

ENVIRONMENTAL ACTION PROGRAMME SUPPORT PROJECT
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

FINAL REPORT

Contract No. DHR-C-00-95-00034-00

Submitted to:
U.S. Agency for International Development

Submitted by:
Chemonics International Inc.

March 2001

ENVIRONMENTAL ACTION PROGRAMME SUPPORT PROJECT
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

FINAL REPORT

Contract No. DHR-C-00-95-00034-00

Submitted to:
U.S. Agency for International Development

Submitted by:
Chemonics International Inc.

Prepared by:
Avrom Bendavid-Val
EAPS Project Manager

With:
Karen Byrne, Editor
Lilit Yoo, Publications Specialist
Dan Marsh, Graphics Specialist

March 2001

TABLE OF CONTENTS – REPORT

Table of Contents – Compact Disc	ii	
Acronyms	iv	
Preface	v	
SECTION I	Overview of the EAPS Project	1
SECTION II	Country Programs	4
	A. Bulgaria	4
	B. Czech Republic	6
	C. Lithuania	7
	D. Macedonia	8
	E. Poland	9
	F. Romania	10
	G. Russia	11
	H. Slovakia	13
	I. CEE Region	14
SECTION III	Activities	15
SECTION IV	Accomplishments	17
SECTION V	Lessons for USAID Environmental Work in the Region	30
	A. Lessons Learned by EAPS Staff	30
	B. Lessons Learned According to the Midterm Evaluation	31
	C. Lessons Learned According to the CDIE Report on Urban and Industrial Pollution	32
SECTION VI	Financial Data	35

TABLE OF CONTENTS – COMPACT DISC

FINAL REPORTS

EAPS Final Report
Bulgaria Final Report
Czech Republic Final Report
Lithuania Final Report
Macedonia Final Report
Poland Final Report
Romania Final Report
Russia Final Report
Slovakia Final Report

ACTIVITY TRACKERS

Regional Activity Tracker
Bulgaria Activity Tracker
Czech Republic Activity Tracker
Lithuania Activity Tracker
Macedonia Activity Tracker
Poland Activity Tracker
Romania Activity Tracker
Russia Activity Tracker
Slovakia Activity Tracker

PUBLICATIONS LISTS

Regional Publications
Bulgaria Publications
Czech Republic Publications
Lithuania Publications
Macedonia Publications
Poland Publications
Romania Publications
Russia Publications
Slovakia Publications
Additional Documents

SAMPLE PUBLICATIONS

Bulgaria Boiler Conversion Assessment
Czech Loan Guarantee Manual
Macedonia Credit Analysis Manual
Russia P2 Assessments

ACTIVITY SUMMARIES

Bulgaria Conversion Assessment
Bulgaria Municipal Boiler Conversion
Bulgaria Municipal Gasification Options
Bulgaria Public Information Program
Czech Bilina Municipal Gas Conversion
Czech Dolni Poustevna

ACTIVITY SUMMARIES (CONT'D)

Czech Duchov Gas Conversion
Czech Fund Cash Flow Forecasting
Czech Fund Credit Analysis
Czech Fund Financial Management
Czech Fund Improved Collateral
Czech Fund Loan Guarantee
Czech Fund Project Finance
Czech Fund Training Development
Czech Havirov Municipality
Czech Jilove Air Pollution Abatement
Czech Krasna Lipa Gas Conversion
Czech Opava Municipality
Czech Orlova Gas Conversion
Czech Petrovice Gas Conversion
Czech Polanka, Ludgerovice
Czech Project Preparation Training
Czech Roznov Municipality
Czech Svinov Municipality
Czech Tanex Leather Factory
Czech Teplo-Vratimov
Lithuania Akmenes Cementas
Lithuania Investment Strategy
Lithuania LEIF
Lithuania Tannery Waste Symposium
Lithuania Vilkas Tannery
Macedonia Co-Financing
Macedonia Computer Procurement
Macedonia Fund Application Procedures
Macedonia Fund Development 1998-99
Macedonia Fund Development 2000-01
Macedonia Fund Financial Management
Macedonia Fund Project Packaging
Macedonia Fund Study Tour
Macedonia Industrial Investment Studies
Macedonia Lagadin-Proakva
Macedonia Municipal Applicant Training
Macedonia Pivara Recycling Study
Macedonia Pollution Charges
Macedonia Stanica Zelenikovo
Macedonia Star Dojran Municipality
Macedonia Sveti Nikole
Poland Andrychow Municipality
Poland Beirun Municipality
Poland Biesko-Biala
Poland Chrzanow Hospital
Poland Directory of Financing Sources
Poland Elckie Lake
Poland Fund Application Workshops
Poland Fund Cash Flow Planning
Poland Fund Project Appraisal

ACTIVITY SUMMARIES (CONT'D)

Poland Fund Project Evaluation
Poland Gliwice Military Housing
Poland Hutki Nursing Home
Poland Knurów Municipality
Poland Kraków Municipality
Poland Krupski Młyn Municipality
Poland Miedzybrodzie Żywieckie
Poland Mikolow Municipality
Poland Podhale District
Poland Raciborz Municipal Housing
Poland Radom Landfill Gas Utilization
Poland Rudoltowy Nursing Home
Poland Rybnik Psychiatric Hospital
Poland Rydułtowy City Hospital
Poland Skoczów District Heating
Poland Swietochłowice Municipality
Poland Tarnów Regional Penitentiary
Poland Wodzisław Śląski Municipality
Poland Zabrze Public School Heating
Regional Enterprise Development Workshop
Regional Environment Fund Conference
Regional Environment Fund Study Tour
Regional ISO 14001 Training
Regional Meeting
Regional US Copper Smelter Tour
Romania Air Pollution Monitoring
Romania Air Sampling Equipment
Romania Air Quality Monitoring
Romania Battery Recycling
Romania Braila Municipality
Romania Compliance Inspection
Romania Copper Smelter Cogeneration
Romania Copper Smelter Modernization
Romania Copper Smelter Recycling
Romania Directory of Financing Sources
Romania Institutional Needs Assessment
Romania KAP Study
Romania Lead Exposure Reduction Plan
Romania Lead Respiratory Protection
Romania Metal Recovery
Romania Rombat Battery Baghouse
Romania Rombat Battery Wastewater
Romania Smelter Emissions Monitoring
Romania US Lead Smelter Tour
Russia EMS Training
Russia IER
Russia Internet Training
Russia P2 Audits
Russia P2 Improvements
Slovakia Krompachy Copper Smelter
Slovakia Sladkovicovo Wastewater
Slovakia SMZ Magnesium Plant
Slovakia Vapenka Tisovec Lime Factory
Slovakia Water-Wastewater

ACRONYMS

C4EP	Central and East European Environmental Economics and Policy
CAA	Czech Clean Air Act
CDIE	(USAID) Center for Development Information and Evaluation
CEE	Central and Eastern Europe
CTO	Contract Technical Officer
E&E	Europe and Eurasia
EAP	Environmental Action Programme
EAPS	Environmental Action Programme Support
EIB	European Investment Bank
EMS	Environmental management system
EPIQ	Environmental Policy Indefinite Quantity Contract
ESP	Environmental service provider
EU	European Union
FARA	Fixed amount reimbursement agreement
FO	Field office
HO	Home office
IER	Initial environmental review
INA	Institutional needs assessment
ISO	International Organization for Standardization
ISPA	(EU) Instrument for Structural Policies for Pre-Accession
LAN	Local area network
LEAP	Local environmental action plan
LERP	Lead exposure reduction plan
NEAP	National environmental action plan
P2	Pollution prevention
USAID	United States Agency for International Development

Preface

This Final Report of the Environmental Action Programme Support project comprises two components: the text on the following pages, and the compact disc in a sleeve attached to the inside back cover. The text takes the form of an extended executive summary, with an emphasis on the story of what the project did and what can be learned from the EAPS experience.

The text also appears on the CD so it can be read from a computer screen. The electronic text contains hyperlinks (indicated in blue) to other documents that are also on the CD:

- Individual country Activity Trackers and a regional Activity Tracker containing annotated summaries of EAPS activities
- One-page descriptions of individual EAPS activities
- Individual country Final Reports
- Individual country Publications Lists, a regional Publications List, and a list of links to Additional Documents
- Examples of Selected Publications

We hope we have created a final report that, in the convenience of print, provides the minimum anyone with an interest in the EAPS project would want to know; and that also provides easy access to additional information to any depth of interest a reader might have.

– Avrom Bendavid-Val
EAPS Project Manager

SECTION I

Overview of the EAPS Project

The countries of USAID's Europe and Eurasia (E&E) region face enormous health burdens and obstacles to economic growth because of pervasive environmental mismanagement and contamination that is a legacy of the Soviet era. Responding to a call to begin seriously addressing environmental problems, environment ministers from Eastern and Western Europe met in Lucerne, Switzerland, in April 1993 and adopted the Environmental Action Programme (EAP). The aim of the programme is to establish an environmental partnership among Central and Eastern European, former Soviet, and Western countries. In this partnership, E&E countries undertake essential environmental policy and institutional reforms while Western governments and international financial institutions provide support for these reforms and help implement priority environmental projects. USAID designed the Environmental Action Programme Support (EAPS) project as a component of its support for this effort.

The primary purpose of EAPS was to provide technical assistance in the E&E region for identifying and selecting environmental investment projects that would reduce pollution and preparing these projects for financing. Investments typically involved improving the operation of a polluting facility through improved process technology, fuel substitution, or both. EAPS helped projects acquire investment financing from commercial banks, international financial institutions (the European Investment Bank, European Bank for Reconstruction and Development, International Bank for Reconstruction and Development), European Union programs, USAID, self-financing by project proponents (municipalities and enterprises), and most frequently, from country Environment Funds. These funds, in turn, obtained their lending capital from a wide variety of sources, including principal and interest payments on outstanding loans, general revenues, donor allocations, pollution fines and fees, and pollution-related taxes. One aim of EAPS was to mobilize large investments in projects that would improve environmental performance and reduce environmental health risks.

In the long run, only a robust, continuing *dynamic* of capital mobilization will guarantee continued environmental investments in EAP countries. For this reason, EAPS/Chemonics project designers focused three of the project's four basic tasks at fostering demand for environmental investments in these countries and strengthening the institutions and individuals that could play a role in responding to that demand. Only the first task was aimed at assisting specific environmental investments. The four basic tasks in the EAPS contract were:

- *Project identification, selection, and preparation for loan approval.* EAPS identified and screened a large number of environmental project proposals in eight countries (Bulgaria, Czech Republic, Lithuania, Macedonia, Poland, Romania, Russia, and Slovakia) and provided technical assistance to the proponents of 122 projects in 6 countries. EAPS provided procurement assistance to an additional 30 projects. While EAPS assistance took a wide variety of forms, the end purpose was always to help obtain financing for environmental projects, often from multiple sources. In six years, EAPS helped mobilize some \$200 million for environmental investments.

- *Institutional development, training, and information dissemination.* EAPS' most important activity under this task was working with country Environment Funds, municipalities, and enterprises that needed environmental investment financing. Other activities included training, publications, study tours, drafting environmental compliance procedures and legislation, special studies, conferences, seminars, workshops, and more.
- *Procurement of environmental equipment to alleviate health threats or demonstrate cleaner technologies.* EAPS managed the purchase, delivery, and installation of environmental equipment as diverse as particulate monitoring equipment, computers, commercial lime kilns, in-plant primary wastewater treatment equipment, gas burners for boilers, municipal water chlorinators, and municipal wastewater treatment plants.
- *Placement of environmental technical advisors and financial advisors in E&E countries.* EAPS/Chemonics established in-country field-office teams of financial and engineering professionals who carried out most of the work for each country program. Teams ranged in size from 2 to 10 people. Each team was managed in the field by a country program manager. Except for occasional temporary arrangements, in all but one case (Macedonia) EAPS country program managers were local professionals.

EAPS operated programs in eight countries and maintained offices, professional staff, and working relationships with local subcontractors and government entities in each. Each country program was tailored to the needs of the country and the priorities of its USAID mission. As a result, though these programs shared common objectives, each country program had a unique design and emphasis. Pulling it all together and adapting the lessons of work in one country to program needs in another was the job of the EAPS/Chemonics home-office staff and the USAID contract technical officer (CTO) in Washington, D.C.

The project was designed and managed within USAID's E&E Bureau by the Environment and Natural Resources Division, EE/EEEST/ENR. Loren Schulze was chief of that division for the last three years of the EAPS project. Angela Crooks was CTO for EAPS for approximately its last four years.

EAPS was implemented by Chemonics International Inc. and a consortium of specialist subcontractors, including Dames & Moore, Environomics, Ernst & Young LLP, Harvard Institute for International Development, Industrial Economics Inc., Institute for Sustainable Communities, and K&M Engineering and Consulting Corporation. The EAPS home office, located at Chemonics, provided overall guidance, supervision, and support to field-office staff and country programs; reported to and maintained close collaboration with the CTO at USAID/Washington; and carried out regional initiatives.

EAPS was initiated on March 17, 1995, and ran for six years. During that period, USAID obligated about \$17 million to carry out eight EAPS country programs and a few regional initiatives.



Solid blue indicates EAPS countries.



EAPS home-office and some field-office staff, 1997. Front row: Julie Bourns, Courtney Marsh, Olya Smolyanova. Back row: Michelle Otterman, Diane Bagnell, Liviu Ionescu (Romania FO), Avrom Bendavid-Val, Henry Koner, George Chavdarov (Bulgaria FO).

SECTION II

Country Programs

EAPS undertook about 265 discrete environmental projects and activities: preparation of individual environmental investments; workshops; direct financing of small municipal environmental projects; seminars, symposia, and conferences; formulation of environmental inspection and monitoring protocols, environmental regulations and legislation; training courses; study tours; procurements; special studies (e.g., recycling, environmental institutional needs assessment); development of computerized environmental project assessment models and other tools; major publications, such as financial manuals and directories of environmental financing sources; design of operating procedures for Environment Funds, and more. These sub-projects were undertaken in the context of one of the eight country programs or as a regional activity meant to serve two or more countries.

This section briefly describes the direction and accomplishments of the EAPS program *in each country*, with links to documents that provide more detail and, in some cases, examples of EAPS products. Section III is organized around specific *types of activities* throughout the region.

A. Bulgaria

The EAPS Bulgaria program ran from late 1995 to late 1998 and involved a USAID obligation of \$1.2 million. The centerpiece of the program was helping the city of Stara Zagora convert boilers in 21 municipal facilities (schools, hospitals, day-care centers, etc.) from light diesel oil to natural gas so as to reduce ambient air pollution and achieve reliability of fuel supply. To accomplish this, at the recommendation of USAID, EAPS developed a fixed amount reimbursement agreement (FARA) as a mechanism to enable EAPS to reimburse the municipality for each new installation as it was made. A secondary aim of the program was to demonstrate the benefits of oil-to-gas conversion to other municipalities.

To make these conversions possible, and to lay the groundwork for eventual conversion of the entire city to natural gas, the municipality had to enter into a concession agreement with the gas supply company that would make it worthwhile for the company to build a gas distribution network under the streets of Stara Zagora. EAPS helped the municipal government assess its technical and economic options, inform the public of its gasification initiative, invite citizen input, create the first municipal utilities commission in Bulgaria, and negotiate a concession agreement with the gas distribution company. An assessment study at the conclusion of the EAPS Bulgaria program captured the lessons learned for the benefit of other Bulgarian municipalities.

- [Bulgaria Activity Tracker](#) takes you to an annotated “quick list” list of activities carried out under the EAPS Bulgaria program.
- [Bulgaria Publications List](#) takes you a list of publications produced under the EAPS Bulgaria program.

- *Bulgaria Final Report* takes you to the final report for the EAPS Bulgaria program. The report describes the major elements of the EAPS Bulgaria program and the program design justification. It provides a concise description of all program operations, field personnel, activities, results, and overall accomplishments.
- *Bulgaria Boiler Conversion Assessment* takes you to an assessment of the environmental, municipal budgetary, municipal service, institutional, and other impacts of the of the 21 municipal building boiler fuel conversions carried out under the EAPS Bulgaria program.

EAPS Bulgaria field-office team, 1998. George Chavdarov (EAPS country program manager) and Diana Iskrev (Stara Zagora coordinator).



Boiler in Stara Zagora regional hospital, converted from light diesel to natural gas under the EAPS Bulgaria program, 1998. Yellow pipes mean gas.

B. Czech Republic

The EAPS Czech Republic program ran from late 1995 to mid-1997 and involved a USAID obligation of \$1.3 million. The program was characterized by a two-track approach also employed in Lithuania, Macedonia, and Poland: improving the capabilities of municipal governments to conceptualize and design environmental projects and prepare them for loan financing, while simultaneously strengthening the national Environment Fund so that it could do a better job of lending for environmental projects.

Using local subcontractors for much of the work, EAPS provided technical assistance to 16 municipalities that submitted successful project loan applications to the Czech Environment Fund. EAPS conducted training seminars in environmental project preparation for mayors and municipal staff in northern Moravia and northern Bohemia, the most polluted regions.

On the other track, EAPS prepared a set of guideline documents, policy analyses, and financial training manuals for the Environment Fund and provided a resident advisor in Prague to work with the Environment Fund on a day-to-day basis for more than a year. As a result, the Czech Environment Fund became more transparent, efficient, and financially effective through capital leveraging. The Czech field team later provided assistance to the EAPS Lithuania program.

- [*Czech Republic Activity Tracker*](#) takes you to an annotated “quick list” list of activities carried out under the EAPS Czech Republic program.
- [*Czech Republic Publications List*](#) takes you a list of publications produced under the EAPS Czech Republic program.
- [*Czech Republic Final Report*](#) takes you to the final report for the EAPS Czech Republic program. The report describes the major elements of the EAPS Czech Republic program and the program design justification. It provides a concise description of all program operations, field personnel, activities, results, and overall accomplishments. Among other things, this report documents quantified environmental benefits resulting from EAPS activities, including greenhouse gas reductions and leveraging of environmental investment capital.
- [*Czech Republic Loan Guarantee Manual*](#) takes you to a primer on loan guarantees prepared to train staff of the Czech Environment Fund. This is one of six related training manuals EAPS prepared for the Fund.



New hot water distribution center in an apartment complex in Vratimov, Czech Republic, 1997. EAPS helped operationalize a joint venture between the town of Vratimov and the nearby Nova Hut steel mill, under which Nova Hut utilized its waste heat (supplemented by heat from a cogeneration facility) for district heating serving 32 percent of the city. This enabled Vratimov to shut down 16 heavily polluting coal-fired district heating boilers.

C. Lithuania

The EAPS Lithuania program ran from late 1995 to late 1997 and involved a USAID obligation of \$815,000. The program was characterized by a two-track approach also employed in the Czech Republic, Macedonia, and Poland: improving the capabilities of municipal governments to conceptualize and design environmental projects and prepare them for loan financing, while simultaneously strengthening the national Environment Fund so that it could do a better job of lending for environmental projects.

The team helped launch the Lithuania Environment Fund by drafting the initial legislation, preparing an operations manual for the Fund, recruiting and training the first Fund director, allowing its offices to be used as Fund offices until permanent arrangements for housing the Fund could be made, and serving for a period as Fund staff until the government of Lithuania provided normal staff funding.

Simultaneously, project staff worked with prospective applicants to the Fund, both individually and through two applicant training seminars. The program included a demonstration environmental and financial analysis for modernizing the largest cement factory in the country; a demonstration wastewater pretreatment plant to remove hexavalent chrome from effluent at a tannery; and a three-day symposium on pollution prevention in the leather industry.

- *Lithuania Activity Tracker* takes you to an annotated “quick list” list of activities carried out under the EAPS Lithuania program.
- *Lithuania Publications List* takes you a list of publications produced under the EAPS Lithuania program.
- *Lithuania Final Report* takes you to the final report for the EAPS Lithuania program. The report describes the major elements of the EAPS Lithuania program and the program design justification. It provides a concise description of all program operations, field personnel, activities, results, and overall accomplishments.



A gathering of EAPS associates in Vilnius during the EAPS Lithuania training seminars for Environment Fund applicants, 1997. Former EAPS Czech Republic staff gave presentations at these seminars. Front row: Hana Smolkova and Lubomir Paroha (EAPS Czech Republic), Angela Crooks (EAPS CTO), Ramune Bieksiene (EAPS Lithuania), Arunas Kundrotas (Lithuania Ministry of Environment) and his wife, Zilvinas Martinkus (director of the Lithuania Environment Fund). Back row: Avrom Bendavid-Val (EAPS home office), Romas Lenkaitis (EAPS Lithuania), Bretislav Klic (EAPS Czech Republic).

D. Macedonia

The EAPS Macedonia program ran from late 1998 to early 2001 and involved a USAID obligation of \$3.7 million. The program was characterized by a two-track approach also employed in the Czech Republic, Lithuania, and Poland: improving the capabilities of municipal governments to conceptualize and design environmental projects and prepare them for loan financing, while simultaneously strengthening the national Environment Fund so that it could do a better job of lending for environmental projects.

The EAPS team in Macedonia helped establish the newly created Macedonia Environment Fund by training personnel; drafting the Fund's short-, medium-, and long-term strategy; preparing internal operating procedures; preparing application and application evaluation procedures; drafting legislation to convert the Fund to an independent agency with lending authority; drafting legislation to provide it with long-term financing; and processing the first grant applications.

Simultaneously, through direct technical assistance utilizing local experts and subcontractors and through training seminars, the team worked with individual municipalities that were applying to the Fund for environmental project financing, or contemplating doing so. In addition, on behalf of USAID, the team directly identified, prepared, and co-financed environmental infrastructure improvements in five municipalities with a combined value of more than \$1 million.

The EAPS Macedonia program included a number of study tours to Environment Funds in other Central and Eastern European countries; public information seminars to promote understanding of a proposed new Environment Fund law; two industrial pollution case studies to demonstrate the links among cleaner production, improved business performance, and capital attraction; a national beverage container recycling feasibility study; and public education seminars that gave 164 municipal officials an opportunity to learn about assistance available from the Fund.

- [Macedonia Activity Tracker](#) takes you to an annotated “quick list” list of activities carried out under the EAPS Macedonia program.
- [Macedonia Publications List](#) takes you a list of publications produced under the EAPS Macedonia program.
- [Macedonia Final Report](#) takes you to the final report for the EAPS Macedonia program. The report describes the major elements of the EAPS Macedonia program and the program design justification. It provides a concise description of all program operations, field personnel, activities, results, and overall accomplishments.
- [Macedonia Credit Analysis Manual](#) takes you to one module of the extensive training materials that EAPS prepared for the staff of the Macedonia Environment Fund.

EAPS Macedonia Skopje field-office staff, 2001. Front row: Sonja Mikovska, Jennifer McGuinn, Irena Lozana. Second row: Andrej Avramov, Simon Avramovski, Henry Koner. Back row: Gordan Kovacki, Brad May, Vladimir Grozdev.



E. Poland

The EAPS Poland program ran from late 1995 to early 1998 and involved a USAID obligation of \$2.75 million. The program was characterized by a two-track approach also employed in the Czech Republic, Lithuania, and Macedonia: improving the capabilities of municipal governments to conceptualize and design environmental projects and prepare them for loan financing, while simultaneously strengthening the national Environment Fund so that it could do a better job of lending for environmental projects.

In Poland, EAPS provided technical assistance for environmental project preparation to nearly 90 applicants to local and national Environment Funds and conducted workshops for municipal officials on how to prepare financing applications for projects to reduce low-stack emissions. Technical assistance was provided directly by EAPS staff and through local subcontractors.

Simultaneously, the team developed computerized programs to help Environment Funds select projects to finance and help them manage their finances better. EAPS worked directly with Polish Environment Funds on a regular basis to strengthen their capacities. The team's work with environmental borrowers and lenders contributed to dramatically reducing air pollution in historic Krakow and helping the city regain its potential as a major tourist destination. EAPS Poland published two editions of a directory of environmental financing sources and experimented with some innovative solutions to environmental problems, such as tapping into methane produced in a landfill as a source of fuel. The Poland team later provided assistance to the EAPS Macedonia program.

- [*Poland Activity Tracker*](#) takes you to an annotated “quick list” list of activities carried out under the EAPS Poland program.
- [*Poland Publications List*](#) takes you a list of publications produced under the EAPS Poland program.
- [*Poland Final Report*](#) takes you to the final report for the EAPS Poland program. The report describes the major elements of the EAPS Poland program and the program design justification. It provides a concise description of all program operations, field personnel, activities, results, and overall accomplishments. Among other things, this report documents quantified environmental benefits resulting from EAPS activities, including greenhouse gas reductions and leveraging of environmental investment capital.



*EAPS Poland staff members, 1997.
Front: Urszula Markowska-
Rogozinska, Agata Miazga, Barbara
Letachowicz. Back row: Jacek
Podkanski, Stanislaw Sitnicki, Marc
Hyman, Tom Downing (EAPS HO).
Missing: Grzegorz Peszko.*

F. Romania

The EAPS Romania program ran from late 1995 to early 2001 and involved a USAID obligation of \$4.39 million. During that period the EAPS Romania program shifted its focus from time to time in response to the changing preferences of USAID/Romania's environment program leadership.

The initial work plan emphasized reducing environmental health risks to workers in the non-ferrous metals industries. It included tours of U.S. copper and lead smelters by Romanian industrial leaders, workshops and technical assistance to help reduce lead exposure among workers, procurement of air-sampling equipment for use on a demonstration basis, special studies leading to pollution prevention recommendations for specific factories, and more.

The second EAPS Romania work plan (1999) emphasized strengthening the compliance enforcement capabilities of local environmental agencies. EAPS helped develop and promulgate official regulations guiding environmental compliance inspections and air-quality monitoring and contributed to establishing a collaborative rather than adversarial approach to environmental regulatory enforcement. In its final year, the EAPS Romania program concentrated on environmental finance. The team published a directory of sources of environmental financing modeled after similar directories published by the Poland program. EAPS also helped the city of Braila prepare a successful application for \$60 million in EU funding for a desperately needed major upgrading of its wastewater collection and treatment operations.

- [Romania Activity Tracker](#) takes you to an annotated “quick list” list of activities carried out under the EAPS Romania program.
- [Romania Publications List](#) takes you a list of publications produced under the EAPS Romania program.
- [Romania Final Report](#) takes you to the final report for the EAPS Romania program. The report describes the major elements of the EAPS Romania program and the program design justification. It provides a concise description of all program operations, field personnel, activities, results, and overall accomplishments.



Entrance to the hall where a ceremonial workshop marking the beginning of EAPS Romania assistance to the city of Braila took place, 2000.



EAPS Romania country program manager, Liviu Ionescu, speaking at a ceremony marking the release of the Directory of Financing Sources for Environmental Investments in Romania, 2000.

G. Russia

The EAPS Russia program ran from late 1998 to late 1999 and involved a USAID obligation of \$450,000. In early summer 1998, USAID/Russia contracted the EAPS program to assist with major environmental project identification and preparation for financing for the city of Samara, located on the Samara bend of the Volga River. But in August 1998 the Russian economic collapse rendered that program focus unworkable.

The program was redesigned to emphasize small- and medium-scale pollution prevention (P2) opportunities that required little or no investment and generated significant savings for Samara enterprises, and also on using environmental management systems (EMS) to identify more P2 opportunities. The program included seminars, workshops, and Internet training sessions; P2 mini-audits; P2 technology demonstrations; a P2- and EMS-related public education campaign; an EMS implementation course; a demonstration Initial Environmental Review (IER); and more. Since the program was destined to last only about a year and was minimally funded, EAPS contracted with the Volga District branch of the Russian Engineering Academy to serve as its field office in Samara, and engaged Ecoline, a nongovernmental organization, to provide some of the necessary Moscow-based technical expertise. Most EAPS activities were carried out in collaboration with, and in the facilities of, four partner enterprises: Samara Cable Company, Samara Bearing Company, Rodnik Vodka Company, and Yukos Petrochemicals Refinery. The maker of the Lada automobile, Avtovaz, located near Samara, also participated as a partner enterprise at its own initiative. This participation ultimately led to a U.S. Trade and Development Agency grant for a feasibility study that may open the door to considerable sales of U.S. equipment to the Russian automaker.



Samara, Russia, circa 1900.

- *Russia Activity Tracker* takes you to an annotated “quick list” list of activities carried out under the EAPS Russia program.
- *Russia Publications List* takes you a list of publications produced under the EAPS Russia program.
- *Russia Final Report* takes you to the final report for the EAPS Russia program. The report describes the major elements of the EAPS Russia program and the program design justification. It provides a concise description of all program operations, field personnel, activities, results, and overall accomplishments.
- *Russia Pollution Prevention Assessments* takes you to a summary of the methodology and economic and environmental results of P2 audits and P2 measures taken under the EAPS program in industrial plants in Samara, Russia.



Opening seminar of the EAPS Russia country program in the city of Samara, 1998. Yuri Mikheev (Russian Engineering Academy, Volga District), Alexander Kaliagin (chief of the Environmental Department, Avtovaz), Maegan Conklin (EAPS HO), Yuriy Kazakov (USAID/Russia).



Wire-rolling machine in the Samara Cable Company, where EAPS introduced low-cost pollution prevention innovations, 1999.

H. Slovakia

The EAPS Slovakia program ran from late 1995 to mid-1998 and involved a USAID obligation of \$1.15 million. However, in mid-1996 it was agreed that EAPS activity in Slovakia would fall under the work plan of its sister project, the Central and East European Environmental Economics and Policy (C4EP) project, and would be coordinated by the prime contractor for C4EP, the Harvard Institute for International Development. For that reason, there is no EAPS final report for Slovakia.

During its initial phase, EAPS Slovakia conducted major investment studies of large environmental project possibilities in a copper smelter, magnesium plant, and wastewater treatment facility and, with the Slovakia Environment Fund, co-financed an air pollution reduction investment in a lime factory. Later, the program engaged in several procurements of pipes, equipment, and associated construction to upgrade wastewater collection and treatment in three Slovakian towns.

- [Slovakia Activity Tracker](#) takes you to an annotated “quick list” list of activities carried out under the EAPS Slovakia program.
- [Slovakia Publications List](#) takes you a list of publications produced under the EAPS Slovakia program.



Loren Schulze, USAID/Slovakia, helps inaugurate a kiln at the Tisovec lime factory, 1997. The EAPS Slovakia program helped renovate the kiln and convert it from coke to gas fuel, greatly reducing polluting emissions and improving plant efficiency.

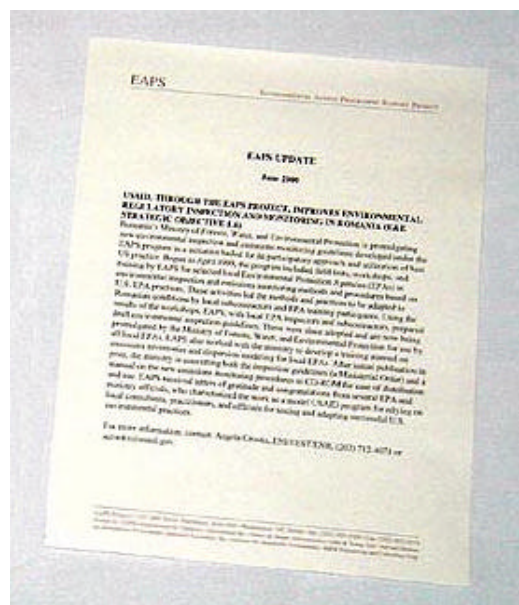
I. CEE Region

EAPS was designed to operate on a country program basis and to be funded by USAID country missions, so there was no specific E&E regional EAPS program. A little more than \$1.2 million was made available from E&E Bureau funds over the life of the project to help cover overall operating expenses and fund Central and Eastern European (CEE) regional initiatives. These initiatives were selected to promote project objectives on a regionwide basis and were built around special interests shared by stakeholders in two or more country programs. On average, the EAPS/Chemonics home-office staff organized one regional initiative every year.

- 1995 *Study tour of U.S. copper smelters* by Romanian and Slovakian enterprise officials to observe environmental health and safety practices.
 - 1996 *Regional conference of Environment Funds* to share experiences with investment fund management, loan processing, credit analysis, default management, leveraging private sector capital, and related topics.
 - 1997 *EAPS regional meeting* that brought all EAPS field-office teams together to promote a regional network and share experiences, techniques, lessons learned, and ideas on commercializing the forms of assistance provided by EAPS.
 - 1997 *Enterprise development workshop* for EAPS field-office staff to help them plan using the environmental technical skills they acquired under EAPS in their local environmental marketplaces after the project ends.
 - 1998 *Environment Fund study tour* to Polish local and national Environment Funds for Bulgarian, Macedonian, and Romanian participants.
 - 2000 *Course in EMS/ISO 14001 and pollution prevention* for local environmental consultants with whom EAPS had worked successfully to help them develop and serve local markets for EMS services.
- *Regional Publications List* takes you to a list of EAPS publications for a regional audience.



Angela Crooks and Gordon Straub, EAPS CTOs, with Avrom Bendavid-Val, EAPS project manager, at the EAPS regional meeting in Budapest, 1997.



EAPS Update, published and circulated every month to communicate USAID/EAPS accomplishments.

SECTION III

Activities

The following table organizes information about EAPS activities by type. The first column lists 10 activity types and shows the total number of discrete activities undertaken in Russia and the CEE region for each type. The second column lists the countries in which these activities were carried out. The third column shows how many activities were carried out in each country. The fourth column points to a sample activity of a each type in a particular country. The last column provides links to a brief annotation or a one-page summary of each sample activity.

Type of Activity	Country	No. of Projects	Example of project type	
			Name	Description
1. Environmental project development and investment preparation <i>120 projects</i>	Czech Republic	15	Polanka and Ludgerovice municipalities	Annotation One-page summary
	Macedonia	16	Evropa chocolate factory	Annotation One-page summary
	Poland	88	Miedzybrodzie Zywieckie hospital and nursing home	Annotation One-page summary
	Romania	1	City of Braila	Annotation One-page summary
2. Trainings, workshops, seminars, symposia, conferences <i>38 events</i>	Bulgaria	1	Workshop on municipal gasification	Annotation One-page summary
	Czech Republic	2	Project preparation training for mayors	Annotation One-page summary
	Lithuania	3	Symposium on tannery waste minimization	Annotation One-page summary
	Macedonia	21	Training on financial application forms and procedures	Annotation One-page summary
	Poland	2	Training on environmental project preparation and financial application	Annotation One-page summary
	Romania	3	Workshops on developing lead exposure reduction plans (LERPs)	Annotation One-page summary
	Russia	3	Training on using the Internet to help solve pollution problems	Annotation One-page summary
	CEE Region	3	Regional conference on Environment Funds	Annotation One-page summary
3. Study tours <i>4 tours</i>	Macedonia	1	Visit to Slovenia Environment Fund	Annotation One-page summary
	Romania	1	U.S. lead smelter and battery factory tour	Annotation One-page summary
	CEE Region	2	U.S. copper smelter tour	Annotation One-page summary
4. Special studies <i>22 studies</i>	Bulgaria	2	Assessment of municipal boiler conversions	Annotation One-page summary
	Czech Republic	2	Krasna Lipa economic evaluation of gas distribution system	Annotation One-page summary
	Lithuania	2	National environmental investment strategy	Annotation One-page summary
	Macedonia	4	Bottle and can recycling study	Annotation One-page summary
	Poland	3	Survey of users of <i>Environmental financing Sourcebook</i>	Annotation One-page summary

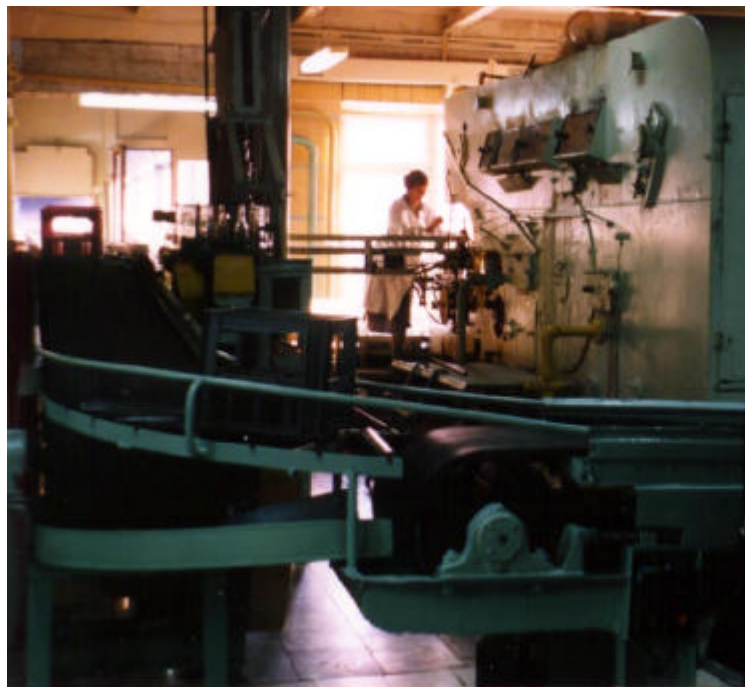
Type of Activity	Country	No. of Projects	Example of project type	
			Name	Description
4. Special studies (cont'd)	Romania	6	Fugitive dust baghouse efficiency study	Annotation One-page summary
	Slovakia	3	Environmental and economic assessment for SMZ magnesium plant	Annotation One-page summary
5. Manuals, computerized tools, directories, and other knowledge access and dissemination products <i>15 products</i>	Czech Republic	1	Guidelines for improved collateral evaluation	Annotation One-page summary
	Lithuania	1	Environment Fund operations manual	Annotation One-page summary
	Macedonia	4	Environmental project evaluation software	Annotation One-page summary
	Poland	5	Cash flow management software	Annotation One-page summary
	Romania	1	Directory of financing sources for environmental projects	Annotation One-page summary
	Russia	3	20-minute video film on P2 and EMS	Annotation One-page summary
6. Regulatory and legal reform <i>5 regulations/laws</i>	Bulgaria	1	Municipal utilities commission bylaws	Annotation One-page summary
	Macedonia	2	Environment Fund law	Annotation One-page summary
	Romania	2	Compliance inspection ministerial order	Annotation One-page summary
7. EMS and P2 <i>11 demos/courses</i>	Russia	10	P2 factory audits	Annotation One-page summary
	CEE Region	1	5-day EMS/ISO 14001 and P2 course	Annotation One-page summary
8. Other institutional capacity development <i>9 activities</i>	Bulgaria	1	Recommendations for public information program	Annotation One-page summary
	Lithuania	1	Initial support for Environment Fund	Annotation One-page summary
	Macedonia	5	Financial strategy for Environment Fund	Annotation One-page summary
	Romania	2	Environmental institutional needs assessment (INA)	Annotation One-page summary
9. Procurement <i>13 procurements</i>	Lithuania	1	Vilkas tannery wastewater treatment equipment	Annotation One-page summary
	Macedonia	1	Computers and LAN for the Environment Fund	Annotation One-page summary
	Romania	4	Air sampling equipment	Annotation One-page summary
	Russia	3	Automatic flow control valves (no/low-cost P2)	Annotation One-page summary
	Slovakia	4	Sewer lines and connections	Annotation One-page summary
10. Environmental project financing (via FARA) <i>26 projects</i>	Bulgaria	21	Municipal boiler diesel-to-gas conversions	Annotation One-page summary
	Macedonia	5	Sewer system for Lagadin village, Struga and Ohrid municipalities	Annotation One-page summary

SECTION IV

Accomplishments

Although EAPS was designed to carry out individual country programs in the E&E region, Chemonics managed the project with the idea that country programs should add up to a focused regional impact. Ten regionwide accomplishments contributed substantially to accelerating the financing and implementation of priority environmental projects in Central and Eastern Europe (where seven of eight EAPS country programs were located). This, in turn, contributed to sustainable economic development and helped reduce mortality and morbidity caused by environmental factors.

1. *EAPS carried out an enormous volume and variety of activities to reduce environmental health risks and improve environmental management in Russia and the CEE region.* The table in Section III lists more than 260 activities of 10 different types and gives examples of how EAPS/Chemonics approached its mission flexibly, addressing both the motivation and the capacity for environmental investment from many angles. EAPS focused its resources on everything from promoting awareness and sound project design to strengthening the regulatory environment and lending capability, depending on country needs and USAID's best contribution in light of what other donors were doing in each country. This volume of activity created a critical mass that enabled EAPS to make a material difference in the region – and to be seen making a difference. As a result, government institutions, donors, the private sector, and other stakeholders recognized USAID as a serious presence promoting environmental and economic sustainability in each EAPS country.



Bottle-washing machine at the Rodnik Vodka Company in Samara, Russia, 1999. In the course of a pollution prevention audit, EAPS experts determined that by installing automatic flow control valves on these machines, Rodnik could reduce water consumption and wastewater discharges by 648 m³ per day, or 50 percent. EAPS procured the valves for one of Rodnik's three washing machines to demonstrate the environmental and economic benefits.

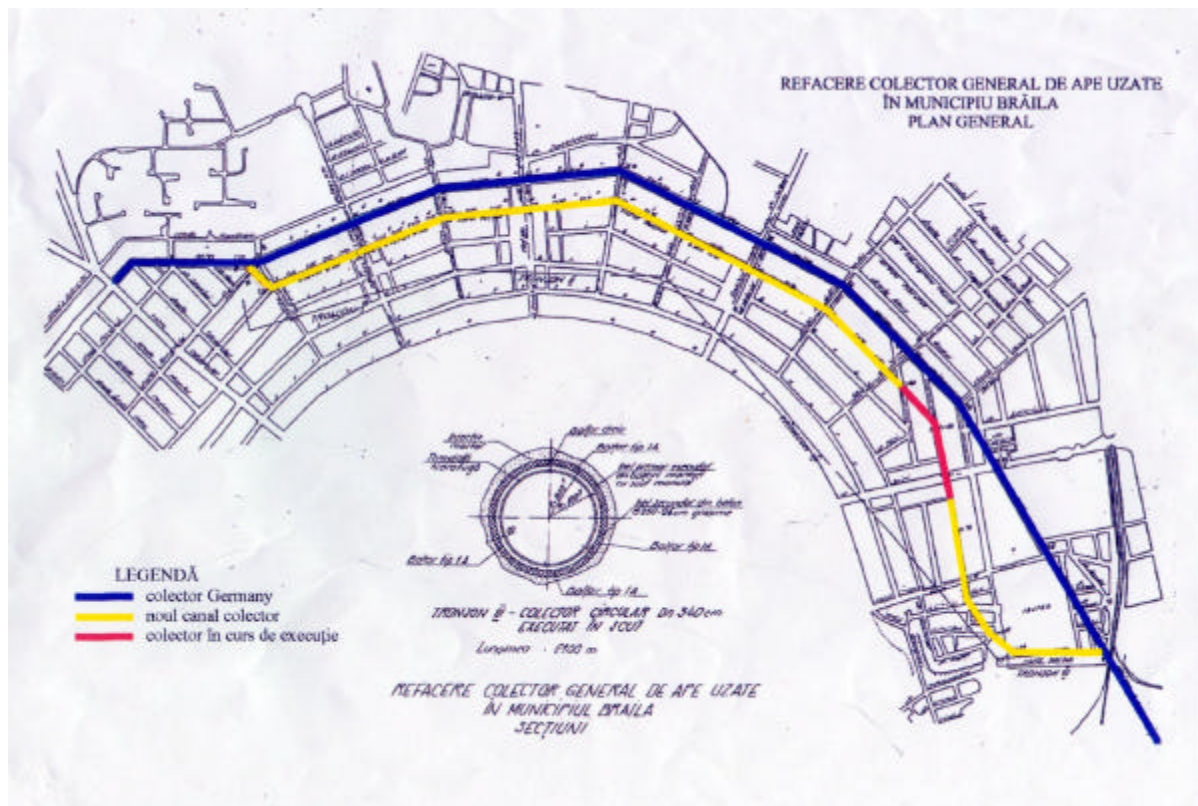


Reactor number 1 before reconstruction at the Dojran wastewater treatment plant, rehabilitated through the EAPS Macedonia program, 2000.



Apartment block furnace room in Krakow, 1997. The EAPS program helped obtain financing to replace heavily polluting, antiquated, coal-fired furnaces with these clean, automated, gas-fired furnaces, including renovating the space to accommodate modern equipment.

2. EAPS helped obtain financing for a large number and dollar volume of environmental investments in the region, leveraging USAID's investment at a ratio of 1:62. EAPS helped develop and obtain financing for more than 150 environmental projects in seven CEE countries. (Russia was the only EAPS country in which this was not done.) These projects ranged in size from \$5,000 (in Slovakia) to \$70 million (in Poland). Many smaller projects are shown in the table in Section III as procurements, but for the recipients they were serious investments that were co-financed by local government through direct payments or force account labor and equipment – for example, in the case of sewer lines and connections in the town of [Danisovce, Slovakia](#). In a few cases, EAPS participation was a small but essential part of an overall project development and financing process, as in the case of Geotermia [Podhale, Poland](#). More frequently, EAPS technical assistance was major and crucial to obtaining financing, as in the case of [Braila, Romania](#). Sometimes, EAPS' role was to provide specialized expertise, as in the coal-to-gas boiler conversions undertaken in [Krakow, Poland](#). Elsewhere, in addition to providing technical assistance, EAPS was the principal (but never exclusive) source of financing, as in [Stara Zagora, Bulgaria](#). Chemonics has calculated an overall leveraging ratio of 1:62 for environmental investments assisted by the EAPS project – that is, every dollar that USAID spent through EAPS to mobilize investment in environmental projects leveraged \$62 of investment from other sources.



Schematic representation of the main sewer collector, Braila, 2000. This is one component of a wastewater project for which EAPS Romania helped Braila obtain \$60 million in EU financing. The blue line is the 100-year-old collector, which is collapsing. Yellow shows the completed portion of a replacement collector, with specifications as shown in the diagram. Red shows the portion of the new collector that passes through unstable soils and will be completed with the EU financing.

3. *EAPS helped create 2 new Environment Funds and substantially strengthened 10 others in the region through training and the creation of new capabilities and tools.* The project helped create Environment Funds from scratch in **Lithuania** and **Macedonia**. This meant helping to draft Environment Fund legislation, operating procedures, operating manuals, and internal systems; training Fund staff; helping the new Funds work with applicants and process applications; and helping them develop long-term strategies for revenues, lending, and cash management. In addition, EAPS greatly strengthened the operations and effectiveness of the **Czech Republic** national Environment Fund, the Polish national Environment Fund, and eight **Polish** regional Environment Funds. For these Funds, EAPS provided training in special lending skills; helped develop more efficient operating procedures; created new capabilities, such as making loan guarantees; and created new tools, such as project evaluation manuals and computerized cash flow management programs. All this helped Funds support formal National Environmental Action Plans (NEAPs) or other national environmental strategies. The *USAID Impact Evaluation: Urban and Industrial Pollution Programs*, a study of the impact of EAPS published by USAID's Center for Development Information and Evaluation in November 2000, argues that even in countries like Poland and the Czech Republic, where EAPS/Chemonics leveraged tens of millions of dollars of environmental investments from domestic and foreign sources, the beneficial impact of project activities that strengthened local and national Environment Funds will ultimately be far greater.



Ljupco Avramovski, director of the Macedonia Environment Fund, consulting with Henry Koner, EAPS Macedonia country program manager, 1998.

EAPS training manuals for Environment Fund staff and applicants.



The EAPS/Chemonics approach to assisting Environment Funds involved trying to move a Fund gradually from grants, to loans, to loan guarantees and interest-rate subsidies involving commercial banks, to minority partners in financing packages. The Environment Fund life cycle fostered by EAPS systematically shifted the financing burden and risk to project proponents and other lenders. The objective was to establish a healthy commercial environmental financing dynamic that would eliminate (or at least greatly diminish) the need for a non-market mechanism like an Environment Fund.

4. *EAPS transferred environmental project development and packaging skills to municipalities, Environment Funds, central government agencies, environmental service providers (ESPs), and EAPS field-office staff professionals across the region. EAPS/Chemonics tried always to work with its beneficiaries, not for them. When helping municipalities prepare environmental project financing proposals, EAPS/Chemonics experts worked as closely as possible with municipal staff to transfer skills, including how to select and manage contractors. Project experts not only prepared manuals and provided formal training for Environment Fund and ministry staff, but also engaged them in collaborative research, analysis, and strategizing as a means of transferring skills. When EAPS hired local ESPs – usually, small environmental consulting companies – local or U.S.-based professionals supervised and worked closely with them to strengthen their skills and teach them Western approaches to project design, business planning, feasibility studies, and the like. EAPS hired excellent local professionals for its field staff, then gave them a combination of professional freedom and support from top-flight U.S. experts that enabled them to mature professionally while working for the project. All EAPS field staff have moved on to higher professional environmental positions, at least in part on the strength of skills acquired during their EAPS service.*

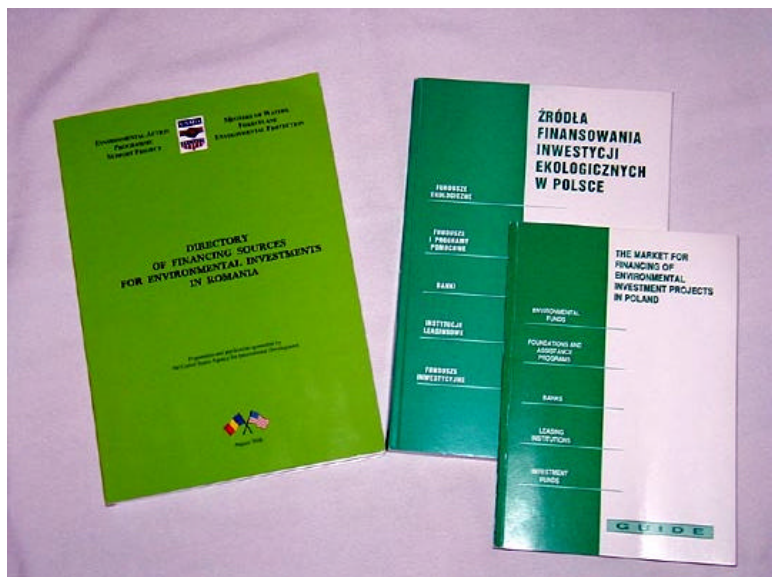


EAPS Macedonia workshop for potential municipal applicants to the Environment Fund, 1999. Henry Koner is at the podium.

5. *EAPS created many products that will continue to foster environmental investment in Russia and the CEE region. Examples include computer applications for use by Environment Funds in Poland and Macedonia to process loan applications, manage their resources, and analyze the comparative environmental benefits of proposed projects; procedural and training manuals for Environment Funds and Fund applicants in Lithuania, Poland, the Czech Republic, and Macedonia; Environment Fund loan application forms in Poland and Macedonia; EMS/ISO 14001 and pollution prevention manuals and guidebooks in Russia; directories of sources of environmental investment funding in Poland and Romania; and more.*



Pollution prevention and environmental management system (ISO 14001) manuals prepared by the EAPS Russia program.



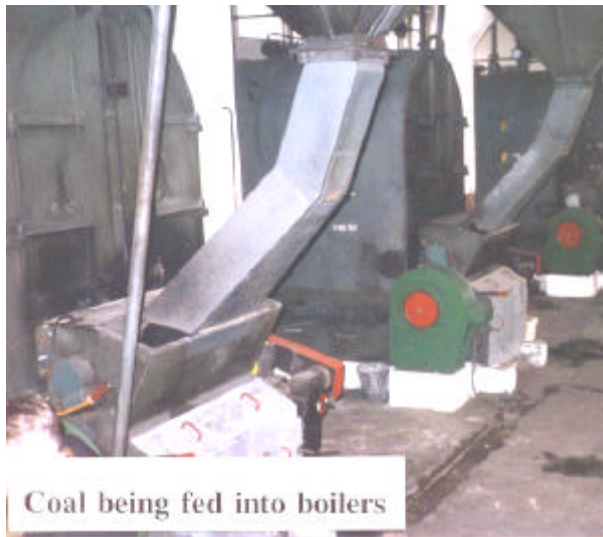
Directories of sources of financing for environmental investments prepared by the EAPS Romania and EAPS Poland programs.

6. *EAPS helped improve national environmental strategies, laws, regulations, and regulatory enforcement.* EAPS was not originally expected to be engaged in environmental policy and regulatory reform. But it soon became evident that a clear line could not be drawn between promoting environmental investment and improving the policy and regulatory context. In reference to the EAPS Czech Republic and Poland experiences, the *USAID Impact Evaluation: Urban and Industrial Pollution Programs* report says, “Environmental regulations and meaningful enforcement are necessary first steps for improving air quality.” EAPS *had* to engage in regulatory and policy reform if it was to succeed in its primary mission. In Lithuania, EAPS helped formulate the Environment Fund law and the [National Environmental Investment Strategy](#). In the Czech Republic, EAPS helped revamp Environment Fund bylaws to make Fund decision-making transparent and more independent of politics. In Bulgaria, EAPS helped formulate the first [municipal concessions law](#) to regulate the gas distribution utility. In Romania, EAPS helped adapt U.S. Environmental Protection Agency [environmental inspection](#) and [air monitoring protocols](#) to Romanian needs and formulate them, to be ultimately issued as ministerial orders. In Macedonia, EAPS helped draft a new [Environment Fund law](#) that makes the Fund an independent agency with lending and loan guarantee authority. EAPS also undertook research and established the basic parameters of a new pollution charges law based on the polluter-pays principle that would provide a source of revenue for Macedonia’s Environment Fund.



Workshop for environmental compliance inspectors conducted under the EAPS Romania program, 1999.

7. *EAPS introduced pollution prevention approaches and technologies through a large number of seminars and low-cost demonstrations throughout the CEE region and in the Samara region of Russia. USAID has been working hard through many projects to promote pollution prevention (P2) throughout the E&E region. P2 approaches and technologies are more environmentally efficient and economically sound than end-of-pipe approaches to reducing the impact of pollution. Whenever practicable, P2 approaches were at the center of EAPS/Chemonics project design assistance. Beyond that, EAPS promoted P2 solutions vigorously and in many ways: through conferences, such as the three-day [symposium for tanneries](#) conducted in Lithuania; through [in-plant demonstrations](#), such as at the Samara Cable Company; through [study tours](#), such as the tour of U.S. lead smelters and battery makers; and through [special studies](#), such as a P2 assessment at the Yukos Petrochemical plant in Novokuibishevsk, Russia.*



A typical boiler room before modernization and conversion to natural gas with assistance from the EAPS Poland program, 1996.

A section of a typical boiler room after renovation and conversion with EAPS assistance, 1997.





Heat exchanger for utilizing waste heat from the Nova Hut steel mill for district heating in the town of Vratimov, 1997. The EAPS Czech Republic program helped implement this P2 project, which reduced emissions of particulates in Vratimov by 55 percent, reduced sulfur dioxide emissions by 72 percent, and reduced carbon monoxide and carbon dioxide emissions by 93 percent.



Yukos Novokuibishevsk petrochemical refinery, near Samara, 1999. EAPS conducted a P2 assessment at one facility of the plant.

8. *EAPS pioneered training in environmental management systems, especially based on ISO 14001 principles, in Central and Eastern Europe and the Samara region of Russia. EAPS was designed before the ISO 14001 international EMS standard was issued. During the project design period, the relationship between EMS and reducing environmental health risks, and between EMS and sustainable economic development, were not as widely understood as they came to be later. EAPS/Chemonics senior staff grasped the significance of ISO 14001 early and arranged ISO 14001 lead auditor training for selected home-office and field-office personnel in early 1998. EAPS then built EMS seminars, workshops, and training courses into its new Russia country program that began in late 1998; injected EMS awareness wherever possible in its remaining programs in Macedonia and Romania after the Russia program ended and its EMS presentations had been refined; and in March 2000, provided a one-week EMS/P2 training course for ESPs from Bulgaria, Macedonia, Poland, and Romania so they could begin developing and serving EMS markets in their countries on a commercial basis.*



EAPS EMS course in Sofia, Bulgaria, 2000.



ISO 14001 training manual prepared by Chemonics International Inc. and made available to support EAPS training of CEE environmental consultants.

9. *EAPS demonstrated many innovative technologies and institutional approaches. In collaboration with its CTO, EAPS/Chemonics took a flexible, broad-mandate approach to the project's core mission. All country programs sought to introduce both tried-and-true and new ways of approaching problems so that local governments and the private sector would have a range of possibilities for responding to environmental needs. Under their former Soviet-dominated regimes, local officials and plant managers were encouraged by the system *not* to think innovatively, creatively, “out of the box” – but to lay a basis for sustainable development in the future, officials of these societies in transition had to learn. EAPS made a point of exposing these officials to the constructive results of non-routine thinking whenever possible. In Poland, for example, EAPS participated in [geothermal](#), [lake reclamation](#), and [methane-from-landfill](#) projects, in addition to its many “routine” coal-to-gas-conversion projects. In Romania and Macedonia, EAPS participated in studies to test the feasibility of [recycling automotive batteries](#) and [beverage containers](#) respectively. In the Czech Republic, EAPS assisted a [cogeneration project](#) that involved directing waste heat from the Nova Hut steel mill to district heating in the nearby town of Vratimov. In Bulgaria, where there were no institutional mechanisms for substituting natural gas for oil in municipal buildings, EAPS demonstrated how a known mechanism – [municipal concessions](#) – could be applied to a gas distribution utility to make the substitution possible. In the Czech Republic, EAPS helped the Environment Fund multiply its impact by moving from making grants and loans to executing [loan guarantees](#) and interest-rate subsidies involving commercial banks.*



Elckie Lake, where the EAPS Poland program carried out a reclamation study, then helped obtain financing for the lake reclamation project, 1997.



Bottle discards that could be recycled at the Pivara Beverage Company plant in Skopje, Macedonia, 2000.



"Dancing flames" in a performance to celebrate conversion of an elementary school to natural gas as part of the EAPS Bulgaria program, 1997. The conversion reduced emissions, lowered municipal costs, and gave the school reliable heating.

10. *EAPS successfully coordinated with other donors to multiply the benefits of its limited resources.* It was clear to EAPS/Chemonics managers from the outset that if the project was going to make a difference, ways had to be found to greatly multiply the value added by its limited resources in each country. A deliberate effort to leverage resources from other projects and donors whenever possible became basic a tenet of EAPS operations. Staff worked with other USAID projects, such as the Central and East European Environmental Economics and Policy (C4EP) project and the Environmental Policy Indefinite Quantity Contract (EPIQ), that could provide policy reform complements to EAPS project financing activities. EAPS worked with other USAID contractors that could provide complementary services, such as the World Environment Center and World Learning; with other donor programs that could provide special expertise, such as the Organization for Economic Cooperation and Development and EU-Phare; and with other sources of donor financing, such as the World Bank, the European Bank for Reconstruction and Development, the Instrument for Structural Policies for Pre-Accession (ISPA) program, and the European Investment Bank (EIB). The Geotermia Podhale project in Poland provides a premier example of this multiplication of benefits: A \$250,000 contribution of technical assistance by USAID/EAPS enabled a \$70 million World Bank investment to go forward. Another example is the Braila effort in Romania, which leveraged a USAID/EAPS investment of \$400,000 to attract a combined ISPA and EIB investment of \$60 million.

SECTION V

Lessons for USAID Environmental Work in the Region

The first section below presents five lessons learned from EAPS experience as identified by project staff. The project's achievements justify many of the lessons presented here. The second and third sections present lessons learned from EAPS as presented in the reports of two external evaluations. EAPS staff generally agree with the conclusions reached through these other efforts and have not duplicated these in our own presentation.

A. Lessons Learned by EAPS Staff

1. *Focus primarily on creating a dynamic of demand and supply for sound environmental investments: a demand for financing for good environmental projects and a supply of capital to make those projects happen.* Like all other brown environmental activities undertaken by USAID, direct assistance for project financing and direct project financing (or procurement) should not be programmed as ends in themselves, however worthy. They should be designed as *means* for promoting an enabling regulatory, institutional, and private sector context in which good environmental management will be profitable and able to attract capital. The direct, immediate benefits of USAID assistance will always be modest. USAID's comparative advantage will always be in helping to build the appropriate policy and regulatory environment, institutions, and awareness to make the right things happen and continue to happen in the long run. Particularly in the E&E brown environmental arena, USAID should always take the long view, investing in the *process* of environmental management and seeking to bring the resources of others into play in this process.
2. *Program assistance to Environment Funds with a clear life-cycle model in mind.* The life-cycle approach used by EAPS/Chemonics systematically shifted the financing burden and risk from Environment Funds to project proponents and other lenders. The key is to view these funds as interim means for environmental finance and tools for fostering a commercial environmental capital market rather than permanent mechanisms for financing environmental investments. Care must be taken to ensure that an Environment Fund does not distort a nascent environmental capital market. This means going beyond financing to help educate potential players in such a market, then backing out of the business by deliberate degrees as it becomes possible for borrowers to access more capital from commercial sources.
3. *Invest resources in promoting the growth of private sector participation frameworks to finance environmental infrastructure needs.* This is not a new idea, but six years of EAPS/Chemonics experience with environmental finance in the CEE region gives us a unique perspective and particular authority on this matter. Environmental infrastructure needs in the region are enormous, but the economies of these countries are too weak to mobilize the required investment capital. Without environmental infrastructure investments, these economies cannot recover. The region seems trapped in a vicious circle, unable to generate the momentum needed to invest in sustainable growth. In the foreseeable future, economic recovery will depend on massive private investment in environmental

infrastructure. All the donor help imaginable will be insufficient, and may even be counterproductive if it undermines the private capital market. Private sector participation (PSP) solutions are essential, and EAPS/Chemonics believes USAID dollars would be well spent on encouraging them.

4. *Allocate resources to sharing experience across borders.* The CEE countries have a great deal in common and also are very different from one another. Environmental officials and professionals from countries in the earlier stages of transition can learn a great deal from their CEE counterparts in countries that are much farther along toward a democratic society with a market economy. While U.S. experts can still contribute a great deal, the sharing of experience and expertise within the region is even more valuable. The experience of a professional from one country is more likely to be relevant to the problems of a counterpart from another. This message came home repeatedly in feedback from the many cross-border activities that EAPS conducted, such as a [regional environment fund conference](#), [Fund applicant workshops](#) in Lithuania that utilized speakers from the EAPS Czech Republic program, and a [regional meeting of all EAPS field teams](#).

In the former Soviet Union, EAPS worked only in Russia, so we cannot speak with authority on this matter with respect to that region.

5. *Design projects to depend heavily on local professionals.* Former Soviet-bloc countries are rich with highly trained professionals in environmental sciences and related engineering disciplines. Their weaknesses are a lack of knowledge of computer tools; lack of training and exposure to cost-effectiveness concepts (which leads to a tendency to overdesign); lack of experience with Western standards of construction, construction practices, and costing concepts and tools; and lack of familiarity with acceptable office management standards and techniques. Consequently, the ideal project is one that makes heavy use of local professionals, with a minimum complement of U.S.-based long- and short-term professionals to exercise quality control and help strengthen local professionals in areas where they are weak. This approach is very cost-effective for USAID, is culturally sensitive and efficient, and contributes most to upgrading the capabilities of a permanent national cadre of environmental professionals.

B. Lessons Learned According to the Midterm Evaluation

USAID conducted a midterm evaluation of the EAPS/Chemonics project in 1997. A team of USAID and contract personnel visited countries in which EAPS had programs; interviewed mission personnel, EAPS personnel, beneficiaries, and other stakeholders; visited project sites; and reviewed project documents. The team prepared a draft report that was not formally published. The report focused on two principal lessons learned from EAPS experience approximately two years into the project.

1. *The EAPS “two-track” model works well.* To quote the draft report, “The model places the EAPS team in the center of programs designed to stimulate environmental investments ... acting as a broker between potential clients who have to make environmental investments and the suppliers of investment capital. Technical advisory services are provided [by EAPS] in both directions: to the sources of capital to foster institutional policies and procedures, and

to the clients who have to provide [financing] applications which demonstrate the economic, financial, technological, and environmental feasibility of the proposed investment.... The result is a strong linkage of macro environmental policies ... and policy implementation.... [Through this model] practical experience with the application review and disbursement process has been fed back into the institutional policies and operational guidelines for Fund management. The result is transforming the [Environment] Funds into dynamic tools for creative financing ... leveraging modest amounts of private capital as well.”

2. *Environment Funds should use their resources increasingly for leveraging investment capital from other sources.* Referring to the EAPS Czech Republic experience, the authors of the midterm evaluation state in their draft report, “With Environment Fund participation, multiple source loans are being discussed, a mixture of grant and loan funds, to produce terms acceptable to commercial lenders but within the revenue flow from user fees or profits [of the environmental project being financed]. A high degree of leverage will result ... and private capital markets will be exposed to longer term environmental loans at reduced risk.”

C. Lessons Learned According to the CDIE Report on Urban and Industrial Pollution

USAID’s Center for Development Information and Evaluation (CDIE) conducted an impact evaluation primarily of the EAPS Czech Republic program in mid-2000. (The EAPS Czech Republic program concluded in mid-1997, and the USAID Czech Republic mission closed later the same year.) The evaluation was designed to identify the lessons of EAPS experience for USAID efforts to address urban and industrial pollution. A team of USAID and contract personnel conducted an extensive document review at the EAPS home office in Washington, D.C.; interviewed EAPS home-office personnel and former field-office personnel, beneficiaries, and other stakeholders; visited project sites in the Czech Republic and in neighboring areas of Poland; and reviewed field documents relevant to both country programs. The evaluation is summarized in the November 2000 document, *USAID Impact Evaluation: Urban and Industrial Pollution Programs*. The six lessons learned through the evaluation were:

1. *Environmental regulations and meaningful enforcement are necessary first steps for improving air quality.* “The driving force for many municipalities to undertake environmental upgrades was the Czech Clean Air Act (CAA).... Progress switching from coal to gas and the pace of district heating improvements would have been much slower, if at all, without the CAA.... EAPS effectiveness would have been seriously compromised had it preceded CAA enactment and enforcement.”
2. *Domestic Environment Funds can be vital finance sources for municipal projects in transition countries.* “Notwithstanding the increased participation of other sources of project financing through loan guarantees and interest rate subsidies to commercial banks, Environment Funds are still needed because they play the additional role of being a policy instrument to implement projects that take into account environmental and social priorities.”
3. *Environmental investment evaluation and packaging can be an effective tool, but not under all conditions.* The report argues that assistance in preparing and packaging environmental projects is not particularly effective when municipalities already have the needed expertise; when the Environment Fund approval process is corrupt, so that the quality of an application

has little bearing on its chances of approval; and if employees of the municipality do not receive sufficient hands-on experience to enhance their project preparation skills. Hence, it is not a foregone conclusion that a program of assistance in preparing and packaging environmental projects will be effective in every country. Before launching such a program, the situation in a particular country should be assessed carefully, and if a program is warranted, it should be designed and targeted with great care.

4. *Replication at the municipal level can work, but it requires an up-front strategy that takes into account the local context.* “Unless an explicit replication strategy is planned in advance, and implemented, the likelihood of ‘spread’ to other entities will remain quite low. Two approaches to replication are: (a) to develop high-quality assistance products such as manuals on how to prepare loan applications ... specific templates for different kinds of projects, i.e., coal-to-gas conversion of boilers, district heating, wastewater, etc., for distribution beyond the target municipalities, and (b) to target groups of municipalities such as municipal associations who can spread the word.”
5. *For Environment Funds to have the greatest societal impact, it is important to emphasize their dual purpose of providing financing and subsidizing socially desirable environmental investments.* “Technical assistance often focuses on the financing aspects of an Environment Fund, such as credit policies, risk diversification, financial analysis, and operating procedures.... However, Environment Funds are also a means of subsidizing socially desirable environmental investments. Since many of the benefits of mitigating environmental damage or managing resources properly do not accrue to those that incur the costs, the rate of return on these activities is often below that which is needed in a market economy, and as a result less investment is undertaken [through the market] than is socially desirable.... Strengthening an Environment Fund’s policy and operations in this role should be part of a technical assistance program.” In many cases, environmental investments that reduce risks to human health will not be made without the help of an Environment Fund. Financing such investments is an important function of Environment Funds.
6. *USAID obtains more reduction in air pollution per assistance dollar spent when its resources are invested in strengthening Environment Funds as compared to providing technical assistance in project preparation.* “EAPS-assisted projects that received funding reduced pollution much less than what the Czech Environment Fund accomplished by following EAPS policy recommendations.... EAPS assistance to the Czech Environment Fund increased the overall investment in environmental projects by reducing the Fund’s grant allocations.... This resulted in approximately \$24 million additional in environmental investments.”

We could argue that this observation in the CDIE report does not go quite far enough, because the higher level of environmental investment made possible as a result of EAPS technical assistance to the Czech Environment Fund continues to compound and leverage more capital from other sources year after year. On the other hand, even though its immediate environmental payoffs are comparatively fewer than those of the other EAPS technical assistance track, a program of direct assistance in project preparation is essential. Working with project proponents to help them prepare projects for financing builds a base of

competent borrowers for environmental investments and provides information that can be used to strengthen technical assistance to the lender – all in addition to directly reducing environmental health risks sooner rather than later, and hastening the creation of a sustainable base for economic expansion.

SECTION VI

Financial Data

A. Funding Outlays by Country

Country	Funds Obligated
Bulgaria	\$1,200,000
Czech Republic	\$1,300,000
Lithuania	\$815,000
Macedonia	\$3,700,000
Poland	\$2,749,000
Romania	\$4,390,000
Russia	\$450,000
Slovakia	\$1,150,000
Regional	\$1,207,000
Total	\$16,961,000

B. Expenditures by Year

Year	Expenditure
1995	\$1,643,320
1996	\$3,923,893
1997	\$3,063,389
1998	\$2,291,489
1999	\$2,272,352
2000	\$2,747,751
2001	\$1,018,806
Total	\$16,961,000

C. Expenditures by Line Item

Cost Element	Totals
Salaries/ Wages	\$3,805,616
Fringe Benefits	\$1,029,413
Overhead	\$2,733,323
Travel/Transportation	\$932,261
Allowances	\$359,159
Other Direct Costs	\$1,701,204
Subcontracts	\$5,114,545
G&A	\$437,429
Total Estimated Cost	\$16,112,950
Fixed Fee	\$848,050
Total Cost Plus Fee	\$16,961,000