



U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

# Environment Project Profile



Global

936-5559

Pollution  
Prevention

## Environmental Pollution Prevention Project

**U** SAID's \$20 million, seven-year *Environmental Pollution Prevention Project* (EP3) began in FY 1992. Its purpose is to help developing countries reduce and manage environmental pollution associated with urbanization and industrialization and its accompanying waste. EP3 provides on-site industrial assessments and institutional support along with technical assistance, training, and information services for industries and governments. Activities include information dissemination, public/private sector education programs, technical training, pollution prevention, pollution audits, and development of pollution-reduction policies and technologies. EP3 activities are currently underway in four continents.

### Highlights FY 93-94

- *EP3 two-phase field activities began in late 1993 and are currently underway in Latin America, Asia, and Africa.*
- *As of January 1995, the project had worked with more than 25 pro bono consultants in approximately 15 missions.*
- *Since 1993, the EP3 central clearinghouse has compiled 1,000 in-house references and responded to some 800 requests for information on industrial and urban pollution. EP3 is also organizing local clearinghouses in participating countries.*
- *EP3's diagnostic assessments have already produced practical results; for example, water conservation and annual savings of \$100,000 thanks to a \$1,500 process modification in a Chilean dyeing plant.*
- *EP3's activities led to the development of a new vehicle for sustainable energy production, the Greenhouse Gas Emissions/Environmental Pollution Prevention project.*
- *Training activities include a five-day trainer workshop in Washington, DC, a week-long orientation for host-country clearinghouse employees, in-plant assessment strategies, and a pollution prevention workshop for 62 project volunteer candidates.*

### Project at a Glance

**Funding:** Life-of-Project \$20,000,000

**Project Duration:** FY 1992-99

**Implementors:**

U.S. Environmental Protection Agency

RCG/Hagler, Bailly Inc.

Water Environment Federation

**USAID Project Officer:**

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## Background

During the last 30 years, rapid industrialization and urbanization in developing countries has resulted in severe environmental pollution. Industrialization has led to sharp increases in the volume and toxicity of wastewater discharges, airborne emissions, and solid wastes dumped in urban areas. Large migrations to cities also contribute to the problem. For example, by 2000, Bombay's population is projected to be 18 million and São Paulo's, 25 million. Consequently, city dwellers in developing countries are regularly exposed to an ever-widening spectrum of environmental hazards and risk serious consequences to their health, development, and productivity.

Initial urban and industrial pollution management efforts have concentrated on "end-of-pipe" solutions, which are both costly and unsustainable. Experience in the U.S. and other developed countries demonstrates that, in the long run, pollution prevention through waste minimization and cleaner production offers a cheaper, more cost-effective, and more sustainable option.

## Implementation

EP3 provides in-country activities, training, and information dissemination through three mechanisms. A support services agreement with the U.S. Environmental Protection Agency (EPA) provides EPA staff and resources. A contract with RCG/Hagler, Bailly Inc., and 16 subcontractors provides core support and program management. A cooperative agreement with the Water Environment Federation (WEF) provides staff and resources to supplement core initiatives. WEF and the Coalition for International Environmental Resources and Assistance (CIERA) also supply volunteers to support in-country activities. As of January 1995, the project had worked with more than 25 *pro bono* consultants in approximately 15 missions.

## Project Progress

EP3 field activities, begun in late 1993, are currently underway in Latin America, Asia, and Africa. The project's Washington headquarters works closely with USAID missions to select participating countries on the basis of type and severity of industrial pollution problems; likelihood of success; support from the host government, nongovernmental organizations (NGOs), and the USAID mission; and the extent to which host-country legal systems can support pollution prevention. Typically, project activities receive mission funding for one to three years. The project attempts to strengthen local capacity and expertise in pollution prevention, thus establishing key sustainable pollution prevention elements by the time EP3's contractual activities end.

The project identifies focus industries on the basis of the feasibility and commercial viability of pollution prevention opportunities, the international presence of the industry, and significance in terms of sustainable economic growth. EP3's initial activities included leather tanning, food processing, electroplating, printing, manufacture of paint and batteries, and textile dyeing. In 1995, auto repair, metal finishing, the hotel industry, and producers of paper and circuit boards will also be added.

An expanded communications network among participating EP3 countries will improve interaction and include data on American suppliers of pollution prevention services and equipment.

**EP3 clearinghouse.** The EP3 clearinghouse responds to questions on industrial and urban pollution from environmental professionals in developing countries. Since opening in October 1993, the clearinghouse has compiled about 1,000 in-house reference documents, including some 800 that are used to meet requests from participating countries. Documents

include technical reports, books, articles, and other materials on pollution prevention from U.S. and international sources. In addition, 14 case studies are available that document how the project has helped individual facilities tackle their pollution problems. While clearinghouse materials emphasize pollution prevention, information also includes a broad range of environment-related topics, an electronic database, and materials in French and Spanish as well as in English.

EP3 is also organizing local clearinghouses in participating countries. Local clearinghouses receive extensive core materials and can request additional materials related to in-country needs and local pollution problems. In Tunisia, one of the first participating countries, the project has already established a clearinghouse. In late 1994, EP3 offices in Chile and Ecuador signed agreements with local institutions to set up similar operations. The EP3 office in Egypt, which opened in August 1994, will establish a clearinghouse in early 1995.

**Country support programs.** EP3 implements its country support programs in two phases. Phase I lasts about six months. During this time, a work plan tailored to local needs and circumstances is developed. Phase I also begins low-cost or no-cost pollution prevention innovations at individual plants.

Phase II activities simultaneously target individual plants, industry categories, and national policy.

*Tunisia.* In October 1993, the EP3 Tunisia program began operating with support from the Near East Bureau. In 1994, with a budget of \$350,000, it hired in-country personnel and opened an office. The project signed agreements with both the Ministry of Environment and with the country's most influential trade association to jointly pursue opportunities for training and technical assistance. It also carried

out seven technical training sessions and nine pollution prevention assessments in the following industrial sectors: leather tanning, textile dyeing, edible oil extraction, battery manufacture, printing, hotels, and metal finishing. Project suggestions for processing changes at a battery plant will not only reduce production costs, but also reduce pollution from lead dust inhalation and groundwater contamination. Plant managers are presently implementing these changes.

*Chile.* In November 1993, an EP3 team conducted diagnostic assessments at two leather tanneries and two textile dyeing plants in Santiago. Chilean consultants who had cooperated with the initial assessments then conducted 16 more assessments in a variety of industries, including textiles, slaughterhouses, tanning, paint manufacture, and printing. In one tannery, a \$5,000 process modification is expected to save more than \$60,000. In one of the dyeing plants, a \$1,500 modification will greatly reduce the volume of water used in the final washing-out process, saving about \$100,000 annually.

*Ecuador.* A kickoff meeting in November 1994, attended by more than 120 representatives from government, industry, NGOs, and academia, officially launched Ecuador's EP3 activities. Local engineers and U.S. experts have conducted an assessment at a leather tannery and plan to perform assessments at automobile assembly, tile, and fiberboard manufacturing plants in early 1995. The project is housed within Corporación OIKOS, a local NGO specifically organized to provide environmental technical assistance to Ecuadorian industries.

*Egypt.* EP3's Egypt office officially began its activities in October 1994 with financial support from USAID's *Energy Conservation and Environment Project* (ECEP). EP3 focuses on four priority industries: textiles, food

processing, metal finishing, and metallurgy. The project will initially work with Egyptian industry, associations, and research centers in the greater Cairo area and will provide technical assistance, training, and information to local industries and urban enterprises. Project funding will also support demonstration activities for clean technologies in several industrial sectors. Environmental assessment training began in November 1994.

*Indonesia.* EP3's initial activities in Indonesia will begin in early 1995. The project is working with the *Environmental Improvement Project* to establish the *Indonesia Clean Industrial Production* program. This program's technology transfer and technical assistance will benefit Indonesian industries and will help Indonesia's Ministry of Environment to develop and implement comprehensive policy and legislation supporting pollution prevention and clean technology.

*Zambia.* In September 1994, EP3 conducted pollution prevention assessments at a textile facility and a nitrogen fertilizer plant in Zambia. The project worked with USAID's Regional Economic Development Services Offices in Nairobi and used the assessments performed to provide technical assistance to the Zambia Privatization Agency. These activities will establish the basis for integrating pollution prevention into the Zambian privatization process.

*India.* In January 1994, EP3 helped draft a strategic approach for environmental protection for India. This effort to focus India's resources for maximum environmental impact outlines a broad-based approach to pollution prevention. EP3's involvement ended with the completion of the strategy, but project assistance led to the development of a new vehicle for sustainable energy production: the *Greenhouse*

*Gas Emissions/Environmental Pollution Prevention* (GEEP) project. GEEP provides technical assistance and institutional development for clean, renewable energy sources. USAID/India supports this project through parallel funding for the *Global Environment Facility*.

**Training.** EP3 aims to increase local capacity to address environmental pollution and protection issues through seminars, train-the-trainer events, and workshops. The project's industry assessment component provides on-the-job training and increases local participation, thereby increasing project sustainability. Typically, an EP3 assessment team includes a staff member, a pollution prevention consultant, a *pro bono* consultant (usually with industry-specific expertise), and local consultants familiar with the nature of area industries and their prevailing problems. These consultants participate in facility interventions from assessments through follow-up phases. Over time, EP3 aims to build a network of local experts whose continuing learning and commitment will form the cornerstone of sustainable pollution prevention programs beyond the life of the EP3 project.

In May 1994, the project put on a five-day train-the-trainer workshop in Washington, DC for pollution prevention trainers in developing countries. The workshop included sessions on types of pollution prevention measures, pollution assessments, data collection, and international pollution prevention resources. The 20 participants included consultants, government representatives, and university professors from Chile, Egypt, Ecuador, and Tunisia, as well as representatives from Argentina, India, Zambia, the World Bank, and the United Nations. Participants developed and practiced training programs for use in their own countries. Follow-up surveys will determine the course's effectiveness.

In November 1994, EP3 held additional training programs, including a week-long orientation for host-country clearinghouse employees. Personnel from three of the first EP3 clearinghouses attended. The project also began in-plant assessment training for Egypt's EP3 staff. This two-week

training session focused on the electroplating and textile dyeing industries.

EP3 is also supporting or participating in a number of international conferences, congresses, and roundtables on environmental technology transfer. For example, in October

1994, the project conducted a workshop on pollution prevention for 62 project volunteer candidates at a conference held by the Water Environment Federation.

—Stephanie Joyce, Datex

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