



Cleaner Production in Latin America and the Caribbean: USAID's Role

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The Latin America/Caribbean (LAC) region has weathered cycles of impressive economic growth and dramatic slowdown for several decades. The continued integration of these nations into the international economy requires their private sector companies to become stronger regional and global competitors. To do so successfully, firms must incorporate environmental considerations into their business operations. Adopting cleaner production practices to improve the efficiency of their operations is integral to environmental improvement and economic competitiveness.

The United States Agency for International Development (USAID) is committed to institutionalizing cleaner production (CP) and enabling self-sustaining CP programs and activities in the LAC region. Since the December 1994 Summit of the Americas Agreements, USAID's LAC Bureau, Missions, and Regional Urban Development Office have advanced pollution prevention initiatives through key partnerships, funding over 70 CP projects in ten industries of 13 LAC countries. These programs have offered both integrated technical cooperation support and projects tailored to local priorities. Some examples include CP policy advances in Peru, environmental management for Jamaica's tourism sector, and in-plant industrial CP assistance in Bolivia. They have also introduced new methods to minimize waste, prevent emissions, increase energy efficiency, and recover and recycle resources. USAID's programs have provided a solid foundation for expanded initiatives in CP through technical centers of excellence known as cleaner production centers. Most of the LAC region's centers are linked to a CP network through the UN Industrial Development Organization; other active donors include the Inter-American Development Bank, UN Environment Programme, Swiss government, among others.

What is Cleaner Production?

Cleaner production is an integrated strategy for preventing or reducing waste at the source rather than managing it at the end of the production process, by using such techniques as good housekeeping, reuse/recycle, byproduct recovery, materials substitution, and in-process modification. CP addresses three important issues:

Environmental Protection:

CP protects and improves environmental quality,

especially in municipal areas that are increasingly polluted as a result of rapid industrialization and urban growth.

Efficiency and Quality:

CP measures usually lead to better operating efficiency and improved product quality through the recovery and reuse of valuable materials, reduced consumption of resources (e.g., energy, water, raw materials), and greater process control.

Economic Savings:

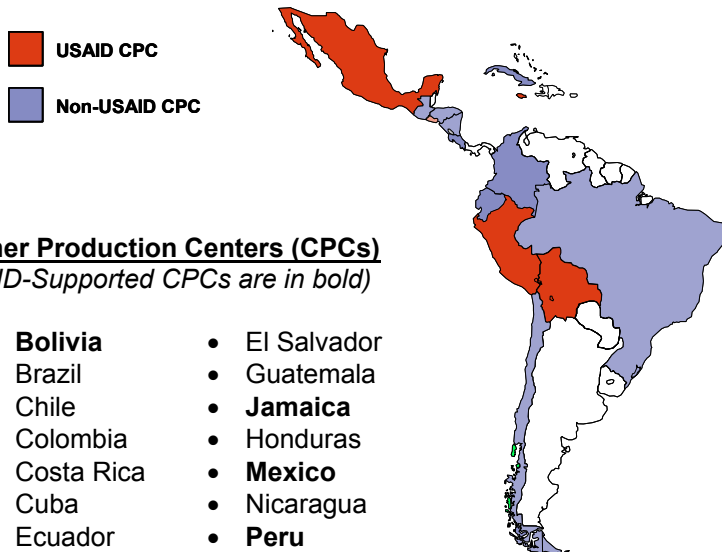
CP can save significant costs through reduced raw

material, energy and water consumption; lower waste handling, treatment, and disposal costs; and decreased liability.

USAID's experience with companies shows that initial investments can be recuperated in as little as six months.

Additional benefits include improved worker health and safety, good customer and public relations, enhanced competitiveness and market share, and improved industry-government relations.

Examples of USAID-Supported Cleaner Production in LAC



Cleaner Production Centers (CPCs) (USAID-Supported CPCs are in bold)

- **Bolivia**
- Brazil
- Chile
- Colombia
- Costa Rica
- Cuba
- Ecuador
- El Salvador
- Guatemala
- **Jamaica**
- Honduras
- **Mexico**
- Nicaragua
- **Peru**

What Does a Cleaner Production Center Do?

CPCs generally provide the following services, based on local priorities and needs:

- **Technical assistance** to industries and municipalities, including environmental audits
- **Information dissemination** on best practices and case studies
- **Training** programs on environmental management, pollution prevention, and other topics
- **Policy** leadership to create CP incentives
- **Financing assistance** to enable CP projects
- **Cooperation** nationally and regionally
- **Capacity building** for companies and consultants in CP approaches

What are USAID's Cleaner Production Approaches?

USAID uses three integrated approaches to promote CP:

1. **Creating full-scale pilot demonstrations** to best illustrate the benefits of CP and create demand for cleaner technology.
2. **Providing policy support** to help governments develop policies and regulations that use economic and other incentives to encourage sound environmental management and CP.
3. **Cooperation for information/training/ partnerships** with local NGOs, educational institutions, industrial associations, and governments to distribute and provide access to cleaner production information, services and tools. To implement these approaches, USAID draws on the experience and expertise of other U.S. Government agencies, universities, NGOs, and the private sector.

Financing Cleaner Production

Companies in the LAC region face challenges in accessing credit for CP projects because the financial sector is generally unfamiliar with the cost savings and competitiveness benefits. Thus, USAID is supporting efforts to overcome CP project finance barriers.

1. **Peru:** USAID has created a loan guarantee facility to encourage lending for CP, energy efficiency, and EMS. Working with a local financial institution, the U.S. government assumes up to 50% of the loan risk. Eligible small and

medium-sized enterprises may borrow up to \$400,000 to deploy cleaner technologies or implement other EMS measures within their facilities.

2. **Bolivia:** USAID has assisted the Center for the Promotion of Sustainable Technologies (CPTS) to leverage a World Bank environmental fund to implement CP projects; CPTS is assisting companies to develop qualifying projects, and expects the life of the credit line to extend through 2014.

3. **Mining sector:** USAID is creating a handbook to help public and private financial institutions promote pollution prevention policies, practices, and technology in this sector. The document will highlight case studies of operations in LAC, and present the business case for CP in the mining industry.

4. **LAC region:** Based on the results of its finance activities and taking local factors into consideration, USAID plans to consider other interventions to support investments in CP technology and share lessons learned.

Cleaner Production Policy

USAID supports several initiatives that promote the adoption of CP policy incentives:

Central America

A recent effort in Panama assisted with several in-plant assessments and supported the National Environmental Authority (ANAM) in beginning a process to analyze and review CP policy. On July 1, 2000, ANAM established an Inter-institutional Technical Committee on Cleaner Production (CTI) with representatives from the public and private sectors. CTI has reviewed technical recommendations for the initial priority sectors to discuss policy options in the context of Panama's overall environmental goals. Following this achievement, the Inter-American Development Bank's Multilateral Investment Fund initiated a \$1.2 million effort to help improve the competitiveness of SMEs through the development and implementation of environmental management instruments. Based on this success, USAID is extending this model to other parts of Central America.

Peru

USAID provides technical support to the National Environmental Council to assist the Ministries of

Industry and Fisheries with environmental regulatory design. It is also working with the Peruvian Society for Environmental Law and a mining development organization to develop a stakeholder dialogue on formal and informal mechanisms to improve environmental law and enforcement.

Bolivia

The Vice Ministry of Internal Commerce and Industry has prepared a proposal to establish a national environmental regulation that promotes CP. If approved, firms will have increased access to financing for CP measures and additional time to comply with environmental laws. With USAID support, CPTS has prepared technical guidance for the draft regulation, and has developed sector-specific technical CP guides for tanneries and slaughterhouses. It plans to develop additional technical guides for other key sectors.

LAC mining sector

Together with the US Bureau of Land Management, USAID is advancing the inclusion of key framework elements in the declarations and work plans adopted by the Mining Ministers of the Americas. It is also promoting pollution prevention through the

Mining, Minerals and Sustainable Development Project, and commenting on a voluntary global industry code of practice for the use of cyanide in the gold mining industry, which is being developed under the auspices of the UN Environment Programme and the International Council on Mining and Metals.

LAC Summits

As a catalyst promoting CP, USAID has participated in regional CP summits in Brazil, Canada, Colombia, and the U.S. focused on promoting effective policy and economic incentives. USAID has presented case studies, shared lessons learned, and distributed informational resources with other CP experts in the Americas, while also benefiting from information exchange with counterparts and other international donors.



Close-up of Drums

New CP Resource!

USAID has completed a CD-ROM called "Cleaner Production – Latin America and Caribbean." It contains reports, case studies, Internet links, and other documents and resources related to various sectors. Copies can be obtained from Dr. Gilbert Jackson at gijackson@usaid.gov.

Ongoing USAID Support for Cleaner Production

Bolivia

USAID has supported CP initiatives in Bolivia that began in 1995 under the Environmental Pollution Prevention Project (EP3). Bolivia's center for cleaner production, called the Center for the Promotion of Sustainable Technologies (CPTS) leads the program with a focus to encourage CP in the industrial sector.

Its main activities are:

1. CP supply and demand creation: To increase supply and demand, USAID provides *technical assistance* to industrial, commercial, and service sector clients; develops technical *industrial guides for best practices*; created a *cleaner production fund* to enable investments in

cleaner technology; provides *information* and outreach for industry; and gives technical assistance to *municipalities*.

2. Policy: The program supports initiatives to integrate CP strategies and concepts into laws and regulations to improve the regulatory framework governing industrial pollution.

3. CPTS development: USAID supports the institutional strengthening of the CPTS.

4. Stakeholder capacity building: CPTS provides capacity building activities for consultants, plant

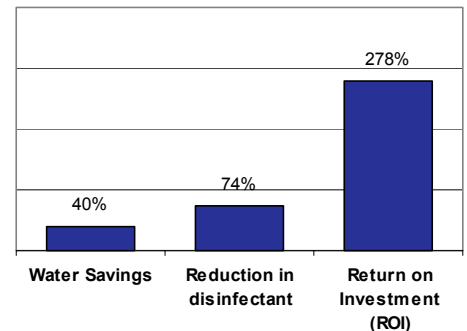
managers, government officials, academics, and other stakeholders to institutionalize cleaner production practices.

5. Environmental awareness: USAID is developing a household-level public awareness campaign that focuses on the environmental and economic benefits of reducing energy and water consumption.



CP in a Bolivian Poultry Slaughterhouse: Project Results

Investment: \$21,200
Cost Savings: \$58,850 annually



Implementation Results for Recommended Pollution Prevention Measures in Bolivia (EP3)

Sector	# of plants	Implemented Recommendations	Investment Size (US\$)	Annual Savings (US\$)
Tanneries	2	55%	\$1,290	\$6,890
Textiles	1	60%	\$23,700	\$80,300
Chicken slaughterhouse	1	80%	\$12,140	\$17,540
Cattle slaughterhouse	1	63%	\$300	\$3,800
Meat packing	1	47%	\$38,200	\$18,500
Breweries	1	71%	\$55,000	\$100,000
Total	7		\$130,630	\$227,030



Peru



“USAID has been an active partner in Peruvian initiatives, [including the] Center for Technological Efficiency. The Center is a driver of cleaner changes, cleaner technologies, and a cleaner culture in our industry, keeping always in mind to preserve our future.”
 -Luis Alberto de La Torre Vivar, Director, CET-Peru

USAID’s cleaner production activities in Peru began in 1993 under the Environmental Pollution Prevention Project. Ongoing programs continue to provide technical assistance, training and information to private industry, government institutions, and NGOs. Efforts strive to promote CP and process and energy efficiency in selected industrial sectors, and strengthen the capacity of key Government of Peru agencies to develop and implement regulatory programs that encourage cleaner technology over pollution control. USAID’s activities include:

1. Center for Technological Efficiency:

CET-Peru was created in 2001 as a joint initiative of USAID and the Swiss Office of Foreign

Economic Affairs. It provides a host of services including cleaner production and energy efficiency services to industries.

2. Technical cooperation with Peruvian agencies:

To expand previous policy efforts, USAID has placed a technical advisor in the National Environmental Council to support the Ministries of Industry and Fisheries in environmental regulatory design.

3. Fishmeal industry:

Building on past success with this industry, the program provides support to encourage more efficient and environmentally sound processing practices.

4. Demonstration projects:

These activities show industry the advantages of making specific process and energy efficiency

improvements.

5. CP financing:

USAID has created a loan guarantee fund for cleaner production and energy efficiency projects. Implemented through a local commercial bank, the fund offers eligible small and medium-sized enterprises access to credit of up to \$400,000 for CP and energy efficiency projects.



Decantador

“The difficulty lies, not in the new ideas, but in escaping the old ones.”

– John Maynard Keynes

Mexico

USAID began cleaner production work in Mexico through the Environmental Pollution Prevention Project, after UNIDO helped create the Mexican Cleaner Production Center (CMP+L). USAID continues to lead efforts to promote sustainable development through CP and best practices within industry, the service sector, and municipalities. Its activities include:

1. Institutional strengthening of CMP+L: USAID supports a training program to develop and strengthen skills in cleaner production. It focuses on sales and marketing, presentation and training capabilities, ISO 14000, the link between CP and environmental management systems, and other technical topics related to CP and pollution-related regulations. USAID is also assisting CMP+L to develop a methodology to evaluate the quality of services provided, and a quality program following the ISO 9000 model, for eventual certification.

2. Environmental management systems: USAID is helping CMP+L to develop its EMS capability and use its skills to provide services to the government and private sector.

3. Outreach to SMEs: USAID is part of a public-private initiative to promote CP within small and medium-sized industries (SMEs). The initiative follows the model of major multinational corporations that integrate CP concepts into their environmental management programs (e.g. "greening the supply chain").

4. Hotel cleaner production pilot project: USAID supports environmental audits of selected hotels in the Mexican Riviera Maya region south of Cancun. The audits integrate CP analyses with the fundamentals of EMS, helping the hotels chart a path toward long-term sustainable environmental operation.

5. CP role in municipal EMS: USAID is supporting the implementation of EMSs in two municipal

governments, Tlalpan and Mexico City (additional programs have been designed for Solidaridad and Naucalpan). In both cases, CP audits covering energy, water, materials use, and waste disposal help identify practical measures that form the building blocks for EMS activities. USAID provides support for the EMS committees, trains local staff, and documents procedures and activities. CP audits of the Tlalpan Delegation buildings have led to an ongoing program of energy- and water-related retrofits. Plans have also been developed for a waste separation program, one of the first such programs in the Mexico City area. The five-year Mexico City EMS program has conducted CP audits of 17 buildings in seven government ministries. This will be followed by implementation activities, and expansion of the audits to the next group of ministries.



Central America

USAID initiated its Central America CP programs in El Salvador under EP3. It later supported an initiative that promoted environmental technology and developed environmental programs with industry associations in Costa Rica, El Salvador, Guatemala and Panama. Target sectors included food processing, textiles manufacturing, tourism, and cement manufacturing. The initiative also increased the private sector's role in environmentally sustainable development. At the same time, USAID provided technical assistance regarding best practices for companies in the dairy and tannery sectors in the region to improve competitiveness and environmental performance.

USAID continues to support several initiatives promoting CP and improved environmental management in the region:

1. Industrial CP: UNIDO, Canada, and other donors have supported the creation of CP centers in Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua. These technical centers strive to raise awareness about the benefits of CP, provide training to businesses and institutions, and promote the adoption of cleaner technology. (Continued...)

Central America (continued)

To protect the environmental integrity of the region's Mesoamerican Biological Corridor, which is threatened by pollution from industrial activities, USAID works to increase the private sector's use of less-polluting technologies and practices. It collaborates with the private sector to: 1) increase firms' access to financing so they can improve their practices and processes, 2) demonstrate the economic, social, and environmental advantages of CP and environmental management to executives of polluting entities, and 3) facilitate the transfer of environmentally sound technologies to companies in the region through chambers of commerce and other organizations.

2. Municipal pollution prevention: USAID is helping cities to identify options for financing improved solid waste and wastewater management, facilitate institutional arrangements such as the creation and strengthening of local environmental management groups, and demonstrate the technical, economic and social viability of selected technologies and procedures.

For example, USAID helped Guatemala City to apply a methodology for developing an environmental management system. The program was based on integrating command-and-control regulatory interventions and market-based incentives. Using this approach, the city intends to achieve its EMS objectives of stabilizing and then reducing industrial air, water, and waste discharges through CP practices.

3. CP policy: USAID supported the development of appropriate environmental policies in Panama through a technical review and stakeholder dialogue. USAID is now extending this model effort to other countries in the region to support similar policy reform.

The Caribbean



Environmental Audits for Sustainable Tourism (EAST)

In 1997 USAID began a small-scale effort to reduce environmental impacts from Jamaica's manufacturing and tourism sectors. This successful initiative became a model for the Caribbean and continues to promote CP and environmental management through several venues.

1. Environmental performance: USAID supports training, pollution prevention audits, equipment demonstrations, Green Globe 21 certification, and equipment demonstrations to expand the application of sound environmental management in the manufacturing and tourism sectors, with an emphasis on creating linkages between them. To this end, USAID is developing a pilot model for a sustainable tourism destination program. In addition, its workshops promote the benefits of CP to the public and private



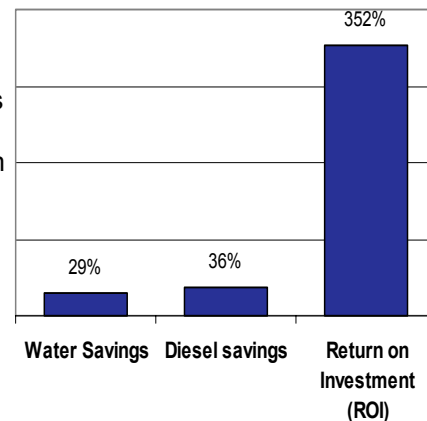
sectors and NGOs.

2. Educational outreach: USAID collaborates with tertiary educational institutions to include best environmental management practices in tourism education curricula.

3. Support to small hotels: USAID supports a program in the Eastern Caribbean that applies lessons learned from past experiences to increase the competitiveness of small hotels by improving their environmental management. It includes environmental assessments, public awareness tools, the creation of an eco-destination certification program for Dominica, and capacity building for the Caribbean Alliance for Sustainable Tourism.

Environmental Management in Five Jamaican Hotels

Total Annual Cost Savings: \$620,000 or \$920 per hotel room



USAID's Past LAC Programs in Cleaner Production

Environmental Pollution Prevention Project (EP3), 1993-1998

This program formed the basis of USAID's ongoing efforts and addressed urban and industrial pollution and environmental quality in developing countries. It offered technical, policy, and training/ information assistance to spur the adoption of pollution prevention approaches and technologies. EP3 conducted over 200 pollution prevention assessments targeted at a dozen industrial sectors in the LAC region. These included management and operational improvements that could bring cost savings and environmental benefits. EP3 built an extensive network of local experts to provide pollution prevention, environmental cost accounting, and facility assessment services throughout Latin America. It conducted training workshops and seminars to educate key local stakeholders about the

concept of CP, transfer the results of assessments to wider industrial audiences, and promote a systematic approach to industrial environmental management. EP3 also supported cleaner technology development and transfer by demonstrating innovative approaches, identifying business opportunities, and providing assistance in mobilizing investment capital in many industrial sectors in Latin America.

In Bolivia, Ecuador, Mexico, and Peru, EP3 established policy dialogues on cleaner production issues among government, industry, and other key actors. This was an important first step toward creating a favorable policy environment for the widespread adoption of CP practices.

Latin America Initiative for Environmental Technology, 1994-2000

This partnership program sought to increase the private sector's role in

environmentally sustainable development. It operated in Central America, the Andean Region, and Brazil to educate the private sector about environmental performance and encourage investment in cleaner technologies and processes. The program also developed conferences, workshops, business exchanges, working groups, and other technical cooperation efforts with local partners.

Latin America Fund for the Environment, 1996-1999

This matching grants program provided up to \$15,000 to qualified U.S. environmental technology companies to undertake innovative pollution control, prevention, and energy efficiency projects. The Fund awarded 51 projects in 17 countries throughout the LAC region and generated over \$20 million in revenue for the participating firms.



Key EP3 Industry Sectors Included:

- Chemicals
- Fishmeal
- Food processing
- Hospitals
- Hotels
- Metal finishing
- Mining
- Paper and wood
- Leather tanning
- Textiles

Contact Information

For further information on cleaner production programs in Latin America and the Caribbean, or to share case studies, contact:

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