministry of Labor and Social Welfare (STPS), which in coordination with civil society organizations, universities, and federal, state and local authorities, established and led the Juárez Citizen Council for the Promotion of Employment (CCPE), consolidating members’ program resources (e.g., university-based social service) to implement the Council’s action plan.

CCPE aimed to strengthen the social fabric in poor neighborhoods and train NiNis in social and labor skills needed for the formal sector. The Council implemented a series of workshops to develop an understanding of attitudes and behaviors that employers value, “*Talleres de Valores para la Empleabilidad de los Jóvenes*.” Almost anyone from 16 to 59 years could partake in the workshops, which featured a special component on “soft skills” for employment: How to write a resume, dress for work, communicate during a job interview, etc.

Ciudad Juárez’s experience in promoting youth employment soon became part of a higher-level policy dialogue about national employment policy. Because of the highly participatory public-private process developed within the CCPE, the Juárez program became recognized as an innovative approach to a problem facing many large and medium-sized cities throughout the country. However, given how fast the program was launched and how little time it had been operating, officials from STPS, local government, as well as business and NGO leaders in Juárez, acknowledged that they lacked information about its effectiveness.

Key stakeholders within the CCPE agreed that a neutral, third-party organization should carry out an objective, empirical evaluation to identify strengths and weaknesses, and to propose refinements and best practices to increase the effectiveness of the Juárez Youth Employment program. STPS also expressed interest in replicating the program in other cities and drafting a national program for youth employment. In early 2011, CCPE invited USAID’s Mexico Competitiveness Program to carry out the evaluation and to present it to national and local leaders. Technical assistance to CCPE would include this evaluation and ultimately the design of a national employment program for poor and urban youth, currently awaiting approval and finance for the implementation of a first pilot.

Leveraging a Local Evaluation to Reform National Policy

In January 2011 the Undersecretary of Labor requested technical assistance from the Mexico Competitiveness Program to design an evaluation for “*Talleres de Valores para la Empleabilidad de los Jóvenes*,” a new employment program implemented by the CCPE and funded by the STPS. The program had three objectives: 1) strengthen the social fabric in poor neighborhoods to make communities more resilient; 2) provide *NiNis* with social and labor skills needed for formal employment; and 3) link trained *NiNis* to potential employers. The Undersecretary emphasized the evaluation should include a review of international best practices in youth employment programs, documentation of all phases of the Juárez program, and direct empirical observation. He stipulated that the new program had to be evaluated by a neutral international organization that was not a member of the Citizen Council or the Mexican government, to ensure credibility and objectivity of conclusions.

After the initial meeting with the Undersecretary in Mexico City, the Competitiveness Program was introduced to members of the CCEP during its February 2011 monthly meeting in Juárez. The Council unanimously approved USAID’s role in designing and carrying out an evaluation of the employment program. USAID and Competitiveness Program staff participated in two additional meetings at the request of the Undersecretary, to better understand the priorities of the Council, which had been working on numerous employment issues in Juárez for over a year.

The Competitiveness Program and its subcontractor C-230 carried out intensive primary and secondary research over two months, including a desk review of international best practices of youth-oriented employment programs; an assessment of scope, size and characteristics of the “*NiNi*” population in Juárez; a document review of the Juárez employment program itself; over 60 interviews with Council members, government officials and local residents; as well as focus groups with *NiNis* and other unemployed participants—some of whom had participated in the workshops.

The evaluation went beyond the workshops and addressed the local STPS National Employment Service office, which provides information about job opportunities. Program staff met several times with the Undersecretary and his staff to present the central findings and results of the study, as well as to Council members and U.S. Embassy personnel.

On October 26, 2011, USAID officials, Competitiveness Program staff and contractors participated in a special CCPE meeting, including Chihuahua Governor César Duarte, Ciudad Juárez Mayor Hector Murguía, national Minister of Labor Javier Lozano, and numerous local business and civil society leaders. Following the presentation of the evaluation, USAID Senior Deputy Assistant Administrator, Amb. Liliana Ayalde praised the bottom-up effort from local, state, and federal authorities working together with the academic community and civil society to directly confront the youth employment challenge and said lessons learned from the Juárez employment initiative could be adapted to other communities in Mexico. Following the meeting the CCPE and the Minister of Labor and Social Welfare, Javier Lozano, requested additional USAID assistance to implement recommendations from the evaluation.



Figure 19. The October 26 meeting included high-level local and national leaders who endorsed USAID assistance.

Competitiveness Program participation in Juárez resulted in a direct request from the Chief of Staff of the President for additional USAID support to design a national program for youth employment for FY 2012, based partially on the recommendations and conclusions of the evaluation of the *NiNis* employment program in Juárez; and partially on the development of a more comprehensive strategy with strategic lines of actions and instruments like “*Talleres*.” The idea was to deploy this strategy in urban cities afflicted by the *NiNi* phenomenon.

Following a presentation in October 2011, however further technical assistance to Juárez was suspended due to high-level leadership changes within STPS. Not only was the Minister replaced,

but also the Subsecretary with whom the Competitiveness Program had worked the entire year. Although the new leadership acknowledged the value of the work done thus far, it did not focus on scaling up the Juárez program.

Subsequently staff from the President’s office recommended the Competitiveness Program present the proposal to develop a national youth employment program to the Mexican Youth Institute (IMJUVE), which operates under the Ministry of Education (SEP). The Institute had previously conducted polls and pilot *NiNi* programs, but sought to scale up its youth employment efforts to the national level. Given our experience in Juárez, IMJUVE requested technical assistance from the Program to carry out broader research on youth unemployment and to provide concrete proposals to improve the Mexican government’s approach.

The process for this phase of the project was similar to that of the Juárez work: Program staff made multiple presentations to IMJUVE’s Director and his senior staff on research findings and draft proposals. These technical discussions resulted in significant conclusions, such as how to determine eligibility and selection criteria for intended beneficiaries, and how to present the proposed program to the transition team of the then-incoming Administration. Yet support for the project flagged again when IMJUVE’s director transferred to another Ministry.

Fortunately, the incoming administration expressed commitment to the proposed national strategy. In June 2013, the Competitiveness Program presented the main findings and recommendations on program design to Under-secretary of Labor Inclusion Ignacio Rubí Salazar, who suggested piloting the program in the city of Monterrey, Nuevo Leon. The Program visited Monterrey a week later and met with the state secretary of labor and municipal officials, who expressed great interest in pursuing the program locally.



Figure 20. Amb. Liliana Ayalde affirms USAID commitment to promoting youth employment in Ciudad Juárez.

Outputs

The evaluation of the Ciudad Juárez program, “*Evaluación de los Talleres de Valores para la Empleabilidad de Ciudad Juárez*,” completed in August 2011, included documentation of the process through which the City Council, federal and local authorities implemented a bottom-up program designed with community input. Because so many actors had been involved in a rapidly developing program, the technical assistance provided the only comprehensive step-by-step description of its implementation, an important component of any effort to build on or replicate such programs elsewhere.

The findings also helped the Juárez City Council learn more about *NiNi* characteristics, and thus better shape interventions. For example, the study showed that Juárez, contrary to wide belief, did not have a significantly higher number of *NiNis* than the national average. It also unearthed factors that rendered Ciudad Juárez more vulnerable than other border cities to the 2008-2009 economic downturn, including 1) systemic job insecurity, given virtually no retail opportunities in the City; 2) economic activity concentrated heavily in the *maquiladora* industry, which downsized its presence in Juárez significantly during the recession; 3) the city’s status as an immigration magnet, which meant those laid off from the *maquiladoras* were forced to leave altogether, leaving youth who remained with a lack of parental guidance and housing.

The evaluation found participants greatly value employment workshops, which focus on both “hard” (technical) and “soft” social and cultural working skills. Workshop participants received financial support during the training, financed via STPS’s *Primer Empleo* program. The evaluation also included critical findings about the workshops, including their positive impact on youth employment. Key recommendations included:

- Workshops on employability and values (sometimes called “soft skills”) should be integrated and coordinated with other components of the employment program.
- Rules of operation of the employment program should increase the program’s flexibility and adaptability. Labor training done by the National Service of Employment could be carried out by universities. The program needs more connection between soft skill components (workshop on employability) and hard skill components (specialized training that meets the demands of industries or services from the locality).
- Workshop content should incorporate on-site training certification for labor capacity-building and direct linkages to local employers (especially the maquila industry, the most important employer in Juárez).

The second phase of technical assistance gave IMJUVE a detailed design of a new national program for poor urban youth (ages 14-29) that replaced the previous temporary relief/hard skills-focused model. Research measured the extent and geographic location of the NiNi using census data. The proposal was entitled “*Diseño de un Programa de Empleabilidad para Jóvenes Urbanos en Situación de Pobreza*” (Program Design for Poor Urban Youth). It includes: a diagnostic to define key NiNi characteristics and challenges they face in finding jobs; an analysis of international best practices; and a strategy to address youth unemployment under five strategic components: (a) strong links to the private sector, (b) social mentoring, (c) in-class and in-situ (internships) training, (d) university certifications, and (e) intermediary employment services, such as job listings and fairs.

Results

The conclusions of the Juárez study were discussed extensively among the Office of Mexican Presidency (*Presidencia*), the Ministry of Labor and Social Welfare, IMJUVE, the Juárez Citizen Council for Promotion and Employment, U.S. Embassy personnel (USAID Mission Director and COTR, Merida Initiative officers), and Competitiveness Program staff. The external evaluation of local workshops helped confirm that “soft skills” are crucial in preparing young people to enter the labor market.

The Program affirmed youth-oriented programs should follow different rules from traditional employment programs, which provide temporary income relief rather than sustained employment. The evaluation documented the process of bottom-up intervention, and enabled local government stakeholders to refine interventions based on objective empirical findings. Most importantly, USAID technical assistance resulted in the design of a comprehensive *national* program for employment of urban and poor youth, and the high level of political support from *Presidencia* and STPS increases the probability of implementation and replication.

In an important follow-up to Competitiveness Program work, on May 9, 2013, C-230 President Alberto Saracho was invited to present the initiative to President Peña Nieto. The National Development Plan (PND) 2013-2018 was then presented by the Peña Nieto Administration on May 20, 2013, outlining the Administration’s strategic priorities and planning for the *sexenio*. Promotion of youth employment is explicitly addressed in two key areas of the PND: “Mexico with Quality Education” and “Prosperous Mexico” explicitly state the need to prepare youth for employment, naming a variety of strategies to address the challenge, including provision of an education relevant to market demand, fostering on-the-job training, and promoting linkages between educational institutions and the private sector.

STPS has indicated willingness to finance the first phase of the youth employment program in the Monterrey, Nuevo Leon. After the pilot’s completion and proof of effectiveness, STPS could then request an official program allocation from the Ministry of Finance (SHCP) for 2014. USAID has indicated that it will support future labor-related work through a new Workforce Development Program, and STPS officials have initiated a dialogue with USAID to explore using the new program to support implementation efforts in Monterrey and elsewhere. Competitiveness Program technical assistance to STPS serves as an important example of how USAID leverages public sector resources and improves government initiatives through rigorous research and identification of best practices.

Chapter 8

Legislative Reform of State

(Government Procurement and Economic Regulation)

Chapter 8

Legislative Reform of State Government Procurement and Economic Regulation

Bid-Rigging in State Government Procurement

While Mexico's federal government collects most of the country's taxes, state and municipal government spending, through fiscal redistribution to states, makes up one-third of total government spending. Local governments may also levy their own taxes and fees to generate resources for public sector goods and services. State government procurement is therefore a major component of Mexico's overall fiscal policy and has a major impact on regional and national economic efficiency.

However, state government procurement in Mexico is often dominated by rent-seeking interests, ungoverned by a transparent, objective bidding process that promotes competition. State procurement laws (*ley de adquisiciones*) typically allow (or do not explicitly sanction) anti-competitive practices. For this reason, collusion (bid-rigging) is common: Firms conspire to raise prices or lower quality of goods or services, or to ensure a particular winner of a public tender at a mutually arranged price. Other problems include highly discretionary or ambiguous bidding criteria, sole-source contracts (absence of a public bid), and blatant corruption and favoritism.

Mexico's Federal Law on Economic Competition prohibits bid-rigging and subjects violators to strong sanctions. Anticompetitive practices in state procurement processes have become a priority for the Federal Competition Commission (CFC), which has worked with the Organization of Economic Cooperation and Development to help federal agencies, such as the Mexican Social Security Institute (IMSS), adopt and enforce guidelines to end bid-rigging and lower prices for mass-produced goods and services. In this effort, CFC developed a sophisticated econometric methodology to detect bid-rigging in public procurement.

Not surprisingly, state governments have taken little action to reform the process. The ability to make discretionary procurement decisions to reward allies has long been a source of political capital for state and municipal government leaders. Some state laws completely ignore federal legal principles, granting local officials almost unrestricted authority to select providers. When federal legal principles inform state processes, loopholes dilute their effectiveness. For example, a federal standard to competitively bid contracts worth more than one million pesos can be evaded by breaking up the tendering process into smaller amounts.

Collusion to rig prices or ensure a particular winner is also widespread at the state level—for example, internal agreement to rotate contract awards allows one company to win at a higher price than legitimate competition would allow. Firms also collude by manipulating dispute resolution rules, because public officials know formal disputes (even those without merit) can delay or halt a procurement process. Officials who evaluate tenders may therefore have an incentive to ignore or even condone anomalies.

After receiving a formal request for technical assistance from CFC, the Competitiveness Program carried out a public bidding process for a qualified contractor to develop the model law and selected the Mexican Competitiveness Institute (IMCO) in early 2012. As a first step in creating a model procurement law, IMCO reviewed procurement legislation from all 32 federal entities (31 states and the Federal District) and evaluated each state using an assessment tool created in-house and based on OECD best practices.¹² IMCO conducted a thorough literature review of international procurement laws, including the OECD Handbook on Public Procurement; a study detailing the IMSS procurement reform process; and a model law developed by the United Nations. IMCO evaluated comparative international cases, including Australia, Chile, Italy, New Zealand, and the United Kingdom. IMCO also analyzed the more transparent Mexican state procurement laws, including those from Sinaloa, Federal District, Nuevo León, Baja California and Veracruz.

¹² Assessment of the Quality of State Regulations in Procurement Processes The tool is based on 41 indicators. For more information see: "Evaluación sobre la calidad de la normatividad estatal de compras públicas." IMCO.09/2011: [http://www.imco.org.mx/wp-content/uploads/2013/6/Competencia_en_las_compras_publicas.12sept2011_documento_\(final\).pdf](http://www.imco.org.mx/wp-content/uploads/2013/6/Competencia_en_las_compras_publicas.12sept2011_documento_(final).pdf)

This preliminary research enabled IMCO and Program staff to develop basic principles for a model procurement law. A select group of economists and lawyers spent several weeks reviewing a preliminary draft. On June 6, 2012, the Program held a meeting to review the draft with OECD experts, CFC staff, state comptrollers from five states (Campeche, Guerrero, Oaxaca, Puebla, and Zacatecas), and several NGOs and private organizations (including Transparencia Mexicana, and Aklara, a firm specialized in reverse auction systems). The frank discussions led to numerous recommendations to improve transparency, civic oversight, and consolidation mechanisms, and all participants acknowledged that the exercise had been fruitful in achieving a more comprehensive draft law.

Economic regulation

CFC protects consumers and fosters free market access by identifying, curtailing and preventing anti-competitive practices that erode free markets. The Commission also promotes competition by fostering pro-market regulations within institutions at the national and sub-national level (e.g., Mexican Congress, the Federal Regulatory Improvement Commission, as the telecommunications and energy regulatory agencies CRE and COFETEL). Even as national efforts gain traction, however, CFC lacks the financial and human resources necessary to have a major presence at the state level, where anti-competitive behavior is pervasive.

Given this challenge, CFC seeks to work more closely with local regulatory authorities. The Government of Aguascalientes expressed its intention to carry out a major reform initiative that fosters competition and competitiveness: by enacting a law that mandates review of local economic regulation. The review would be institutionalized through the creation of an autonomous state commission responsible for evaluating the impact of the state's existing and future regulations that effect competition and economic activity.

Outputs

Assessment of the Quality of State Regulations in Procurement Processes

With a score of 100 representing the “perfect” procurement law, IMCO’s legislative quality index gave Mexico’s federal law a respectable 70.7 points. The average score of the 32 Mexican states, however, was just 46.7 points. The Program argued that while a good law doesn’t ensure efficient procurement, a bad law virtually guarantees anti-competitive practices.

Another finding was the significant disparity among state regulations defining thresholds for sole-source selection in procurement contracts. For example, while the state of Chihuahua limits sole-source contracts to just \$10,000 pesos (approx. USD \$770), Guanajuato allows sole-source contracting for up to \$36 million pesos (approx. USD \$2.76 million). The assessment also showed that some states do not give any preference to in-state firms in the procurement process, while others require a minimum level of local content (up to 15 percent).

Finally, IMCO’s research revealed a high correlation between the quality of the law and the time elapsed since its most recent reform. States scoring below average show much less procurement reform since the 1980s, while high-scoring states have reformed or enacted laws since 2005. More recent laws were more likely to include provisions on bidding transparency.

Model State Government Procurement Law

The Competitiveness Program developed these guiding principles for a state procurement law:

- *Simplicity*. The law should be easy for officials, businesses and citizens to understand;
- *Consolidation*. Procurement should be the responsibility of a single authority that packages purchases for all agencies of government, negotiating discounts through volume and ensuring proper procedures (agencies would still have a procurement unit that specifies needs);

- *Flexibility*: The law should accommodate certain second-order principles, such as special treatment for marginalized groups, local providers, environmental protection, and small business promotion—as long as those provisions did not deter price or quality.
- *Transparency*: The law should mandate public disclosure of relevant procurement data. It should establish benchmarks and performance indicators to compare actual achievement to projections. It should also include client satisfaction ratings and mandate disclosure of bid data (volume and peso amount) for contracts awarded.

The model law also identified more specific characteristics, such as an electronic tendering system; a tender scoring system based on points and not solely financial offers; and a dispute mechanism with the proper incentives. An electronic tendering system reduces governmental discretion, and tender evaluation is to be based on a points system using a pre-determined rubric, rather than a make-or-break financial offer, allowing for greater transparency among competing firms. The model law also establishes a dispute resolution mechanism to create incentives for transparent and legal practices. If an investigation (carried out because of a government inquiry or a third-party complaint) reveals that the winning contractor engaged in improper bidding practice, the contractor is fined and made ineligible for future bids over a given period of time. Sanctions for repeat violators are heftier than for first-time offenders.

State regulation model law

The draft legislation for the establishment of the new state commission is entitled: *Ley Para la Creación de un Organismo Estatal de Regulación Económica* (Law to Create a State Regulatory Agency): Its contents include:

1. *Overview*: Summary description of proposed regulatory commission drawn from international experience
2. *General Provisions*: Objectives, scope and definition of Regulatory Commission
3. *Institutional characteristics*: Organizational, legal mandate, activities, relationships with other public authorities, sources of finance
4. *Instruments for promoting competitiveness*: regulatory assessment toolkit and impact assessment
5. *Procedures*: documentation, review process, information requests, coordination with other authorities, appeals, sanctions, transparency and confidentiality
6. *Recommendations* to implement legislation

Results



On October 2, 2012, Nuevo Leon Governor Alfredo Rodriguez signed an agreement with IMCO and the OECD to seek adoption of the Program’s proposed model law in one of Mexico’s most important industrial states. Five months later, on February 28, 2013, Nuevo Leon’s State Congress approved amendments to the Law on



Purchases, Leases and Service Contracting. In addition to banning collusive practices, the new legislation establishes a highly transparent electronic system for state and municipal purchases. Leadership from the Governor's office to promote this change was instrumental.

The day before Nuevo Leon passed its reform, another economic powerhouse, the State of Mexico, launched its own effort to strengthen its procurement process. On February 27, Governor Eruviel Avila (pictured right) submitted to the State Congress a version of the model law created by USAID's Mexico Competitiveness Program, saying the measure would place his state at the forefront of good economic governance in the country. If the State of Mexico also adopts this law, the size and economic importance of the two states increase the likelihood that other

states follow suit.

The model law on state economic regulation was received by CFC at the end of August 2013. Because the Competitiveness Program closed shortly after the proposal was delivered, we cannot report about state adoption of the legislation. However, CFC and the government of Aguascalientes have both expressed their intention to pursue formal passage of the pioneering law. CFC has also indicated that it will attempt to replicate the legislation in other states.

Chapter 9

Promoting local suppliers

in Baja California's Wind Energy Sector

Chapter 9

Promoting Local Suppliers in Baja California's Wind Energy Sector

Baja California is the Mexican state with the second largest wind energy potential after Oaxaca, and its proximity and electricity inter-connection with California make it an attractive site for wind energy generation. Several project developers (including U.S.-based Sempra Generation and Power Cannon Group) have announced plans to build 4,000 megawatts (MW) of generation capacity there over the next 10 years to meet California's electricity needs. If these projects materialize, Baja California would have Mexico's largest concentration of installed wind turbines—almost four times Oaxaca's current installed capacity.

High growth in wind energy generation could stimulate local manufacture and servicing of turbine components, which brings significant logistical, transport cost and communication advantages—not to mention accompanying good jobs and profits. Indeed, other countries, including the United States, have attracted investment in wind turbine component manufacturing and assembly as original equipment manufacturers (OEMs) seek to reduce transportation time and cost, as well as solidify a presence in the market.

Yet increasing local sourcing for wind energy sector is far from easy. Global value chains already exist, and with the exception of installation and some tier-one component suppliers for export to the United States, Mexico is essentially absent in wind sector component production. Major OEMs obtain virtually all of their components through internal production or from well-established providers in Asia, Europe and the United States. Modifying and re-locating these production relationships means local suppliers must move up a complex learning curve and adjust production to satisfy strict volume, speed, quality and certification requirements.

An illustration of unfulfilled wind energy manufacturing and local sourcing prospects is Oaxaca, with a current installed capacity of over 1,000 MW. Despite tremendous investment of technology and equipment in the state, local Oaxaca businesses have virtually no role in component supply. Neither the state or federal government, nor any of the international donors who supported wind energy expansion in Oaxaca, developed any kind of promotional program to increase participation of local firms. Given the state's low level of economic development, such opportunities were bound to be limited to lower value-added goods and services.

Baja California, however, has markedly greater development than Oaxaca, with relatively sophisticated and diversified automotive, aerospace and metal-mechanic sectors and strong potential for adapting production to local sourcing and manufacturing for wind energy needs. If large-scale wind energy generation projects materialize in Baja California, the state could use existing economic development programs to encourage OEMs to develop a skilled workforce, provide adequate transportation infrastructure, promote investment by top-tier manufacturers and offer financial and economic incentives.

The Baja California State Energy Commission (BCSEC) initially expressed interest in exploring value chain opportunities for expected large-scale wind energy generation at a January 2010 roundtable on the California-Baja California renewable energy market convened by U.S. Ambassador Carlos Pascual. Per the roundtable summary: "An integrated approach to creating an energy region must look beyond generating power to export. Linking renewable energy generation to economic development in Mexico requires a focus on value chain creation for providers and services. Information needs to flow from developers to universities and authorities to develop training and certifications for technicians and engineers."¹³ This roundtable launched Competitiveness Program activities in both the U.S.-Mexico cross-border renewable energy market and local supply chain opportunities for renewable energy projects.

¹³ Meeting report: "Creating a Regional Renewable Market in the Californias," Woodrow Wilson International Center for Scholars. Washington, DC January 25, 2010

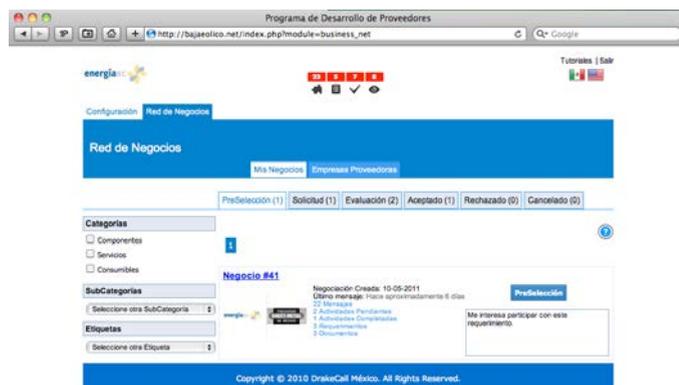
Outputs

Over three years, the Competitiveness Program worked with the Baja California state government to create an agenda to promote local supply chain opportunities. By sponsoring a April 2010 seminar on wind energy value chain opportunities, organized by the Latin America Wind Energy Association (LAWEA), the Competitiveness Program and the Director General of the BCSEC interacted with industry representatives and outlined future activities. Shortly after, Competitiveness Program staff travelled to Baja California to meet with officials from the state’s Economic Development Secretariat and professors from the local university UABC. These meetings helped jump-start awareness about the potential of local manufacturing capacity.

In the fourth quarter of FY2010, the Competitiveness Program began working closely with the state of Baja California to develop a promotion program to link qualified local suppliers to the wind energy sector. Competitiveness Program consultants assisted the state government in identifying potential suppliers and designing a strategy to develop necessary capacity among small and medium-sized business. The initial phase of this work established a dialogue with project developers in Mexico and OEMs to identify local supplier opportunities. Over several years, the Competitiveness Program financed several reports to generate knowledge about wind energy supply opportunities:

1. Components required by large-scale renewable energy projects (existing and planned)
2. Assessment of local firms capabilities to supply components
3. Assessment of human capital, university degrees and training opportunities
4. *Analysis and identification of capacities of the metal-mechanic sector in Baja California*

In addition, the Competitiveness Program funded creation of a unique, interactive business-to-business (B2B) website that links original equipment manufacturers (OEMs) of wind turbines to local suppliers. The B2B tool is based on pre-qualification questionnaires and standard filtering mechanisms used to assess suppliers.



The interactive B2B tool (www.bajaeolico.net) enables providers to broadcast their capacities and qualifications, while OEMs use it to communicate sourcing opportunities and technical specifications. The site enables OEMs to filter only the most promising supplier opportunities, significantly reducing transaction costs associated with case-by-case review of supplier capacity and increasing OEM incentives to increase local sourcing. In addition, consultants created databases of local businesses to be integrated into the wind energy supply chain.

To present preliminary findings and engage wind energy OEMs, the Competitiveness Program sponsored the workshop “Baja California: Wind Energy Business Summit,” on December 16, 2010 in Mexico City. The event promoted investment and supplier development in the state’s wind energy sector and was organized jointly with the Baja California State Government and the Institute of the Americas. A panel on value chain promotion

presented a state government program to bridge the information divide between OEMs and local suppliers of goods and services. As a result, the Competitiveness Program was invited in February 2011 to meet with executives and the purchasing department of Gamesa Wind US LLC, one of largest original equipment manufacturers (OEMs) of wind turbines in North America. The meeting, at Gamesa’s nacelle assembly plant in Pennsylvania, focused on use of the USAID-financed web portal.¹⁴

Competitiveness Program partners presented on wind energy supply chain development at “Wind Power Mexico,” one the most important industry forums in the country, on May 13, 2011. The event was attended by project developers, OEMs, suppliers, investment firms, development banks and public officials. The www.bajaeolico.net online tool was presented in the panel “Developing Effective Domestic Supply Chains” along with the methodology developed by the UNDP’s Supplier Development Program, used in Mexico to identify and develop suppliers for other sectors. The panel informed some of the world’s largest OEMs about opportunities to develop local suppliers, and invited them to post detailed information about goods and services for wind energy projects that could be locally sourced in Mexico.¹⁵

Finding out firm-level data on Baja California’s industrial sector wasn’t always easy. The Competitiveness Program had limited success with the state’s Economic Development Secretariat to gain access to studies and databases. Program consultants personally visited over a dozen potential suppliers who uploaded their information to the B2B website. The Energy Commission approached municipal development corporations in Mexicali, Tecate and Tijuana and signed joint agreements to identify suppliers and promote the web-based tool. On July 19, 2011, the BCSEC formally presented the supplier development program for the renewable energy industry to private sector representatives in Mexicali.¹⁶ The private sector and state government representatives signed an agreement to promote the web-based tool bajaeolico.net and to work jointly to identify potential suppliers for wind energy OEMs.

Following development of the B2B portal and other efforts to identify relevant capacities among local suppliers, the Competitiveness Program proposed a technical course (*diplomado*) on electricity inter-connection, wind farm site selection, and operation and maintenance, highlighting the business and employability opportunities in different segments of the value chain. The Program helped develop the contents and identify instructors and facilitated adoption of the course by the state’s Polytechnic University.

On April 5-6, 2013, the Baja California State Polytechnic University (UPBC) formally inaugurated a first-of-its-kind *diplomado* on Renewable Energy Project Development and Operation. The course was developed by the Baja California State Energy Commission (CEEBC) with technical assistance from the Competitiveness Program. The 90-hour course consisted of seven modules: (1) sector overview, (2) renewable energy regulatory framework, (3) generation technologies, (4) technical standards and grid inter-connection, (5) project site selection and environmental impact, (6) project construction and (7) operation and maintenance of solar and wind projects.

Results

Opening up a major international manufacturing value chain to local businesses is a long and difficult process. The Competitiveness Program successfully raised awareness about value chain opportunities among potential supplier firms, OEMs and government organizations, while the B2B portal developed with USAID funds significantly lowers the transaction costs of matching potential suppliers to OEMs. Research financed by the Competitiveness Program

14 In 2010, Gamesa signed a 10-year, 1-gigawatt turbine supply agreement with Cannon Power Group for a Baja California wind farm, expecting to export electricity to the California market. Since then, this agreement has not come to fruition. Instead, construction is expected to begin in 2013 for the first cross-border wind energy project, Energia Sierra Juarez, a 155 MW project that will consist of 47 wind turbines built by Vestas.

15 A slowdown in the U.S. wind energy installations, due to uncertainty surrounding the production tax credit (PTC), led to reorganization and layoffs in U.S. manufacturing facilities. This environment contributed to a decreased interest in sourcing from Mexico. http://www.bajacalifornia.gob.mx/portal/noticia_completa.jsp?noticia=22157

16 http://www.bajacalifornia.gob.mx/portal/noticia_completa.jsp?noticia=22157

also led to real-world impact: as of August 2013, two businesses identified by the Program's metal-mechanic report¹⁷ as candidates for value chain integration are being contracted for support structures for wind blade mounting and wind tower base rings.¹⁸

Finally, USAID support led to a sustainable initiative to increase capacity among developers and other clean energy stakeholders. The first 34 graduates of the *diplomado* on renewable energy project development and operation received diplomas from the Polytechnic University of Baja California on June 21, 2013.¹⁹ The popularity of the course led Competitiveness Program subcontractor Immelmann, S.A. to create the *Centro de Investigación y Manufactura Aplicada, A.C.* (Center for Applied Manufacturing), an NGO to offer other clean energy courses at universities throughout the state.

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17 "Análisis del Sector Metal-Mecánico de Baja California y Posibilidades de Proveduría para la Industria Eólica", May 21, 2012.

18 Due to confidentiality requirements, the Program is unable to publicly state the status of negotiations or the names of the parties involved.

19 <http://politecnicas.sep.gob.mx/notas2013/24062013/nota24062013.html>

Chapter 10

Municipal Clean Energy

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Mexico’s Ministry of Energy (SENER) estimates that lighting accounts for 18 percent of total electricity consumption.²⁰ At the municipal level, electricity for public lighting, water pumping and the operation of government offices absorbs significant chunks of governmental budgets. Municipal clean energy projects allow local governments in Mexico to contribute to an energy transition to renewable sources and deployment of more efficient lighting technologies, and most state governments include renewable energy generation in their Climate Change Action Plans. A growing number of municipalities, including important urban centers like Monterrey and Mexicali, have successfully undertaken clean energy generation projects. However, such pioneering efforts were funded by traditional public spending and state government ownership of assets, not so easily replicated among budget-constrained local governments.

Energy “self-supply”²¹ can also reduce electricity bills for local governments. As technology has progressed and costs have fallen to competitive levels (i.e., comparable to rates charged by the Federal Electricity Commission: approximately USD \$0.20/kWh) municipalities now have attractive self-supply options, primarily through wind power, hydroelectric generation and landfill biogas. As a result, local governments and private sector developers have increasingly sought to carry out municipal energy projects, leading to a surge in the last few years (Figure 24).

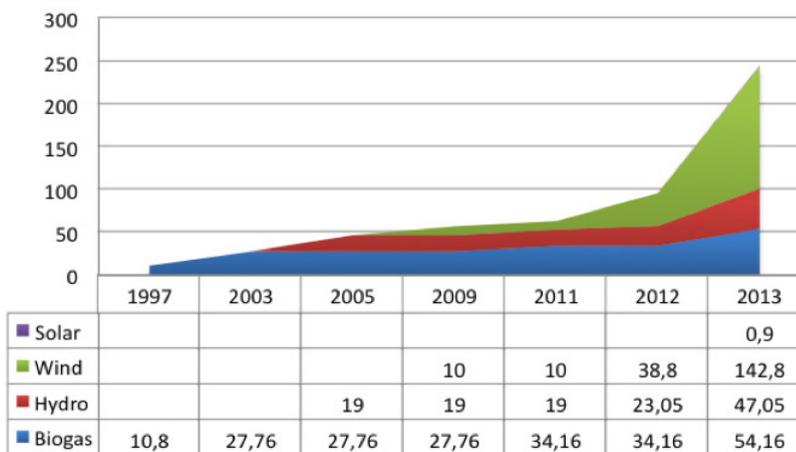


Figure 24. Cumulative installed capacity of municipal energy generation projects²² (larger than 0.5 MW)³

Mexican states and municipalities are important consumers of local energy, and their leaders are increasingly aware of the importance of local governance of energy resources. Several states have created energy commissions or energy-savings departments to adopt local measures and facilitate access to federal resources for local companies. However, Mexican states and municipalities have not promoted such projects.²³ Major obstacles

²⁰ <http://www.conuee.gob.mx/wb/CONAE/comunicado122010>

²¹ The Mexican Public Service Electricity Law allows a few exceptions to the Constitutional restriction on the State’s monopoly on electricity generation, including own-use or self-supply. This modality has encouraged large corporations to pursue renewable energy generation as a way to lower their cost of electricity.

²² Jonathan Pinzon, “Oportunidades para el desarrollo de proyectos de energías renovables y eficiencia energética para Estados y Municipios,” March 22, 2013 presentation at the workshop *Proyectos de Energía Limpia para Gobiernos Estatales y Municipales por Medio de Asociaciones Público-Privadas*.

²³ Notwithstanding Mexico’s tremendous natural resource endowment, until fairly recently there was little progress toward clean energy use among local governments. By mid 2013, not a single municipal government in Oaxaca – the state with Mexico’s greatest wind energy potential – utilizes wind energy for its electricity consumption.

include lack of experience and technical capacity, insufficient knowledge about opportunities and benefits, and a short-term political horizon resulting from the ban on re-election.

Outputs

For almost five years, the Mexico Competitiveness Program addressed these obstacles through a range of projects and activities, including production and dissemination of capacity-building materials, organizing major events to inform local government officials and link municipalities and states to project developers, as well as direct technical assistance in the development of specific clean energy projects.

Small-scale business plans

The Competitiveness Program supported the creation of *Guide for the Development of Renewable Energy Electricity Generation Projects for Municipalities*, developed by Odón de Buen (who later became General Director of the National Commission for Energy Efficiency), which explains how to use renewable resources (wind, photovoltaic, biomass and mini-hydraulic) to produce clean electricity. The Program also supported the publication of a document by the Ministry of Environment (SEMARNAT) on [available federal funds for small-scale municipal renewable energy projects](#). These documents were used during training seminars in 2010 and 2011 in the states of Morelos, Jalisco and Hidalgo.

The Competitiveness Program also organized the following trainings:

- Cuernavaca, Morelos (June 2, 2010), attended by almost 100 officials from 26 municipalities.
- Guadalajara, Jalisco (June 28, 2010), attended by over 130 officials from 51 municipalities.
- Pachuca, Hidalgo (May 31, 2011), attended by over 70 local government officials from most of the state's municipalities.

The seminars trained municipal government officials on promoting small-scale renewable energy projects and calculating electricity cost and resource availability. State and municipal government officials also identified different opportunities for renewable energy projects. Program consultants prepared the following business plans: (1) Recommendations for renewable energy technology options to be installed at the [Chapultepec Zoo](#), (2) Landfill biogas for several municipalities in the state of [Hidalgo](#), (3) [Mini-hydro plant for a municipality in Veracruz](#). Consultants also prepared technical proposals for [photovoltaic installations](#) and for [LED public lighting](#).

Municipal Clean Energy Public Private Partnerships

Beginning in 2005, a few Mexican state governments began to modify their public works laws to include long-term contracting through public-private partnerships (PPPs), an adaptation of the successful British private finance initiative (PFI). A PPP contract bridges the state or municipal government with a private project developer for the design, construction, operation and maintenance of the project (Figure 25), and the guidelines cover technical, legal, administrative and financial requirements of such projects.

Such innovative contracting mechanisms apply project finance to traditional infrastructure, such as roads and hospitals. In mid-2010, the Competitiveness Program approached the Inter-American Development Bank (IDB) to learn more about its groundbreaking work promoting public-private partnerships for state and municipal infrastructure development. Through its PIAPPEM program, the IDB provided technical assistance to implement legislation for multi-year contracting.²⁴ Yet bank and state beneficiaries focused on hospitals and road infrastructure, and had not considered the model for local government energy projects.

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²⁴ Programa para el Impulso de Asociaciones Público-Privadas (Program to Promote Public-Private Partnerships. See <http://www.piappem.org/>

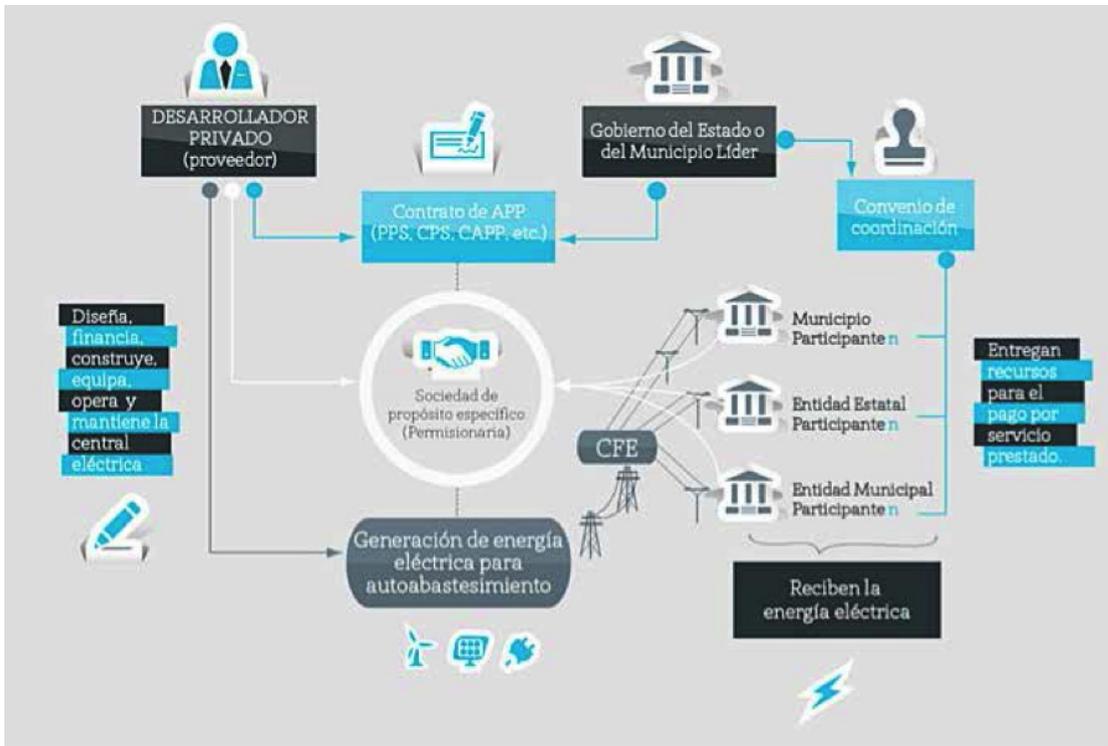


Figure 25. Municipal Renewable Energy Generation PPP schematic²⁵

The Competitiveness Program’s most enduring contribution to clean energy was the creation and launch of step-by-step online guidelines dedicated to municipal PPPs. Main findings were presented at several major events throughout Mexico from late 2010 to early 2013, including the state of Mexico and Monterrey, reaching hundreds of municipal officials. The *Manual de Instrumentación de Proyectos de Energía Limpia para Gobiernos Estatales y Municipales Mediante Asociaciones Público Privadas* was launched in March 2013. The guidelines are available at <http://www.energiamunicipal.mx>

During the launch, presenters showcased successful experiences, such as state and municipal government off-takers (self-supply) and high-efficiency public lighting. Presenters included the General Director of the National Energy Efficiency Commission (CONUEE), the General Director for Electricity and Renewable Energy from Mexico’s Energy Regulatory Commission (CRE), wind, solar and biogas project developers, an energy service company (ESCO), and a representative from an IDB-FOMIN program that supports PPP development.

All conference presentations, including general overviews of clean energy and PPP opportunities, can be downloaded at <http://energiamunicipal.mx/index.php/descargas>. The municipal clean energy PPP model has also been showcased in a number of publications, including a feature article in *Energía Hoy*²⁶ and in *Acciones Cruciales*, prepared by the Mexican Center of Research for Development (CIDAC).²⁷

Mexico City Zoo Biogas Feasibility Study

In February 2013, Competitiveness Program staff met with Mexico City’s newly appointed Secretary of Environment, Tanya Mueller, who expressed interest in developing the biogas project at the city zoo outlined in the initial business plan prepared by project consultants. She requested additional assistance from the Competitiveness Program on two key technical inputs: (1) a feasibility study to confirm financial viability and adequate logistical

²⁵ <http://energiamunicipal.mx/infografias/112-proyectos-de-generacion-electrica-con-energia-renovable>

²⁶ <http://www.energiahoy.com/revistaOnline/#/Agosto%202011/40>

²⁷ <http://accionescruciales.cidac.org/>

capacity, and to identify an acceptable location for the biodigester; and (2) develop technical terms and requirements to pursue construction of the project.

Competitiveness Program subcontractor Biogasmaxx Inc. prepared a feasibility report that includes an [inventory of available biomass](#) and [three scenarios for plant capacity and location](#) and [a cost estimate based on the most likely scenario as selected by the Secretary of the Environment](#). The Competitiveness Program proposed a larger combined heat and power plant (CHP) that could also benefit the Chapultepec Park, while taking into account limited space in the zoo and the park's land use limitations. The final feasibility study was officially presented on August 26 to Mexico City's Secretary of the Environment.

Dissemination of Information about Renewable Energy in Mexico

On October 5-7, 2010, Mexico's Energy Regulatory Commission (CRE) hosted a Forum on Renewable Energy Regulation to celebrate its 15th anniversary, co-sponsored by numerous organizations, including USAID, and attended by over 150 private energy developers, original equipment manufacturers, industrial energy end-users, national and international government officials, entrepreneurs and academics. The Competitiveness Program presented on U.S. electricity regulation, state promotion and municipal renewable energy generation projects.

The Competitiveness Program financed the book [Energías Renovables: Impulso político y tecnológico para un México sustentable](#), ([Renewable Energy in Mexico, Policy and Technologies for a Sustainable Future](#)) edited by the *Instituto Tecnológico Autónomo de México* (ITAM) and written by over 20 experts in the field. The first comprehensive review of the sector after the country's 2008 energy reform, the book was widely disseminated through the printing of 1,000 copies, 200 CDs and a web-friendly version hosted on several websites. The book addresses Mexico's regulatory framework governing renewable energy, presents main findings and policy recommendations, and describes eight sectors with the greatest potential in Mexico: hydroelectric, biomass and biogas, liquid biofuel, wind, geothermal, solar photovoltaic, solar thermal, and micro-generation.

Capacity Building for Energy Regulatory Commission (CRE) Officials

The Competitiveness Program supported CRE participation in these capacity-building activities:

- The Forum on Clean Energy, Good Governance and Electricity Regulation hosted by the World Resources Institute (USA), Idasa (South Africa) and Prayas Energy Group (India), 19-22 May 2010. Through this unique platform, regulators from India, South Africa and Mexico shared their experiences designing new programs to support energy efficiency and renewable energy.
- The Global Workshop on Planning for a Low Carbon Power Sector, February 28-March 4, 2011, which discussed how utilities are integrating low carbon-generation resources into their systems.
- The Transmission Business School (TBS) in Chicago, June 13-16, 2011, for which the CRE official prepared a report on lessons learned and applicability for the Mexican context.

Results

The Competitiveness Program did more than any other initiative to promote municipal public-private partnerships for clean energy projects. Through research, public events and a web portal, the Program made practical, essential information available to municipal government officials and energy project developers.

The public-private partnership model for clean energy was showcased in forums with state and municipal officials and private sector developers in the State of Mexico, the State of Nuevo Leon and the Federal District. The Competitiveness Program's work has encouraged private sector energy developers to use the PPP model to design

contractual mechanisms for projects in Baja California, Chiapas, Mexico City, Quintana Roo and Zacatecas.²⁸ On December 30, 2011 the state legislature of Chiapas approved construction of the country's first clean energy PPP generation project. The state and 38 municipal governments will be off-takers in a 28 MW wind farm located in the municipality of Arriaga for a period of 20 years.²⁹

The Competitiveness Program also pioneered promotion of government investment in small-scale clean energy projects. The State Government of Veracruz used a business plan prepared by the Competitiveness Program to seek funds to implement an LED streetlight substitution project. On November 27, 2012, the Government of Veracruz announced that it had obtained Federal Government funds to substitute one thousand streetlights with LED technology for the municipality of San Rafael.³⁰ In addition, the Competitiveness Program produced a business plan and feasibility study that the government of Mexico City is using to invest in a biodigester for the city zoo, a small-scale project with a tremendous potential to publicize the opportunities and benefits of clean energy.

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28 <http://www.altonivel.com.mx/34744-ppp-el-nuevo-motor-para-acelerar-la-economia.html>

29 <http://amdee.org/announcements/woodhouse-lorente-ludlow-s-c-desarrolla-exitosamente-el-primer-parque-eolico-bajo-el-esquema-de-proy>

30 <http://www.veracruz.gob.mx/medioambiente/noticia/tecnologias-eficientes-reducen-emisiones-de-gases-de-efecto-invernadero-sedema/>

Annex A

Adoption of Proposals Produced by the Mexico Competitiveness Program

Annex B

Activity Summaries