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ENVIRONMENTAL TRAINING PROJECT

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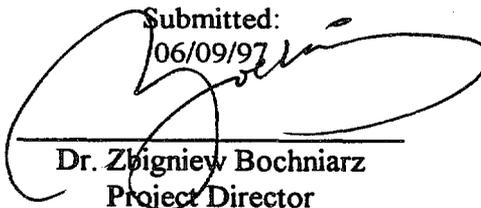
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I. Executive Summary

According to the Collaborative Agreement with the United States Agency for International Development (USAID), the Environmental Training Project (ETP) Year Five was supposed to be the last year of this project. Due to the changes in the Strategic Objective of the USAID and a good ETP performance, this program is continuing with new funding in Poland and Slovakia. In the other Central and East European Countries (CEEC), ETP trainings were financially supported either from carefully collected savings and matching funds in Bulgaria and Hungary (until June 30) and in Romania (at least until September 30). In Czech Republic, where the AID funding expired after three years, the ETP mission is continuing through fundraising efforts of the Center of Environmental Analysis (CEA). Despite the earlier than anticipated truncation of AID funding in Bulgaria, Czech Republic, Hungary and Romania (there was no new AID funding for Year Five), ETP delivered 73 trainings, a record high number. The number of participants was also a record; 3,130 persons (at least 1,400 women) to be exact. The Project is approaching the level of 10,000 participants, as originally planned in the proposal.

Year Five was the final year of sustainability building and strengthening in most of the CEEC, particularly in Bulgaria, Hungary and Poland. The institutions established as successors, such as ETP Foundation-Bulgaria and the Center for Environmental Studies, proved their maturity during the last year, raised new funds and diversified their funding portfolio of foreign (American and European) and domestic donors. In Poland, a new institution was established last December -- ETP-Foundation-Poland. A new similar institution is on the verge of being established in Romania -- ETP Foundation-Romania. The ETP-Foundation-Slovakia and its Czech partner--CEA -- increased their national and international visibility by undertaking several innovative and cross-border projects. All together, these organizations matched ETP funds of over \$238,000 during the past year.

Another indicator of sustainability is maintaining the core of about 250 local trainers and facilitators, who designed and delivered over 75% of trainings last year. Those trainers are equipped with more than one hundred manuals and textbooks, which are often written jointly with American instructors and translated into local languages.

The sustainability of the ETP educational capacities was not a final goal but a major foundation for environmentally friendly restructuring of CEE economies. We are very proud to report that Year Five brought a record high pro-ecological investment inspired and facilitated by ETP graduates -- almost \$190 million in only three CEEC (Bulgaria, Poland and Romania). This investment should also be magnified by another investment facilitated by ETP graduate, Wojciech Napierala, who was instrumental in not only bringing the initial GM investment of \$50-70 million to Gliwice, but he also encouraged GM in developing plans for an additional investment of up to \$300 million by the end of 1998. Although the GM investment is not purely pro-ecological, it is, however, a project that brought new economic vitality to this economically and environmentally depressed region and also provided an opportunity for the GM-Poland leadership to demonstrate that they are environmentally sensitive and are listening to suggestions of environmental

NGOs and local governments (The GM management changed the preliminary allocation of the investment after critical assessments by NGOs and LG).

Year Five marked another big step in shifting ETP activities toward the local governments (LG) and democracy. This was due to the request of Polish and Slovak AID missions. It is worth mentioning that Year Five capitalized all previous ETP investments in local governments, which in Poland produced \$110 million of pro-ecological investments over the past years of 1995-1996. In this way, ETP became the most impactful training provider for local governments.

The past year was also successful for the Academia. The ETP facilitated establishing the fifth Post-Diploma Studies in Environmentally Friendly Restructuring of Heavy Industry at the Technical University in Cluj-Napoca (TUCN), Romania. By the end of Year Five, the first PDS offerings in Bulgaria, Hungary and Slovakia, and the second offering in Poland graduated 75 CEE industrial managers.

The PDS participants (110) prepared 108 practical-oriented dissertations (two or three were joint dissertations) concerning the following aspects of a company's environmental performance:

- 55 analyses, evaluations and company restructuring programs, including:
 - 22 restructuring programs,
 - 21 restructuring program analyses and evaluations,
 - 5 restructuring management systems and privatization,
 - 7 marketing restructuring programs or plans,
- 24 environmental audits and protection plans,
- 21 environmental impact assessments,
- 8 environmental audits,
- 8 strategic plans,
- 6 business plans,
- 4 energy audits and modernization plans for conservation,
- 3 analyses and programs for regional development or municipality,
- 1 environmental management systems,
- 1 logistic plan,
- 2 assessments of PDS's effectiveness.

During PDS, several projects were undertaken to reduce natural resources consumption and the volume of pollution emission. We believe that these are the best examples of changes behavior of business leaders.

- the *amount of hazardous waste* has decreased at 6 organizations;
- *more effective technologies* have been introduced at 6 organizations;
- the *use of hazardous materials* has decreased at 7 organizations;
- *noise emission* will be decreased at 4 companies;
- the *protection of the living environment* (flora/fauna) has been improved at 3 organizations;
- the *use of industrial water* has decreased at 8 companies;

- the *emission of waste water* has decreased at 5 firms;
 - the *consumption of energy* has decreased at 11 firms;
 - the *production of solid waste materials* has dropped in 13 companies;
 - the *abatement of dust emissions* was achieved in 7 companies;
- gas emissions* have been reduced in 7 companies.

The management of the project was further decentralized, and the Minnesota coordination and staff was reduced; the position of deputy director was abolished. Minnesota began working more as a "Resource Center" than a Management Center. In-Country Coordinators (ICCs) further increased their managerial and financial independence. This report is also written in a decentralized way -- all country parts are prepared by ICCs and combined and edited by Center for Nations in Transition staff at the UMN.

ETP continued collaboration with the AID sponsored peer projects such as LEM, HIID, WEC and NEAP in CEEC.

II. Project Activities and Impacts

The Environmental Training Project (ETP) is funded as a cooperative agreement between ENI/EEUD/DNR at the U.S. Agency for International Development (AID) and a consortium led by the Hubert H. Humphrey Institute for Public Affairs at the University of Minnesota. The initial target region for ETP were all countries in what was defined in 1992 as Central and Eastern Europe (CEE): Bulgaria, the Czech and Slovak Republics, Hungary, Poland, and Romania. In response to AID's evolving strategic priorities, ETP training activities were phased out in the Czech Republic after February, 1995 and have been in the process of phasing out in Bulgaria and Hungary since February, 1996.

ETP was designed by USAID as a response to the environmental and economic problems in Central and Eastern Europe (CEE). The Project includes four components, which, working in conjunction, have the best possibility of resulting in sustainable, intersectoral environmental and economic stability. This in turn can lead to political stability.

As a *training project* ETP has as a fundamental goal the changing of peoples behaviors and, by extension, changing the organizations, institutions and communities in which they live and work. Most of this annual report focuses on the inputs and outputs of ETP training activities; in this section we would like to highlight what we refer to as the *impacts* of these activities. While these impacts may not wholly describe changes in human or institutional activity, they serve as indicators of the impact ETP training has had and the promise of change or engagement in new behavior as a result. There is no way of fully knowing the extent of the impacts ETP trainings have had in Central and Eastern Europe for years to come. But we are confident that the indicators presented in this section reflect the promise of much greater and diverse impacts yet to be documented.

Following are descriptions of each of the four components and summaries of notable impacts within each component and each country in Year Five of the ETP. Prepared by each country's in-country coordinator, the list of impacts varies from country to country due to different funding levels as well as differing conditions for implementation.

A. Environmental Business Management and Administration

1. Component Overview

This component builds the environmental skills of business and industry and the management and marketing skills of environmental specialists. Training in this component embodies several principles. First, managers of existing enterprises need better training in environmental management--how to evaluate their facilities' environmental problems and how to evaluate economic impacts and relative cost effectiveness of alternative pollution control investments. Such training is based on concepts of pollution prevention, efficient use of energy and other inputs, auditing and other methods of analysis and accountability. Second, financial, marketing and other management training is conducted so that the existing pool of well-educated and technically knowledgeable individuals in Central and Eastern Europe may better market its skills as a home-grown environmental service industry. The long-term objective is to supplant regional reliance on expensive, locally inexperienced foreign consultants with greater reliance on local talent. The substantive progression of training courses includes both using material of greater complexity and expanding the share of program development and delivery for which local trainers are responsible. Third, the production sector, as well as government, is learning about concepts of environmental impact assessment for analysis of prospective new activities. Fourth, selection of trainees from the private sector avoids duplication of training that US companies can or ought to pay for themselves.

Throughout ETP training, we foster active learning via site-specific case studies and interdisciplinary approaches to the material. In trainings, we model the kinds of attitudes and behaviors that foster initiative, collaboration and healthy competition, problem-solving and informed debate. We also incorporate use of simulations and collaborative teams working on case studies in interactive learning environments.

One of the consistently positive comments from participants in all our training is that they learned a "new way of thinking" which helped to empower them and helped build their confidence. Moreover, this new way of thinking has given them a better understanding of problem-solving and systematic approaches for communicating about problems and opportunities and requesting funding to solve problems. Strategic planning, financial decision-making, cost-benefit analysis, market analysis and other process skills related to economic restructuring all contribute to the skills base and are outgrowths of this "new way of thinking."

2. Impacts of the Business Component in Year Five

BULGARIA

Post-Diploma Studies at Varna Economics University

The goal of American-Bulgarian Post Diploma Studies is to improve the managerial skills and the environmental awareness of the management teams from the key industries of the Varna region. The participants in PDS had an opportunity to become familiar with the experience of the American and Bulgarian specialists and to exchange ideas with representatives of other companies. This has created a strong basis for environmentally friendly restructuring of the businesses in the Varna region.

The PDS graduates from Bulgaria reported the following impacts from their businesses:

- Sugar factory in Gorna Oryahovitsa - \$2 million interest-free credit received for waste water treatment plant.
- Two leather factories in the Yantra River Basin will receive a total of \$2 million grants from the government of Denmark for reconstruction of the tanneries on an environmentally-friendly basis.
- PRIMA Company in Poliski Trambesh which produces vegetable oil, received \$500,000 interest-free credit by the National Fund for Environmental Protection (NFEP) to build an industrial waste water treatment plant.
- several companies recorded an increase in profits, several a decline in losses and several a stabilization of profits or losses;
- sales figures increased in several companies as a result of product quality improvements and increased competitive advantages;
- several PDS students proposed establishing new departments such as environment, logistics and marketing.
-

The program also reported the following quantitative output:

- 19 theses were prepared concerning important aspects of the companies' environmental performance;
- 19 analyses and evaluations were presented;
- 12 environmental projects and programs were presented
- 1 strategic plan, 4 business plans and 2 marketing plans were developed;
- 17 environmental audits were conducted;
- 15 environmental impact assessments were completed;
- 5 environmental projects were undertaken;

PDS aroused the students' interest in increasing their own qualifications as well as the qualifications of their personnel. Some of the managers decided to reserve places in PDS for other representatives of the company in future courses.

Other business impacts

The publication of the Eco Business Catalogue created opportunities for the environmental business sector to advertise their activities in Bulgaria and abroad and to strengthen their position on the market. Many companies are invited to participate in domestic and international exhibitions and other events.

The ETP Foundation (Sustainable Development Projects) was invited to participate in a national environmental business exhibition from June 3 - 7, 1997 as recognition for ETP's contribution to the development of the environmental business sector in Bulgaria, and in order to use this forum for advertising its activities.

After five years of ETP trainings delivered to the business sector in Bulgaria we are proud to say that the results are very encouraging. Many companies have realized the importance of developing and implementing environmental strategies, business and marketing plans. ETP has attracted the attention of several national and international funds and investors. This is especially valid for the companies located in the Yantra River Basin, where extensive ETP trainings were conducted.

HUNGARY

Post-Diploma Studies at Miskolc University

The PDS program at Miskolc University was organized for the business sector in Hungary in Year Five and targeted top and medium level managers of the sector.

Direct technical and environmental impacts reported by the participants:

- the amount of hazardous waste has been decreased at 6 organizations (air, earth, water); more effective technologies have been introduced at 6 organizations;
- the use of hazardous materials has been decreased at 7 organizations;
- noise emission will be decreased at 4 companies;
- the protection of the living environment (flora/fauna) has been improved at 3 organizations;
- the use of industrial water has been decreased at 3 companies;
- the emission of polluted water has been decreased at 2 companies;
- the energy consumption has been decreased at 4 companies.

Economic impacts have also been recorded:

- due to more effective technologies being introduced, cost-reduction has been recorded in 6 organizations;
- one company reported decreasing logistics costs;
- regular economic inspections are expected to result in further cost-reductions;
- quality improvement was recorded at all organizations;
- one of the companies received ISO certification.

Institutional changes emerging from the PDS course included:

- ISO certification of the electricity supplying company, (ÉMÁSZ);
- formalized customer service was initiated at the same company;
- environmental training will be given to ÉMÁSZ employees;
- A strategic restructuring plan has been developed for the town of Kazincbarcika as the diploma work of one of the PDS participants. In the recent past there were some environmental scandals in this much polluted, formerly "socialist town" that drew the attention of the whole country. The thesis analyzed the present environmental situation of the town, the emission factors and the ways of eliminating these problems. It resulted in a plan to reduce emissions in the fields of industry, transport and communal waste.

Other business impacts

ETP Hungary facilitated the participation of two Hungarian experts in the international Life Cycle Analysis (LCA) training organized in Decin, Czech Republic in November 1996. The principal objective of the training was to suggest ways to promote the development and improvement of LCA applications in the CEE countries. One of the Hungarian participants was invited to participate in the development of the project proposal in London, in January 1997.

The ETP Eco-Business Club, after a series of successful meetings in 1995 and 1996, has gained financial and organizational independence. It continues to operate as a civic association. It has a bank account and is successfully raising money to fund on-going activities. The Club serves as a forum for information and networking of primarily Borsod county environmental businesses, governmental organizations, academia and NGOs. No ETP funding occurred after June 1996.

POLAND

Post-Diploma Studies at Silesian Technical University

Participants in ETP courses as well as PDS students are very active in implementing the latest environmentally friendly technology in their factories or businesses. Our participants, additionally, have been very active in the privatization and restructuring process. In this report we mention only the most important impacts, but other impacts run very deeply as well. Many of these impacts are measurable in millions of US dollars (e.g. capital investments).

The Copper Mining and Metallurgy Complex is one of the largest producers of copper in the world (400,000 metric ton per year). Participation in the ETP project by five employees has resulted in the following impacts for this company:

- restructuring plan for the company, based upon participation of foreign and Polish investors;
- preparation to enter into exchange stocks in Warsaw and London;
- total value of ecological investments is about \$85 million;
- all five participants are members of the top management of the company, and their theses were directly connected with restructuring and ecological investments in the company. The thesis prepared by the Director of Legnica Copper was distinguished.

An ETP participant from The Mining Metallurgical Plant "Boleslaw" was able to accomplish the following results:

- a plan to restructure the company will be implemented in the first half of 1997;
- a plan for modernization of the company will be implemented by the end of 1997 and was an integral part of the PDS thesis;
- the company's participant was promoted to Deputy of Management for Technological Modernization;

- the total value of ecological investments in 1996 was \$5 million -- all planned environmental investments will be finished before the end of 1997; and
- the plant took part in World Environmental Center Waste Minimization project in 1996 (benefits about \$250,000).

Three participants from the Non-Ferrous Metals Plant "Szopienice" -- all of them in the top tier of management -- were able to accomplish the following results:

- a plan of organizational and technological changes in the company that will be a component of the general director's thesis;
- a restructuring plan for the company that will be implemented in 1997;
- environmental-friendly and energy saving investments totaling \$10 million; and
- the plant has taken part in the WEC Impact Waste Minimization Project.

Participants from the metallurgical plant, "Silesia" accomplished the following impacts:

- a plan for capital privatization of the plant with a strategic in-country investor -- the first stage of the plan was implemented by first half of 1996, the second half was finished in March 1997;
- the plan that was developed for restructuring the company includes the creation of several small firms that will cooperate very closely with the main plant;
- final PDS theses prepared by members of top management of the company were put to practical use, and one of them will play a very important role in the future because it was connected with recycling used batteries;
- total value of the ecological investments is \$1 million; and
- the plant participated in Waste Minimization Pilot Project (benefits per year \$90,000).

The metallurgical plant "Bedzin" reported the following impacts resulting from participation in ETP:

- a plan for restructuring that is being implemented in the first half of 1997;
- ecological investments totaling \$2 million; and
- the PDS thesis of the general director dealt with the modernization of water and sewage treatment and is being put into practice.

The two participants from the rolling mill "Dziedzice" both wrote PDS theses whose results will be put into practice. They also achieved:

- a restructuring plan that will be implemented in 1997; and
- total value of ecological investments estimated at \$1.5 million.

The ferroalloys plant "Laziska" has sent top managers to participate in PDS since its beginning (PDS1). They report the following achievements:

- became the first producer of ferroalloys in Poland;
- a plan for restructuring the plant;
- total value of ecological and energy saving investments estimated at \$2 million.

The plant, "Wtórnet" is the only Polish plant that deals with secondary non-ferrous metals processing. This is very important from an ecological point-of-view. They reported the following impacts:

- a plan for restructuring the company that promises the establishment of a new company based upon the Oswiecim department;
- preparation of ideas for "Program for Waste Minimization in Poland" which was a part of one participant's final thesis and was distinguished by the board; and
- ecological investments in Oswiecim (value \$17,000).

Two participants from the metallurgical equipment plant, Kety, accomplished the following results:

- a plan for restructuring the company that will be completed by the end of 1997;
- invention of new measuring equipment that won prizes at the International Fairs, POLEKO and INTEREKO;
- a total value of ecological investments of about \$1 million.

The participant from the power conductor plant, "Bedzin" completed:

- a restructuring plan for the plant that will be the basis for privatization in the near future;
- a final thesis that was fully implemented for a total investment value of about \$18,000 and annual savings of about \$50,000.

The Silesian Cable Factory reported the following as a result of its participation in PDS:

- a restructuring plan for the factory that takes includes the participation of a strategic investor;
- ecological investments totaling about \$7.5 million; and
- the new technology described in the PDS thesis prepared by the participant will be purchased by the end of 1997.

Metalodlew Foundry Company's general director participated in PDS1. They sent another top manager for participation in PDS2. They have accomplished the following impacts:

- preparation of a marketing plan for the company for 1997-2000;
- the final thesis of the most recent participant is scheduled for implementation in the second half of 1997;
- environmentally friendly investments of about \$200,000; and
- participation in the WEC Impact Waste Minimization Project that could bring concrete economic and ecological benefits in the second half of 1997.

The technical equipment plant GZUT in Gliwice had one manager participate in PDS2 with the following results:

- a restructuring plan developed in the PDS thesis has been implemented;
- a total value of investments in 1996 and 1997 of about \$1 million; and
- preparation of a plan for waste management in the plant.

The participant from the metallurgical plant "Huta Czestochowa" reported that:

- due to environmental investments over the past two years, the company fulfills ISO 14000 requirements and is in the process of certification.

As a result of environmental investments in new technologies that have been implemented in thirteen participating companies, there has been a distinct reduction in almost all environmental pollution factors. It is especially important that these results are not connected with a decrease in total production, but rather with the implementation of pollution prevention practices and the application of modern technologies.

As a result of the of PDS2 as well as ETP training courses for business sector:

- restructuring plans for all 13 companies participating in the PDS were prepared and almost all of them will be completed in 1997;
- one company will enter the Polish and English stock exchange this year;
- the total value of the environmentally-friendly and energy saving investment exceeds \$310 million -- a portion of these investments were completed last year (1996) and the remainder will be completed by the end of 1997;
- all PDS theses were closely connected with the participants' own companies and the average quality-level is very high. Three of them have earned the honor being ranked "distinguished";
- two companies participated in the WEC Waste Minimization Project that ended in 1996 -- total benefits were \$300,000;
- two other companies have been taking part in the WEC Impact Waste Minimization Project that will be completed by July 1997;
- the distinct reduction of dust, NO_x, SO_x, solid waste materials as well as water and energy savings has been observed in all companies. This is not been characteristically connected to a decrease in total production;
- About 20 companies are prepared for ISO 9000 certification; and
- 12 industrial plants will apply for ISO 14000 certificates.

ROMANIA

There were no specific training activities for the business component carried out by ETP in Romania in Year Five. However, the newly initiated PDS program is addressed to the business sector. This PDS program is discussed in more detail under the "University Strengthening" impacts. Its business impacts will be more evaluable after the completion of the first offering next fall.

With follow-up money, we supported a group of five Romanian specialists to participate at the (LCA) Life Cycle Assessment ETP-International workshop held in Czech Republic. This training also targeted impacts for the business component regarding approaches to implementing this concept in industrial production. As a result of the LCA training, a core group of people was identified and organized in a (local and also regional) task force that will strive to put LCA principles into practice in Romania. The Romanian core group designed a five phase action program to this end, having in view the needed legislative

frame-work, the implementation methodology, the accreditation process, the stakeholders training and pilot projects development, case-studies dissemination and the practical institutionalization. These steps will address ISO 14,000 (14,009 and 14,011) assimilation, environmental auditing, liability, inventory and compliance schedule, eco-labeling and environmentally friendly restructuring -- all training topics that ETP-Romania intends to address in the next year.

It is evident that based on previous trainings conducted by ETP in Romania for environmental private businesses, the participating firms have gained a more concrete definition of their existence and role. Their organizational, managerial and marketing skills have been improved. As a result, these firms are better represented now on the market. They have begun to have a presence in bids for contracts (both run by the state or other firms); and some joint-ventures (both with Romanian and foreign partners) were initiated. Under the ETP-created Association of the Environmental Private Business Firms in Romania (AFPM), some participated in one, two or three of the Eco-fairs organized in country this year. One of these firms even initiated an exhibition on their own.

The businesses that have participated in ETP Romania's trainings have in general oriented their activities in a more focused manner -- either through better, more efficient structure, or by targeting a certain market demand more systematically.

Another good result is that the linkage between these firms and the academic sector has now been initiated. Business firms appeal to research teams to assist their development. They apply research results in their work, take advantage of innovations, invest in students' preparation in the areas of environmental goods and services and initiate and inspire more up-to-date teaching topics in the university curricula. At the same time they are taking steps to develop their own research and are creating think-tank teams. They also transferred knowledge and experience from our courses and from their own practical experience into new working attitudes, new skills and new thinking concepts.

Additionally, new kinds of jobs were created by these firms. The majority of our trained business people applied for accreditation in EIA (environmental impact assessment) studies. Of the 36 organizations accepted by the Ministry, 16 represent ETP participants (44.44 %).

This year we also up-dated our Romanian Environmental Business Directory that now represents 312 organizations.

SLOVAKIA

Post-Diploma Studies at the Technical University of Kosice

Through the Post Diploma Study program in Environmentally Friendly Restructuring of Heavy Industry, managers in the industrial business community are gaining skills and

exposure to management and organizational techniques, learning new professional and training skills and obtaining more experience with monitoring and evaluating work and making assessments. The high demand for the second year of the program reflects the quality and need for this type of continuing education. The formation of an Alumni Club by the first year graduates shows the commitment to increasing contacts, monitoring implementation of knowledge, organizing seminars, workshops, conferences and excursions, and finding new contacts in Slovakia and abroad. A further analysis of the impacts of this program can be found under the "University Strengthening" section.

B. Public Participation and Outreach

1. Component Overview

Public participation in environmental issues drives the regulatory process that spurs environmental improvements by the private sector. Our training efforts in this component foster public participation in environmental decision-making to support this goal. This training focuses on workshops on negotiation and conflict resolution, NGO financing, policy analysis, leadership training, conducting public awareness campaigns and promotion of freedom of access to government information. The goal of this training is to provide NGOs and other organizations with strategic management skills and experience to restructure their nation's political, economic and social institutions in an environmentally sustainable way based on principles of democratic decision-making.

2. Impacts of Public Participation and Outreach Component in Year Five

BULGARIA

ETP Foundation delivered a series of trainings for the Environmental Youth Clubs in the Yantra River Basin in support of the public participation of the young generation in the sustainable development of their communities. A special workshop was organized for them to encourage participation in the Veliko Turnovo municipal solid waste management program. More than 80 students and teachers took part in the training activities. A follow-up to this activity was the Teachers' Workshop on Solid Waste Management Resource Guide, co-organized by the ETP Foundation and the municipality of Veliko Turnovo.

A special workshop was conducted by ISC trainers for the Yantra River Basin Council, "Working Together More Effectively," which helped improve the skills of the council members to conduct meetings, negotiations, resolve conflicts and improve decision-making process. The participants got easily involved in the training process, realizing its importance for their future participation in the council's activities.

HUNGARY

There were four training activities organized for NGOs in Year Five in Hungary. The workshops were focused on legal management, financial management, conflict resolution and implementation of an environmental action plan.

As a result of the Non-Profit Legal Management training, an intensive cooperation was initiated between the Environmental Law and Management Association (EMLA) and the environmental organizations participating in the training. EMLA is willing to represent these organizations should they be faced with legal issues.

An important product of the Non-Profit Financial Management training was an accounting software developed for NGOs. The first version of the software was presented at the training and was further developed and improved on the basis of participants' observations. The final version was prepared in December 1996 and is in demand not only by participating organizations, but by outside non-profit organizations as well.

The half day self-training meetings of ÖKOTÁRS Facilitators' Group contributed to the sustenance of their work enabling a continuous evaluation of their activity. These meetings proved to be so important and useful that they are continuing without ETP funding.

As a result of the self-training meetings, the members of the group have become more experienced and are able to deliver some individual training modules and even entire training activities. Previously, the capacity of the group was considerably less. While in 1995 they performed 11 training activities, in 1996 this number doubled.

The major impact of the "Implementing a Community Environmental Action Plan" workshop, organized in Debrecen in November 1996, was that working groups have been organized for the protection of the natural, architectural and esthetic values of the town. A positive turn occurred in the cooperation of the local government and non-governmental organizations. The mayor of Debrecen and representatives of NGOs agreed to have further discussions on the environmental problems of the town after the NGOs submitted their remarks and proposals regarding the on-going environmental projects and the cooperation possibilities with the local government.

One of the participants of the public relations (PR) training held in Szõdliget in November 1996, an NGO representative and member of Junior Chamber Vác, organized a successful press conference in Budapest. The conference was held on the occasion that György Bíró, the Head of Environmental Department of the City Hall of Vác was awarded with the world champion prize in the category of environmental protection of the International Youth Chamber's "Ten Outstanding Youth" program.

POLAND

In ETP Year Five PIP for Poland, only two activities focused exclusively on NGOs: "Strengthening of NGO Network" and "Tested Food for Upper Silesia." Apart from this, representatives of NGOs took part in other trainings. For instance several NGO representatives took part in "Advertising and Public Relations" (4 persons), "Quality Management and Behavioral Styles"(4 persons) and "Management of Environmental Investments" (2 persons).

The most important impacts of this activities are:

- development and widening of the project: "Environmental Health and Tested Food for Silesia" by securing long term financing for further activities; securing finances for long term chemical testing of organic products available in the market; developing a demand for certified organic products and sustaining private and municipal support for the program in four municipalities;
- maintaining a network of environmental NGOs working in industrial areas;
- awakening environmental awareness by spreading independent information dealing with actual environmental issues. This includes editing the independent publication *Monthly Environmental Bulletin* (1000 copies). The Bulletin is widely distributed to Polish Parliament, governmental institutions, universities, municipalities, NGOs, schools and general citizens;
- organizing monthly "Open Environmental Meetings" for Silesian citizens and institutions;
- current contacts with media; and
- strengthening particular organizations by providing successful projects (PEC Gliwice, Information Center for Air Protection Katowice).

ROMANIA

This year ETP-Romania paid special attention to this objective as we worked on aspects of democracy and strengthening democratic processes. The courses were comprised of strategic planning fundamentals, advanced skills in public participation and involvement, accountability of governmental institutions to citizens, leadership, environmental action plans, public awareness and civic education, governmental and civic rights and responsibilities in democratic societies. These topics were addressed to representatives of all our (four) components, plus media from all our targeted regions.

We assisted the City Hall of Pitesti municipality (at the special request of the Mayor) to develop a proper public participation plan and to develop more effective communication. This was done with the goal of better meeting the needs of the local community and better responding to the new legislative demands on city hall.

Essential concepts of strategic planning for environmental management and practical ways of getting public involvement in designing and implementing environmental projects were introduced to participants from two communities facing very heavy pollution problems.

The communities were also presented with different approaches to leadership and various leadership roles in the process of planning and implementing projects. Some of the concrete project ideas developed during the training sessions were put into practice. As a result, the seeds for future of NGOs emerged. Public outreach procedures were also presented to the communities. Several materials (brochures, newsletters, leaflets, posters, slogans, even songs and poems) on pollution threat and environmental ideals were produced. Local media came in with impressive coverage of the events and the outcomes. The press even offered some donations to these new NGOs in an effort to help their work. Donations included a computer monitor, free printing of awareness or advertising materials, and publicity. They have also joined efforts in public campaigns and data collection.

The media has been actively engaged in the Arges district as well where a local private television station established a special channel on environmental issues. This took place due to the initiative of an ETP-Romania business training participant. The media has also donated their time with children in schools and NGO members role-playing as "reporters."

ETP-Romania as has been nominated for an award in recognition of our contributions to the NGO sector and to civic society development. The prize will be awarded this spring by Euro-Media International.

SLOVAKIA

This component is one of ETP Slovakia's strongest foci because there is great need to increase public participation and civil initiatives. One of the most successful projects has been Environmental Monitoring of Hornad River, accomplished through a subgrant to the SOSNA Foundation. This was a year-long project of public monitoring of water quality in Hornad. It was completed by a workshop held in December 1996 that was attended by 30 participants from NGOs, the state environmental agency, waste water inspectorate, Hornad River Basin Authority, Water and Sewage company and local self-governments. This project included the publication of a Manual for GIS Use and Monitoring Results and an exhibit open to the public that received so much interest it was prolonged for two weeks with over 3,500 visitors. The comments in the guestbook reflected the increase of public awareness and interest in this subject. The compilation of a Project Team from all areas of interest is a major reflection of the new importance that monitoring has been given in the area. This team will develop and submit a proposal for a new project to the State Environmental Fund.

A second very successful project was the training workshop on Public Participation for Improvement of Municipal Waste Disposal held in October 1996 in Bardejovske Kupele. Participants included officials from local self-government, state environmental inspectorate, municipal waste companies and media. They were presented with and trained in tools of public outreach on municipal waste issues. The second half of the three day workshop was devoted to discussions on the strategy for municipal waste in Kosice and identifying specific activities to improve municipal waste management in Kosice. As a

result of the activity a manual on "How to Deal with Communal Waste" was published and distributed to the public. A list of recommendations from the workshop was sent to the Mayor of Kosice, along with a list of concrete activities that can contribute to improving the waste disposal situation. A TV show broadcast weekly, "Waste and We" was created. Other media coverage on waste management was increased. The participants have formed a group to meet quarterly and continue efforts in this area.

Public relations is an area that many NGOs are still not aware of, but is essential for increased effectiveness and public awareness and support. A workshop held in December 1996 addressed these issues, and produced concrete results including a Manual on Public Relations for NGOs. The participants have since managed to increase the number of press conferences and articles published on relevant environmental topics. The subgrantee Greenpen Foundation has become a contact for NGOs in the area of public relations, available for consultation.

C. University Strengthening and Institutional Capacity Building

1. Component Overview

Training presented in this component is designed to enhance ways in which societies in Central and Eastern Europe use university resources and capabilities in the field of environmental protection. The issue we are addressing may be framed this way: "How can teaching, research and information dissemination capabilities of universities in the region be directed to solving environmental problems?" This approach focuses not only on strengthening traditional academic functions through creation of better curricula and stronger libraries, but also on designing new university-based institutions. This includes development of university outreach in the form of an environmental extension service and establishment of technical assistance arms to serve government, industry and the public with training, technical services and applied research. In substantive terms, this approach gives participating institutions in Central and Eastern Europe access to the most promising new elements in environmental management. As the focus of policy shifts from regulation and enforcement to facilitation of compliance, from "end-of-pipe" control to process-based pollution prevention, new institutional approaches of a distinctly multi-sectoral nature are required to achieve policy objectives. As such, our effort is linked to efforts in other Components as industry's and government's roles are clarified and strengthened.

Through our collaboration with our CEE university partners, we understand that environmental and resource management are the weakest curricular areas in Central and Eastern European universities because of the long emphasis on production-oriented, centrally planned economics. As a result, we are supporting programs for faculty and curricular development in two major areas: (1) environmental resource management and policy and (2) environmental and natural resource economics.

Ph.D. Fellows Program

Ph.D. students in CEE countries play a vital role as change agents in their countries. To support this investment in human potential, the Environmental Training Project (ETP) developed a pre-doctoral fellowship program with the goal of helping Ph.D. candidates with an environmental focus to make progress on their Ph.D. theses. The program provided access to current courses and publications in environmental management and environmental economics -- the kind of information not widely available in CEE institutions that have just started incorporating market-based principles into environmental education. This program took place over the 1994-95 academic year. We recently completed a survey of these Ph.D. fellows to see how they are doing now and what are the lasting impacts of their time in Minnesota.

One of the Polish Ph.D. fellows, Krzysztof Przybylowski, has successfully completed his thesis and defended it publicly making him the first of the fellows to earn his Ph.D.

Many of the fellows have reported a change in the way they think. In many cases this was manifested in a broadening of focus from a more technical interest to one that encompasses social and policy aspects. Following are some of the changes they reported:

- "...my studies with ETP gave me a different, more global perspective on environmental problems." -- Gyula Zilahy, Hungary
- "The direction of my academic studies has taken a more important policy dimension." -- Niculai Valerian-Marocico, Romania
- "I have shifted my focus from pure technical problems to ones that integrate social, economic and legal aspects..." -- Cristina Ionescu, Romania

Fellows described a wide variety of important benefits of the program including understanding capitalism and market mechanisms, gaining a democratic policy perspective on natural resources and environmental management and pollution prevention.

These leaders' plans for the coming year include:

- establishment of an NGO acting in the field of energy (Marek Zaborowski, Poland);
- completion of Ph.D. dissertations (Niculai Valerian-Marocico and Cristina Ionescu, Romania; Gyula Zilahy, Hungary);
- work on publishing a marketing textbook (Krzysztof Przybylowski, Poland);
- continue research at the Department of Environmental Economics and Technology and teach environmental economics (Arpad Baranyi, Hungary);
- complete the workload of class and exams and gradually devote more time to research (Tomas Hak, Czech Republic);
- continue working for a small company operating in the field of environmental management (Martin Malovesky, Slovakia).

The ETP Ph.D. fellows already have many accomplishments to report. Jindrich Tichy who passed away in 1995 continues to impact the region through his work. A paper that he

wrote was recently published in *Environmental Pollution*. This paper is included as Appendix F to this report.

Other achievements include:

- completion of Ph.D.
- creation and management of a nationwide energy program with the goal of decreasing pollution by energy conservation;
- organized a media campaign;
- representative of NGOs in Polish Efficient Lighting Project;
- coordinator of SCORE energy efficiency program;
- organized conference;
- several publications;
- successful funding proposals;
- employment as national expert;
- coordinated national data collection team;
- project manager at the Regional Environmental Center; and
- editing and textbook on ecosystem management.

2. Impacts of University Strengthening and Institutional Capacity Building in Year Five

BULGARIA

The first offering of the Post Diploma Study Program at the Varna Economic University was targeted to improve the managerial skills and environmental awareness of the management teams from the key industries in the Varna region. The experience gained by the Bulgarian faculty from the American trainers will be utilized in the future offerings of this program. According to the Director of the PDS program, it provides new theoretical and methodological directions and contributes to the formation of practical skills in their application in the business management process. The academic community enthusiastically supports the program as it introduces new training methods and approaches. The trainers prepared 15 textbooks for the PDS program, which is a well-sustained investment in the future of the university. The PDS program's curriculum focuses on some key subject areas that include management, marketing, business development, intellectual property and pollution prevention strategies.

An environmental extension service offered by university teachers has been instituted by the PDS. Within the university, PDS participants proposed new departments in environment, logistics, and marketing.

A second offering of the PDS program in the Varna Economic University will start in September 1997 with funds raised by the university.

The PDS program at Varna Economics University brought many positive impacts on that institution.

- a library for environmental business management was established;
- personal relations made during PDS have been formalized in the form of a PDS Graduate Club;
- one student prepared an initial version of his Ph.D. thesis based on his research and contacts within PDS;
- the American lectures introduced new interactive methods of teaching. They were met with enthusiasm by the students and helped to make the education more practically oriented.

A core team was trained for the ETP Foundation as a result of the Faculty and Curriculum Development Workshop. The team will be able to deliver future trainings for regional and local government using interactive approaches for non-traditional learners -- brainstorming, stream of consciousness writing, developing case studies and evaluating curricula.

HUNGARY

The second year offering of ETP PDS training at Miskolc University was inaugurated in October, 1997. Eighteen participants enrolled in the two semester environmental management program. The program is incorporated into the 400 hour engineer-manager post-graduate course. PDS gives the second and third semester of this four semester program. PDS can be attended either separately or as a part of this longer program. The lecturing staff consists of both American and Hungarian specialists. The participants are top level managers coming from the energy sector and electric utilities, the steel industry, manufacturing companies and the like. Participants of the second year PDS offering are higher qualified managers than those from the first year offering, a fact that reflects the success and recognition of the program.

The program is financed jointly by ETP, Miskolc University and students' fees. An in-kind contribution for the Energy Efficiency module was provided by the Hungarian EU Energy Center. ÖKO Rt. (former ETP alumni and later subgrantee) also provided in-kind contribution for the environmental impact assessment module. ÖKOTECHNIKA, the members of which are also ETP alumni, deliver the eco audit module of the PDS training. Since ETP financial involvement will cease in the next year, Miskolc University has started fundraising in order to finance the program in forthcoming years.

The PDS program, as the first of the kind in the area, offered wide knowledge of environmental, technical, restructuring and managerial skills and planted the seeds for new, environmentally sound thinking.

Fifteen out of sixteen students graduated from the first offering of the PDS environmental management program. Each presented a valuable study as a diploma thesis. Six participants reported that the recommendations in their theses were implemented at their respective organizations. As an impact of the course, measures were taken by the

participants' organizations in the areas of air protection, water protection, hazardous waste treatment, noise and vibration prevention, flora and fauna protection and increased effectiveness of equipment.

Training activities were institutionalized at Miskolc University where they plan to continue offering PDS courses in the future.

- Four young assistant lecturers from the Department of Management and Organization of Miskolc University participated in the first offering of PDS. One of these faculty members is especially interested in environmental issues because environmental management is the topic of his Ph.D. dissertation. The Department wants to prepare some new teaching textbooks using recent ETP manuals. A series of publications is expected to result from the program as well.
- Two of the dissertations, "The Role of Environmental Protection in Manufacturing Companies" and "Analysis of the Environmental Protection Situation in Small and Medium Sized Engineering Firms in Hajdú-Bihar County" prepared by two participants will be developed into teaching manuals.
- As a result of the curriculum development at Miskolc University, seven sets of American teaching materials have been translated into Hungarian on the following topics: environmental management in international business, pollution prevention, the development of a first in class pollution prevention program, assorted pollution prevention case studies, environmental management and strategic management, the mutual relations of marketing-, logistics-, production- and information systems, regional economics and industrial restructuring. Also five sets of instructional materials have been prepared by Hungarian authors: Environmental Auditing; Theoretical-Methodological Summary of Environmental Management; Total Quality Environmental Management; Environmental Protection and its Position at MGM Rt. (case study); and Analysis of the Situation in Environmental Protection at the Small and Medium Sized Engineering Firms of Hajdú-Bihar County (case study).
- There has been a library established for the environmental restructuring literature at the University of Miskolc.

Training materials from ETP business courses have been used by the Baja College of Water Management and the Business School of the Miskolc Humanities.

The participants of the first offering meet regularly and exchange experiences. PDS knowledge is disseminated at Miskolc University as well as at the different participating organizations.

Further impacts of the PDS program in Miskolc can be found in the section on business component.

POLAND

The main activities in University sector were Post Diploma Studies (PDS) Run 2 and Run 3 held in Silesian Technical University in Katowice. The second run of PDS was focused on non-ferrous metallurgy, the third run was focused on power industry. Participants in PDS were senior managers.

During the second run of PDS, there were 28 participants from 13 non-ferrous metals plants in 4 voivodships. Twenty-four participants prepared a final thesis connected closely with their own companies and graduate studies (16 general or technical directors - 66.6%, 8 other representatives of higher managerial staff - 33.3%). Most of the theses were put to practical use.

Impacts at Silesian University of Technology:

- new methods of teaching (interactive methods and case studies) are now used very often by professors at the Silesian University of Technology;
- some new courses have been included in the academic curricula for under-graduate students;
- Prof. R. Sosnowski, co-chairman of the PDS Steering Committee, was elected to the position of Vice-Rektor for Science of the Silesian University of Technology;
- Prof. Franciszek Grosman, member of Steering Committee, was nominated as a Deputy of Ministry for Industry for restructuring of metallurgy;
- Dr. Jerzy Barglik was nominated Deputy of the Rector for Cooperation for Industry since October 1, 1996;
- Prof. Remigiusz Sosnowski, Dr. Wieslaw Chodasewicz and Dr. Jerzy Barglik received the Rector's of Silesian University of Technology award for 1995 and 1996.

ROMANIA

Post-Diploma Studies at the Technical University of Cluj-Napoca (TUCN)

Since its official opening in October 1996, the PDS program in Romania has offered seven modules. Five of the seven so far have concentrated on management and two on technology. Four were taught by American professors and three by Romanian.

The audience comprised of the following participants: 13 from polluting industry, 9 from EPA, 3 from university and 2 represented private firms. All of them have narrowed down their thesis topic and have had them approved by the boards of their respective units who reviewed them for their practical applicability.

Among other things, the initiation of this PDS program meant the following for the local university:

- an occasion to exchange knowledge and interest and strengthen ties with various interested parties in the TUCN;

- an opportunity to strengthen the relationships with the economic sector and governmental institutions;
- a chance to raise students' awareness of new professional orientations;
- the development of a special library with recent books on modern concepts linked to eco-management;
- having university staff exposed to faculty, teaching methods and environmental curricula of American universities;
- reconsidering university curricula and making changes in the syllabi;
- TUCN is a leader in promoting this more complex, integrative approach among the institutions of higher learning in Romania.

As a result of these and other accomplishments, there have already been several proposals from other universities in Romania to join the project, collaborate and develop a network of PDS programs -- each addressing a unique aspect of environmentally friendly industrial restructuring in addition to other areas of environmental, managerial, economic and public interest. Consequently, the Ministry of Education has approved new environmental programs, department chairs and research in other universities in Romania.

PDS has brought in new teaching manuals, presented new teaching skills and produced a core of Romanian trainers with new professional skills and abilities. TUCN is already in the process of preparing for next year's edition of this PDS program. Many professors taken responsibility for designing new courses, case studies have been identified and the list of applicants wait-listed grows.

The PDS program already is considered essential to this period of transition in Romania and has gotten accreditation from both the Ministry of Education and the Ministry of Industry.

Other impacts in university strengthening

One specific course was addressed to faculty development in Romania in Year Five. It focused on interactive teaching techniques in teaching adults. The participants, university professors, were presented with methods for distance learning, continuous education, and modular teaching. Presently, the majority of them teach in PDS courses or they have revised their usual classes to make them interactive and modern. Others initiated new topics in the curricula or proposed new environmental programs for students.

These participants generated several proposals for university activities. Many and are now in review for accreditation or financing either to the Ministry of Education or to special funds (mainly through Tempus assistance programs). Some of the proposal even suggest ways of restructuring the higher education system, both in terms of teaching approaches and in terms of practice.

We are now focusing our attention on other formal education directions geared toward adults as well as institutions (NGOs, business, government). This includes job re-training and new managerial skills for the demands of economic restructuring and civic society.

Many professors now function as consultants for human capacity building, business improvement and strategy for governmental institutions. Beyond that, they have begun seeing the university (institution) through the eyes of business, judging it for its efficiency, attractiveness, flexibility, modernity and contributions to new students' demands and the new socio-economic needs of the transition.

SLOVAKIA

The Slovak Post-Diploma Studies Program on Environmentally Friendly Restructuring of Heavy Industry has been implemented in cooperation with the Technical University (TUK) of Kosice, University of Minnesota, ETP-Slovakia Foundation, East Slovak Steel Mill Company (VSZ) Kosice, and Educational and Consultation Center - VSZ. In the second year, the organizations who cooperated in the Program were expanded to include Bugh Wuppertal (Germany), Holter GmbH (Germany), Slovak Ministry of Environment and Ostrava Mining University (Czech Republic). PDS is led by a Steering Committee, Program Council (for training curriculum and manuals) and Executive Board.

The program is based on an Academic Agreement between the University of Minnesota and Technical University of Kosice and allows for a joint certificate. The ETP provided the program \$30,000 in Year Four and \$20,000 in Year Five. The program allows TUK and participants of the program to benefit from the know-how of the University of Minnesota in the areas of environmental restructuring and business management. Support was received from VSZ for \$30,000 in its start-up phases which emphasizes the importance to the industrial business community.

The objective of the PDS Program is to improve managerial skills and awareness of environmental issues of managers who make important decisions in engineering and heavy industry. A second objective is to make good contacts between American and Slovak environmental business people, as well as education and research institutions and to create a forum for a mutual exchange of information. During the second year the goals were expanded to include:

- spreading the PDS program to more industrial branches (besides metallurgical and mining, to include chemical, mechanical and energy industries), which will be done through promotion and personal meetings with the representatives of single industrial enterprises in Slovakia;
- becoming a member of EAEME (European Association for Environmental Management Education) and through it improving the level of program;
- improving the existing study materials including updating and adding case studies;
- increasing the level of environmental knowledge of key (top to sub-top level) managers as a tool for reduction of industrial pollution;

- promoting economic reform with emphasis on environmental aspects through assessment of investments in terms of environmental effects;
- ensuring (together with other potential partners) cooperation among industry, enterprises and universities in the field of environmental protection mainly through cooperation with the East Slovakia Steel Mill - VSZ Kosice

The twelve month program is divided into two semesters that are composed of 2-3 day modules. These modules involve lectures from Slovak and foreign experts, seminars, discussions and solving concrete tasks. The first semester is focused on management (e.g., strategic management; marketing, logistics and information technology; human resource development strategies, work safety management), the second on environmental technologies (e.g., US experience in restructuring of heavy industry; pollution prevention technologies and waste management and recycling, environmental friendly technologies). The culmination of the program is the participant's dissertation which integrates their real-world experiences with the new methods and information they have learned over the year. This dissertation is presented and defended to peers and a panel of business and academic experts for graduation.

The program is geared for graduates of technical or other universities who have experience in management of industry. The first year the participant list included top managers and directors - 20 from VSZ, 2 from the mine Nizna Slana. This trend continued the second year, once again attracting top managers from VSZ and MEZ Michalovce (electrical engineering company in joint venture with Siemens), and 1 Ph.D. candidate from the Civil Engineering Faculty at Technical University-Kosice. The high quality and demand for the course is evident -- in the second year TUK was able to charge an admission fee of \$1,000 which participants willingly paid.

One of the overall impacts of the PDS program is the expansion of TUK's position in the region, with increased outreach to industries. This has allowed the pooling of academic knowledge with business experience for environmentally sound restructuring. The cooperation and networking among business and university has been strengthened through this program. An example of future cooperation possibilities occurred in the second year when a special bonus module was added focusing on Project Design and Management.

PDS allows managers to gain skills and exposure to management and organizational techniques, learn new professional and training skills, obtain more experienced with monitoring and evaluating work/making assessments and other areas of environmental and management activity.

The Technical University of Kosice has benefited from observing and participating in newer methods of training. The use of interactive exercises, role-play, case studies and practical examples presented Slovak professors with a new perspective on academic learning and teaching. The manuals from the courses will contribute to the libraries in the region, and will be integrated into regular TUK courses.

Outcomes of the PDS program also include the formation of a special group created for Public Relations of the PDS - to market the program and increase public and professional awareness of the specialized program; and the formation in September 1996 of an Alumni Club, whose goals are to increase contact, monitor implementation of knowledge, organize seminars, workshops, conferences and excursions, and find new contacts in Slovakia and abroad.

In Year Six, ETP will support the program at a lower level to phase out the assistance. However, TUK has expressed commitment to this program in the future and the interest of the engineering and heavy industries means that this program could become self-sustaining and financially stable without external support.

In addition to the PDS program, institutional capacity building within NGOs has been the focus of several ETP projects in Slovakia. Subgrants to the Center for Environmental Public Advocacy in the capacity of "Strengthening Environmental NGOs," has proved very successful in assisting NGOs in institutional development and sustainability issues after the foreign assistance ends. Three workshops for NGOs have been held: "NGO Fundraising and the Legal and Tax Related Issues," "Accounting and Insurance for NGOs" and "Law and Green Agriculture." Several handbooks were produced from the workshops answering questions on accounting, insurance and tax issues. A free legal consultation service has been offered, with already 100 requests for assistance each month on average. Two student workshops have been held to form student teams who are interested in NGOs and public interest law. The possibility exists for student internships and a future course at university on the subject.

D. Environmental Policy and Management

1. Component Overview

The Consortium continued to offer trainings to upgrade the skills of governmental decision makers and other ETP audiences in a combination of subject areas critical to effective environmental policy analysis, planning, and management. These include environmental information management, comparative risk analysis and priority setting, permitting and enforcement, interagency coordination, municipal financing, and environmental planning and action.

Target audiences are regional and local government officials who are being given increasing responsibility for managing local environmental problems due to democratization and decentralization of power. ETP's goal is to train these officials to ensure that economic restructuring is supported by increased local management capacities in environmental protection.

Training for this component complements public participation and outreach and the conflict resolution elements of the ETP NGO component and is being closely coordinated with other environmental management courses and training sponsored by US AID and

bilateral and multilateral agencies such as the EU-PHARE program. Training has continued to be delivered on a regional basis, using a case study, problem solving approach. Efforts in institution building in the public sector support development of indigenous capabilities in environmental policy, analysis, and management.

2. Impacts of Environmental Policy and Management in Year Five

BULGARIA

As a result of the work done by the Yantra River Basin Council Activities "Coordination of Water Quality Management Actions by Council Member Organizations," twelve large companies and eight municipalities in the Veliko Turnovo region were investigated in 1996 in order to check the condition of the waste water treatment plants. Based on the recommendations made by the Basin Council working group, several industrial companies and municipalities received interest-free, low-interest loans and grants to build waste water treatment plants.

The ETP graduates assisted in writing successful proposals for the following municipalities that secured funds:

- Tryavna municipality received a \$100,000 grant from the National Fund for Environmental Protection (NFEP)
- Veliko Turnovo municipality received a \$40,984 grant from NEF and a \$288,778 grant from the USA in the form of equipment.
- Gabrovo municipality received a \$250,000 grant from USA in the form of equipment.

ETP also contributed with methodology and training in the USA of one person on the preparation of National Municipal Environmental Strategy.

The workshop on Sustainable Development of Municipalities in the Yantra River Region offered significant knowledge on municipal investments, funding sources other than state funds and development of municipal sustainable development strategies.

HUNGARY

The Public Relations workshops (2 offerings) encouraged communication between local governments on one hand and local citizens and NGOs on the other. The workshops also encouraged a flow of useful information to local citizens. The training was greatly appreciated by the vice president of the Zala County Assembly and the local resident of the US AID Public Administration project managed by the International City/County Management Association (ICMA). The coordinator of the program commissioned the Center for Environmental Studies to develop and organize two county specific workshops one for Zala county the other for Hajdú-Bihar county, for local government officials and

media in order to assist them in developing strategies for effective communication with each other and the public and to facilitate public involvement.

Two mayors, participants of the PR training, reported that the public hearings organized after the training were very successful. Citizens in the community have noticed the difference between public hearings organized before and after the workshop. Another mayor who participated in the training reported that he shared the information and the training materials of the course with his colleagues. They find them very useful in their everyday work as well as in preparing a proposal for developing a village tourism portfolio in the Bakony region in association with several neighboring villages. There is also a participant who attributes improved relations with her superior to the training. She also started to organize a conference about the tasks of the local government regarding children and youth. The training inspired a young NGO representative to start studying PR at university.

As a result of the Integrated Waste Management (IWM) training, participants were made familiar with legal, technical, economic and political factors involved in IWM and with the design and implementation of IWM programs. They were provided with information on businesses related to waste management and recycling.

Following the course, one of the training participants reported using the acquired knowledge in developing a regional development concept on waste collection and transportation for 12 communities in Szabolcs-Szatmár-Bereg county. Another training participant, an environmental expert of the Szentendre local government, prepared a waste management concept for the city that has been accepted by the general assembly of the city council. Another participant, organizer of the transportation of solid waste and sewage of the village of Pomáz, developed advantageous business relations at the training and these relations help him a lot in his business. Another participant of the course who is engaged in a project that organizes 64 selective waste collection stations in 3 years is benefiting from the new business contacts she made at the workshop. The environmental expert of Heves county government shared the information received at the training with the team that has recently been developing the waste management program of the county. A representative of the Hajdú-Bihar county government disseminated the IWM knowledge at a meeting of the Area Regional Environmental Committee where each community of the county is represented by an environmental expert. An NGO representative started a business in waste disposal following the training.

POLAND

Referring to AID priorities in 1996, the main effort of ETP in Poland in Year Five was training for Local Governments. Participants of our training were mayors, deputy mayors, heads of environmental, financial and investment departments of City Halls, and other experts.

In total 240 participants from 48 municipalities and 15 community institutions represented Local Governments at ETP trainings in Year Five. There were 15 mayors and deputy mayors, and 28 heads of departments.

The method of selecting decision-makers as participants has been in practice in ETP since 1994 and ensures the influence of ETP on the creation of municipal and regional environmental policy.

The number of participants from local governments who took part in environmental policy improvement training and their relative professional positions are ETP impacts on environmental policy in the region. All participants anticipate staying current on ETP courses in Year Six and have committed to participate in them.

Impact indicators illustrating community activities include:

- new land use plans have been prepared in 28 municipalities;
- environmental protection strategy plans have been prepared or modified in 17 municipalities;
- new environmental and community investments took place in 42 communities;
- municipalities developed their abilities in financial engineering (matching funds).

Many communities put investments and activities into practice on the basis of funds obtained from different financial organizations. In the past, co-financing such undertakings was mainly on the basis of their own means. The most frequently used financial resources are:

- * Voivodship Fund of Environment Protection and Water (16 municipalities)
- * Communities' own means 42
- * National Fund of Environment Protection and Water Management 12
- * Eko-Fund 5
- * Ploughland Protection Fund 4
- * Bank of Environment Protection 12
- * Small Donation Fund 5
- * others organizations and sponsors 11

In all municipalities covered by investigations, different kinds of investments are taking place. Investments are planned for future years. Some of them will be finished by the end of 1998, others by about 2000. They are put into effect depending on needs and funds available to the communities:

The numbers below illustrate the kinds of investment taking place in investigated municipalities:

- waste water treatment plants: 16
- waste dump: 10
- change heating systems from coal to natural gas: 15
- water piping systems: 12
- sewage system: 13
- collector building: 6
- reforestation: 3
- other: 2

A number of communities have chosen to undertake joint investments with neighboring communities. The examples of joint investments are:

- waste water treatment plant in Tworóg - Krupski Młyn, (completed in 1997)
- sewage system in Krupski Młyn - Potempa, (completed in 1997)
- solid waste dump Toszek - Pyskowice - Zbrosławice (completed in 1997)
- waste dumps Wilkowice - Zywiec, (ongoing)
- five new strategies of municipal waste management (Swietochłowice, Knurów, Tworóg, Miasteczko Sl., Kozy)
- three proposals of new policies of cooperation with local industry in improving pollution prevention actions .
one additional municipality began a project of selective waste collecting and recycling (Swietochłowice)

Co-operation between the communities and NGOs or Voivodship Office are being evaluated in general as positive (35%), as good (5%), in 45% communities are considered sporadic and in 15% bad.

In 24 municipalities there are conflicts centered on threats to the environment. These conflicts are mainly connected with the location of sewage treatment plans, dump fields, and space management plans. Ten conflicts were solved successfully. The best example is that of the General Motors factory that was built in City of Gliwice. The original location was protested by environmental NGOs and citizens because it threatened for rare species of bird nesting in the neighborhood. After negotiations led by Mr. Wojciech Napierala (participated in 8 ETP trainings) the location was successfully changed and the conflict was resolved.

For additional impacts in the municipality sector for ETP Poland, please see Appendix F.

ROMANIA

This objective was served this year in Romania by fostering community projects. Activities were carried out primarily in Zlatna and Baia Mare, but we have impact reports from other places as well such as Bistrita, Topoloveni and Oltenita. In all these communities, local task-forces were created made up of people from all sectors (government, administration, NGO, business, police, church, industry, media, schools, civic society) in order to design and implement these projects.

In Zlatna, a place critically affected especially by lead pollution and our region of primary focus this year, an important behavioral and mental change occurred due to our assistance. The people changed from hopeless, obediently passive dwellers to become determined citizens who are taking their fate in their own hands and improving it. Several concrete actions were initiated and achieved. Through their own initiative, they built a safe playground for children in a kindergarten and a "freshly green" area of recreation for all people. Research was conducted to determine the areas most contaminated with lead. There were blood tests for every child. The degree of pollution was determined in meadows, in animals' milk and in vegetable gardens. Sanitary and hygiene education was

conducted for the population. Other broader scoped and more ambitious projects are also in progress including diminishing pollution at the source, beginning alternative economic activities in the area and initiating soil recovery and environmental rehabilitation to beautify the locality. ETP helped inspire the dreams and beliefs that gave rise to these important changes in actual conditions and in peoples' states-of-mind regarding their environment. Now, people are "awakened" and they have demonstrated such commitment that, no matter the risks or needs, nothing can stop them working for their rights and saving their local environment.

A relatively similar phenomenon took place in Baia Mare. The citizens who had previously suffered from lack of trust and hope in a seemingly desperate environmental and economic situation, were brought together and shown means of brightening their prospects and thus their collective spirit. They were shown ways to make use of their human capacities and local resources to implement concrete action. To their own surprise, once the wheels were in motion they were able to formulate an incredible number of ideas and very well-defined plans for positive change. The plans were achievable, practical and accessible to wide range of citizens and at the same time, ambitious enough to create real change.

In Topoloveni, the previously reported GAMA group that focuses on household recycling and landfill improvement projects, reached the point of becoming a model program. Several presentations have been made featuring this group for national and international audiences. The presentations have drawn visitors from other cities in Romania and from Bavaria, Germany. The city also gained regulatory authority over the recycling company to facilitate expansion of the project's scope. Governmental funding was granted for planning, designing and modernizing the sanitary landfill. GAMA has spawned a "GAMA Junior" group of the adult members' children. GAMA Junior has taken care of cleaning up rubbish dumps and has planted trees in their place. They involved the entire school community in the promotion of educational efforts toward environmentally-friendly behavior.

Bistrita initiated a "Green Day" to involve citizens in taking care of their parks, forests and recreation areas. This was done through developing an environmentally concerned civic attitude by involving citizens in litter clean-up and in disseminating awareness leaflets with educational messages. Around 100 people responded by actively participating in the first Green Day. The action has helped spawn a new NGO. Local administration and private businesses lent a supporting hand.

Oltenita felt the impacts of the Bulgarian transboundary training initiative that crossed borders over the Danube. The work has brought together transboundary communities to solve environmental problems that had the potential for causing conflicts. The joint work of these communities has created promising cross-sectoral and intercultural exchange. Latent energies were mobilized and challenged to enter into collaborative communication and democratic efforts. Common projects ideas emerged and joint work has been

supported by local resources. Intentions are to bring all "twin-pair cities" along the two borders together into a "chain" of networking programs.

We found this year that investments in community involvement projects are in many ways the most rewarding, the most achievable and the most likely to be self-sustainable. Additionally, they have had tremendous impact fostering democracy and social development and bringing together governmental agencies with the general public in order to solve their community's problems in an interactive, decentralized and collaborative manner.

SLOVAKIA

After several years of environmental management training offered to Slovakia's NGOs, local governments and businesses, it has become necessary to reflect on the impacts of previous efforts and focus training in necessary areas for the future. Several projects have addressed this issue at a local, regional and national level. In November 1996, ETP held a workshop on the *Analysis of Training Needs in the Environmental Sector*. It was a cross-sectoral meeting of training experts designed to evaluate and analyze needs for the future of environmental training. Six sectors prepared and presented papers from their perspectives. Based on these papers, the participants discussed and analyzed the situation and they compiled a list of training needs for the future that will be published. The discussions and meetings were relevant not only for the information they generated, but for the new contacts and networks that were created within the cross-sectoral group.

Slovakia's environmental policy was positively affected by a training course held by the Veterinary University in Kosice. The course, *Risk Assessment for Toxic Elements in the Food Chain and Animals*, was specially designed for professionals from National Pesticide Reference Laboratory, Institute of Preventive and Clinical Medicine, State Food Certificate Authority, Regional Environmental Office and Military Veterinary Research Institute. The course presented methods of US EPA, European Union and Slovakia used in risk assessment, a very new subject for most of the participants. This course contributed to a discussion on acceptance of risk assessment methods, and the preparation of a new law for the Ministry of Soil Management. The manual from this course has been sent to relevant libraries, and will also serve as material for new courses in the University of Veterinary Medicine. The course has the potential to become self-financed because there is high demand for the information -- in particular from veterinarians and people involved with pesticides.

III. Year Five Trainings

A. The ETP Curricula

ETP's overall goal is to contribute to environmentally sound economic restructuring in the CEE countries as they negotiate the transition from centrally planned economies to market-oriented, democratically-governed societies. In the context of AID's *portfolio* of development projects in the region, ETP responds to AID's country-specific strategies.

Training activities include professional seminars, workshops, on-site consultation, internships, and university training, all of which enable trainees as well as in-country subgrant organizations to sustain subsequent training activities themselves. Our long-term goal has been to improve indigenous capabilities to identify, assess, prioritize, and address environmental problems taking into account the efficient use of natural resources, pollution reduction, and pollution prevention, in the context of a competitive market economy. Through these efforts, we improve efficiency and accountability of local authorities.

The Year Five trainings are listed in a calendar table for easy reference in Appendix A. In section "IIIB" following, is a summary of ETP's training activities during Year Five.

It is important to note that trainings are sequential and build upon skills, knowledge base and local resources of the Region. Some of our training is primarily designed and conducted by our Consortium Partners. For example, the environmentally-sound restructuring sequence for businesses designed by UM, CHMR and local partners includes: 1) a general seminar in managing an environmental business, 2) a more specific workshop in writing business plans and financing proposals, 3) a basic marketing training, 4) an advanced marketing course that results in a marketing plan, 5) an advanced environmental management training, 6) strategic planning for environmental business, 7) business logistics for emerging environmental firms, 8) strategies for survival for environmental firms, 9) advertising and public relations strategies for environmental firms, 10) green investment opportunities, and finally 11) environmentally sound management in companies.

The capacity building programs for NGOs include a general strategic planning and financial management workshop for NGOs and then fund-raising seminars. The training is designed and developed by both WWF and the University of Minnesota. Each of these trainings concentrates on different aspects of fund-raising and managing those funds, and we are training local institutions to deliver future training activities. In Hungary the NGO building program was developed together with the "Community Development Program" of Joe Szakos.

A sequence of our training cuts across all four sectors and is composed of both policy-planning and technical programs. Policy training includes strategic planning workshops developed by both ISC and the University of Minnesota, followed by environmental policy and management workshops and improved environmental program courses developed by ISC. These are complemented by conflict resolution courses prepared by WWF, communication trainings prepared by ISC and the University of Minnesota and technical trainings in environmental impact assessment (ISC) and introductory and advanced environmental auditing courses developed by CHMR.

Follow-up to ETP Training

ETP follow-up activities in Year Five served several purposes: to provide advanced training on specific topics, to further networking ties established at the initial workshop and to offer ETP support to participant initiatives. Follow-up workshops have had many positive outcomes, such as formation of Eco-business clubs, establishment of local task forces, forging business ties and increased skills and knowledge. Follow-up activities receive consistently positive evaluations and represent one of ETP's most significant investments. The Year Five follow-up funds were to be spent at the recommendation of the ICC with the concurrence of the Management Team for follow-up activities recommended by former participants, AID Representatives in-country or representatives of local and regional authorities. When Consortium partners had positive balances after a training activity, these funds were also allocated for follow-up activities.

B. Year Five Trainings -- Country by Country

During Year Five we conducted 73 trainings in 100 offerings in the Region. We trained 3130 participants of whom at least 1400 were women. In addition to the trainings, ETP offered 52 PDS modules and over 80 different follow-up activities.

Year Five saw a further expansion of new and advanced offerings as participants become more sophisticated and activities were increasingly offered by in-country trainers rather than Consortium partners or U.S. subgrantees. For Year Five, the Consortium and its subgrantees offered new training activities and extended the Post Diploma Studies to Romania. This supported the plan for in-country sustainability.

Following are descriptions of ETP's Year Five programs. They were written primarily by the ICCs and are based on reports by the training organization, pre- and post-workshop evaluations, follow-up evaluations and information reported by training alumni.

Please also note that the very important quantitative data concerning the trainings and participants is found in Appendix B.

1. BULGARIA

6 training activities (in 15 offerings) comprised of:

2 designated (POLYCONSULT, Varna University)

4 subgrants (ETP foundation (3), ISC - YRBC (1))

In addition to the trainings, the following activities were delivered:

9 offerings of PDS moduls

3 follow up activities:

- Eco-Business Catalogue publication
- Teachers' Workshop on Discussion and Implementation of a Solid Waste Management Resource Guide
- Teachers' Solid Waste Management Resource Guide Publication

Year Five training in Bulgaria concentrated on strengthening local self-governance, encouraging public participation in local community programs, and improving public relations between local government, the private sector and NGOs. A very important facet of Year Five training was improving the skills of local trainers in designing their own training curricula.

a. Strengthening Democratic Governance and Increasing Regional Impacts of the Yantra River Basin Council

This subgrant was initiated in Year Four and titled, "Proposal Development for the Yantra River Basin Council." Five major components were developed jointly by ISC, ETP Foundation, Ministry of Environment, National Water Council and the Yantra River Basin Council (YRBC). They are:

- Institutionalization of the YRBC through enactment and implementation of the new Water Law.
- Coordination of water quality management actions by council member organizations.
- Development of improved water quality information in the Yantra region.
- Development of a public information program.
- Development of a proposal for stream bed restoration.

Impacts:

- Two public discussions were organized on the draft Water Law in support of the establishment of river basin councils as decentralized bodies for water resource management.
- Several municipalities and industrial companies in the region got the support of the River Basin Council and received grants and interest-free loans from the National Environmental Fund for environmental friendly restructuring projects.
- \$641,000 was raised for municipal projects during the ETP support of the Yantra River Basin Council (YRBC).
- \$4.5 million has been raised for industrial projects in the Yantra River Basin in the last two years.
- Several project proposals were prepared by the YRBC for institutional support of the Council and one proposal was prepared for river bed restoration.

This subgrant ended on September 30, 1996.

b. Prevention of International Environmental Conflicts through Joint Transboundary Training

This course was taught with the goal of encouraging two sides of an environmental conflict to use the same criteria to help in solving environmental problems. The post-workshop evaluation forms indicated great interest on the part of the participants. They were particularly gratified to analyze real-life case studies and to solve environmental problems together as Bulgarians and Romanians. The participants, step-by-step,

overcame uncertainty and discussed more and more freely the strengths and weaknesses of Totrakan enterprise "Terma" and the Oltenita Waste Disposal Site. The small group work was extremely interesting and highly active. A specific feature of this course was that some of the local participants were also interpreters. There are historically rooted relations between the citizens from both sides of the Danube River. More criticism was shown by the Totrakan citizens for the case study "Terma" and more by the Oltenita citizens on the case study "Waste Disposal Site." The results that were accomplished were written in both languages. The Mayor of Totrakan announced that the municipality would develop an environmental program with the assistance of Poly-Consult as a follow-up activity. He also shared the municipality's experiences of using an established NGO as a partner rather than an opponent. The participants suggested a follow-up training be organized in Oltenita with funds raised by the local business circles.

c. Increasing Environmental Awareness Among the Young Generation of the Yantra River Basin

At the request of the local authorities and the Veliko Turnovo Youth Club Iatrus-Ret, the ETP Foundation designed and delivered three trainings for approximately 60 young people focusing on various aspects of sustainable development and developing practical skills. The Youth Club is an important local NGO - member of the YRBC. Its major focus is protection of nature and indigenous culture. The training was supported by financial and in-kind contribution by the municipality and other local organizations.

d. Strengthening Environmental Awareness and Skills of the Yantra River Basin Council Constituency

This training took place in two offerings in March and April, 1997 in Veliko Turnovo. It consisted of a teacher's workshop on discussion and implementation of a Solid Waste Management Resource Guide and the publication and dissemination of a Solid Waste Management Resource Guide for Schools.

The workshop was designed with two goals:

1. To test the readiness of the teachers to introduce a new teaching topic, "Solid Waste Management" to school children in grades one through eight in five Veliko Turnovo schools.
2. To assist the Veliko Turnovo municipality in implementing their Regional Solid Waste Management Plan by involving the young generation, their parents and teachers, and the whole community.

The head of the Regional Inspectorate of the Ministry of Education and three of his experts attended the course along with fourteen teachers from five schools. They suggested testing the guide in five schools over a one year period starting in September 1997. Three hundred forty-three students filled out a questionnaire developed by the teachers at the workshop. The questionnaire was designed to test their willingness to

participate in the experiment. **Three hundred thirty-five** respondents said they would want to participate.

The Teachers' Guide was revised by a team of six teachers and the municipal environmental expert to adapt it to the Bulgarian conditions. Their suggestions were taken into consideration in the publication of the guide.

e. Advanced Public Relations Methods in Business, Local Government and Environmental Communication

The workshop focused on introducing advanced methods used in public relations. It briefly presented theoretical communication background on which public relations builds and then concentrated on the practical aspects of public relations methods. Case studies were used to illustrate the implementation of specific methods. Most of the cases were local and had been prepared by local assistants.

f. Post Diploma Studies in Environmental Business Management

In response to the requests of the business community and Varna Economic University, ETP designed a post-diploma study in environmental business management jointly with the University of Minnesota. The following PDS modules occurred in Year Five:

1. Corporate Financing
2. Bulgarian Environmental Legislation
3. Information Systems in Environment
4. Intellectual Property
5. Teams and Communications Management
6. Environmental Production Management
7. Business Development
8. Environmentally Friendly Technologies
9. Survival Strategies

The ETP Foundation will continue facilitating the first offering of PDS in Varna after the end of USAID funding by monitoring the quality of the training and representing the interests of the University of Minnesota.

g. Faculty and Curriculum Development Workshop

This workshop was conducted in December 1996. It was designed to expand and improve the knowledge and skills of trainers from five universities in Bulgaria in the designing and conducting of the future ETP courses targeted to the local government and business sectors. On the first day of the workshop, the shifting paradigm in higher education in Bulgaria as a function of the political, social and economic changes that occurred because of the transition. The case was made that the birthrate in Bulgaria has declined and the number of traditional university age students is declining. At the same time, the number of

nontraditional students who need retraining to function effectively in a market economy is increasing. There was discussion as to the kinds of changes that would have to be made in the educational system to capture this emerging market of nontraditional students.

h. Publication of an Eco-Business National Catalog

Over the last five years, several business courses were delivered to about 300 participants. They expressed an interest in publishing an eco-business national catalog that would significantly improve the visibility of emerging environmental businesses and would provide information about 100 companies for potential clients and partners in Bulgaria and abroad. The catalog was published in Bulgarian and English and is being disseminated domestically and abroad by the ETP Foundation - Bulgaria.

Impacts:

- The catalog is used as a source of information about environmental business firms which are constantly invited to participate in domestic and international forums, fairs and exhibitions.
- New environmental companies would like to participate in a second issue (1997) and many of the companies already presented in the catalog would like to add new information.
- The Ministry of Environment of Bulgaria highly values this publication.

j. Sustainable Development of Municipalities of the Yantra River Region -- Investing in the Future

This three-day workshop was conducted in Veliko-Turnovo on May 7-9, 1997. The goal of the training was to offer tools and mechanisms to the local administration in this region for the development and implementation of sustainable development strategies for their municipalities including economic development, creating new jobs and preserving local natural resources. The twenty participants were primarily YRBC members four of whom were mayors, three municipal council members, one district administration representative and several heads of municipal environmental departments.

The ETP Foundation invited the Executive Director of the National Trust EcoFund and some other foreign funds to make their presentations. The participants showed enthusiasm in preparing proposals and applying to these funds. The discussion focused on how to employ local resources in reducing unemployment and opening new businesses. A list of suggested changes to specific laws related to sustainable local development was prepared. There was one local TV broadcast and one radio interview during the workshop.

2. CZECH REPUBLIC

6 trainings

1 roundtable meeting

All activities in Czech Republic were organized by the Center for Environmental Analysis (CEA) -- the offspring and successor of the ETP. Those activities were conducted due to determination and successful fundraising by the CEA leader, Maria Ticha. This way the CEA confirmed not only vitality of the ETP mission in Czech Republic, but also effective investment of ETP/AID funds during the first three years of ETP operations.

a. Ecological Auditing 2: Management of Risks

The three-day seminar, Ecological Auditing II, took place in April 1995 and followed a previously-offered course with the same name, Ecological Auditing I. Ecological Auditing I was run within the same framework of ETP and organized by the Center for Environmental Analysis (CEA) in November 1994. The ecological audit process has an important place in the area of the environment. It follows chronologically the mass privatization process where ecological audits give some impression about the scope of ecological damage in factories, military areas, etc. The theme of the seminar was very topical and relevant because it concentrated on problems in executing risk analysis in ecological audits and on the directing of ecological risks at the factory, regional and state level. The trainers were chosen from the same areas affected by ecological risks: the factories, regional and state levels. The trainers were from the Czech Ministry of the Environment and the National Property Fund. These groups work on how to direct risks at the state level and develop appropriate legislation. The other challenge is to transfer methodology about the execution of risk analysis in the US and other Western European countries to the Czech Republic. Participants in the seminar were given the opportunity to obtain topical information from state and private institutions. Trainers from private firms that do ecological audits and risk analysis had a productive and provocative discussion about the ways of executing ecological audits and risk analysis.

b. Environmental Impact Assessment (EIA): Public Participation

The course took place in February 1996 and presented the possibilities for NGOs and the general public to participate in the EIA public participation process. The course analyzed the gaps in public participation and EIA documentation. Also presented were the methods of public involvement: 1) creation of an NGO coalition, 2) public discussions about EIA documentation, and 3) forum of candidates. Another possibility presented was the involvement of locals in post project analysis.

The training course was organized to provide a very positive environment. This facilitated the creation of new and informal contacts among participants from different sectors of society.

c. Conflict Resolution

This five-day training course took place in April 1996 and used interactive methods ("facilitated-learning style"). Primary themes were: conflict resolution using negotiation (2 days), special ecological conflicts (1 day), decision making and leadership advice (1 day) and the basics of effective communication (1 day). The training contained theoretical information (30%), group discussions (30%) and interactive (simulation) games (40%). The key message of the course was to issue an invitation to the participants' counter parts in ecological conflict to pursue an even-sided, friendly solution before "going to battle" with those in conflict.

The training course presented participants with a philosophical basis for effective resolution of ecological conflicts. The participants were presented with a list of techniques that may be possible to use. The basic techniques were used in simulation situations. The main success was the participants having the possibility of sharing experiences of practical resolution in ecological conflicts. A second success was the creation of new contacts between participants, organizers and trainers. These contacts are very important because they connect people from different sectors of society.

d. Toxic Release Inventory (TRI)

This three-day training course took place in June 1996 and was loosely related to and based on the ETP course "Toxic Release Inventory" held in 1994 in Ústí nad Labem. The course gave actual information about system development in the world and preparation for implementation in the Czech Republic. Information was given about the structure and functions of the PRTR system in the USA, Canada, Netherlands, and Great Britain. Participants were also provided information about the contribution towards registering and better management of chemical substances. In the seminar the different kinds of PRTR applications for Risk Assessment were explained. Participants were also given current information about the use of data from PRTR in Life Cycle Assessment.

Participants received the publication, *Right to Know - Pollutant Release and Transfer Register* published in 1995 and its revised format in electronic form. Also, participants gained additional information about the methodology of Risk Assessment and LCA. In the seminar, it was also possible to browse and look at materials from U.S. EPA, CD-ROM presentations and special software (Risk Assistant).

e. Advanced Conflict Resolution

This five-day training course took place in October 1996 and was developed for the graduates of first Conflict Resolution course and for participants with long-time practical experience in conflict resolution. The seminar was based on facilitated learning, on simulation games and on discussions about the games. Theoretical knowledge was taken from the practical experiences of participants and from the games' discussions. In the beginning, there was a repetition of the theory of conflicts, decision making and

communication from the last course (1 day). Additional time was used to increase the knowledge and skills in principal negotiation. Participants were given advice leading to problem resolution (2 days) and introduction to mediation (2 days). The two largest simulation games were based on the theme of environmental conflicts (location of waste depositories and the location of a protected area).

Because of the high quality and high level of experience of the course participants, it was possible to work on advanced themes (negotiation in a group of people, strategies in negotiation) and to learn about using a neutral person in conflict resolution - the mediator. During the course, there was good feed-back between lecturer and participants and this increased the amount and quality of the knowledge gained from discussions about special problems. Results from these discussions were used in other course preparations. During this course, it was possible to see how cooperative negotiation influenced conflict resolution in lives and work of some participants.

f. Life Cycle Assessment

On November 11th and 12th, 1996, the International LCA Seminar was convened by the Center for Environmental Analysis in the Czech Republic. CEA worked with ETP International and the Slovak ETP-SK coordinator to develop a proposal for the CEE region.

This seminar brought together 25 participants with advanced knowledge regarding LCA from 5 different countries: Czech Republic, Hungary, Slovak Republic, Romania, and United Kingdom. This seminar was made possible by generous help from the British Council - Prague Office and the Regional Environmental Center - Regional Prague Office.

The seminar created the opportunity for cooperation between experts who have worked in the environmental field in the participating countries. The seminar was one of the first to provide complete information about the LCA methodologies in Central and Eastern European countries. During this seminar a foundation was created to broaden LCA in the different countries. Each seminar participant received extensive materials concerning LCA methods. This will be very important for preparing national seminars in the various countries.

The group of participants also created a coordinating group for LCA during the meeting. This group's goal is to develop LCA in the various participating countries and also to develop cooperative projects focused on improving the environment.

g. CEA Roundtable Needs Assessment Meeting in Prague

On June 12, 1996, the Center for Environmental Analysis organized and held a Needs Assessment meeting at the Ministry for the Environment concerning the needs of the Czech Republic with regards to environmental training for the upcoming year. Representatives from the four target groups that the environmental trainings try to reach were invited to the meeting: businesses, non-governmental organizations (NGOs), universities, and all levels of government. Twelve people attended the meeting including the Vice-Chair from the Czech Ministry for the Environment, a representative from the Association of Chemical Industry, a representative from an active NGO, Zeleny dum, in North Bohemia, and the mayor of Decin, a North Bohemian city.

3. HUNGARY

7 training activities (in 17 offerings and 6 half day meetings) including 4 designated activities.

In addition to the trainings, the following activities were delivered:

- 7 follow-up activities

- 10 PDS courses (4 for PDS I, 6 for PDS II.)

Year Five training in Hungary concentrated on increasing local government capacities to broaden public participation.

a. Conflict Management training for trainers with PDC of the Facilitators' Group (1 offering + 6 half day meetings, continued from Year Four)

The two day workshop on Conflict Resolution was designed to deepen the knowledge of facilitators in management skills regarding conflict management, negotiation and consensus building. Members of the Facilitators' Group as well as their Romanian partners who represented NGOs from Transylvania, participated in the training organized by Ökotárs Foundation with a trainer from Partners Hungary Foundation at Drávafook (near the Croatian border) on April 26-28, 1996.

Six half day self-training meetings were organized by the Facilitators' Group in the period between February and June 1996 in Budapest. These meetings contributed to the sustenance of the Facilitators' Group work, enabling a continuous analysis and evaluation of the group's activity. The meetings proved to be so important and useful for the group that they are continuing them without ETP funding.

b. Advanced Public Relations Methods and Environmental Communication for Local Communities (2 offerings)

The objective of the training was to encourage communication between local governments on the one hand and local citizens and NGOs on the other, as well as to assist local governments in providing public access to information. Elected members and experts from local governments and NGO members participated in the training. The workshops focused on introducing advanced methods used in public relations. They briefly presented the theoretical communication background on which public relations builds and then concentrated on the practical aspects of public relations methods. Case studies were used to illustrate the implementation of specific methods (e.g., press conference, public hearing).

Both courses were organized by the Center for Environmental Studies and were conducted by the same American trainer, Professor Peter Przytula. The Hungarian experience was presented by a Hungarian public relations expert in municipality issues. The first, two-day offering was held in Szédliget November 25-26, 1996, the second workshop lasted an additional half day enabling more time for case studies, situation games and evaluations. This training was organized in Dobogókő, January 13-15, 1997.

c. Integrated Waste Management Training

The goal of this three-day workshop was to familiarize the participants with the legal, technical, economic and political factors involved in IWM, to enable them to design and implement Integrated Waste Management (IWM) programs.

Ten municipality officials, 6 businesses and 2 NGO representatives participated in the training. The training was greatly appreciated by the participants for its "holistic view" of waste management – an approach that is not yet common in Hungary.

The training was organized by the Center for Environmental Studies, and it was delivered jointly by a Romanian trainer and an Hungarian expert from the Waste Department of Baja Environmental Inspectorate. The agenda included a panel discussion with representatives of four communities participating in different selective waste management projects organized by PHARE, ISC, Citizen's Waste Utilization Association - a Hungarian NGO, etc. They briefed the audience about the experience of these on-going projects. A meeting with seven recycling businesses provided useful information about the conditions of potential cooperation of businesses and local governments in waste re-cycling projects. A lecture and consultation with a PR expert helped the trainees to organize communication related to designing and implementing selective waste management projects between citizens, NGOs, businesses and local governments.

The training took place in Visegrád on February 9-12, 1997.

d. Non-profit Legal Management

This one day training was delivered by Ökotárs Foundation's Facilitators' Group. The goal of the workshop was to strengthen the knowledge of participants on legal management. There were two major topics around which the training focused: public participation and environmental law and financial law. Participants were members of environmental NGOs facing environmental problems in their regions and seeking legal solutions to their problems. Trainers were members of the Environmental Management and Law Association (EMLA) and there was one guest-trainer from the Ministry of Finance. The offering was held in Budapest, April 23, 1996.

e. Non-Profit Financial Management

The training was designed to provide useful information on financial management (many NGOs in Hungary are not fully aware of the financial issues relating to their organizations), to offer an opportunity to discuss financial problems with experts and to develop bookkeeping software for NGOs (the available software is for profit oriented enterprises whose regulations differ from NGOs'). The workshop consisted of two parts: the first one dealt with financial management issues, the second one with the presentation of the bookkeeping software. Participants were NGO members representing administrative staff. Seven of seventeen participants have been in one or more previous ETP trainings. The workshop was organized by Ökotárs Foundation's Facilitators' Group in Göd on May 3-5, 1996.

f. Implementing a Community Environmental Action Plan

This three-day workshop was a follow-up to the Year Four training on Implementing a Community Environmental Action Project which was based on the original Institute for Sustainable Communities (ISC) manual and delivered by the Independent Ecological Center (IEC), an ETP sub-grantee. The training was initiated by a prominent member of Debrecen's NGO community who participated in the Year Four ETP workshop, and raised US\$1,023, as an in-kind contribution to the training, from the Ministry of Environmental Protection. The 38 participants of the course represented different sectors of the city. The training has helped to form working groups focusing on the protection of environmental, architectural and esthetic values of the town of Debrecen. As a result of the workshop, the cooperation between local government and non-governmental organizations has been renewed.

The training was delivered in Debrecen Nov. 7-9, 1996.

g. Publication of the "Community Action Plan" Manual

Publication of the "Community Action Plan" training manual is a follow-up to Year Three and Year Four training courses. The manual, adapted by the Independent Ecological Center, a former ETP sub-grantee, is based on an original ISC manual, and presents basic steps in strategic planning, priority setting and comparison of environmental problems in terms of the risks posed to human health and the environment. The objective was to publish a book that could be used both with and without training.

This publication will enable local governments as well as citizens and NGOs cooperating with local governments to develop local action plans based on public participation. This is expected to result in an increased number of conscious, well designed local policies, increased public participation and cooperation with NGOs.

Both publications will be advertised by using a short brochure sent to local governments and also to the Ministry of Environment LEAP Project.

h. Publication of the "Financing Municipal Environmental Investments" Manual

This publication is a follow-up to the "Financing Municipal Environmental Investments" training held in Year Three. This subject is currently an issue of great concern and importance. There has been a great deal of interest in the book. In an effort toward greater applicability and practicality, the original manual was very carefully revised, redesigned and amended with newly developed chapters. The new version is focusing on the Hungarian experience and presents more country-specific and up-to-date information than the original manual did. The publication will be disseminated among local governments with the contribution of the Center for Civic and Municipal Innovation, a US AID funded organization developed for coordinating local government related AID programs in Hungary.

i. Post-Diploma Studies at Miskolc University

In Year Five the first year offering of PDS on environmental management was completed at Miskolc University and the second year offering for top and senior-level managers of Borsod county was initiated in the fall of the year. The two semester environmental management program is incorporated into the 400 hour engineer-manager post-graduate specialization at Miskolc University. PDS delivers the second and third semesters of this four semester program, and can be attended either separately or as a part of this longer program. The lecturing staff consists of both American and Hungarian specialists. This offering, as well as the first one, includes both managerial and technological courses. The modules held in Year Five are as follows:

First offering, second semester:

- Pollution Prevention
- Eco-Audit
- Environmental Impact Assessment
- Environmental Management

Second offering, first semester:

- Introduction to Environmental Economics
- Strategic Management
- Marketing
- Managerial Economics
- Decision Support System
- U.S. Restructuring Experience

For more information see also chapters II/A/2: Impacts of the Business Component in Year Five, II/C/2 University Strengthening and Institutional Capacity Building, Appendices A, B & D.

j. Meeting of the Environmental Business Club

The ETP Business Club is a group of ETP business training alumni who gather to discuss issues of concern to the environmental business community. They represent a positive impact of ETP training in Hungary. The programs and meetings are organized by OKOTECHNIKA Co. a previous ETP sub-grantee that is an environmental consulting company in Miskolc.

On the February 23, 1996 meeting participants discussed tasks and opportunities arising from the environmental product charges.

On June 7 participants discussed the Borsod county regional development concept with guest speaker, Kalman Gyongyosi, Executive of the Borsod Regional Development Council.

The program has gained financial independence and no ETP funding occurred after June 1996. Since then 2 more meetings have been organized without ETP support.

k. External Evaluation and Preparation of End-of-Project Status Report

The external evaluation is a forty page study prepared by a team of sociologists. The aim of the external evaluation survey was to evaluate the results and impacts of the ETP training courses held in Hungary between 1992 and 1996. The sample included forty ETP alumni representing five sectors according to fields of activity:

- business sector;
- polluters
- enterprises engaged in environmental protection
- municipalities;
- NGOs;
- university/academia

Within each sector, the answers of eight respondents were analyzed. Two success stories are also included in this study. These "stories" are the two best entrants and the winners of the "ETP Success Story" competition announced by ETP Office Hungary for ETP Eco Club members.

The preparation of the End-of-Project Status Report is ongoing.

4. POLAND

20 training activities (in 27 course offerings) including:

- 3 consortium trainings (one American trainer and 1-4 Polish co-trainers)
- 1 consortium training from Year Four
- 9 designated subgrant trainings and workshops
- 2 designated subgrant training from Year Four

In addition to the trainings, the following activities were delivered:

- 3 follow-up activities (consisting of 51 workshops)
- 17 PDS courses (6 for PDS2 and 11 for PDS3)

Year Five training in Poland concentrated mainly on issues requested by local and regional authorities. The most important topics were managerial knowledge connected with environmental investments i.e., management of whole process, financial management, valuation of environmental damage, bidding procedures and human resource management.

The majority of courses were performed by Polish trainers educated by ETP. It is worth noting that three trainings (six courses) were performed jointly by ETP and LEM Project experts. Apart from the above mentioned trainings addressed to Local Governments, ETP continued Post Diploma Studies (PDS2 and PDS3) focused on top level managers of heavy industry and power sectors.

a. Management of Environmental Investment Process in Municipalities

This course was performed in cooperation with AID's LEM project and was requested by the local and regional environmental authorities in the Silesia region. The training was offered twice and was designed to assist municipal authorities in managing the entire process of investment in environmental municipal infrastructure from the moment of identifying environmental investment needs, through designing and setting stages, selecting subcontractors, to the end of investment cycle with the "ribbon cutting." Special attention was given to potential difficulties on particular stages of the investment process and the ways of overcoming them. The instructors were experienced specialists who prepared case studies on the basis of real examples from the region. In addition to instructions, there were planned meetings with representatives of the Environment Protection Bank, regional environmental authorities, potential contractors and representatives of municipalities which successfully completed such investments. Impacts included:

- strengthening human capacity of municipalities in managing the environmental investment process;
- popularizing the best examples of successful investments;
- improvement of economic and ecological efficiency of municipal investment, particularly by reducing traditionally long time spans in the Polish investment cycle;
- assisting in the restructuring of local government to better respond to their citizens under market conditions.

b. Evaluating Environmental Damage by Local Self-Governments in the Process of Satisfying Collective Needs of Communities

Katowice School of Managers - Centre for Training & Education "Interdont" conducted a series of training seminars for the representatives and employees of self-government areas of the following provinces: Bielsko-Biala, Czestochowa, Katowice and Opole. The project's objective was to increase the participants' knowledge of legal instruments of counteracting ecological damage, the methods of estimating the "ecological capital," the techniques of removing economical damage and their implementation costs, as well as to increase the participants' awareness of natural environmental values in the process of proprietary transformations. Impacts include:

- participants' knowledge of the subjects was updated and considerably increased in seven gminas preparing the calculations regarding values of damaged areas;
- participants were inspired to innovate their own working methods; and
- participants became aware of the need for further education.

c. Financial Management of Environmental Investments

This course addressed the request for an advanced training for the participants of the Year Four training on financing environmental investments representing mostly municipalities. The training was offered twice and focused on identifying financial sources for environmental investment, preparing financial proposals, legal and technical

documentation and on effective management of an environmental portfolio. One of the major challenges for municipal investment officers is to cope with multiple sources of financing such as commercial loans, grants and self-financing schemes which is completely new for them. The course was designed by Polish instructors who delivered the basic training together with American trainers last year. The trainers represent financial, legal and organizational expertise in this area. The course was addressed exclusively to the representatives of municipalities who are at the stage of searching for sources of financing investments and their potential contractors. Training material was based on local cases. Representatives of financial institutions (banks, national, regional and local environmental funds, and EcoFund), potential contractors and local authorities were invited.

Impacts:

- about 30 financial proposals, business plans or fund-raising strategies;
- improving skills of the local governments in this critical area; and
- developing a collaborative network between municipalities, banks, national, regional and local environmental funds, EcoFund and potential contractors.

d. Pollution Prevention Strategies

This two-day module presented the concept and application of the environmental management approach of pollution prevention for use by both business government. The course was made up of the following six components:

- the traditional approach of command-and-control environmental management and the change in focus over twenty years;
- the link between environmental quality and economic success at both the firm and regional levels;
- the impact of international environmental management systems;
- the need for revision of government policies to encourage pollution prevention;
- the relationship of pollution prevention to Total Quality Management in business, and;
- the relationship of pollution prevention to regional economic competitiveness.

e. Strategies for Local and Regional Development

This follow-up activity was a sub-grant to the Union of Municipalities of Upper Silesia and Northern Moravia at their request. The main goal of the activity was the preparation of SWOT analysis which is the basic material for building strategy plans. During recent months it became clear that one workshop is not sufficient to reach the goal and it is necessary to hold at least three workshops in each of 15 sub-regional communes in the Region. To date, the Union has completed 40 workshops. The remaining five will be organized by the end of June. The success of this major project was possible due to successful fund-raising by the Union.

Impacts:

- professional SWOT analysis done for 15 groups of municipalities with similar characteristics. The result will be a basic information for preparation of realistic strategy plans in all participating municipalities;

- creation of 15 local leaders of sub-regional communes of gminas;
- 15 strategy plans for municipal development;
- successful fund-raising in the amount of \$25,000 from local and foreign resources.

f. Environmental Health and Tested Food for Silesia

This follow-up training consisted of five workshops for Local Governments. The high level concentration of heavy metals in the soil of industrial areas of Upper Silesia causes organic food produced in the areas to be very dangerous to human health especially for children. Knowing the situation, ETP funded a sub-grant in Year Four to the Polish Ecological Club (PEC) to organize a set of courses for local governments, health institutions, food producers and sellers. These activities were very successful. In fact PEC and five municipalities have provided a long term project to eliminate contaminated food from the market. ETP decided to support the project by financing 50% of the costs for this follow-up activity. The remaining 50% of costs were covered by local resources.

Impacts:

- securing long term financing farther activities especially for the cost of chemical testing and quality control of the organic products on a large scale;
- ensuring that the supply of short and long term agricultural production will meet the criteria and demand for organic products.
- increased customer demand and sustained private and government support for the program.
- four additional municipalities are interested in widening the activities of the project to include their territories.

g. Advanced Public Relations and Advertising Methods in Business, Local Government and Environmental Communication

The workshop focused on introducing advanced methods used in public relations and advertising. It dealt briefly with theoretical principals of public relations and advertising and concentrated on the specific practical application and use of selected advanced advertising and public relations methods in local government, small business and environmental organizations. The workshop addressed application aspects by means of case studies. Most cases had been prepared in advance but during the workshop, participants were invited to present their own cases which were discussed and solved in class.

Impacts:

- Students acquired basic knowledge needed for developing advertising and public relations (PR) campaigns
- Students learned all basic vocabulary and terminology used in advertising and PR and are now able to negotiate with advertising and PR agencies, if they choose to use their services. Likewise, they are now able to develop detailed advertising and public relations budgets.

- Students have been sensitized to the growing importance of proper use of PR in local government, business and environmental activism.
- Many students indicated that upon returning to their workplaces they would strongly recommend establishment of PR departments. Similarly, they indicated that they knew how to deal with international business partners who frequently point to the need for public relations.
- Participants were offered individual consultations. Local press journalists were given advice about the layout of their PR publications. Local government representatives received detailed advice on how to address specific PR problems. Small business entrepreneurs were given extensive help on how to use advertising to expand their consumer base.
- Several participants developed detailed plans for PR and advertising campaigns.
- Many participants brought their PR materials to the workshop. These were examined and critiqued. Specific suggestions about brochures, press releases, posters and, above all, media relations were offered and are to be implemented in the near future.

h. Introducing ISO 14000 and other International Environmental Management Systems

This course was conducted November 4-8, 1996 in Ustron and was the first of two offerings on this topic included in the ETP Year Five program for Poland. The second was delivered in March 1997.

The objective of the course was to familiarize participants with the dual role of currently developing environmental management systems as 1) tools for improving environmental performance and economic competitiveness of their firms and 2) an element in Poland's participation in European and world markets.

Material made available to the participants included a basic text and extensive sets of presentation notes that accompanied each special presentation. The structure of the course was a mix of lectures and discussion, group exercises, and participant reports. These case studies provided by Huta Czestochowa and Bureau Veritas illustrated the application of ISO 14000 and other environmental management systems in actual Polish business situations.

In addition to the core course, expert presentations were given on the following specialized topics.

- Environmental management as an element of competitiveness
- Life-cycle assessment of products
- Cleaner production
- Implementation of an environmental management program in Huta Czestochowa steel works
- Environmental auditing and certification projects carried out by Bureau Veritas
- Trends in public and private sector environmental management in the U.S.

Impacts:

- improvement of industry, local government and NGO understanding of international environmental regulations and standards as potential policy tools;
- facilitation of the adaptation process by industry to international environmental standards and regulations;
- strengthening the competitive position of Polish enterprises;
- sustaining a collaborative network between local government, business and NGOs;
- six industrial plants will apply for ISO 14000 certificates

i. Project Management and Bidding Procedures

This course was performed in cooperation with AID's LEM Project and its main goal was to provide the local government officials who are responsible for project management and public procurement with practical skills and knowledge on how to efficiently manage public projects. There has been a huge need for this kind of training since there was new legislation introduced in Poland on January 1, 1996 on project management and bidding procedures.

Impacts:

- participants received practical knowledge on bidding and management procedures;
- on-going advising from LEM's consultants on selection of particular bidding process modes;
- preparation and organization of three bids in two municipalities by LEM's consultants; and
- these municipalities have requested additional technical assistance from ETP.

j. Human Resources Management

These two 4-day training courses on Human Resources Management were held in cooperation with AID's LEM Project and focused on introducing basic principles and providing tools for effective personnel management, including information on social impact of economic reconstruction and a possibility of turning the problem of unemployment into opportunity for economic growth.

Impacts:

- all participants believed they would be more effective in human resources management in their companies in the future; and
- all realized the use of some of the methods they learned would help them to deal with the workers in their organizations and would help them to solve problems.

k. Quality Management and Behavioral Styles – Training for Trainers.

This course was a follow-up training offered for ETP trainers, facilitators and staff. The course was very professionally performed by Bukowski-Stanton Associates, a US firm. This training was especially designed for Foundation ETP Poland. The main goals of the training were:

- Increased professional skills of ETP trainers.
- Preparation of three new ETP trainers.
- Maintaining relationships between ETP staff and trainers.
- Strengthening participants' capacity to solve personal problems.
- Consolidation of the group of ETP trainers.
- Developing professional abilities of ETP staff.

l. Strengthening the ETP NGO Network

Over the last years there have been twelve trainings directed to NGO representatives that were attended by about 350 participants from many different NGOs. These activities created close contacts and cooperation among particular organizations. This very important impact of ETP activities is further sustained through this investment in maintaining the collaborative network.

This activity consisted of two parts. One is a three day workshop organized by the Polish Ecological Club and will be held in Beskidy in June 1997. The aim of the workshop is an overview of activities of particular organizations in order to establish priorities in the activities of all NGOs in the region. Joint realization of those common goals will be the method of strengthening the NGO Network.

The second part of the activity is the edition of six issues of Environmental Monthly Bulletin (1000 copies each) edited by the Polish Ecological Club. The goal of the bulletin is to present the achievements of NGOs and to publish opinions and facts connected with environmental problems occurring in the region. The Bulletin will be distributed to NGOs, Local Governments, environmental companies, Polish Parliament and Silesian Parliament.

Impacts:

- developing cooperation among NGOs working in industrial areas
- publishing workshop results
- publication and distribution of six issues of Monthly Environmental Bulletin during the period of May - December 1997

m. Post Diploma Studies: PDS3 at the Silesian Technical University

ETP completed delivery of the second offering of PDS and initiated a third offering for top managers of Energy Sector Industry. This sector, Poland's largest polluter, has enjoyed a monopolistic position for years. Besides managerial and technological courses, the curricula for the third offering includes institutional aspects of deregulation and the breaking down of the monopolistic power of this sector -- concepts completely new in Poland. High interest in the current PDS as well as successes and significant impacts of the PDS1 and PDS2 editions, have justified continuation of this program. PDS3 was completed on April 29, 1997 and on this day there were public presentations of the students' diploma works. The very high professional level of these dissertations was underlined by the final examination commission.

Impacts:

- development of over 25 restructuring plans, environmental impact assessments and audits;
- strengthening of decision-making skills of top-level managers in the power generation sector;
- reduction of environmental pollution from this sector; and
- improvement of the economic efficiency of this sector.

n. Academic Curricula Development workshop in Environmental and Natural Resources

This workshop elicited very interesting discussion. The group, made up of 35 leaders (rectors, deans and professors) from the most established Polish technical universities, were able to agree to the following recommendations as well as other conclusions regarding academic curricula development.

- There is a necessity for a broad introduction of ecological content to technical curricula currently under implementation by technical universities. It is necessary to standardize assumptions for basic ecological subjects.
- It is necessary to establish a standardized interdisciplinary approach to environmental protection issues at technical universities.
- Special emphasis should be placed on teaching public and private sector economics and their relationship to the environment.
- Curricula should be exchanged between Polish and American universities in the areas of Environmental Economics, Environmental Management Systems and the like. This would enable creation of a minimum curricula that is compatible with international standards.

Impacts:

- preparing national guidelines for environmental curricula development at technical universities;
- initiation of curricula reform at technical universities;
- publication of the basic text for environmental and resource economics; and
- popularization of American curricula and teaching methods at technical universities.

o. Institutional Development of ETP Operations

Foundation ETP Poland is in the process of officially registering. This process will be complete in June of 1997. The ETP office has moved to a new space in a better location. ETP Poland has upgraded its office equipment and now has access to e-mail and the internet. ETP staff have been developing their professional skills and taking part in courses with specialized focus.

p. Reduction of Low Emissions and Strategies of Energy Management in Municipalities

The reduction of low level emissions is among the highest priority environmental problems in Poland, particularly in the Silesia region and in Cracow. This problem is especially dangerous in urban areas with large numbers of households living in old buildings with inefficient and environmentally harmful heating systems using individual coal burning tile stoves in each room (in the Katowice area there are 600,000 stoves). The result of the practice has been a 40% increase in air pollution during the heating season. Recently, there was an interesting development in the region. While industrial pollution is decreasing significantly, air pollution from households is increasing due to purchasing the cheapest coal, which is highly sulfurized. This course was offered twice in order to address this problem by identifying the major sources of low level of pollution, presenting potential technical options to the problem (including energy efficiency and conservation) and finally, by designing appropriate policies, which can be implemented by local governments. Local cases, such as developing local central heating systems, using other fuels (natural gas) or electricity, improving insulation of buildings and reduction of energy losses were presented. Finally, financial possibilities for implementing policy options were discussed.

Impacts:

- shut-down of about 48 small and environmentally harmful boiler plants in central heating systems;
- modernization of 12 local central heating distribution systems;
- changing fuel in 10 coal combustion boilers from coal to oil or natural gas.

5. ROMANIA

8 training activities (in 9 offerings) comprised of:

- 3 Designated trainings
- 1 Solicited Subgrant
- 5 Follow-up activities

Year Five training in Romania concentrated on community based projects and activities in cross- sectoral involvement and on institutional contributions to economic restructuring. Pilot programs or case studies were a major outcomes in addition to the achievements and results of human capacity investment.

a. Public Participation for Environmental Policy and Program Implementation

As an evaluative follow-up activity, the purpose of this session was to meet with several former ETP participants from the Arges district in order to determine impacts, to identify specific activities that had occurred as a result of ETP assistance and to solicit suggestions for future programs or ideas about further training needs.

Participants' comments revealed that ETP trainings made a significant difference and changed the way people thought about environmental problems. It had changed their working attitudes and built bridges between government, industry and NGOs. Knowledge gained in ETP trainings had also helped launch some important community projects.

There was a lot of enthusiasm for expanding the training, exposing more people to the core courses and providing some technical assistance on particular projects. New topics were identified as being greatly needed.

b. Strategic Planning for Public Involvement

This one-day workshop was held in Pitesti at the specific invitation of the mayor and as a follow-up to a previous workshop on Public Participation for Environmental Policy and Program Implementation which was conducted in Valea cu Pesti in May, 1995. There were about 25 participants and the group included many members of the mayor's staff and a few leaders from local industry and environmental groups.

The content of the workshop involved a mix of lecture and small group work and engaged participants in a "competition" to develop the best public participation plan to meet the needs of a community described in a case study.

The workshop was successful in introducing some of the concepts important to public participation, engaging people in discussion, and exposing them to some techniques for effective communication. Participants enjoyed the day.

c. Designing and Implementing a Community Environmental Action Plan (CAP)

This activity's goal was to increase local environmental management capacity and encourage community action to solve local problems with local resources. In designing this training, the Institute for Sustainable Communities (ISC) collaborated with the Environmental Health Project that is being carried out in Zlatna, and other AID assistance programs in the region in an effort to prepare and challenge that community to undertake concrete initiatives and implementation strategies for addressing their environmental concerns.

Later, the experience that gained in practical projects and the lessons learned were transmitted and replicated entirely by local trainers. They used the initial training outcomes as case-studies for the community of Baia Mare. The presentation was a real event in the area with significant impact on human resources commitment and mobilization for problem solving.

d. Community Leadership and Strategic Planning

The workshop was designed to provide participants with a basic understanding of the process of strategic planning for environmental management and practical experience in

planning and involving the public in community environmental projects. The workshop content drew upon the most successful elements of Ronnie Brooks' previous training experiences in the Arges district and engaged participants in practical exercises designed to build their understanding, experience and confidence.

Participants were introduced to essential concepts of strategic planning for environmental management and learned practical ways for getting community participation in the planning and implementation of environmental projects. During the course of the workshop, participants were given the opportunity to apply what they were learning to real issues in the Alba Iulia area. In addition to the substantive training, participants learned about and applied various techniques that help groups function effectively.

Different approaches to leadership were discussed and people had the chance to examine various leadership roles in the process of planning and implementing community environmental projects.

e. Lead Exposure Abatement Program (LEAP)

The workshop was a follow-up topic and approach and built on former ETP courses (Conflict Resolution and Community Action Plan) held in the area over the past year. It also served to create a "seamless interface" between other US AID funded partners working in the area (EHP, WEC, HIID).

LEAP offered assistance in sampling lead from contaminated soil and working on an X-ray fluorescence spectrometer that was lent by EPA Denver to three Romanian communities that are endangered by heavy pollution. The training also presented optional programs that may help reduce lead exposure from soil, especially for children who are most at risk of being affected.

Participants were provided with the means to properly understand the situation in their locale, ways to take action aimed at alleviating the major problems and help in designing their own plan and assigning responsibilities to begin this problem-solving process.

Outcomes of the implementation consisted of the creation of a local task force that involved the whole community in developing an informational map indicating all lead pollution influence statistics and conditions in Zlatna, in creating a safe playground for kindergarten children and in establishing prevention measures to fight against all contributors to the unhealthy environment in their area.

f. Prevention of International Environmental Conflicts through Joint Trans-boundary Training

This course was initiated in spring in Bulgaria as a common offering to representatives from two neighboring cities -- one on each side of the Danube -- one Romanian and the other Bulgarian. The goal of the activity was to encouraging two sides of an

environmental conflict to use the same criteria to help in solving problems through democratic approaches and by means of environmental education. The course used real-life case studies and team work, with examples from community pilot projects developed in Romania, by ETP.

Participants were so appreciative of the idea of facing environmental problems and solving them through common efforts that this fall they requested a continuation of the experience and the work they had begun by transferring the workshop over the Danube to the Romanian side of the border. On this occasion, the event was entirely supported by the financial efforts of the local community. It involved local government and administration, businesses, school teachers and NGOs.

Participants have been so enthused at their new, improved success in communicating about these issues and in practically approaching trans-boundary cooperation through common programs that they have initiated several ideas for project proposals that they will be submitting to various potential funders. They hope this will help them to further maintain the links they have created and enable this group of good-willed individuals to involve more community members in these activities and extend the activities to other important joint environmental actions.

g. Interactively Teaching Adults

This training was offered as one of the preparation steps for the PDS opening in Romania. It exposed university professors to a variety of interactive teaching techniques -- in particular when addressing presentations to adults -- by using student-centered learning strategies. The training also addressed curricula development in modular system delivery. Distance learning and multi-media methods were also among the topics for discussion. The presented the role and the importance of evaluations, modern evaluation methods and data interpretation.

Outcomes included a rethinking of traditional student-teacher roles, syllabi redesign for interactive or modular presentation, promotional materials for the university curricula, plans modernization and reform of higher education and development of extension services.

h. PDS in Environmentally Friendly Restructuring in Romania

This program aims to provide new managerial and technical skills to meet the challenges of the transition process and the requirements of the new environmental laws and regulations. It facilitates integration of environmental aspects in restructuring and it develops human capacity to articulate and design sound reforms.

These strategic objectives are addressed by offering new managerial skills, introducing principles of international competitiveness, strengthening entrepreneurship and introducing methods to reduce environmental health hazards.

The audience is recruited from top and middle management of polluting industry as key players in technological and economic restructuring (including privatization) of their enterprises. Adding managerial knowledge and environmental concerns to their technical skills, they are expected to become important agents for change to sustainable development.

By initiating a first year delivery of this program, hopes are to strengthen the local university as well, and to create a pool of local trainers, a core of manuals and an experience that can further grow into a country-wide program.

i. Life Cycle Assessment (LCA)

A three day international workshop was organized in Czech Republic under ETP International to introduce the LCA (a relatively new method of environmental analysis) approach and teach LCA methods in hopes of fostering their implementation in CEE. The activity was assisted by the British Council and was attended by groups of participants from ETP countries. (For more detailed information on this training, please see the description in the Czech section.)

The event was a good opportunity for the exchange of experience and ideas, for regional and international cooperation and as an incentive for country specific plans regarding ISO 14,000 regulations -- including LCA -- and eco-labeling initiatives.

The nucleus of Romanian experts that was created for this occasion was given a welcome chance for more determined involvement in these areas. The team developed concrete action plans and are eager to have more training experiences and documentation opportunities.

6. SLOVAKIA

26 training activities including:

- 6 solicited subgrants,
- 6 follow-up trainings.

In addition to the trainings, the following activities were delivered:

- 8 manuals and brochures,
- 7 PDS modules .

Year Five for ETP in Slovakia concentrated on increasing public participation and strengthening the NGO sector within the AID SO 2.1 and 3.3. The focus was primarily placed on partner institutions that had the best potential for future self-sustainability in environmental training and management. That can be reflected in the ability of one ETP-assisted NGO that was able to obtain a grant for \$160,000 for a project resulting from an ETP needs assessment project. Also of key importance to the ETP was the concept of

community development, as only with community support and input will there be environmental change. Preparation was made for the long term viability of ETP-Slovakia Foundation which will carry on the tenets of ETP after the US-AID financing is gone.

Within the Year Five ETP Slovakia completed 11 projects consisting of 34 activities (training workshops, and publications). These activities included 26 training workshops and resulted in the production of over 8 manuals and brochures, plus the many manuals that were an output of the training courses. ETP has provided follow-up subgrants to 6 local partners, and awarded 6 designated subgrants, all of them Slovak. In total, ETP has worked with 12 different local organizations. The ETP training courses attracted 474 participants through the year, and met the high expectations of those who attended.

a. Risk Assessment for Toxic Elements in the Food Chain and Animals

The risk assessment training course was held in December in Kosice as a part of the Ministry of Soil Management plan for reduction of toxic elements in animals and the food chain that will soon be institutionalized in a Ministerial decree. The training has been specially tailored for needs of the 17 participants who were professionals from National Pesticide Reference Laboratory, Institute of Preventive and Clinical Medicine, State Food Certificate Authority, Regional Environmental Office and Military veterinary research institute. The workshop has been designed by the team at the National Pesticide Reference Laboratory at the University of Veterinary Medicine in Kosice and served as a kick-off activity for self-financed courses that may be delivered for a wider audience such as pesticide distributors and consumers by local trainers. The course presented methods of US EPA, European Union and Slovakia used in risk assessment. The course has produced a publication which will be distributed to universities and offices as a resource. In-country subgrant to Veterinary University of Kosice.

b. Financing Environmental Projects on the Municipal Level

The goal of this training is to make the financial management and decision making in towns more effective. The training activity planned for September 1997 would prepare a comprehensive background profile of municipal environmental financing and from that basis the training would address most relevant methods and techniques, such as repayment schedules, rate of return, etc. Replication of the course is expected. This activity would be paired with the one from Year Four and it would be targeted for the environmental hot-spot regions in Slovakia. The partner will be IROMAR - Institute of the Development of Villages, Towns and Regions at the Faculty of Economy at the University of Matej Bel in Banska Bystrica. The original budget of \$26,000 has been changed and the \$20,000 has been transferred to the follow-up budget.

c. Methods of Effective Decision Making on a Local Level

The three offerings of this course were held between October and November 1996. They addressed 61 participants and targeted "first contact" local government officials to

strengthen their communication skills and decision-making capabilities. Participants were drawn from the municipal police department in Banska Bystrica, the Institute of Monument Preservation and the Regional Association of Towns and Villages of Tatro region. Participants gained exposure to new discussion methods (cooperative, negotiation, and participative), as well as concrete experience through role-playing in mediating conflicts, decision making in groups and presenting and facilitating public meetings. The training has been highly evaluated and requested also by different agencies from different places in Slovakia.

d. Technical Assistance to Local Community Initiatives

This activity was comprised of three workshops aimed at organizational consultancy and technical assistance to community initiatives in Slovakia. At one of the events in Trencianske Teplice in February 1997, more than seventy participants took part in a one day discussion forum on the experience and information sharing of community initiatives and support programs. The activities have been attended by 134 participants all together. In-country subgrant to Partners for Democratic Change Slovakia.

e. Strengthening Environmental NGOs

The goal of this series of workshops was to provide skills that are essential for NGOs to sustain after foreign assistance ends. Three workshops for NGOs have been held: "NGO Fundraising and the Legal and Tax Related Issues", "Accounting and Insurance for NGOs," and "Law and Green Agriculture." The offer of free legal consulting has been taken full advantage of, with over 100 requests and consultations from NGOs per month. Two student workshops have been held to form student teams who are interested in NGOs and public interest law. There is a possibility for student internships and a future course at university on the subject.

f. Human and Institutional Development of the ETP Operations

This activity has been providing for human and institutional development of the ETP-Slovakia Foundation to provide better service in the future. It allowed the staff to attend professional development courses and benefit from other kinds of management assistance from University of Minnesota. Internal organizational and economic rules have been finalized, job descriptions written and performance appraisal procedures are being prepared. Our human resource development plan including training goals is being drafted and discussed. The strategic planning process has continued throughout the year 1996 and has helped in clarifying the vision and strategies for the future.

g. Public Relations for NGOs

This training on Public Relations was held from December 6-8, 1996 for 20 participants from NGOs in Slovakia. The training was a subgrant to Greenpen Foundation.

The main intention of this training was to provide a basic orientation to public relations theory and to help develop practical skills of participants for making contacts with media, publishing in newspapers and making dynamic media presentations on radio and television.

The outcome of the training is that the participants were motivated to continue their learning about public relations as well as to apply the know-how they had gained through increased public relations activities for their NGOs. A manual on Public Relations for NGOs was produced and distributed.

h. Post-Diploma Studies in Environmentally Friendly Restructuring and Strategic Management of Industrial Companies

The activity represents the second year of PDS in cooperation with the TU Košice and VSZ a.s. (first year VSZ contribution equaled the ETP 1:1). The local partner - Technical University has marketed the program successfully and 21 participants - middle to senior managers of industrial companies in the region - have registered for 1996/97 and paid the \$1,000 annual fee for the program. The matching funding of the program in Year Five remained 1:1 due to lower costs. The costs were lower since start-up costs were not incurred as in the last year. The program has successfully cooperated with TEMPUS funded program at the TU as well. The alumni club of PDS graduates has been established and the prospects for self-financing the program at the Technical University are very high. In the year 1996/97 PDS consisted of 12 core modules of which 6 are technology based and 6 focus on management in addition there was one bonus module on project design and management.

i. Environmental Monitoring of Hornad River

The workshop, held in December 1996, was attended by 30 participants from NGOs, the state environmental agency, waste water inspectorate, Hornad River Basin Authority, Water and Sewage company and local self-governments. It was the last event in a year-long project of public monitoring of water quality in Hornad. The workshop consisted of a series of presentations on water quality in Hornad, international aspects and measures mitigating the water pollution of Hornad. The second part of the workshop focused on specifying the problems that are related to water quality and identifying options for solutions and next steps. In-country subgrant to SOSNA Foundation.

j. Guidebook for Community Initiatives

The authors - Lubica Macedo and Ladislav Briestenský, together with a team of consultants have prepared a guidebook for community initiatives that will come out in May 1997. The goal of the guidebook is to provide a summary of information for community initiative activists in Slovakia on legal, fiscal and institutional environment for their work. The Guidebook will explain and describe steps of the public outreach process and community initiation (planning for community action, public participation, action plan management, leadership, community institutions) based on Slovak and relevant foreign

experience. The target audience is NGOs, active public, local government, etc. In-country subgrant to ETP Slovakia Foundation.

k. Public Participation for Improvement of Municipal Waste Disposal

The training workshop was held in October 1996 in Bardejovske Kupele. Nineteen participants from local self-government, state environmental inspectorate, municipal waste companies and media were presented and trained in tools of public outreach on municipal waste issues. The second half of the three day workshop was devoted to discussions on the strategy for municipal waste in Kosice and identifying specific activities to improve municipal waste management in Kosice. As a result of the activity, a brochure on "How to Deal with Communal Waste" was published and distributed to the public. In-country subgrant to Third Millennium Resources Foundation.

l. Needs Assessment of Horna Torysa Region

The purpose of this publication was to provide involved NGOs and development institutions a comprehensive needs assessment and analysis of the Upper Torysa in Eastern Slovakia to better focus the rural development and training activities of the NGO. The brochure looks at traditions, perceptions and other aspects of the region that help to specify the targeting of training and consulting activities for NGOs in that region. In-country subgrant to NGO People and Water.

m. Vital Signs in Energy - Publication

Translation of the famous Vital Signs chapters on energy issues providing the up-to-date trends in energy production and consumption patterns. The copyright has been personally waived by Christopher Flauvin. The pamphlet has been widely distributed to energy policy and decision-makers in Slovakia in government, parliament and ministries and in the environmental NGO community. In-country subgrant to For Mother Earth.

n. Analysis of Training Needs in the Environmental Sector - Publication and Workshop

In an effort to contribute to improving intersectoral exchange of information in the area of environmental management training in Slovakia, the ETP Slovakia Foundation undertook this needs assessment. This project was implemented in three phases. In the first phase, chosen representatives of particular sectors: state government, universities, business, NGOs and organizations focused on rural development; made up a comprehensive report from their sector about this issue.

In the next phase, at a professional meeting, these reports were presented to the multi-sectorial group. These presentations served as a basis for discussion about trends and needs in the particular sectors, possibilities of the intersectoral cooperation, types of

required training and their characteristics, an exchange of information about activities of particular sectors and their interest in cooperating in the very near future.

The outcome of this analysis is an evaluation of the current status of environmental management training, identification of trends and needs (topics, sources, foreign support, methodology), mutual exchange of information among the participants and an update of information necessary for effective support of training activities by ETP Slovakia Foundation in the year 1997/98.

o. Developing a Local Environmental Action Plan

The three day course in a community in Eastern Slovakia will be focused on community environmental planning methodology conducted in the form of workshops and consultations and addressing local problems. The course will cover steps of action planning, identification of high priority environmental problems and selection of priority strategies to address the problem. Key words are: comparative risk, priorities setting and selection, strategy development and project management. The course will be delivered by the ISC with assistance from the A-project Foundation in Liptovsky Hradok which will pursue further activities in a local action planning process. The course will be held in Fall 1997. The activity will be targeted in the region selected for the Institute's for Sustainable Communities "community project" to complement the effort of ISC.

p. Developing Non-Cash Resources

A two-day course aimed at identification of non-traditional, non-cash resources in a community with a goal for use in a specific, community based or community improvement program. The course will address all components and will address the problem of a lack of local sources for community development activities. The local partner to the course will be ETP Slovakia Foundation - Kosice office. The course will be held in June 1997.

q. Training of Trainers in EMS and Ecoaudit

This is planned to be a series of consultations and meetings aimed at introducing the concept of environmental management systems and environmental audit at both the municipal and industrial company level. Specifically, the tool of eco-audit in the cities is a new trend in a local urban development that allows the town managers to be informed on their environmental risks and facilitates the communication of these risks to public. Since many aspects of the EMS methodology are directly applicable, the activity will also serve consultants dealing with industrial applications. The activity will be performed between May and November 1997.

IV. Progress toward Institutionalization of the ETP

A. Activities of ETP- International

The ETP-International (ETP-I) is an informal, non-governmental, nonprofit, international association. It does not have legal status nor is it registered at this time. It is headquartered in Bratislava, c/o ETP Slovakia Foundation, Hanulova 5/b, 840 02 Bratislava, Slovakia.

Mission and goals.

Mission:

The ETP-I mission is to contribute to sustainable development in CEE by:

- enhancing policies and institutions,
- strengthening civic society
- improving decision-making capabilities, and
- raising environmental awareness.

Strategic goals for 1996 - 1998:

1. By 1998 ETP-I will have designed and implemented a minimum of five joint proposals significantly contributing to the goals of ETP-I.
2. By 1998 ETP-I will be a functioning network effectively collaborating among its members and with the other partners in fulfilling its mission which will be measured by the quality of impacts of the joint projects with measurable parameters:
 - reference case
 - list of trainings, trainers, and impacts
 - database on experts, services, funders, credentials
 - strong and lasting contacts with European Union partners
 - newsletter for public relations

The ETP-I activities are not limited to specific geographical area and ETP-I has institutional membership.

The bodies and structure.

The bodies of ETP-I are: the Assembly
the Coordinator

The Assembly consists of all ETP-I members. It is the supreme decision-making body of ETP-I. Each member of ETP-I has one vote. The Assembly meets at least once a year. Meetings of the Assembly are called by the coordinator with at least one month prior notice. The Assembly can be called by five of the members. The Assembly elects a chairperson for each individual meeting.

The Coordinator:

- provides daily management of ETP-I
- reports to the Assembly and to the Head of the host organization
- prepares background documents for Assembly meetings and takes minutes
- drafts the budget and gives an annual report on the state of assets
- makes decisions on all issues that are not of specific concern to the complete Assembly

Current members are:

- Center for Environmental Analysis
Decin, Czech Republic
- Center for Environmental Studies
Budapest, Hungary
- Center for Hazardous Materials Research
Pittsburgh, Pennsylvania U.S.A.
- Environmental Training Project
Katowice, Poland
- Environmental Training Project
Bucharest, Romania
- ETP Foundation Bulgaria (Sustainable Development Projects)
Sofia, Bulgaria
- ETP Slovakia Foundation
Bratislava, Slovakia
- University of Minnesota
Minneapolis, Minnesota U.S.A.
- World Wildlife Fund
Washington D.C. U.S.A.

B. Current Status of Institutional Progress -- Country by Country

1. BULGARIA

ETP Foundation (Sustainable Development Projects) Bulgaria was established on July 6, 1995. It is met with success in the institutionalization process and has secured funding from sources other than USAID.

Address for correspondence:

ETP Foundation (Sustainable Development Projects), Bulgaria
27-B, Al. Stamboliiski Blvd., apt. 18
1301 Sofia
Bulgaria

tel/fax: +359-2-80-16-70
tel: -35-2-980-0533
E-mail: kmandova@cserve.mgu.bg

Currently the foundation is engaged in four projects:

1. Training of trainers for Strategic Planning of NGOs - funded by PHARE Democracy Program. This training is jointly conducted with Environmental Partnership for Central Europe (EPCE), Poland. The training materials were developed by ETP (WWF-US as consortium partner). At the request of the funder, Civil Society Development Foundation, Bulgaria, the training materials will be published as a book. One thousand copies will be distributed among Bulgarian non-governmental organizations. This project is co-financed by the National Forum Foundation. It serves as a perfect example of East-East partnership.
2. Public Relations for Environmental NGOs - funded by Regional Environmental Center - Bulgaria.
3. Strengthening Business Contributions to Sustainable Development - Charles Stewart Mott Foundation joint project with ETP-I.
4. Ongoing ETP training activities.

ETP Foundation (Sustainable Development Projects) is highly regarded as a partner to other well known national foundations and non-profit organizations such as the Regional Environmental Center CSDF, EMTC, as well as the Ministry of Environment and the National Water Council. ETP Foundation works in close cooperation and partnership with many municipalities and environmental businesses throughout the country.

2. CZECH REPUBLIC

The ETP mission in the Czech Republic is being carried out by The Center for Environmental Analyses (CEA) in Decin, Northern Bohemia.

Institution at glance

Established: 1994

Type of organization: non-profit, non-governmental

Contact address:

Center for Environmental Analyses - CEA

Kízová 25

405 01 Dicin 1

Czech Republic

Phone/Fax 420-412-22084

E-mail: CEA@SPACE.CZ

Institution description

The process of environmental management training envisions the successful transfer and development of elementary democracy on local and regional levels in the CEE region.

The improvement of severe environmental conditions can only succeed if the people of our countries exercise their rights as concerned citizens and share responsibilities for the future of our region.

Training in environmental management, participatory and interactive in nature, is a cost-effective vehicle for the implementation of this vision. Our message addresses the grass-roots level of society and the impact is measurable in both qualitative and quantitative ways.

The main goal of the CEA is to transfer and develop environmental methods of analyses from US and European Union countries and their dissemination to the all involved parties in the Czech Republic and thus help with building efficient tools of environmental protection including ecosystems and public health. The targeted audiences include local and regional governments, non-governmental organizations (NGOs), environmental businesses as well as major polluting industries and finally universities and research institutions.

Current Status of CEA

CEA, as the carrier of the ETP mission after the phase out of US AID funding in the Czech Republic in February 1995, is continuing with the delivery of high quality training courses. This is achieved by adhering to the basic principles of ETP training philosophy. This approach includes an interactive participatory workshop format, lectures followed by small group work, follow-up reporting, the use of facilitators for small group work and discussions and brainstorming sessions.

In June 1996, CEA organized a Needs Assessment-Roundtable Meeting for leaders in the environmental community to discuss what sort of environmental training is still needed in this country. From this discussion, CEA developed some project proposals and sought to make them real trainings. Fundraising for these trainings was relatively successful. CEA received funding from NROS, Regional Environmental Center in Prague and Budapest, Open Society, British Council in Prague and other Central and Eastern European countries, and the Czech Ministry of the Environment.

CEA as an organization is also in the process of forming a board of directors to better guide the organization. Tentative members of the board include a city mayor, leaders in industry and representatives from other non-governmental organizations. The formation of the board of directors is an important step in continuing the sustainable development of CEA.

CEA is also a member of the project "Environmental Management Training in the Czech Republic." The project is a part of the Environmental Management Training Centers (EMTC) Network of the Regional Environmental Center for Central and Eastern Europe.

Partners and Funders

The CEA has built close contacts with the Environmental School of the Regional University at Ústí nad Labem and the School of Transport, Technical University, Dién. It is involved in strategic planning of university development, curriculum development and teacher preparation. The CEA also cooperates with the Czech Ministry of the Environment on the development of environmental analyses methodology and the Institute for Environmental Policy, Prague, an independent non-governmental public policy think-tank.

The funding for CEA came from US AID, US EPA, REC, PHARE and UNDP.

3. HUNGARY

In Hungary, the ETP mission has been taken over by the Center for Environmental Studies (CES) in Budapest. The Center was registered in November 1993 and is directed by the ETP ICC. CES is an independent non-profit organization dealing with public policy research and education related to environmental policy and sustainable development. As an independent think tank, it serves national as well as regional and local governments, the business sector and non-governmental organizations. Since November 1993 the Center has evolved significant expertise. The staff consists of nine people with educational backgrounds in economics, law, environmental engineering, and political science, and professional experience in research, research and project management, government administration and journalism. Around the Center, a sizable team of collaborating institutions and individuals has evolved including for example the Business Management Department as well as individual researchers of the Budapest University of Economic Sciences, the Institutes of Economics and Political Science of the Hungarian Academy of Sciences, Research Institute of Business Cycles, the Economic Research Institute (all in Budapest), and the Department of Organizing and Management of Miskolc University. Thanks to its advisory board of NGO leaders as well as Board Members with strong NGO backgrounds, the Center's collaboration with other environmental NGOs is quickly expanding. The CES continued to coordinate ETP activities under a subcontract established during Year Four including follow-up activities, tracking impacts, producing publications and facilitating training activities from Year Four. The CES also delivered training courses for local governments, and was and is working on raising funds for further training programs. Besides its contract with ETP, the Center is funded by the Rockefeller Brothers Fund, the German Marshall Fund of the US, the Charles Stewart Mott Foundation, PHARE as well as contracts with different agencies of the Hungarian government.

Apart from the Center, training activities were institutionalized at Miskolc University that plans to continue offering PDS courses in the future. Also, the Environmental Partnership's Facilitators Group, strengthened by the experience gained from delivering ETP courses as well as the Independent Ecological Center will continue the ETP mission using ETP materials and methods for NGOs. Training materials from ETP business courses have been used by the Baja College of Water Management and the Business School of the Miskolc Humanities. Two sub-grantees: HUNGAROKORR and

OKOTECHNIKA are also able to deliver further courses on environmental liability and environmental auditing.

4. POLAND

While ETP Poland continues to deliver high quality training programs and receives financial support from USAID, it is important for the ETP organization in Poland to continue to develop its institutional capacity to support and sustain these activities in anticipation of USAID assistance ending in the near future. To this end, within the past year ETP has submitted a notarial act which establishes the "Foundation ETP-Poland." The act was officially signed on December 20, 1996 in Katowice. The notarial act (deed authenticated by a notary) together with the statute has been submitted to the City Court of Warsaw for formal acceptance.

During the next year of activity, the Foundation will focus on the following objectives:

- establishing the visibility of and awareness about the Foundation as the sustainer of ETP activities in Poland;
- assuming the management of ETP activities in Poland more fully;
- developing more cooperation with the domestic and foreign partners of ETP as a self-sufficient institution;
- organizing ETP trainings in collaboration with the University of Minnesota;
- cooperating in the organization of the Post Diploma Studies program for Local Governments;
- perfecting Foundation management and working methods in accordance with Polish law and financial regulations.

5. ROMANIA

The path to institutionalizing ETP Romania began with several external and internal analyses and evaluations concerning all decisions related to becoming a local foundation. Further to this goal, this year brought visits of ETP Management Team representatives from Minnesota to Romania for the purpose of assisting and guiding this process. There were also two Advisory Board Meetings organized. One of these occurred in Minneapolis during the ICC internship that focused on the objective of institutionalization. The meeting included ETP professors that have taught in Romania. The other board meeting took place in Bucharest and gathered both American and Romanian ETP collaborators as environmental experts and decision makers.

Additionally, the ICC attended an international workshop on Alternative Fundraising for NGO self-sustainability that provided useful experience and orientation on the subject.

Based on these experiences and the SWOT analyses, the principal ideas for the Charter and the general structure of this Foundation (that will probably be called Resource Center for Change) were designed. The next immediate step is procedural and depends on the local legal requirements for getting a legal identity for the organization.

This anticipated Foundation has already been contacted for various collaborations, partnership offers for some projects and applying with joint effort on proposals. This represents a good indication of the kind of recognition and level of appreciation that ETP has in-country. This successful work will continue pending new funding opportunities.

6. SLOVAKIA

Background

The Environmental Training Project was institutionalized in Slovakia in Spring 1995 as the ETP Slovakia Foundation (ETP-S). ETP-S was registered and established with the mission of contributing to sustainable development and the development of civil society in Slovakia through education, research and information support and services.

The main reasons for establishing the ETP Slovakia Foundation were as follows:

- to satisfy the educational needs in the area of environmental management in Slovakia through interactive and participatory training programs; and
- to enhance the skills of NGOs, local governments and the business community so they can better address the issues of quality of life, environment and sustainable development in the country.

Diversification of Funding for Sustainability

Since the very beginning, the Foundation has been aware that the main funder - the ETP - will phase out sooner or later and the financial sustainability of the institution will be the crucial issue to deal with in a short run. The understanding of this fact led the staff to diversify the Foundation's project portfolio with other educational, research, and community development projects. The total revenues of the Foundation for 1995 and 1996 represent \$227,400, of which \$167,684 (74%) represent the subgrant of the University of Minnesota. The Foundation has succeeded in decreasing the total dependency on the single source of the Environmental Training Project and this trend continues so that the share of ETP budget in the total budget is constantly decreasing.

The structure of income for the Foundation is as follows: 1% is income generated from contracted services, 99% are grants and donations from Slovakia or abroad by various private and governmental agencies. The operational costs of the Foundation represent 20% of the total budget, ETP projects 54% and non-ETP projects 26%.

Programs

After two years of operation, the Foundation is broadly utilizing the institutional and programmatic resources accumulated since 1992 through the Environmental Training Project in Slovakia. ETP-Slovakia Foundation has been active in the following areas:

- **developing management and environmental protection skills** through administering the Environmental Training Project in Slovakia and coordinating or delivering training courses. Since October 1995 ETP-S has managed environmental training worth

\$123,005 through subgrants to local training institutions and provision of training by ETP-S staff. This program area represents 54% of the total budget.

- **assisting the development of the NGO sector in Slovakia** through managing a feasibility study on possibilities of developing community philanthropy in Slovakia funded by various private foundations such as Rockefeller Brothers Fund, Open Society Fund and Sasakawa Peace Foundation; arranging for the selection of young Slovak NGO leaders for six month fellowships of the Civic Leadership Foundation in Minnesota; and assessing the needs of NGOs in Eastern Slovakia for Charity Know-How Fund. This area represents 11% of the total budget.
- **assisting local governments in environmental planning on a local level** through a WRI managed project "Opportunities and Limitations for Air Quality Management at the Local Level, a case of Upper Nitra" and REC funded workshops for municipalities on EU legislation in water management. (15% of total budget)
- **contributing to a debate on various issues of environmental policy** - ranging from workshops on right-to-know legislation with the Harvard Institute for International Development to co-organizing international workshop on Life Cycle Analysis and studying the contribution of business sector to sustainable development in Slovakia within a research project of the Center for Nations in Transition at University of Minnesota, co-organizing a national conference on "Sustainable Slovakia" together with the Society for Sustainable Living in Slovakia.

The Foundation has been actively involved in the Environmental Management Training Centers Network as one of its EMTCs and delivering environmental training. In September 1996 it established a Consortium with the Partners for Democratic Change Slovakia to implement projects focused on support of community initiatives in Slovakia.

The Foundation offers training, facilitation, research, consulting and management services for various projects related to sustainable development, environmental management and NGO development as well as grant management.

Institutional Development of the Foundation

The Foundation has established its operating principles and procedures, including the finalizing of internal organizational and economic rules. The Board of Directors meets every three months and efforts are made to increase its involvement in strategic planning and fundraising. In order to meet the increased work demands of diversification, the Foundation has grown to six and a half employees plus one U.S. Peace Corps volunteer. Of these six and a half, the Kosice office employs two and a half persons and the Bratislava office four. Staff includes the director, financial manager, program manager, several project managers and an administrative assistant.

The human resource development plan is being drafted and discussed, including plans for staff training. Job descriptions have been finalized with staff roles and responsibilities

clarified, and the performance appraisal procedure is being worked on. The strategic planning process has continued throughout the year 1996 and has helped in clarifying the vision and strategies for the future. Increased awareness of marketing and public relations techniques and opportunities has developed, especially with the need to become financially sustainable.

Challenges for Sustainability

The phase-out of ETP funding is the biggest challenge to the Foundation despite its efforts in diversification of funding and programs. An intensive debate continues on what will be the major target area of the Foundation's activities. Possibilities include: provision of training, facilitation and technical assistance to NGOs, organizing of environmental training, grant-giving, community development or environmental policy research. One of the potential alternatives for future ETP activities is the Slovak Institute for Sustainable Development which is in the process of registration. The potential funding from PHARE Partnership and Democracy programs will be explored along with more intensive efforts in selling the Foundation's services.

Slovakia's hostile legal environment is another challenge that must be met. The new "Foundation Bill" represents a formidable obstacle. This bill was adopted by parliament last May. The law prevents the Foundation to continue in its activities as a "mixed" foundation (grant-giving and operating). Legal alternatives have been examined recently to suggest a way of transforming into a civic association.

Appendices

Appendix A -- Year Five Calendar

Country and Component	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
BULGARIA	Follow-up Funds			\$22,000
Local Gov't	<p>Strengthening Democratic Governance and Increasing Regional Impacts of the Yantra River Basin Council:</p> <ul style="list-style-type: none"> • Institutionalization of the River Basin Councils through Enactment and Implementation of the New Water Law; • Coordination of Water Quality Mgt. Actions by Council Member Organizations; • Devel't of Improved Water Quality Information in the Yantra Region; • Devel't of a Public Information Program; • Devel. of a stream bed restoration proposal. 	<ul style="list-style-type: none"> • introduction of the YRBC concept into the new Water Law as a new democratic form of natural resource management • codification of democratic rules of governance as a model for other river basin councils 	Oct. 1, 1995 - Sept. 30, 1996	ISC-let subgrant \$20,000
Local Government	Prevention of International Environmental Conflicts through Joint Transboundary Training	<ul style="list-style-type: none"> • The participants' opinion is that similar training courses would be very useful along the Danube River. These courses could include the rest of the "paired" towns. This idea is supported by both the Bulgarian and Romanian trainers. • The teachers from both towns are committed to sharing their new skills and experience and incorporating the env'tl issues into the everyday contact with students. They plan to make an "investigation excursion" on the Danube River. • The NGO reps. also plan to join their activities to serve as a partner of the gov'tl authorities in solving env'tl problems • The two municipalities intend to prepare a common env'tl program with the help of the local NGOs • Although the lectures to exercises ratio was 1:2, the participants need more small group work. The participants after the second small group exercise were very eager, satisfied and fully motivated to express their ideas. • Since all the Romanians expressed a desire to visit Varna (very close to Balchik) POLY organized a four hour visit to the Water Treatment Facility of Golden Sands. 	Toutrakan, April 27-30, 1996	Allocated in Year Four POLYCONSU LT \$15,300

Country and Component BULGARIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
Local Government	<p>Increasing Environmental Awareness Among the Young Generation of the Yantra River Basin:</p> <ul style="list-style-type: none"> • Young People for a Sustainable World; • Solid Waste Management and Public Participation; • Bulgarian Factors for Sustainable Development. 	<ul style="list-style-type: none"> • A photo album was prepared of the sites visited , which will be included in the photo exhibition to be shown in three towns. • The youth clubs were invited to participate in the Municipal Solid Waste Management Project, and the eco-brigade to clean up the forest reserves. • A round-table discussion was held on the Bulgarian factors for sustainable development; and a competition announced on the above topic. • A funding proposal was submitted to the Civil Society Development Foundation in Bulgaria and the Regional Environmental Center in Sofia for organizing a World Youth Forum "Young People for a Sustainable World" held October 20-23, 1996. • The establishment of a Youth Center for Sustainable Development is still in progress and is supported by the Ministry of Education. • The Iatrus Ret youth club has strengthened its position and expanded its popularity both in the region and nationwide. • A funding proposal was submitted to the Ministry of Environment national eco-fund for the establishment of a Youth Park "Derwent" along the Yantra River. • A communication network among various environmental youth clubs in the region has been established with the prospect of creating a national network of youth clubs. 	<p>Veliko Turnovo</p> <ol style="list-style-type: none"> 1. January 26-27, 1996 2. May 10-11, 1996 3. June 6-10, 1996 	<p>WWF-\$0 In-Country subgrant to ETP Foundation \$5,000 Matching funds from Yantra region organizations \$3,000</p>
Local Government	<p>Strengthening environmental awareness and skills of Yantra River Business Council constituency:</p> <ol style="list-style-type: none"> a) Teacher's workshop on discussion and implementation of a Solid Waste Management Resource Guide b) Publication and Dissemination of a Solid Waste Management Resource Guide for Schools 	<ul style="list-style-type: none"> • The Resource Guide is currently being tested by two schools in Veliko Turnovo with the strong support by the municipal authorities. • The results will be incorporated in the municipal solid waste management strategy. • The publication of the guide will give a chance to a large number of schools in the country to include it in their school curricula. 	<ol style="list-style-type: none"> a) March 1997 in Veliko Turnovo b) April 1997 	<ol style="list-style-type: none"> a) ETP Foundation, \$6,000 b) ETP Foundation \$4,000

Country and Component BULGARIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
Business and Local Government	Advanced Public Relations Methods in Business, Local Government and Environmental Communication	<ul style="list-style-type: none"> • Students learned basic steps used in preparing public relations (PR) programs and campaigns. • Students learned all basic methods, vocabulary and terminology used in PR and are prepared to engage in well informed negotiations with PR agencies, should they choose to use them. • Students know the basics of public relations budgeting. • Students have been informed of the significance of PR and its potential contributions to the success of local government, business and environmental activism. • Students are now able to speak the common language with international businesses which often emphasize the importance of PR in overall marketing plans. • Several students stated clearly that they now understand the significance of PR, indicating that they would insist on forming PR departments at the workplaces. • Students were offered individualized consultations and advice. Some public materials were reviewed and critiqued. • Participants learned principles of press relations and research methods used in PR. • An offer was made to publish a book with local case studies from Bulgaria. 	Sofia, November 18-20, 1996 January 16-18, 1997	U of M \$11,870
Academic/ Institutional Strengthening	Post Diploma Studies in Environmental Business Management <ol style="list-style-type: none"> 1. Strategic Management 2. Marketing 3. Restructuring of the Economy 4. Corporate Financing 5. Information Technologies 6. Bulgarian Environmental Legislation 7. Pollution Prevention Strategies 8. Intellectual Property and Copyright 9. Operations and Logistics 10. Team Management and Communications 11. Business Development 12. Environmental Impact Assessment of the Food Industry 13. Environmental Impact Assessment of the Chemical Industry 14. Pollution Prevention Strategies and Waste Management 15. Survival Strategies 	<ul style="list-style-type: none"> • development of business, strategic and marketing plans; • establishment of the Varna post diploma center as an extension services provider for envt'l bus. in the region; and • improvement of envt'l and economic performance of the participating firms. • Participants showed a visible change in their way of thinking. The students with technological education showed that they are able to think not only in a narrow, technical way, but as managers too -- assessing not only technology, but also economic and environmental factors. • Many managers enrolled in PDS reserved places for other representatives of their company in the next courses • PDS generated 1 strategic plan, 4 business plans, 2 marketing plans, 17 environmental audits and 15 environmental impact assessments. 	Varna September 1995 -September 1996	Allocated during Year Four -- U of M \$29,000; in-country subgrant \$10,000

Country and Component BULGARIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
Academic/ Institutional Strengthening	Faculty and Curriculum Development Workshop	<ul style="list-style-type: none"> A core team was trained for the ETP Foundation who will be able to deliver future trainings for regional and local government. They will use the interactive approach to non-traditional learners -- problem-solving through brainstorming, brain-writing, developing case studies and evaluation of curricula. A request was made by the participants to publish the training manual and distribute it to university trainers in the country. 	December 12-15, 1996	U of M/ ETP Foundation \$6,640
Business	Publication of an Eco-Business National Catalogue	<ul style="list-style-type: none"> Improved visibility of emerging environmental businesses About 100 companies have information to provide potential clients and partners in Bulgaria and abroad. 	publication date of September 1996	ETP Foundation, \$3,000
Academic/ Institutional Strengthening	Final Evaluation of Impacts in Bulgaria		report to be submitted by May 1997	In-Country subgrant, \$4,000
Country and Component CZECH REPUBLIC	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
All	Ecological Auditing 2: Management of Risks	<ul style="list-style-type: none"> Improvement of skills in ecological auditing Gave possible solutions for problems when executing risk analysis in ecological auditing 	April 1996	ETP Foundation \$7,935
All	Environmental Impact Assessment (EIA): Public Participation	<ul style="list-style-type: none"> Increased the possibilities for citizens to participate in the EIA process The course enabled people from different sectors to talk about common problems in a non-confrontational environment. 	February 1996	US-AID \$4,280
All	Conflict Resolution	<ul style="list-style-type: none"> Participants gained basic knowledge and techniques for effective resolution of environmental conflicts Creation of new contacts among trainers and participants 	April 1996	US-AID \$4,900
All	Toxic Release Inventory (TRI)	<ul style="list-style-type: none"> Provided actual information about TRI system development in the world and the preparations for implementation in the Czech Republic "Right to Know-Pollutant Release and Transfer Register" in Czech was published as part of the course materials 	June 1996	US-AID \$4,980

Country and Component CZECH REPUBLIC	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
All	Advanced Conflict Resolution	<ul style="list-style-type: none"> Increased participants' knowledge and skills in negotiation leading to problem resolution Results of discussions were used by the trainer to develop other related courses 	October 1996	US-AID \$4,900
All	CEA Roundtable Needs Assessment Meeting	<ul style="list-style-type: none"> Needs for environmental training in the up-coming year were evaluated The meeting reached representatives from all four components 	June 12, 1996	
All	Life Cycle Assessment (LCA) - International Seminar	<ul style="list-style-type: none"> One of the first courses to provide information about LCA to CEE countries Created opportunities for cooperation among experts from different countries Creation of coordinating group for LCA - group produced a proposal for a CEE-UK joint project 	November 1996	US-AID \$4,200
Country and Component HUNGARY	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
	Follow-up Funds			\$28,025
Local Government, NGOs	Implementing a community Environmental Action Plan - a customized workshop for the city of Debrecen	<ul style="list-style-type: none"> The training has assisted the formation of working groups on protection of environmental, architectural and esthetic aspects of the town Debrecen. As a result of the workshop, the cooperation between local government and non-governmental organizations has renewed. 	November 7-9, 1996	\$0 (from ETP follow-up funds-- training financed by residual ISC Year 4 training funds sent to FOK and matched by the city of Debrecen)

Country and Component HUNGARY	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
Local Government NGOs	Advanced Public Relations Methods and Environmental Communication for Local Communities	<ul style="list-style-type: none"> • The training encouraged communication between local governments on one hand and local citizens and NGOs on the other as well as flow of useful information to local citizens. It was highly appreciated also by the vice president of Zala County Assembly as well as the local resident of the Public Administration project financed by the US AID, ICMA. • The coordinator of the program commissioned the Center for Environmental Studies to develop and organize a workshop for Zala county local government officials and media to assist them in developing strategies for effective communication with each other and the public and to facilitate public involvement 	Szodliget, November 25-26, 1996 Dobogoko, Jan. 13-15, 1997	U of M, in-country subgrant \$15,702
NGO	<p>Conflict management training for trainers with PDC: <i>continued from Y4.</i> (1 offering + 6 half day meetings) Conflict Resolution</p> <p>6 half day training meetings</p>	<ul style="list-style-type: none"> • Techniques and skills of conflict resolution were deepened • Connection between Hungarian facilitators and Romanian partners has been strengthened. • The half day self-training meetings contributed to the sustenance of the Facilitators' Group work enabling a continuous evaluation of their activity. These meetings proved to be so important and useful that they are going on even today without ETP funding. • As a result of the self-training meetings the members of the group became more experienced and are able to deliver some modules individually and even whole training activities, while before the capacity of the group was considerably less. • While in 1995 they performed 11 training activities, in 1996 this number doubled. 		

Country and Component HUNGARY	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
NGOs	<p>Non-profit Legal Management</p> <p>Non-profit financial management</p>	<ul style="list-style-type: none"> • An intensive cooperation started between the Environmental Law and Management Association (EMLA) and the environmental organizations participating in the training. In case of legal issues, EMLA is willing to represent these organizations. • An important product of the training was an accounting software developed for NGOs. The first version of the software was presented on the training, and was further developed and improved on the basis of participants' observations. • The final version was prepared in December 1996 and was asked for not only from the participating organizations but also by other ones too. 	<p>Budapest, April 23, 1996</p> <p>God, May 3-5, 1996</p>	<p>OKOTARS, \$4,100 Follow-up fund + 5,900 residue from Y2</p>
Local Government, Business, NGO	Integrated Waste Management	<ul style="list-style-type: none"> • The training was very much appreciated by the participants for its "holistic view" of waste management, kind of approach that is not yet common in Hungary 	Visegrad, Feb. 9-12, 1997	U of M, in-country subgrant \$8,742
Local Government	Publication of the 'Municipal Finance' manual	<ul style="list-style-type: none"> • A significantly revised manual has been prepared. • The book is being printed and will be published in late April 	1997	In-Country subgrant, \$5,200
All	Publication of the 'Community Action Plan' manual	<ul style="list-style-type: none"> • The original ISC manual has been revised and adjusted for non-training use. • The manuscript is waiting for proofreading and will be published in late April. 	1997	In-Country subgrant, \$3,200

Country and Component HUNGARY	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
Business	Post Diploma Studies at Miskolc University: <i>First offering, second semester:</i> <ul style="list-style-type: none"> • Pollution Prevention • Eco-Audit • Environmental Impact Assessment • Environmental Management <i>Second offering, first semester</i> <ul style="list-style-type: none"> • Introduction to Environmental Economics • Strategic Management • Marketing Managerial Economics • Decision Support System U.S. Restructuring Experience	<ul style="list-style-type: none"> • Out of 16, 15 students graduated the first offering of environmental management program. The presented diploma works are all valuable studies. • Six participants reported direct utilization of their thesis at the organization they are working at. • The reported measures as an impact of the course were taken in the fields of air protection, water protection, hazardous waste treatment, noise and vibration prevention, flora and fauna protection, more effective equipment. • A library of literature of environmental restructuring was established at the University of Miskolc. The Organization and Management Dept. of Miskolc University, the host of the PDS program, s preparing to develop a more complete block of environmental curricula, using the recent ETP manuals. • A series of publications is expected to result from the program as well. Two of the dissertations summarizing "The role of environmental protection in manufacturing companies" and "analysis of situation of environmental protection in small and medium size engineering firms in Hadju-Bihar county" prepared by two participants will also be developed into a training manual • The participants of the first offering meet regularly & exchange experience. PDS knowledge is disseminated at Miskolc University and at different participating organizations. 	September 1995- September 1996	UofMN
Business	Meeting of the Environmental Business Club	<ul style="list-style-type: none"> • After initial professional and financial ETP contributions, the Club gained financial and organizational independence. • It continues to operate as a civic association, it has its account and successfully is raising money to fund ongoing activities, serving as a forum for information and networking of (primarily) Borsod county environmental businesses, governmental organizations, academia and NGOs. No ETP funding occurred after June, 1996 	Malyi, February 23, June 7, 1996	In-Country subgrant, \$625
All	External Evaluation and preparation of End-of-Project Status Report	<ul style="list-style-type: none"> • The evaluation has been prepared and translated into English. 	1996	In-Country subgrant, \$6,500

Country and Component POLAND	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
Local Government	Management of Environmental Investment Process in Municipalities (2 offerings)	<ul style="list-style-type: none"> strengthening human cap. of municipalities in managing the envt'l investment process; popularizing the best examples of successful investments; improvement of econ. & ecol. efficiency of mun. investments by reducing long time spans in the Polish investment cycle; assisting restructuring of local gov'ts to better respond to their citizens under market conditions. 	1. Zakopane, Oct. 22-25, 1996 2. Zakopane, Oct. 28-31, 1996	U of M \$15,000/ EKO-BUT \$35,000
Local Government	Evaluating Environmental Damage by Local Self-Governments in the Process of Satisfying Collective Needs of Communities	<ul style="list-style-type: none"> Participants' knowledge of the subjects updated & increased. Participants inspired to create their own working methods. Participants became aware of the need for further education. 	1. Myslowice, Sept. 30-Oct. 3, '96 & 2. Oct. 14-17, '96	\$20,000 Interdont
Local Government	Financial Management of Municipal Environmental Investments (2 offerings)	<ul style="list-style-type: none"> about 30 financial props, bus. plans or fundraising strategies; improving skills of the local governments in this critical area; developing a collaborative network among municipalities, banks, nat'l, regional and local envt'l funds, EcoFund, & potential contractors. 	1. Ustron April 7-9, 1997 2. Ustron April 10-12, 1997	Subgrant to EKO-BUT \$25,000
Local Government	Pollution Prevention Strategies (one offering)	<ul style="list-style-type: none"> Five new strategies of communal waste management Two ongoing investments: municipal waste dumps 3 policy proposals to cooperate w/local industry in improving pollution prevention actions The course was a practical application of new methods & new approaches to building envt'l strategy in their gminas. 	Ustron, June 24-28, 1996	Subgrant to EKO-BUT \$40,000
Local Government	Follow-Up Workshops: Strategies of Sustainable Development for Local Authorities This project covers 45 workshops offered in 15 sub-regional communities of gminas. The project will be completed by July 1, 1997	<ul style="list-style-type: none"> Professional SWOT analysis done for 15 groups of municipalities with similar characteristics 15 strategy plans for municipal development Successful fund-raising of \$25,000 from local and foreign resources Development of an effective network among 100 municipalities Development of democratic methods and institutions in participating municipalities 	1. Gliwice, Oct. 18-19, 1996 2. Katowice, Nov. 14-15, '96 3. Jastrzebie, Oct. 14-15, '96 4. Jastrzebie, Nov. 4-6, '96 5. Maszyna, Nov. 28-30, '96 6. Paszczyna, Nov. 21-22, '96 7. Ustron, Dec. 8-9, 1996 8. Ustron, Dec. 12-14, 1996 9. Lubliniec, Oct. 30-31, '96 10. Lubliniec, Nov. 18-20, '96 11. Lubliniec, Dec. 16-18, '96 12. Gliwice, Jan. 16-18, '97 13. Wisla, Jan. 23-25, 1997 14. Paszczyna, Jan. 7-9, '97 15. Ustron, January 20-22, '97 16. Ustron, Jan. 23-24, 1997 17. Swierklaniec, Jan. 28-29, 1997 18. Swierklaniec, Jan. 16-17, 1997	Union of Municipalities of Upper Silesia and Northern Moravia \$7,200

Country and Component POLAND	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
Local Government	Environmental Health and Tested Food for Silesia (5 workshops)	<ul style="list-style-type: none"> • Securing long term financing for further activities, especially for the cost of chemical testing and quality control of the organic products on a large scale • Ensuring that the supply of short and long term agricultural production will meet criteria and demand for organic products • Increasing customer demand and sustaining private and government support for the program • Four municipalities are interested in widening activities of the project in their territory 	1. Zabrze, Oct. 8-9, '96; 2. Sosnowiec, Oct. 28-29, '96; 3. Bytom, Nov. 11-12, '96; 4. Chorzow, Sept. 9-10, '96; 5. Gliwice, Dec. 17-18, '96	Subgrant to the Polish Ecological Club \$7,000
Local Government and NGO	Advanced Public Relations and Advertising Methods in Business, Local Government and Environmental Communication (2 offerings)	<ul style="list-style-type: none"> • Students acquired basic knowledge needed for developing advertising and public relations (PR) campaigns • Students learned all basic vocabulary and terminology used in advertising and PR and are now able to negotiate with advertising and PR agencies, if they choose to use their services. Likewise, they are now able to develop detailed advertising and public relations budgets. • Students have been sensitized to the growing importance of proper use of PR in local gov't, business and env't'l activism. • Many students indicated that upon returning to their workplaces they would strongly recommend establishment of PR departments. Similarly, they indicated that they knew how to deal with international business partners who frequently point to the need for public relations. • Participants were offered individual consultations. Local press journalists were given advice about the layout of their PR publications. Local government representatives received detailed advice on how to address specific PR problems. Small business entrepreneurs were given extensive help on how to use advertising to expand their consumer base. • Several participants developed detailed plans for PR and advertising campaigns. • Many participants brought their PR materials to the workshop. These were examined and critiqued. Specific suggestions about brochures, press releases, posters and, above all, media relations were offered and are to be implemented in the near future. 	1. May 1996 2. Next offerings to be held in Zakopane June 11-14 and 17-20, 1997	U of M \$10,000/ EKO-BUT \$25,000

Country and Component POLAND	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
Local Government NGO, Business	Introducing ISO 14000 and other International Environmental Management Systems	<ul style="list-style-type: none"> • improvement of local government and NGO understanding of international environmental regulations and standards as potential policy tools; • facilitation of the adaptation process by industry to international environmental standards and regulations; • strengthening the competitive position of Polish enterprises; and • sustaining a collaborative network between local government, business and NGOs • 6 industrial plants will apply for ISO 14000 certificates 	<ol style="list-style-type: none"> 1. Ustron, Nov. 4-8, 1996 2. Ustron, March 4-8, 1997 	Subgrant EKO-BUT \$20,000
Local Government and Business	Project Management and Bidding Procedures	<ul style="list-style-type: none"> • Participants received practical knowledge on bidding and management procedures. • On-going advising from EUROTRADE's consultants on selection of particular bidding process modes. • Preparation and organization of three bids in two municipalities by EUROTRADE consultants. • These municipalities have requested additional technical assistance from EUROTRADE. 	<ol style="list-style-type: none"> 1. Krakow-Balice, August 6-9, 1996 2. Krakow-Balice, August 13-16, 1996 	LEM/EURO-TRADE
Local Government NGO, Business	Human Resources Management	<ul style="list-style-type: none"> • All participants believed they would be more effective in human resources management in their companies from now on. • All realized the use of some of the methods they learned would help them to deal with the workers in their organizations and solve problems. 	<ol style="list-style-type: none"> 1. Ustron, February 27-March 1, 1996 2. March 4-7, 1996 	LEM/ EURO-TRADE
NGO	Quality Management and Behavioral Styles Training for Trainers	<ul style="list-style-type: none"> • Increased professional skills of ETP trainers • Preparation of 3 persons to become ETP trainers • Maintaining relationships between ETP staff and trainers • Strengthening of participants' capacity to solve personal problems • Consolidation of the group of ETP trainers • Developing abilities of ETP staff 	<ol style="list-style-type: none"> 1. Miedzybordzie Dec. 6-8, 1996 	Subgrant to \$12,000 Bukowski-Stanton Associates

Country and Component POLAND	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
NGO	Strengthening the ETP NGO Network	<ul style="list-style-type: none"> • Developing cooperation among NGOs in industrial areas • Publishing of workshop results • Publishing & distribution of 6 issues of Monthly Env'tl Bulletin from June - Dec. 1997 (1000 copies of each.) 	Katowice/ Ustron June - December, 1997	subgrant to Polish Ecological Club \$15,000
Academic/ Institutional Strengthening	Post Diploma Studies: PDS 3 at the Silesian Technical University	<ul style="list-style-type: none"> • devel. of over 25 restructuring plans, and EIAs • strengthening of decision-making skills of top-level managers in the power generation sector • reduction of environmental pollution from this sector • improving the economic efficiency of the sector • a foundry waste utilization plant has been established in accordance with the proposal from the participant's thesis • a library for environmental restructuring was established • attitudes among the participants changed from narrow thinking typical of an engineer, to open thinking characteristic of a manager • 11 restructuring plans for concrete companies were prepared and are being implemented • 2 privatization plans were prepared • 10 new environmentally-friendly or energy saving technologies were implemented in concrete companies • the total value of pro-ecological and energy saving investments in the 13 companies which were implemented or will be realized by the end of 1997 is about \$US 110,000,000. 	September 1995 - May 1996 and May 1996 - April 1997	U of M, \$30,000/ Silesian Technical University \$20,000
Academic/ Institutional Strengthening	Academic Curricula Development workshop in Environmental and Natural Resources	<ul style="list-style-type: none"> • nat'l guidelines for env'tl curricula devel. at tech. universities • initiation of curricula reform at technical universities • publication of the basic text for env'tl & resource economics • popularization of American curricula & teaching methods at technical universities 	Miedzybordzie, September 17- 21, 1996	U of M, \$10,000/ STU \$30,000
NGO	Institutional Development of ETP Operations	<ul style="list-style-type: none"> • Foundation ETP Poland is in the process of official registering. The process will be completed in April-May, '97 • The ETP Office has a new space and better location • ETP-Poland has access to e-mail and the internet • ETP staff have developed their professional skills by taking part in specialized courses 	Katowice, Feb. 1996 to Feb. 1997	U of M, \$10,000/ ETP Office, Katowice \$5,000

Country and Component ROMANIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
	Follow-up Funds			\$80,000
Local Govt.	Public Participation for Environmental Policy and Program Implementation (Phase II)	<ul style="list-style-type: none"> At the request of the local mayor, a workshop was organized for local gov'tl & administrative staff about dealing w/the public in env'tl issues of investment & managerial decisions. By law, public involvement and participation is now a requirement with which officials must deal; They've been helped to become more accountable to the citizens. 	Pitesti, Sept. 11, 1996	U.S. Solicited Subgrant, \$14,000\ In-Country. \$2,000
All	Strategic Planning for Public Involvement	<ul style="list-style-type: none"> An evaluative session on impacts in Arges district conducted to stress success stories of ETP course contributions in the region, but also to learn about problems and further needs. The main achievements are the public information program, the community waste management projects and the district environmental strategy of the local task force. 	Pitesti, Sept. 12, 1996	Follow-up In-Country grant
All	Designing and Implementing a Community Environmental Action Plan (two offerings)	<ul style="list-style-type: none"> The newly initiated Eco-Zlatna NGO got new members, a statute, legal registration, an administrative board & an action plan. Several activities were developed with specific tasks, teams & responsibilities, that were accomplished during the summer. The local NGO received media support & donations (computer, monitor & software), that helped them make a difference & influence the local authorities & the officials from the polluting industrial unit. <hr/> <ul style="list-style-type: none"> Four very sophisticated action plans were designed for the specific problems of this region, intending to involve the community in taking initiatives in problem solving. Participants requested their work record as a guideline for further actions. 	<p>1.. Zlatna, March 1-3, 1996</p> <p>2. Baia-Mare, Dec. 13-15, 1996</p>	<p>ISC (CP) \$19,000</p> <p>In-Country subgrant \$15,000</p>
All	Community Leadership and Strategic Planning	<ul style="list-style-type: none"> Participants learned & practiced strategic planning fundamentals. The work resulted in advertising materials for NGOs public outreach and fund-raising. The course was a good opportunity for local facilitators to gain exper. as local trainers, esp. in community involvement. 	Alba-Iulia, Sept. 5-8, 1996	U.S. Designated subgrant, \$20,000/In-Country Subgrant, \$8,000

Country and Component ROMANIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
All	Lead Exposure Abatement Program	<ul style="list-style-type: none"> • EPA Denver brought a spectrophotometer to measure lead concentration in soil & taught the audience ways to control, prevent and eliminate the exposure to lead from the soil. • A local action group was formed to take several steps in evaluating the existing dangers & to initiate abatement programs. • Later, a map of the situation (in Zlatna) was processed on computer & community actions implemented, such as civic info. & education activities, a safe playground area arranged for children, sanitary advertising awareness programs. 	Alba-Iulia, April 27-29, 1996	CHMR (CP) \$20,000 In-Country Subgrant \$10,000
All	Prevent Transboundary Conflicts through Environmental Education	<ul style="list-style-type: none"> • Training was offered to Bulgarian and Romanian participants from two "pair" cities over Danube, as a follow-up to the one held in April on the Bulgarian border • This time, the action was supported by local efforts of the Romanian city, based on their eagerness to strengthen the links between the two communities and to start up common projects 	Oltenita, Romania October 14-15, 1996	Eco-Pro-Consult, Bulgaria (Funded through ETP-Bulgaria)
NGO	Alternative Fundraising	<ul style="list-style-type: none"> • It was gathered orientation on the new trends in NGO funding and new projects of interest • Experience was gained from other NGOs in CEEC and the new options in fundraising activities • The whole exposure to the workshop gave ideas for the ETP Romania Foundation chart and structure 	Budapest, Hungary September 26-29, 1996	FDSC Hungary In-country grant of \$530 from follow-up

Country and Component ROMANIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
Institutional (Academia)	Interactively Teaching Adults	<ul style="list-style-type: none"> • University professors were presented with new teaching techniques used for adults and for distance learning methods. • Some of these professors teach in our PDS program or in other post-graduate courses; others redesigned their usual courses as to adapt them to modern methods. • Increased interest in alternative teaching means prompted 4 university centers in Romania to advance proposals to cooperate in the national network of PDS classes. 	Cluj-Napoca, Sept. 9-13, 1996	Follow-up U of MN \$8,300 In-Country Subgrant \$6,700
Institutional (for Business)	PDS in Environmentally Friendly Industrial Restructuring in Romania: <ol style="list-style-type: none"> 1. Regional Economy and Industrial Restructuring; 2. Pollution Prevention Strategies; 3. Strategic Management; 4. Marketing; 5. Environmental Legislation and Ethics; 6. Financial Management; 7. Pollution Prevention & Waste Management 	<ul style="list-style-type: none"> • Begun in October, 1996, six modules have been conducted thus far, with 30 participants. • The expectation is that the participants' final dissertation theses will be highly practical and have important environmentally friendly economical restructuring impacts. • Participants found that this program helps them getting answers to several problems they encountered in their companies - in the context of new demands, making them raise to themselves questions they never thought about, and showing them aspects of looking to a problems solving approach that is completely new; • It also provides them with managerial and technical abilities and skills that will enable these companies to better understand the development trends and to meet the next coming legal and market requirements, in a proper and competitive way. 	Cluj-Napoca, Oct. 1996-June 1997	U. S. Subgrant \$25,000 In-Country Subgrant \$10,000
Business	Life Cycle Analysis (LCA)	<ul style="list-style-type: none"> • Participants were exposed to LCA principles with special reference to ISO 14,000. • Evaluation of steps taken in CEEC thus far in this respect. • Identification of needed assistance in order to approach the issue locally and implement the LCA principles in the shortest time span • Opportunity for participants to network among specialists through out the region and initiate this new direction in an organized fashion • Participants became more self-confident in their professional occupations and more highly motivated in their work efforts • The group of Romanian participants created an ambitious five-phase work plan and created a think-tank nucleus to design and approach these issues. 	International workshop held in Decin, Czech Republic November 11-13, 1996	Conducted by the British Council. In-country grant of \$1,200 from follow-up.

Country and Component SLOVAKIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
Local Government	Risk Assessment for Toxic Elements in the Food Chain and Animals	<ul style="list-style-type: none"> • Participants were trained in methods of risk assessment of toxic elements, and learned to use the database for this purpose • The course contributed to the acceptance of these methods, and helped to prepare a new law for the Ministry of Soil Management • This course was the first exposure to material covering this subject for the participants • Course participants will be sent to relevant libraries to serve as materials for new courses in universities • As shown by the participants' enthusiastic response, future offerings of this course have the potential to attract further paying participants, especially veterinarians and people involved with pesticides 	Košice, December 2-6, 1996	Veterinary University of Kosice, \$5,000
Local Government	Financing Environmental Investments on the Municipal Level -- Publication	Impact evaluation not yet available	Banská Bystrica September 1996 - June 1997	Inst. for Dev. of Regions, Towns and Villages (IROMAR), \$5,200
Local Govt	<p>Methods of Effective Decision Making on a Local Level (three offerings)</p> <ol style="list-style-type: none"> 1. Improvement of the Conservation of Monuments through Increased Effective Communication 2. Effective Decision Making of Local Government 3. Effective Negotiation and Conflict Resolution for Municipal Police 	Impact evaluation not yet available	<ol style="list-style-type: none"> 1. Svätý Jur, October 28-30, 1996 2. Štrba, November 11-13, 1996 3. Donovaly, November 27-29, 1996 	Partners for Democratic Change Slovakia, \$7,230

Country and Component SLOVAKIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
NGO	Technical Assistance of Local Initiatives 1. Organizational Development of A-Project and Oblazy Foundation 2. Effective Communication and Active Involvement of Citizens to Development of the Community 3. Discussion Forum for Exchange of Information and Experiences for Community Initiatives	Impact evaluation not yet available	1. Lipt. Mikuláš, Kvačany, Nov. 18-24, 1996 2. Opatovská dolina, Jan. 17-19, 1997 3. Trenčianske Teplice, Feb. 12, 1997	Partners for Democratic Change-Slovakia \$9,140
NGO	Strengthening Environmental NGOs (series of trainings) 1) NGO Fundraising and the Legal and Tax Related Issues 2) Accounting and Insurance of NGOs 3) Law and Green Agriculture Handbooks: <ul style="list-style-type: none"> • Insurance from A-Z: Practical Accounting • Questions and Answers on Accounting and Taxes of NGOs • Practical Accounting: Auditor's Advice to NGOs 	1) <ul style="list-style-type: none"> • Clarification of many questions, including the biggest dilemma connected with NGO fundraising--the need for licenses for specific types of activities. • Written record from the training. • Follow-up cooperation was agreed upon among a group of people dealing with NGO economic activities in order to define the NGO requirement in the income tax law amendment and to work out exact economic justification of these needs. 2) <ul style="list-style-type: none"> • Brochure "Insurance from A to Z: Practical Accounting • Initiated the permanent follow-up legal and accounting service for participants by lecturers. 3) <ul style="list-style-type: none"> • Participants are cooperating with CEPA to prepare a project to elaborate a complex manual on practicing alternative agriculture in Slovakia 	1) Králiky, May 31 - June 2, 1996 2) Neresnica, March 23-25, 1996 3) Zajelová, October 18-20, 1996	Partners for Democratic Change Slovakia, \$7,230
NGO	Human and Institutional Development of the ETP Operations		Bratislava, February 1996-February 1997	U of M, \$2,000/ ETP Slovakia Foundation, \$3,000

Country and Component SLOVAKIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
NGO	Public Relations for NGOs	<ul style="list-style-type: none"> • A manual was produced on Public Relations for NGOs • Foundation Greenpen became a contact for NGOs in the area of public relations • Participant interest was very high • The # of press conferences & published articles has increased 	December 6-8, 1996	WWF 0\$/ \$5,000 Greenpen Foundation
Academic/ Institutional Strengthening	<p>Post-Diploma Studies in Environmentally-Friendly Restructuring and Strategic Management of Industrial Companies at the Technical University of Kosice</p> <ol style="list-style-type: none"> 1. Strategic Management 2. Marketing, Logistics and Information Technology 3. US Experience in Restructuring of Heavy Industry 4. Strategy of Human Resources Development 5. Slovak and International Environmental Legislation Environmental Protection and Control 6. Public Presentation and Public Relation "Bonus modul" Project Design and Management 7. Pollution Prevention Technologies and Waste Management and Recycling 8. Environmental Auditing Impact Assessment 9. Environmental Friendly Technologies 10. Financial Management, Survival Strategies 11. Energy Efficiency-Least Cost Planning 12. Work Safety Management 	<ul style="list-style-type: none"> • Participants obtained knowledge about market-base instruments for designing a framework within which to set co. objectives for economics & ecological responsibility. • The current situation & practical application of EMS & EIA was discussed. Participants know that EMS & EIA are suitable & necessary instruments for the iron & steel industry to systematically integrate environmental issues into a company's production & management system in order to meet the challenges of the future. • By introducing the automatic system of control at VSZ, the production costs of the cupola furnace decreased by 35% • By changing the technology of the coating removal during the repair of electric motors, the internal ratio rate has changed to 36% and the production capacity increased by 695,625 kg per year. The effect on the environment was positive as the emissions of particulate matter decreased by 30% as well as emissions of CO and HF that are now well below the emission limits according to Taluft. 	<p>Košice</p> <ol style="list-style-type: none"> 1. Sept. 25-27, 1996 2. Oct. 23, 1996 3. Dec. 16-17, 1996 4. Jan. 9-10, 1997 5. Jan. 29-30, 1997 6. Jan. 31, 1997 6. Feb. 13-15, 1997 7. Feb. 26-28, 1997 8. March 21, 1997 9. Apr. 16-18, 1997 10. May, 8-9, 1997 11. May, 29-30, 1997 12. June, 26-27, 1997 	U of M, \$10,000/ Technical University of Kosice, \$8,970
	Follow-up Funds YEAR FOUR Water and Energy Conservation - Publication		Košice, August 1996	Association of Healthy Towns of Slovakia \$3,020

Country and Component SLOVAKIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
All	<p>Follow-up Funds YEAR FIVE</p> <p>1. Environmental Monitoring of Hornad River</p>	<p>1)</p> <ul style="list-style-type: none"> • Manual on GIS use & outcomes of monitoring the Hornad River • From outcomes of monitoring, one major project will be developed & proposal submitted to the State Environment Fund • To prepare the proposal, a Project Team was created with members from SOSNA Association of Towns and Villages, the Mayor of Kosice, schools, Slovak Environmental Agency, NGOs, Environmental Inspection Agency, Water and Sewage Agency, and the Agricultural Cooperative. • The exhibition was prolonged two weeks, with over 3,500 visitors. As reflected in the comments within the guest book, interest was raised with the public 	<p>1. Košice, Dec. 11-13, 1996</p>	<p>1. SOSNA Foundation, \$4,030</p>
All	<p>2. Guidebook for Community Initiative - Publication</p>	<p>2) Impact evaluation not yet available</p>	<p>2. Oct. 1996-March 1997</p>	<p>2. ETP-S Foundation \$9,030</p>
All	<p>3. Public Participation for Improvement of Municipal Waste Disposal</p>	<p>3)</p> <ul style="list-style-type: none"> • Manual produced on "Public Participation to improve Community Waste Disposal" • A list of recommendations from the seminar was submitted to the Mayor of Kosice. • A list of concrete activities which can contribute to improving the situation with waste disposal was generated. • Journalists who participated in the training wrote articles and discussed the subject of waste disposal in the media. • A TV broadcast show was created, "Waste and We," regularly shown each week. • Participants formed a group to meet quarterly and continue efforts in this area. 	<p>3. Bardejovské Kúpele, Oct. 3-5, 1996</p>	<p>3. Third Millennium Resources Foundation, \$4,000</p>

Country and Component SLOVAKIA	Training Activity	Impacts	Location and Dates	Consortium Partner Responsible
All	FOLLOW-UP - CONTINUED 4. Needs Assessment of Horná Torysa Region - Publication	4) • The needs assessment led to writing a project proposal addressing the specific needs. The proposal was funded with \$160,000.	4. Sept. -Dec. 1996	4. People and Water, \$1,490
All	5. Vital-Signs in Energy - Publication	5) Information not yet available	5. Dec. 1996 - Jan. 1997	5. For Mother Earth, \$1,500
All	6. Analysis of Training Needs in the Environmental Sector - Publication and Workshop	6) • Cross-sectoral meeting allowed for new contacts within NGOs, government and business. • Information from six sectors was collected, analyzed and presented. • Participants generated a list of training needs for the future	6. Sivec, Nov. 7-8, 1996	6. ETP-S Foundation, \$1,700

Appendix B
Quantitative Impacts -- Year Five Trainings

BULGARIA Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Strengthening Democratic Governance and Increasing Regional Impacts of the Yantra River Basin Council:	48	-	48	14	-	1	5	11	28		
1. Institutionalization of the River Basin Councils through Enactment and Implementation of the New Water Law	15	-	15	6						10	
2. Coordination of Water Quality Management Actions by Council Member Organizations;	8	-	8	1						4	
3. Development of Improved Water Quality Information in the Yantra Region;	9	-	9	4						9	
4. Development of a Public Information Program;	11	-	11	2						9	
5. Development of a Proposal for a Stream bed Restoration.	5	-	5	1			3			5	
Prevention of International Environmental Conflicts through Joint Transboundary Training	37		24	7	5		3	3	4	6	
Increasing Environmental Awareness Among the Young Generation of the Yantra River Basin (3 phases)	120	38	82	47			3	1		8	\$3000

BULGARIA (continued) Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Strengthening Environmental Awareness and Skills of the Yantra River Business Council Constituency	18	-	18	10	0		1		0	6	
Advanced Public Relations Methods in Business, Local Government and Environmental Communication	60	29	31	9	0	1	1	1	7	23	X
Post-diploma studies at Varna University of Economics	22	-	22	9	0	2	3	2		16	\$9000
Faculty and Curriculum Development Workshop	13	-	13	8	0	0	0	0		6	
Sustainable Development of Municipalities in the Yantra Region-Investing in the Future	20	-	20	8	0	1	1	1		16	
CZECH REPUBLIC Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Ecological Auditing 2: Management of Risks	23	0	22		0		0	0	2	22	0
Environmental Impact Assessment (EIA): Public Participation	15	0	12		0		0	0	4	12	
Conflict Resolution	18	0	14		0		0	0	5	12	
Toxic Release Inventory (TRI)	23	0	21		0		0	0	4		
Advanced Conflict Resolution	19	0	14		0		0	0	0	11	
Life Cycle Assessment - International Seminar	27	0	25		0		0	0	0	20	0

HUNGARY Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Implementing a Community Environmental Action Plan - a customized workshop for the city of Debrecen	31	-	31	9	-	1	1	1	1	24	\$1,023
Advanced Public Relations Methods in Business, Environmental Communication for Local Communities I	26	-	27	6	-	-	1	-	3	23	-
Advanced Public Relations Methods in Business, Environmental Communication for Local communities II	15	-	15	6	-	-	-	-	3	13	-
Conflict management training for trainers with PDC (Continuing from Year 4)	18	-	18	12	-	-	-	-	18	12	-
Non-profit Legal Management	20	-	20	7	-	-	-	-	7	15	-
Non-profit Financial Management	17	-	17	10	-	-	-	-	7	16	-
Integrated Waste Management	18	-	18	5	-	-	1	-	3	17	-
Post-diploma studies at Miskolc University: First offering, second semester	16	-	16	-	-	-	2	2	-	9	\$17,200
Second offering, first semester	18	-	18	-	-	-	-	-	-	15	
Meeting of the Environmental Business Club (2)	40	-	40	17	-	-	1	-	30	31	\$164

POLAND Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Management of Environmental Investment Process in Municipalities (2 offerings)	72	12	59	28	0	0	1	0	7	38	\$1000
Evaluating Environmental Damage by Local Self-Governments in the Process of Satisfying Collective Needs of Communities	66	6	56	31	0	1	1	1	23	38	0
Financial Management of Environmental Investments (advanced training -- 2 offerings)	63	3	56	26	0	0	1	0	15	26	\$1000
Pollution Prevention Strategies	42	12	26	10	0	0	0	1	15	26	0
Strategies of Sustainable Development for Local Authorities	225	-	225	89	5	2	3	3	20	105	\$22,000
Environmental Health and Tested Food for Silesia	96	0	96	73	2	2	4	3	15	33	\$3,868
Advanced Public Relations and Advertising Methods in Business, Local Government and Environmental Communication	85	25	60	20	0	0	2	1	12	24	\$1000
Introducing ISO 14000 and other International Environmental Standards	105	44	60	25	0	0	1	1	20	30	\$1000
Project Management and Bidding Procedures	65	14	51	23	0	0	0	0	19	31	0
Human Resources Management	78	21	57	33	0	0	0	0	11	37	0
Quality Management and Behavioral Styles -- Training for Trainers	17	0	17	4	0	0	0	0	16	10	0

POLAND (continued) Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Strengthening the ETP NGO Network (N/A)	-	-	-	-	-	-	12	-	-	-	
Post Diploma Study at Silesian University, in support of restructuring of the Polish heavy industry (first and second offerings):	85	15	60	7	0	2	3	2	10	34	\$40,000
Academic Curricula Development in Environmental and Natural Resources	34	0	35	7	0	0	1	0	2	28	0
ROMANIA Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Public Participation for Environmental Policy and Program Implementation (phase II)	25	-	25	8	1	1	2	1	3	11	-
Strategic Planning for Public Involvement	40	-	21	9	2	1	2	-	21	15	-
Designing and Implementing a Community Environmental Action Plan (2 offerings)	36 ----- 45	-	33 ----- 45	17 ----- 23	4 ----- 5	- ----- 3	1 ----- 3	- ----- 8	8 ----- 4	21 ----- 28	-
Community Leadership and Strategic Planning	39	-	26	15	1	1	3	1	14	8	-
Lead Exposure Abatement Program	42	-	39	20	8	2	8	2	18	15	-
Prevent Transboundary Conflicts through Environmental Education (no data available yet)											
Alternative fundraising for NGOs			1	1						1	

ROMANIA (continued) Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Interactively Teaching Adults	26	-	23	8	1	2	3	2	1	4	-
PDS in Environmentally Friendly Industrial Restructuring in Romania	36	6	30	15	5	3	8	4	1	17	-
Life Cycle Analysis	8	-	5	3	1	-	-	-	-	3	-
SLOVAKIA Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Risk Assessment for Toxic Elements in the Food Chain and Animals	25	0	15	10	0	1	3	1	6	8	\$0
Methods of Effective Decision Making on a Local Level											\$730
Improvement of the Conservation of Monuments through Increased Effective Communication	29	6	23	15	0	2	0	0	0	2	
Effective Decision Making of Local Government	22	5	17	10	1	0	1	0	0	1	
Effective Negotiation and Conflict Resolution for Municipal Police	21	0	21	1	0	0	0	0	0	2	

SLOVAKIA (continued) Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Technical Assistance of Local Initiatives											\$9,940
Organizational Development of A-project and Oblazy Foundation	20	0	11, 8, 28	5, 4, 9	0	0	0	0	5	3	
Effective Communication and Active Involvement of Citizens to Development of the Community	22	0	16	7	0	0	0	0	4	2	
Discussion Forum for Exchange of Information and Experiences for Community Initiatives	72	0	71	36	5	0	1	0	10	5	
Strengthening Environmental NGOs											\$0
NGO Fundraising and the Legal and Tax Related Issues	21	0	17	4	1	0	0	0	13	11	
Accounting and Insurance of NGOs	26	0	20	9	4	0	0	0	13	16	
Law and Green Agriculture	20	0	19	7	1	0	0	0	10	15	
Public Relations for NGOs	24	4	20	20	3	1	2	3	3	19	\$0
Environmental Monitoring of the Hornad River	42	6	36	17	0	1	6	7		14	\$1,083

SLOVAKIA (continued) Course Title	No. of Applicants	No. Wait-listed	No. Registered	No. of Women	No. of minorities	Media: TV coverage	Media: Newspaper Articles	Media: Radio coverage	No. of Previous ETP students	No. of Institutions Represented	Amount of non-USAID funding
Post-Diploma Studies in Environmentally-Friendly Restructuring & Strategic Mgt. of Industrial Companies at Technical University of Kosice											\$20,000
1. Strategic Management	13	0	13	1	1	1	0	1	13	3	
2. Marketing, Logistics and Information Technology	17	0	17	1	1	0	0	0	17	2	
3. US Experience in Restructuring of Heavy Industry	17	0	17	1	1	0	0	0	17	2	
4. Strategy of Human Resources Development	16	0	10	1	1	0	0	0	16	2	
5. Slovak and International Environmental Legislation Environmental Protection and Control	16	0	10	1	1	0	1	0	16	2	
6. Public Presentation and Public Relation "Bonus Module" Project Design and Management											
7. Pollution Prevention Technologies and Waste Management and Recycling											
8. Environmental Auditing Impact Assessment											
9. Environmentally Friendly Technologies											
10. Financial Management, Survival Strategies											
11. Energy Efficiency-Least Cost Planning											
12. Work Safety Management											
Public Participation for Improvement of Municipal Waste Disposal	25	0	23	13	0	4	5	0	20	13	\$2,180
Analysis of Training Needs in the Environmental Sector	22	0	20	2	0	0	0	0	5	18	\$0

Appendix C

Publications for Outreach

The publication and distribution of ETP materials is another effective and highly demanded outreach activity. ETP training manuals have been published as books in-country. Several publications are in very high demand. Following is a bibliography of ETP Publications in Year Five.

BULGARIA

1. Business Plan and Financing Proposal
2. Environmental Impact Assessment
3. Environmental Business Catalog

THE CZECH REPUBLIC

Strategic Environmental Management: New Terrain for Corporate Responsibility in 21st Century, Dr. Stanley Kabala, Pittsburgh University - adaptation, translation, publishing (1,000 copies) and distribution of this book for mid-level decision-makers.

The publication contains 71 pages of translation of Kabala booklet and 22 pages of the local addition made by Jan Beba. The local edition was needed to adequately explain the differences between conditions in the US and the Czech Republic. The local addition is very good at making the text of Stanley J. Kabala understandable for Czech readers, the translation is also excellent.

Life Cycle Assessment Methodology - contract with the Czech Ministry of the Environment

ICLEI's Guide to Environmental Management for Local Authorities in CEE - Czech edition. CEA is cooperating with the International Council for Environmental initiatives, Freiburg, Germany, on compilation, adaptation and translation of the ICLEI's guide for local audience.

Ecological Auditing 2: Management of Risks, Jan Beba, 1995. This publication was prepared as part of the materials for the course *Ecological Auditing 2*.

EMTC - The Environmental Management Training Centers in Czech Republic (public relations brochure about the 3 organizations involved in EMTC-N in the Czech Republic), CEA, 1996

HUNGARY

1. Community Action Plan, 1997 - p:76, 800 copies.
2. Financing Municipal Environmental Investments, 1997 - p:152, 600 copies.

POLAND

List of Textbooks Edited by American-Polish Post Diploma Studies Between November 2, 1994 and December 31, 1996

1. Proceedings of the first seminar "Environmental Problems in Metallurgy" p.91 Katowice 1994.
2. David Gobeli, Krzysztof Przybylowski, William Rudelius: "Strategic Management and Marketing" p.70 Katowice 1994.
3. Victoria M. Mikelonis: "Financial Management in Small Companies" p.160 Katowice 1994.
4. Teresa Kurowska: "Legal Aspects of Environmental Protection in the Process of Metallurgical and Heavy Industry" p.138 Katowice 1994.
5. Slawomir Pasierb: "Effective Use of Energy in Iron and Steel Metallurgy" p.92 Katowice 1994.
6. Roger Price: "Pollution Protection Technologies" p.126 Katowice 1995.
7. Stanley Kabala: "Social Aspects of Metallurgical Industry Restructuring" p.84 Katowice 1995.
8. Remigiusz Sosnowski, Tadeusz Torz: "Market of Metallurgical Products" p.76 Katowice 1995.
9. Wladyslaw W. Jermakowicz "Survival Strategies in Market Economy Conditions" p.147 Katowice 1995.
10. Proceedings of the second seminar "Environmental Problems in Metallurgy" part I (Abstracts of the final thesis) p.262 Katowice 1995.
11. Proceedings of the second seminar "Environmental Problems in Metallurgy" part II (The best final thesis in English and Polish) p.205 Katowice 1995.
12. Teresa. Kurowska, Stanislaw Lizer: "Selected Subjects of Ecological and Economic Law" p.150 Katowice 1995.
13. Slawomir Pasierb: "Effective Use of Energy in Metallurgy" p.99 Katowice 1995.
14. Stanley Kabala: "Management of Environmental Protection in International Companies" p.94 Katowice 1995.
15. Franciszek Grosman: "Environmentally Friendly Technologies in Metallurgy" p.35 Katowice 1995.
16. Danuta Krupkova "Selected Subjects of Environmentally Friendly Technologies in Non-Ferrous Metals Industry" p.70 Katowice 1995.
17. Brigitte Widmaier: "Social Aspects of Ruhr District Restructuring" p.54 Katowice 1995.
18. "Lectures Delivered during Inauguration of the Second American-Polish Post Diploma Studies Cycle" p.60 Katowice 1995.
19. Zbigniew. Bochniarz, Grazyna Lesniak-Lebkowska: "Strategic Planning" p.129 Katowice 1995.
20. Jacek Weglarczyk: "Environmental Audits" p.63 Katowice 1995.
21. Tomasz Zylizcz: "Market Institutions and Environmental Protection" p.89 Katowice 1996.

22. Franciszek Grosman: "Some Aspects of Management of Polish Metallurgy Restructuring" p.47 Katowice 1996.
23. Jan Botor, Piotr Kapias: "Environmental Friendly Technologies in Non-Ferrous Metals Industry" p.78 Katowice 1996.
24. Proceedings of the third Seminar "Environmental Problems in Non-Ferrous Metals Industry" part I p.162 Katowice 1996.
25. Proceedings of the second Seminar "Environmental Problems in Non-Ferrous Metals Industry (Abstracts of final thesis in English)" p.59 Katowice 1996.
26. Michael Weiss: "Pollution Prevention Strategies" p.66 Katowice 1996.
27. Danuta Krupkova: "Final Thesis of Graduates of Non-Ferrous Metals Industry - Presentation and Discussion" p.39 Katowice 1996
28. Jacek Węglarczyk: "Integrated System of Environmental Management - Introduction" p.48 Katowice 1996.
29. Irena Lipowicz : "Administration and Legal Aspects of Industry Restructuring" p.96 Katowice 1996.
30. "Energy Policy for Poland by 2010" p.36 Katowice 1996.
31. Brigitte Widmaier: "European Aspects of Restructuring of Industry" p.39 Katowice 1996
32. Jay K. Gronlund: "Strategic Marketing" p.122 Katowice 1996.
33. Stanislaw Lizer: "Legal aspects of Restructuring and Commercialization of State Owned Companies" p.48 Katowice 1996.
34. Teresa Kurowska: Selected Subjects of ecological Law. p. 143. Katowice 1996.
35. Stanley Kabala: Regional restructuring of economy and industry. p. 47. Katowice 1996.
36. Jan Popczyk :Rules of the Polish electric energy market after January 1. p. 118. Katowice 1996.
37. Ewaryst Hille: Law for energy sector. p. 38. Katowice 1996
38. Sławomir Pasierb: Integrated Planning in Energy Economy. p. 71. Katowice 96
39. Zbigniew Jedrzejewski, Anna Hejda : Human Resources Management. Management Styles. Motivation. p. 26. Katowice 1996
40. Some Comments for Business Plan Preparation. p.45. Katowice 1996.
41. Environment-Friendly Investments in Heat Power Stations, Power Stations and other Companies from Energy Sector. p. 111. Katowice 1996.
42. Tadeusz Chmielniak: Environmental Technologies in Energy Sector. p.87. Katowice 1996.

ROMANIA

Up-dated versions of:

1. "Romanian Environmental Business Directory" (313 firms), plus an Appendix of (200) Useful Addressed (for the Business sector);
2. "Romanian Environmental NGOs Catalogue" (640 organizations listed).

SLOVAKIA

1. Guidebook for Community Initiatives

Publisher: ETP Slovakia Foundation

Date of Issue : April - May 1997

Author: Lubica Macedo, Ladislav Briestenský

Co-authors: Andrej Steiner, Maja Zelenáková, Kaja Miková, Boris Strecanský, Juraj Mesík

Contents: The goal of this Guidebook is to provide a summary of information for community initiative activists in Slovakia on the legal, fiscal and institutional environment for their work. The Guidebook will explain and describe steps of the public outreach process and community initiation (planning for community action, public participation, action plan management, leadership, community institutions) based on Slovak and relevant foreign experience. The target audience are NGOs, the active public, local government, etc.

2. Needs Assessment of Horná Torysa Region

Publisher: NGO People and Water, Košice

Date of Issue: January 1997

Authors: Michal Kravčík, Jaro Tešliar

Contents: The purpose of this publication is to provide a comprehensive needs assessment and analysis of the Upper Torysa Region in Eastern Slovakia to better focus the rural development and training activities of the NGO. The brochure looks at traditions and perceptions, and other aspects of the region which help to specify the targeting of training and consulting activities for NGOs in that region.

3. Vital-Signs in Energy

Publisher: For Mother Earth

Date of Issue: December 1996

Contents: Translation of the famous Vital Signs chapters on energy issues providing the up-to-date trends in energy production and consumption patterns. The copyright has been personally waived by Christopher Flauvin. The pamphlet has been widely distributed to energy policy and decision-makers in Slovakia

4. Analysis of Training Needs in the Environmental Sector

Publisher: ETP Slovakia Foundation

Date of Issue: November 1996

Contents: Transcription of the two day workshop organized by the ETP Slovakia Foundation analyzing the current and future environmental management training needs in Slovakia by leaders of various sectors.

5. Financing Environmental Investments on the Municipal Level

Publisher: ETP Slovakia Foundation

Date of Issue: July 1997

Contents: The guidebook will serve as a resource manual to municipal officers for their financial decisions in relationship to investments to infrastructure environmental improvements. It will also serve as a training guidebook.

6. Insurance from A to Z: Practical Accounting

Publisher: Center for Environmental Public Advocacy

Date of Issue: September 1996

Contents: This information brochure covers the issue of fringe benefits and social and health insurance of employees in environmental NGOs. This was an output from the "Strengthening Environmental NGOs" activity.

7. Questions and Answers on Accounting and Taxes of NGOs

Publisher: Center for Environmental Public Advocacy

Date of Issue: September 1996

Contents: The brochure presents answers from accounting and tax advisors to the questions of environmental NGOs as recorded on the workshop in September 1995. This was an output from the "Strengthening Environmental NGOs" activity.

8. Practical Accounting: Auditor's Advice to NGOs,

Publisher: Center for Environmental Public Advocacy

Date of Issue: September 1996

Contents: The brochure is focused on basic rules and most frequent problems and specific aspects of NGO accounting. It is based on questions and answers discussed at the workshop with same title in February 1996. This was an output from the "Strengthening Environmental NGOs" activity.

9. Water and Energy Conservation

Publisher: Association of Healthy Towns of Slovakia

Date of Issue: August 1996

Contents: This brochure gives practical recommendations for the general public on specific steps to save energy and water consumption.

Appendix D
Trainings by Component -- Years One through Five

A. Bulgaria

Training Activity	Years Offered
Business	
Environmental Business Management (2 offerings)	Year I
Managing an environmental business: The business plan and financing proposal	Years I, II, III
Introduction to environmental auditing	Year III
Advanced Environmental Auditing (2 offerings)	Year III
Marketing environmental goods and services (2 offerings)	Year III
Sustainable resource management in the company (2 offerings)	Year IV
The green investments opportunities (3 offerings)	Year IV
Publication of an Eco-Business National Catalog	Year V
Advanced Public Relations Methods in Business, Local Government and Environmental Communication	Year V
NGO	
Strategic planning and financial management for NGOs (2 offerings)	Year II
Identifying funding sources and proposal writing	Year III
Advanced strategic planning and proposal writing for NGOs	Year III
Environmental Conflict Management for the National Nature Protection Service	Year III
Strategic Planning, Financial Management and Public Relations for the Bulgarian Society for the Protection of Birds	Year III
Governmental	
Financing municipal environmental investments	Year III
Implementing and enforcing an effective regional and local environmental monitoring and enforcement program II	Years III, IV
Waste Disposal Management	Year III
Integrated Solid Waste Management	Year IV
Strengthening Environmental Awareness and Skills of Yantra River Business Council	Year V
Increasing Environmental Awareness Among the Young Generation of the Yantra River Basin	Year V

Bulgaria continued (government)

Strengthening Democratic Governance and Increasing Regional Impacts of the Yantra River Basin Council	Year V
Advanced Public Relations Methods in Business, Local Government and Environmental Education	Year V
Prevention of International Environmental Conflicts through Joint Transboundary Training	Year V
Sustainable Development of Municipalities in the Yantra River Region - Investment in the Future (2 offerings)	Year V
Academic/Institutional Strengthening	
Curriculum development workshop in environmental & natural resource economics	Year III
Post-diploma studies	Year IV
The promotion of ecological education and culture: a prevention measure to avoid ecological conflicts	Year IV
Final Evaluation of Impacts in Bulgaria	Year V
Faculty and Curriculum Development Workshop	Year V
All	
Increasing skills for environmental conflict resolution	Year III
Improved environmental programs through better information management	Year I
Environmental conflict management	Year I
Environmental impact assessment	Year II
River basin management	Year II
Effective Mass Media Strategies	Year III
Risk Assessment	Year IV
Yantraclean	Year IV
Ecological Culture from Aggression to Protections of the Varna Lake	Year IV
Integrated solid waste management training	Year IV

B. Czech Republic

Business	
Financial management of an environment business	Years I, III
Managing an environmental business: The business plan and financing proposal (4 offerings)	Years I, II
Principles of market dynamics (4 offerings)	Year III
Pollution prevention for small and medium sized companies (2 offerings)	Year II
Marketing environmental goods and services	Year III
Strategic planning for environmental businesses	Year III
Advanced environmental auditing	Year I
NGO	
Strategic planning for NGOs (six offerings)	Year III
Conflict resolution management	Year II
Environmental conflict resolution (2 offerings)	Year III
Developing and implementing a community environmental monitoring and enforcement program	Year I
Government	
Implementing environmental monitoring and enforcement programs at the local and regional level	Year II
Academic/Institutional Strengthening	
Development of academic curricula in environmental economics	Year II
All	
Environmental impact assessment: improving development decisions with environmental information	Year II, V
Follow-up with EIA Regional Commission	Year II
Toxic Release inventory workshop	Year II, V
Environmental conflict resolution	Years II, III, V

C. Hungary

Business	
Managing an environmental business: The business plan and financing proposal (2 offerings + follow-up)	Years II, III
Strategic planning for environmental business	Year III
Marketing environmental goods and services	Year III
Advanced environmental auditing (2 offerings + follow-up)	Years III, IV
Increasing the capabilities of private sector firms to perform environmental liability assessments (2 offerings)	Year IV
Financial management for environmental businesses	Year IV
Facts and opportunities in applying the new environmental law	Year IV
Meeting of the Environmental Business Club	Year IV, V
Post-Diploma Studies at Miskolc University	Year IV, V
NGO	
NGO outreach and development (2 offerings + 11 follow-ups)	Years II, III, IV
Managing financial resources for NGOs: Identifying funding sources (1 offering + follow up)	Years II, III
Innovative approaches: Promoting environmentally sound governmental policies	Year III
Innovative approaches: Conflict resolution and mediation	Year III
Innovative approaches: Organizational development	Year III
Conflict management training for trainers with PDC (10 half day self training meetings - one per month + 3 one day meetings + 2 offerings)	Years IV, V
Non-profit Financial Management	Year V
Non-profit Legal Management	Year V
Governmental	
Environmental liability workshop	Year II
Municipal and utility financing of environmental projects	Year IV
Integrated Waste Management	Year V
Advanced Public Relations Methods and Environmental Communication for Local Communities	Year V
Implementing a community environmental action project (one offering + one follow-up)	Year IV, V

Hungary continued

Academic / Institutional	
Curriculum development workshop	Year II
Multinational internet training within the library project	Year IV
Post-diploma studies at Miskolc University	Year IV, V
All	
Strategic planning in the Borsod-Miskolc region (1 offering + follow-up)	Years I, II
Environmental conflict management	Year I
Facilitating skills	Year III
Conflict resolution (6 offerings)	Year III
EIA (two offerings)	Year III
Using environmental law for effective environmental management (2 offerings)	Year III

D. Poland

Business	
Management of financial resources for small environmental business (3 offerings)	Year I
Marketing environmental goods and services (2 offerings)	Year I
Advanced marketing of environmental goods and services (2 offerings)	Year II
Environmental auditing I (two offerings)	Year I
Managing environmental business	Year II
Environmental auditing II, Technical applications (2 offerings)	Year II
Marketing for Environmental Business (2 offerings)	Year II
Strategic planning for environmental business	Year III
Waste Management for Environmental Business	Year III
Financial management for small environmental businesses	Year III
Environmental impact assessment	Year III
Conflict resolution for environmental management (2 offerings)	Year III

Poland continued (business)

Post Diploma Studies Program at Silesian Technical University <ul style="list-style-type: none"> - Fundamentals of Management - Market Economy and Institutions - Marketing - Business plan and financial proposals - Strategic planning for environmental business - Environmental management of restructuring for large enterprises - Selected subjects of Polish law - Pollution prevention-Strategies - Pollution prevention-Technologies - US experience in restructuring - Social aspects of restructuring - Energy efficiency in industry - Environmental protection in metallurgy-Technologies - Environmental auditing for metallurgical plants - Quality control systems - Survival strategy - Marketing metallurgical products - Environmentally friendly technology - Waste management and recycling - Energy efficiency 	Year III, IV, V
Business logistics for emerging environmental businesses in Upper Silesia	Years III, IV
Survival strategies for environmental business	Years III, IV
Advanced environmental auditing	Year IV
Environmentally sound management of industry	Year IV
Business/NGO	
Conflict resolution for environmental management	Year II
Advertising and public relations in environmental activities	Year IV
Academic-Institutional Strengthening	
Potential Funding Sources and Writing Proposals for Universities	Year II
Academic Curricula Development Workshop in Environmental and Natural Resources	Year V
NGO	
Strategic planning and financial management for NGOs	Year I
Identifying funding sources and writing proposals	Year II
Train the Trainers to complement NGO strengthening	Years III, IV
Institutional Development of ETP Operations	Year V
Strengthening the ETP NGO Network	Year V
Government	
Functioning of legal system for environmental protection	Year II
Strategic planning and action initiatives for local governments and NGOs in the context of the Environmental Action Programme	Year III

Poland continued (government)

Financing municipal environmental investments	Year IV, V
Environmental health and tested food for Silesia: Cooperation through the federation of polluted Silesian towns (7 offerings)	Year IV, V
Waste management in planning and environmental policy on a community level	Year IV
Evaluating Environmental Damage by Local Self-Governments in the Process of Satisfying Collective Needs of Communities	Year V
Financial Management of Environmental Investments	Year V
Municipal Budgeting and Financial Management	Year V
Pollution Prevention Strategies	Year IV, V
Management of Environmental Investment Process in Municipalities	Year V
Business/Government	
Waste management and the small business community	Year II
Survival Strategies for Environmental Business Sector	Year V
Project Management and Bidding Procedures	Year V
Government/Business/NGO	
Effective Methods of Communication	Year IV
Human Resources Management	Year V
Introducing ISO 14000 & other Int'l Environmental Mgt. Systems	Year V
Local Government/NGO	
Advanced Public Relations and Advertising Methods in Business, Local Government and Environmental Communication	Year V
Reduction of Low Emissions & Strategies of Energy Mgt. in Municipalities	Year V
All	
Posnan International environmental fair	Year I
Developing effective communication strategy for local gov't & NGOs	Year III
The functioning of the legal system for environmental protection to local self-governing (3 offerings)	Year IV

E. Romania

Business	
Managing an Ent'l Business: The business plan & financing proposal	Year II
Management of small environmental businesses	Year III
Strategic planning for environmental small business	Year IV
Follow-up workshops with business representatives (three offerings)	Years III, IV
Developing a marketing plan	Year IV
Life Cycle Analysis	Year V
NGO	
Strengthening NGOs through organizational development	Year II
NGO public outreach, communication and coordination	Year III
Identifying funding sources and writing proposals (five offerings)	Years I, II, III
Follow-up workshop for NGOs on I.F.S. and W.P. (three offerings)	Years II, III, IV
Building local fin'l & community support for NGOs	Year IV
Follow-up meeting with NGOs - Earth Day brochure	Year IV
How to be a Better Leader	Year IV
Alternative Fundraising for NGOs Institutionalization	Year V
Training of Trainers in Facilitation Skills	Year III
Governmental	
Strategic Planning for Environmental Management	Year I
Developing a Regional Water Quality Management Plan: River Basin Management	Year II
Implementing legal processes for environmental protection at the local and regional level: Environmental permitting for EPA	Year III
Environmental impact assessment	Year IV
Public participation for environmental policy and program implementation (two stages)	Years III, IV, V
Integrated waste management training (three offerings)	Years III, IV
Academic/Institutional Strengthening	
Environmental information in Romanian libraries - Library Project Catalogue	Year III
Using Internet for environmental information and library networking	Year IV

Romania continued (Academia)

Curricula Development: Environmental and natural resource economics	Year IV
Environmental education for Youth (two stages)	Year IV
Proposal writing for research institutes	Year II
Internships and Ph.D. Fellowships (in US)	Year III
Interactively Teaching Adults	Year V
All	
Strategic planning for public participation (two stages)	Years II, III, V
Improved Environmental Programs through Better Information Management	Year I
Environmental mediation and conflict resolution (two offerings)	Year III
Designing and Implementing a Community Environmental Action Plan (three offerings)	Years IV, V
Lead Exposure Abatement Program	Year V
Strategic Planning and Community Leadership	Year V
PDS in Environmentally Friendly Industrial Restructuring	Year V
Prevent Transboundary Conflicts through Environmental Education	Years IV, V

F. Slovakia

Business	
Environmental auditing for industry and government professional	Year II
Financial management for small environmental businesses	Year II
Advanced financial management	Year III
Principles of market dynamics (3 offerings)	Year III
Managing an environmental business: The business plan and financing proposal (2 offerings)	Year II
Environmental auditing II: technical applications	Year II
Developing a marketing plan for environmental businesses	Year III
Environmental auditing III: agricultural applications	Year IV
Developing strategy for environmental business	Year IV
NGO	
EIA: Public participation training for NGOs	Year III

Slovakia continued (NGO)

Innovative approaches to strengthening environmental NGO interaction	Years III, IV
Heavy metals: training of activists	Year III
Strategic planning and management of financial resources for NGOs	Year II
Strategic planning and financial management for NGOs (four offerings)	Year II
Professional development internships in Minnesota	Year IV
Possibilities of using the Internet for beginners from Slovakian environmental NGOs	Year IV
Current legal framework for NGO sector in Slovakia	Year IV
Improvement of environmental data management in Kosice area as a tool for strengthening of environmental awareness	Year IV
Building strong NGOs	Year IV
Public Relations for NGOs	Year IV
Technical Assistance of Local Initiatives (three offerings)	Year V
Strengthening Environmental NGOs (three offerings)	Year V
Human and institutional development of the ETP operations	Year V
Governmental	
Implementing the Environmental Action Programme	Year III
Environmental liability workshop	Year II
Developing a community environmental action plan (2 offerings)	Year IV
Communication strategies, negotiation, and conflict resolution (5 offerings)	Year IV
Waste management (1 offering)	Year IV
Financing municipal environmental investments	Year IV, V
Technical Assistance of Local Initiatives (three offerings)	Year V
Methods of Effective Decision Making on a Local Level (3 offerings)	Year V
Business, Government, NGO	
Increasing Environmental Awareness through better Waste Management in Košice	Year III
Environmental impact assessment: Improving development decisions with environmental information	Year II

Slovakia continued

Academic/Institutional Strengthening	
Developing academic curricula: Environmental and natural resource economics	Year III
Developing academic curricula in environmental business (jointly with Czech Republic)	Year II
Multinational Internet training within the library project	Year IV
Environmental curricula development	Year IV
Institutional development of ETP operations	Year IV
Professional development internships in Minnesota	Year IV
Post-Diploma Studies in Environmentally-Friendly Restructuring and Strategic Management of Industrial Companies at the Technical University of Kosice	Year V
All	
Building regional capacity for solving environmental conflicts	Year III
Environmental monitoring and enforcement on the local and regional level	Year II
Using information for effective environmental management	Year II
Intensive Management Training in Strategic Planning and New Business Development	Year III
Strategic planning for effective environmental business management	Year III
Institutional tools for air quality management	Year IV
Human and institutional capacity building for pollution prevention in eastern Slovakia	Year IV
Implementing effective regional and local legal processes for environmental protection	Year III
Waste Minimization Strategies and Reuse	Year IV
Environmental Monitoring of Hornad River	Year V
Public Participation for Improvement of Municipal Waste Disposal	Year V
Analysis of Training Needs in the Environmental Sector	Year V
Risk Assessment for Toxic Elements in the Food Chain and Animals	Year V

Appendix E

**IMPACTS OF E.T.P. TRAINING COURSES
MUNICIPAL INVESTMENTS
IN GMINAS OF SILESIA**

Prepared by: Dr. Wieslaw CHODASEWICZ

KATOWICE (POLAND) September 1996

ACTIVITIES UNDERTAKEN BY GRADUATES OF THE ETP COURSES IN MUNICIPALITIES OF SILESIA

The evaluation was conducted in August and September 1996 using the method of direct interviews with the graduates of the ETP trainings who are employed in particular gminas. We have concentrated on the gminas where at least one alumnus of ETP trainings has a position involving that person in the investment decision process.

While preparing this material we wondered to what extent the employees' ETP training influenced investment activities and financing investment level. Mr. Tadeusz Januchta, the head of Environmental Department in Bielsko-Biala said, "In order for the City Council to make an investment, I must prove that the investment is necessary and will be profitable. I must present the Council with financing sources, specify the schedule, prepare many other documents, and finally convince the Council that making the investment is the right decision. Having taken a few ETP courses I can now do this more efficiently and effectively than before." Like Mr. Januchta, all of the people questioned stressed the very high quality and usefulness of the ETP courses.

The research covered the following groups of problems :

- Type and size of the undertaken investment during the period of January 1995 through September 1996
- Level and sources of their financing
- Non-investment activities
- Gmina's current problems
- Needs concerning future ETP courses

This report is a summary of the information obtained. We interviewed employees from large gminas such as Katowice, Bielsko-Biala, Bytom, Sosnowiec; medium-sized gminas such as Jaworzno, Laziska, Chrzanów; and small-sized such as Brzeszcze and Miasteczko Sl. Radoszowy-Wieprz..

In the final section of the report, we present a table of the data on gmina's investments in the following branches:

- air protection
- surface water protection and sewage treatment management
- waste management
- land reclamation
- other activities (new parks, forestation, protection of "monuments of nature" etc.)

All of those interviewed want to participate in the next ETP trainings because they have found past ETP trainings to be very useful to them in their everyday work.. In the trainings we always concentrate on solving practical problems and providing carefully

selected Polish cases. Speaking with gminas representatives provides helpful suggestions of subjects for future ETP trainings.

Description of investments and other activities undertaken by selected gminas during the period of January 1995 through September 1996

LARGE GMINAS (over 100,000 citizens)

City GLIWICE

Contract between the City of Gliwice and General Motors Co.

Though no city employees in Gliwice have participated in ETP courses, an ETP alumnus who has established a private consulting firm did play a significant role in developing one of the city's most important contracts.

In the spring of 1996 the City of Gliwice signed a contract with General Motors Company. According to the contract, GM will build a car plant which will employ 10,000 people in Gliwice. The investment will total 200 million USD with 90 million being invested in 1996-97.

Mr. Wojciech NAPIERALA, a graduate of five ETP training courses and Director of the private company, Gliwice Economic Development Agency, was one of the most important people contributing to the final decision to sign this contract. Mr. Napierala convinced the city officials that the investment in the territory of Gliwice was realistic. Next, upon the request of the City Hall, he prepared the proposal for the city to submit to GM and a detailed economic analysis to be used in future negotiations. Mr. Napierala then served as a city representative in negotiations with environmental NGOs which were protesting the investment. His participation helped lead to a compromise which was satisfactory for both parties. To a great extent, Mr. Napierala attributes the success of his work for the city to the knowledge he gained from ETP courses.

City BIELSKO-BIALA

The following information is from an interview with Mr. Tadeusz Januchta, Chief of the Environment Protection Department, who has participated in two ETP trainings.

Municipal environmental investments:

- Modernization of existing sewage treatment plant
- Building of new sewage treatment plant
- Rebuilding of the city sewage pipeline system
 - ⇒ Total cost: 1.5 million USD (0.75 million/year)
- Air pollution monitoring system

- ⇒ Total cost: 40,000 USD
- Modernization of central heating plants from coal-burning to gas or oil-burning (Co-financed)
 - ⇒ Total cost: 0.8 million USD (0.4 million USD/year)
- New "Ecological Park" with environmental education station.
 - ⇒ Total cost: 30,000 USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- National Fund of Environment Protection and Water Management (donations and loans)
- World Bank (loan)
- Agriculture Modernization Agency (donations and loans)
- Bank of Environment Protection (loans)

Non Investment activities:

Bielsko-Biala, the first municipality in CEE, established a company called AQUA Ltd. that takes care of water and sewage management in gmina. The company received a guarantee of the Polish Government and the City Council. The World Bank considered the solution found by Bielsko-Biala as a model for CEE Countries and granted the City a loan equal to 50 million USD.

City BYTOM

The interview was given by Mr. Włodzimierz Charchula, Chief of the Ecology Department who took part in four ETP trainings.

Municipal investments:

- Building of the communal waste dump (under construction)
 - ⇒ Cost so far: 1,2 million USD, in the future another 2.5 million USD.
- Changing of heating system (reduction of low-emission) in 48 schools and other public buildings by canceling old boiler-houses and connection into central gas or oil combustion heating systems.
 - ⇒ Cost: 0.8 million USD
- Refinancing of heating modernization in private and public buildings. Gmina covers up to 70% of the costs consisting of fuel change.
 - ⇒ Cost: 0.8 million USD (0.4 million USD/year)

Sources of financing:

- Gmina's own resources

- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- National Fund of Environment Protection and Water Management (donations and loans)
- Bank of Environment Protection (loans)

Non-investment activities:

- Preparation of Master Plan for City Bytom
- Environmental audits in 5 plants situated on the gmina's territory
- Organization of the School of Clean Production in cooperation with Central Mining Institute and some private companies
- Cooperation with industry located on gmina's territory in the issues of environment protection

City DABROWA GÓRNICZA

The interview was given by Ms. Jolanta Przybyła, Deputy Chief of the Environment Protection Department who participated in two ETP trainings.

Municipal environmental investments:

- Modernization of existing sewage treatment plant and building a new one
⇒ Cost 0.75 million USD
- Building of the waste water collector in Strzemieszyce and rebuilding of the city sewage pipeline system.
⇒ Cost: 4 million USD
- Co-financing of gmina gas supply system
⇒ Total cost: 2 million USD
- Land reclamation in the area of the old waste dumps
⇒ Cost: 0.7 million USD
- Reduction of low emission by building new central heating plants
⇒ Cost: 2.1 million USD.

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Bank of Environment Protection (loans)
- Citizens' own means (concerns gmina's gas system)

Non Investment activities:

- Cooperation with primary and secondary schools in ecological education
- Wide advertising of the environmental impacts of natural gas as a fuel

City CZELADZ

The interview was given by Mr. Beata Siemieniec, employee in the Environment Protection Department who participated in two ETP trainings.

Municipal environmental investments:

- Modernization of existing sewage treatment plant
⇒ Cost: 0.15 million USD
- Building of new waste water collector on the left bank of Brynica river
⇒ Cost: 2.5 million USD
- Reclamation of old waste dumps
⇒ Cost: 0.7 million USD
- Building of new communal waste dump (1st stage)
⇒ Cost: 0.8 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- National Fund of Environment Protection and Water Management (donations and loans)

Non Investment activities:

- Organization of environmental workshops for members of City Council
- Organization of workshops for school teachers

City JAWORZNO

The interview was given by Ms. Bronislawa Paliga-Chechelska, Chief of the Environment Protection Department who participated in two ETP trainings.

Municipal environmental investments:

- Building of new water treatment plant Jaworzno-Dab (1st stage)
⇒ Cost: 5.1 million USD
- Rebuilding of the sewage collectors
⇒ Cost: 0.3 million USD
- Reduction of low emission by co-financing of modernization of heating boilers by fuel change from coal to gas or oil
⇒ Cost: 0.2 million USD. (0.1 million USD/year)

Sources of financing:

- Gmina's own resources

- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Bank of Environment Protection (loans)
- Citizen's own means (concerns to modernizing of heating system and changing fuel from coal to oil or gas)

Non Investment activities:

- Establishing the natural sanctuary "Dolina Zabnika"
- Establishing of landscape sanctuary "Ciezkowice"
- Forestation 10 hectares/year

City KATOWICE

The interview was given by Ms. Kazimierz Ochel, Chief of the Environment Protection Department. She participated in one ETP training.

Municipal environmental investments:

- Building of waste dump (1st stage)
⇒ Cost: 0.25 million USD
- Building of new sewage treatment plant Panewniki
⇒ Cost: 2.0 million USD
- Rebuilding of the sewage piping system in Murcki district
⇒ Cost: 2.5 million USD
- Building a special plant for combustion of wastes from hospitals
⇒ Cost: 2.1 million USD
- Strengthening of Rawa river banks
⇒ Cost: 0.9 million USD
- Reduction of low emission by liquidation of 40 old local heating plants
⇒ Cost: 2.8 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- National Fund of Environment Protection and Water Management (donations and loans)
- Bank of Environment Protection (loans)

Non Investment activities:

- Conflict connected with location of communal wastes was solved
- Establishing a "Information Center of Waste management"

City LEGNICA

The interview was given by Ms. Jolanta Kozinska, Deputy Director of the Environment Protection Department. She participated in three ETP trainings.

Municipal environmental investments:

- Modernization of existing sewage treatment plant
⇒ Cost: 0.25 million USD
- Building of sewage pipeline system in the outskirts of the town
⇒ Cost: 0.20 million USD
- Liquidation of small coal fired central heating plants and connection to the heating network
⇒ Cost: 0.35 million USD
- Development of the existing communal waste dump
⇒ Cost: 0.75 million USD
- Utilization of land of the former military areas
⇒ Cost: 0.25 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Agriculture Modernization Agency (donations and loans)
- Bank of Environment Protection (loans)

Non Investment activities:

- Organization of ecological competitions for school children
- Supporting ecological education of society
- Environmental audits for industrial plants in gmina territory

City RACIBÓRZ

The interview was given by Mr. Jan Urban, Chief of the Environment Protection Department who has participated in four ETP trainings.

Municipal environmental investments:

- Building of new big sewage treatment plant (under construction)
⇒ Cost so far: 3.2 million USD
- Building of new communal waste dump together with 3 other gminas
⇒ Cost: 3.0 million USD
- Co-financing of liquidation or modernization of 70 local central heating plants by fuel change from coal to gas or oil
⇒ Cost: 2.8 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Bank of Environment Protection (loans)
- Citizens' and companies' own means (concerns to modernizing of heating system and changing fuel from coal to oil or gas)

City RUDA-SLASKA

The interview was given by Ms. Jolanta Malachowska, Chief of the Environment Protection Department. She participated in two ETP trainings.

Municipal environmental investments:

- Modernization of existing sewage treatment plant
⇒ Cost: 1.5 million USD
- Building of new communal waste dump (1st stage)
⇒ Cost so far: 3.0 million USD
- Rebuilding of the sewage pipelines
⇒ Cost: 0.5 million USD
- Reclamation of post industrial areas
⇒ Cost: 0.4 million USD
- Reduction of low emission by co-financing the modernization particular heating systems by fuel change from coal to gas or oil.
⇒ Cost: 0.4 million USD. (0.2 million USD/year)

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Agency of Local Development(donations and loans)
- Bank of Environment Protection (loans)
- Citizen's and companies' own means (concerns to modernizing of heating system and changing fuel from coal to oil or gas)

Non investment activities:

Municipality Racibórz has a very effective environmental policy for industry in their territory. The result is a radical reduction of dust and ash emission by industry. A good example is the company, Henkel Poland Ltd. that was forced to improve technology and install very effective filters.

City SIEMIANOWICE

The interview was given by Mr. Jan Kopyczok, Chief of the Environment Protection Department who participated in four ETP trainings.

Municipal environmental investments:

- Reduction of low emission by co-financing of modernization local central heating plants by fuel change from coal to gas or oil
⇒ Cost: 3.2 million USD. (1.6 million USD/year)

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Bank of Environment Protection (loans)
- Citizens' own means (concerns to modernizing of heating system and changing fuel from coal to oil or gas)

Non Investment activities:

- Italian company LANDUCI built a new waste dump for Siemianowice and covered all costs

City SWIETOCHLOWICE

The interview was given by Ms. Henryka Maciejewska, Chief of the Environment Protection Department. She participated in two ETP trainings.

Municipal environmental investments:

- Reclamation of 7 old industrial and communal waste dumps
⇒ Cost: 0.6 million USD
- Building of new communal waste dump (under construction).
⇒ Cost so far: 1,4 million USD
- Liquidation of pond "Kalina" - extremely polluted with hydrocarbons (is being done)
⇒ Cost so far : 2.1 million USD
- Reduction of low emission by co-financing of modernization local central heating plants by fuel change from coal to gas or oil.
⇒ Cost: 0.6 million USD (0.3 million USD/year)

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (loans)
- Bank of Environment Protection (loans)
- Citizen's own means (concerns to modernizing of heating system and changing fuel from coal to oil or gas)

Non Investment activities:

- Integrated plan of gmina's development has been prepared.
- Ecological education of community.

City SOSNOWIEC

The interview was given by Ms. Zenona Kaganiec, Manager of the Environment Protection Department. Participated in three ETP trainings.

Municipal environmental investments:

- Rebuilding of the sewage system in Dmowskiego district
⇒ Cost: 1.8 million USD
- Building a new gas pipeline in Ostrowy district
⇒ Cost: 0.5 million USD
- Liquidation of 6 old coal heated boiler houses
⇒ Cost: 0.8 million USD
- Modernization of 8 coal heated boiler-houses. Change the fuel from coal to natural gas or oil
⇒ Cost: 1.7 million USD
- Building communal waste dump
⇒ Cost: 1.3 million USD
- Land reclamation and establishing a park in Sodula district
⇒ Cost: 0.3 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Bank of Environment Protection (loans)

City TARNOWSKIE GÓRY

The interview was given by Mr. Marian Nowak, Chief of the Department of Investments. (Participated in one ETP training).

Municipal environmental investments:

- Building of new sewage treatment plant (under construction).
⇒ Cost so far: 1.1 million USD
- Modernization of sewage collectors
⇒ Cost so far: 1.0 million USD

- Building of new communal waste dump together with three other gminas.
⇒ Cost: 1.6 million USD
- Building of natural gas pipeline system.
⇒ Cost: 0.6 million USD
- Co-financing of liquidation or modernization of ten local central heating plants by fuel change from coal to gas or oil.
⇒ Cost: 0.3 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Bank of Environment Protection (loans)
- Citizen's and companies' own means (concerns to modernizing of heating system and changing fuel from coal to oil or gas)

MEDIUM SIZE GMINAS 20,000 to 100,000 citizens

Gmina BOLESŁAW

The interview was given by Ms. Helena Makowska, the Major. She participated in of two ETP trainings.

Municipal environmental investments:

- Building of natural gas supply system.
⇒ Cost: 1.8 million USD
- Building of new sewage collectors
⇒ Cost: 0.4 million USD
- Building of the communal waste dump (First stage)
⇒ Cost: 0.5 million USD/year
- Land reclamation on post industrial areas
⇒ Cost: 0.9 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (loans)
- Agriculture Modernization Agency (donations and loans)
- Bank of Environment Protection (loans)
- Citizen's own means (concerns to installing gas supply system)

Gmina LEDZINY

The interview was given by Mr. Jerzy Kowalski, Chief of the Environment Protection Department. He participated in one ETP training.

Municipal environmental investments:

- Modernization of existing sewage pipeline system
⇒ Cost: 1.3 million USD
- Building of new communal waste dump together with gmina Tychy
⇒ Cost: 0.3 million USD
- Reduction of low emission by co-financing of modernization local central heating plants by fuel change from coal to gas or oil
⇒ Cost: 0.8 million USD (0.4 million USD/year)

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Bank of Environment Protection (loans)
- Citizen's own means (concerns to modernizing of heating system and changing fuel from coal to oil or gas)

Gmina WODZISLAW SLASKI

The interview was given by Mr. Kazimierz Cichy, Chief of the Environment Protection Department. (Participated in four ETP trainings.)

Municipal environmental investments:

- Building of 3 new sewage treatment plants
⇒ Cost: 4.0 million USD
- Building of the sewage-pipe system in Jodlowniki district
⇒ Cost: 4.0 million USD
- Modernization and development of 3 big coal combustion central heating plants and change fuel from coal to gas or oil
⇒ Cost: 3.7 million USD
- Conservation of "Monuments of Nature" and forestation
⇒ Cost: 0.35 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- National Fund of Environment Protection and Water Management (loans)
- Agriculture Modernization Agency (donations and loans)
- Bank of Environment Protection (loans)

Non Investment activities:

- Separating the oldest and the most valuable parts of the forest and registering them as "Monuments of Nature"
- Supporting school activities concerning ecological education

Gmina CHRZANÓW

The interview was given by Ms. Zofia Zajac, Chief of Organization and Investments Department. She participated in one ETP training.

Municipal environmental investments:

- Building of the main sewage collector (under construction)
⇒ Cost so far: 2.6 million US
- Building 3 new central heating plants equipped with furnace gas desulphurisator
⇒ Cost: 1.2 million dollars
- Re-building of the city sewage pipeline system
⇒ Cost: 2.0 million USD
- Building of gas supply pipeline for all gmina (under construction)
⇒ Cost so far: 0.9 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Bank of Environment Protection (loans)

Non Investment activities:

- Negotiation concerning building common communal waste dumps was successfully completed and agreement was signed.

Gmina LAZISKA GÓRNE

The interview was given by Ms. Barbara Denysiuk, Deputy Chief of the Environment Protection Department, graduate of two ETP trainings.

Municipal environmental investments:

- Modernization of existing sewage treatment system
⇒ Cost: 0.2 million USD
- Building of new sewage treatment plant
⇒ Cost: 0.2 million USD
- Building of the communal waste dump
⇒ Cost: 0.8 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (loans)
- Bank of Environment Protection (loans)

Non Investment activities:

- Solving social conflict connected with location of communal waste dump
- Steel plant "Laziska" received ISO 9000 certificate

Gmina NOWA SÓL

The interview was given by Mr. Waldemar Hoszowski, Chief of the Environment Protection Department. He participated in two ETP trainings.

Municipal environmental investments:

- Building of communal waste dump
⇒ Cost: 0.4 million USD
- Building of waste water treatment plant (under construction)
⇒ Cost: 2.0 million USD
- Rebuilding of the city sewage pipeline system
⇒ Cost: 0.25 million USD

Sources of financing:

- Gmina's own resources

- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- National Fund of Environment Protection and Water Management (donations and loans)
- Agriculture Modernization Agency (donations and loans)

Non Investment activities:

- Ecological education of community

SMALL GMINAS up to 20,000 citizens

Gmina BRZESZCZE

The interview was given by Mr. Jaroslaw Wolowiec, Deputy of the Major. He participated in two ETP trainings.

Municipal environmental investments:

- Building of sewage treatment plant
⇒ Cost: 1.5 million USD
- Building of the sewage collector
⇒ Cost: 1.5 million USD
- Energy efficient street lamps
⇒ Cost: 0.25 million USD
- Liquidation of three coal fueled central heating plants
⇒ Cost: 0.2 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- National Fund of Environment Protection and Water Management (donations and loans)

Non Investment activities:

- Preparation of the documentation of communal waste dump

Gmina BOJSZOWY

The interview was given by Ms. Longina Giedwillo, the head of Investment Department. She has participated in two ETP trainings.

Municipal environmental investments:

- Building of two new water treatment plants
⇒ Cost: 0.8 million USD
- Building of the sewage collector and other sewage equipment
⇒ Cost till now : 0.6 million USD
- Reduction of low emission by co-financing of modernization local central heating plants by fuel change from coal to gas or oil
⇒ Cost: 0.8 million USD (0.4 million USD/year)

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Agriculture Modernization Agency (donations and loans)

Gmina DOBCZYCE

The interview was given by Ms. Maria Kasperczyk, Chief of the Environment Protection Department. She has participated in one ETP training.

Municipal environmental investments:

- Modernization of existing sewage treatment plant
⇒ Cost: 0.35 million USD
- Rebuilding of sewage pipeline system
⇒ Cost: 0.3 million USD
- Building of the water supply system
⇒ Cost: 0.3 million USD
- Building of the gas supply system
⇒ Cost: 0.3 million USD
- Changing coal boilers into gas boilers in schools and public buildings
⇒ Cost: 0.35 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Bank of Environment Protection (loans)
- Citizen's own means (concerns to water supply system)

Gmina MIASTECZKO SLASKIE

The interview was given by Mr. Stanislaw Wieczorek, Chief of the Department of Investments. He participated in two ETP trainings.

Municipal environmental investments:

- Development of gas-supply system
⇒ Cost: 0.2 million USD
- Participation in building of central communal waste dump
⇒ Cost: 0.9 million USD
- Developing of water supply system
⇒ Cost: 0.6 million USD
- Reduction of low emission by co-financing of modernization individual heating systems by fuel change from coal to gas or oil
⇒ Cost: 0.35 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Agriculture Modernization Agency (donations and loans)
- Bank of Environment Protection (loans)
- Citizen's own means (concerns to changing fuel from coal to oil or gas)

Non Investment activities:

- Ecological Education of society.

Gmina RADOSZOWY-WIEPRZ

The interview was given by Mr. Józef Kania, Chief of the Environment Protection Department. He participated in one ETP training.

Municipal environmental investments:

- Building of new water supply system and reservoirs
⇒ Cost: 0.6 million USD
- Rebuilding of the sewage-pipe system
⇒ Cost: 0.6 million USD

Sources of financing:

- Gmina's own resources
- Voivodship's Environment Protection and Water Management Fund (donations and loans)
- Agriculture Modernization Agency (donations and loans)
- Citizens' own means (concerns water supply system)

CONCLUSIONS

1. ETP training participants are very active and effective in their activities. This fact holds true independently of the size of their gminas and the level of their budget.
2. Interviewed people stress high level of usefulness of knowledge learned during ETP courses in their everyday work.
3. The people interviewed have a sizable influence on gmina's investment decisions.
4. The ETP training alumni say that the courses help them to prepare investment requests, to better justify their needs, and to more effectively and efficiently find financing resources.
5. Some ETP alumni changed the work-style in their departments in order to achieve better results (Legnica, Racibórz, Bielsko-Biala, Bytom).
6. All those people interviewed stressed the need to increase the number of ETP training courses for gminas.
7. The people reported an urgent need for organizing a cycle of integrated courses (3-5 courses) focused on particular stages of the investment process "from budget design to ready investment".

SUBJECTS OF FUTURE ETP TRAININGS

Suggestions from interviewees

1. Strategies for sustainable development of gmina.
2. Principles of sustainable development in budget construction and financial management in gmina.
3. Gmina's promotion towards outside investors.
4. Natural resource management in gminas.
5. Management of particular stages of the investment process in gminas.
6. Local self-government and local financial management in the State financial system.
7. American experiences in "Business-Community Partnership".
8. Economic, financial and environmental analysis of selected investments realized in gminas as capital investments.
9. Transfer of "clean technologies," possibilities and practice.
10. Formal, legal and financing possibilities for gminas in aspects of "Contract for Silesia".
11. Preparing offers for venture-capital investments in gminas
12. Public relations for gmina's majors
13. Energy efficiency auditing for municipalities

Table 1

MUNICIPAL INVESTMENTS IN GMINAS OF SILESIA REGION

	GMINA	AMOUNTS INVESTED IN MILLION US DOLLARS:					TOTAL IN GMINA
		AIR PROTECTION	WATER PROTECTION	WASTE MANAGEMENT	LAND RECLAMATION	OTHERS	
	BIG GMINAS						
1	BIELSKO-BIALA	0.84	1.50	-	0.03	-	2.37
2	BYTOM	1.60	-	1.20	-	-	2.80
3	DABROWA GÓRNICZA	4.1	4.75	-	0.70	-	9.55
4	CZELADZ	-	2.65	0.80	0.70	-	4.15
5	JAWORZNO	0.20	5.40	-	-	-	5.60
6	KATOWICE	2.80	4.50	2.35	-	0.90	10.55
7	LEGNICA	0.35	0.45	0.75	0.25	-	1.80
8	RACIBÓRZ	2.80	3.20	3.00	-	-	9.00
9	RUDA ŚLASKA	0.40	2.00	3.00	0.40	-	5.80
10	SIEMIANOWICE	3.20	-	-	-	-	3.20
11	SWIETOCHŁOWICE	0.60	2.10	1.40	0.60	2.10	6.80
12	SOSNOWIEC	2.50	2.30	1.30	0.30	-	6.40
13	TARNOWSKIE GÓRY	0.90	2.10	1.60	0.30	-	4.90
	SUB-TOTAL IN GMINAS	20.29	30.95	15.40	3.28	3.00	72.92

Table 1

MUNICIPAL INVESTMENTS IN GMINAS (CONTINUED)

	GMINA	Amounts invested in million US Dollars:					TOTAL IN GMINA
		Air protection	Water protection	Waste management	Land reclamation	Others	
	MEDIUM SIZE GMINAS						
14	BOLESŁAW	1.80	0.40	0.50	0.90	-	3.60
15	CHRZANÓW	2.60	2.00	-	-	0.90	5.50
16	LEDZINY	0.80	1.30	0.30	-	-	2.40
17	LAZISKA GÓRNE	-	0.40	0.80	-	-	1.20
18	NOWA SÓL	-	2.25	0.40	-	-	2.65
19	WODZISŁAW ŚL.	3.70	8.00	-	-	0.35	12.05
	SMALL GMINAS						
20	BRZESZCZE	0.20	3.00	-	-	0.25	3.45
21	BOJSZOWY	0.80	1.40	-	-	-	2.20
22	DOBCZYCE	0.65	0.65	-	-	0.30	1.60
23	MIASTECZKO ŚL.	0.55	-	0.90	-	0.60	2.05
24	RADOSZOWY- WIEPRZ	-	0.60	-	-	0.60	1.20
	SUB-TOTAL IN GMINAS	11.10	20.00	2.90	0.90	3.00	37.90

MUNICIPAL INVESTMENTS IN 24 GMINAS - TOTAL

TOTAL	31.39	50.95	17.30	4.18	6.00	110.82
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Appendix F

IMPACT OF ATMOSPHERIC DEPOSITION ON THE STATUS OF PLANTED NORWAY SPRUCE STANDS: A COMPARATIVE STUDY BETWEEN SITES IN SOUTHERN SWEDEN AND THE NORTHEASTERN CZECH REPUBLIC

Jindrich Tichy¹
(1948-1995)

Abstract

Six Norway spruce stands (Picea abies L.) in Southern Sweden and six in the northeastern Czech Republic, 12 stands in total, were selected for short-term investigations during the summer and autumn of 1991. In each of the plots, an assessment of foliar damage and dendrometric measurement of trees were made. Soil and leaf samples were collected and analyzed for their chemical composition.

After statistical evaluation of the most important correlations, it was concluded that the main cause of tree damage in both countries was through the acidification of the soils. In both countries, but especially in the Czech Republic heavy metal accumulation in the humus layer was observed.

The main results of the study was the discovery of similarity of damage processes in the two countries, despite the differences in their geographic locations and ambient air pollution levels.

INTRODUCTION

Air pollution is a readily understood phenomenon in some parts of Central Europe, having the form of a visible cloud of choking, acrid-tasting mist or a sooty acid haze. Such examples lead to the usual, easily perceived air pollution and consequent distraction of the public attention from geographic areas that appear clean, supporting the belief that it is a specific local problem. There are subtle, less dramatic forms of air pollution, such as acidic deposition and other chronic stress factors that cause slow and subtle decline of forests without attracting much attention until reaching a state that is readily visible.

Countries affected by air pollution-induced forest decline have used different approaches to the analysis of the problem. These are reflected by the differences in the methods of damage assessment and by the methods of laboratory tissue and soil

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analysis. East European methods are more practical and field oriented, while West European methods are much more precise, detailed and laboratory oriented. Research described in this paper uses methods from both the Czech Republic and Sweden.

The Czech contribution was the field assessment method of forest trees and stands to define the severity of damage and to formulate appropriate treatment(s) to mitigate the adverse effects of air pollutants. The Czech method of tree damage assessment is based on a combination of visual parameters of damage to the crown. The damage scale has been used successfully since the 1950s (Materna, 1979), with some slight modifications over time (Kucera, 1978; Tichy, 1988). The damage assessment scale enables the evaluation of all types of damage to different tree species; is less subjective compared to other methods and thus more precise estimation of defoliation; and assessment of changes in the whole stand structure.

The research described in this paper combines Swedish laboratory analyses for chemical constituents and Czech field assessment methods to accomplish the following objectives:

- (1) determine the relationships between the tree damage assessment indices and data obtained from chemical analyses;
- (2) present important relationships among certain ecosystem measurements which directly and indirectly impact Norway spruce stands and the soil properties;
- (3) test the soil acidification hypothesis especially at the Czech sites; and
- (4) use data from relatively more and less severely damaged plots to determine the future direction and progression of the less damaged plots.

BACKGROUND OF THE STUDY SITES

The study sites were selected to represent as much as possible similar tree growth conditions. Despite the differences in their latitude, the parent rock at all study sites was mostly gneiss and granite, both geologic materials providing the origin to soils with similar chemical and physical properties. However, two of the Swedish plots were influenced by their proximity to the sea (sites 3 and 6 in Fig. 1A), leading to their comparatively higher content of Na and K in the soil.

Temperature conditions were similar at the sites in both countries (IVL Report, IVL, Göteborg, Sweden, 1992; Zpravodaj Beskydy, 1994), since the difference in latitude is balanced by the difference in the altitude (average for the Swedish sites 79 m and for the Czech sites 702 m MSL).

Forest soils in both geographic areas were similar in their moisture conditions. According to the soil taxonomy used in the Czech Republic, the soils at all sites may be grouped as brown soils with well developed humus layer (Cudlin *et al.*, 1994).

The average annual precipitation at Swedish sites varied from 520 mm (Inglatorp) to 800 mm (Harplinge and Skogaby) (IVL Report, IVL, Göteborg, Sweden, 1992). In comparison, the annual precipitation at the Czech sites was about 1300 mm (Zpravodaj Beskydy, 1994).

The Czech study region had been affected by air pollution for a long time (since the beginning of this century (Environmental Yearbook, 1992). The main sources of air pollution are the iron smelters, and other heavy industries (Materna, 1979). The

Swedish study area has been less affected by air pollution, the main sources such pollution being traffic, urbanization (Malmö, Lund, Gothenburg, Ljungby) and long-range transport (Nihlgård, pers. comm.).

Concerning the wet deposition data: the pH of precipitation at all Swedish sites was very similar, about 4.35-4.45; as an average from 1986-91 (IVL Report, IVL, Göteborg, Sweden, 1992). The deposition of sulphate SO₄-S varied from 8-10 kg/ha/yr. The total nitrogen values (NO₃ + NH₄)-N were almost equal to the sulphur inputs, 8-9 kg/ha/yr (IVL Report, IVL, Göteborg, Sweden, 1992).

The Czech wet deposition values were more similar to the Swedish data in comparison to the potential dry deposition (Table 1). The pH of rain varied between 4.30-4.40. The deposition of SO₄-S varied from 13-15 kg/ha/yr and the total nitrogen from 18-20 kg/ha/yr (Environmental Yearbook, 1993).

MATERIALS AND METHODS

Six stands each in southern Sweden and northeastern Czech Republic, 12 stands in total,

Table 1. Average and maximum values of main gaseous pollutants in southern Sweden (IVL Report, IVL, Göteborg, Sweden, 1992) and northeastern Czech Republic (Environmental Yearbook, 1993). Czech data for O₃ are not available.

	Pollutant concentration (µg m ⁻³)					
	SO ₂		NO ₂		O ₃	
		Max		Max		Max
Sweden	2	22	17	11	57	67
Czech Republic	41	268	20	150	-	-

were selected for the short-term investigations (Fig. 1). The sample plots were selected to be representative examples of Norway spruce plantations with various levels of foliar damage. The Swedish plots had already been used for monitoring in an ecosystem research program. The plots were 30x30 or 45x45 m². All of the plots consisted of planted pure spruce stands, with canopy cover ranging from 80-100%. The plots were selected to represent similar soil (mostly brown forest soils) and geological conditions - granite bedrock. The Swedish plots were at altitudes ranging from 60-110 m MSL in southern Sweden (Fig. 1A). In comparison, Czech plots were in a northeastern mountainous area with an altitude of 700-900 m MSL (the Beskydy Mountains, Fig. 1B).

The study plots were characterized according to the guidelines for environmental monitoring used in the Nordic countries (NORD, 1988). All trees within the plots were numbered and individually assessed. Defoliation was assessed according to ICP-Forests standards used in most European countries for monitoring the health of forest trees (ICP-Forests, 1989). Percentage of defoliation was recorded in 5% increments within the total crown.

The index of damage was a qualitative 5 point scale developed and used in the Czech Republic (Materna, 1973). It is based on a number of different parameters, e.g., transparency of crowns, number of needle age classes, color of the needles, length of the shoots, occurrence of dry twigs, etc. The scale ranges from 0 (healthy), through 1 (slightly damaged), 2 (moderately damaged), 3 (severely damaged) to 4 (dying). Dead trees (5) were not included in the assessment since the specific cause of death was not determined. The average index of damage was calculated as the arithmetic mean of all live trees assessed.

Separate soil samples were taken from the humus (5 cm) and the mineral horizons (15-30 cm) using a soil core devise. From each horizon two compound samples (each composed of 10 sub-samples) were systematically taken through diagonal cores. The soil samples were air dried at 20 C and sieved, humus with a 5 mm sieve and the mineral soil with a 2 mm sieve.

Chemical analysis of the soil included pH in H₂O and pH in 1 M KCl extracts. Samples composed of 10 g humus or 25 g mineral soil were extracted for two hours in 100 ml of the appropriate solvent. Exchangeable Al and exchangeable acidity (EA) were measured in the 1 M KCl extracts (Balsberg-Påhlsson, 1990). In addition, samples composed of 10 g humus or 25 g mineral soil were extracted in 100 ml 1 M NH₄Cl for the determination of exchangeable Ca, Mg, K, and Na. Exchangeable P was analyzed only in the humus samples. Total amounts of carbon, nitrogen, heavy metals and nutrients in the humus were also determined. For Al, B, Ca, Cd, Cr, As, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb and Zn, an Inductively Coupled Plasma (ICP) spectrometer was used after digestion of the samples in 11 M HNO₃.

To determine the nature of the soluble substances passing through the root zone, two, vacuum, ceramic cup lysimeters (P-80) were placed at a depth of about 30 cm in each plot (NORD, 1989). Soil water samples were collected once or twice per month in the Czech plots. In comparison, average yearly data (1990) supplied by the Institute of Water and Air Research (O. Westling, IVL, Göteborg, pers. comm.) were used for the Swedish plots. The soil water samples were analyzed for pH, Na, K, Ca, Mg, Al, Fe, Mn, Cl, SO₄, NO₃, NH₄, F, Si, As, Cd, Mo, Ni and Pb. Conductivity was measured in mS/m at 25 C. Data quality was assured by calculating the sum of anion:cation ratio on an equivalent basis (μmol), and by recalculating the conductivity from the values of the analyzed ions.

Leaf samples were taken from the upper third portion of the crowns (6-7th whorl) of 4-5 randomly chosen dominant trees. Only the current year shoots were used for chemical analyses of the essential nutrients and important metals: N, P, K, Mg, Al, S, B, Cu, Zn, Mo, Mn, As, Cd, Cr, Ni and Pb. The statistical significance of the differences between the two sets of study sites was determined using a paired t - test (Snedecor & Cochran, 1978).

To obtain a complete picture of the health status of the whole tree, mycorrhizal samples were taken in all plots. Samples consisted of three cores, (20x20 cm) down to a 20 cm depth depending on the root systems. These samples were washed and sorted into long roots and short lateral roots. Sub-samples of short roots were examined using a

stereo microscope and the mycorrhizal roots were divided into three classes (Kocourek, 1990): 0 - turgid (healthy); 1 - shriveled; and 2 - dead.

The relative share of each mycorrhizal category was calculated for each sample as percentage mean value. To express the status of mycorrhizae as one value, an index of mycorrhizal damage was calculated. The total number of roots of each category was multiplied by the damage class value, summarized and divided by the total sample number, to obtain a weighted mean value for each plot. The coverage and approximate share of dominant plants of the ground flora were estimated in each of the sample plot using ecological indices (Ellenberg, 1982). Numerical results were statistically evaluated first by means of multiple correlations and factorial analysis, and then by individual correlations.

RESULTS

The assessed foliar damage index (1-4 scale) varied from very low values indicating the healthy status of some plots (index 0.12) to seriously damaged plots with an index of 2.03. The biggest variations were found among the Czech plots. Defoliation varied from 1.3% to 41%, also with the biggest variation seen within Czech plots. The mean number of needle classes ranged from 3-6 years.

Table 2 presents results obtained from the chemical analyses of soil and foliar samples. Soil pH values and exchangeable amounts of Al, H and organic acids indicate very acid conditions in both Swedish and Czech plots. Exchangeable amounts of P, Ca, K, Mg in both humus and mineral soil were rather low. The total amounts of most minerals in the humus layer were higher in the Czech plots, with the exception of slightly higher amounts

Table 2. Summary statistics of the chemical composition of soil and foliar samples.

Sample/ element, (units)	Sweden		Czech Republic		Stat. test results		
		S.D.		S.D.	t	p	Significance
<i>A. Humus (µg/g)</i>							
K (exch.)	4.30	1.57	3.18	0.36	1.983	0.104	
Na (exch.)	2.62	0.96	0.32	0.10	-5.578	0.002	***
Mg (exch.)	10.42	2.04	7.99	4.33	1.038	0.347	
Ca (exch.)	45.15	27.26	39.10	27.36	0.415	0.695	
Exch. (acid.)	36.58	6.46	85.22	47.53	-2.583	0.049	*
Al (total)	5207.08	1608.09	23635.21	7819.25	-5.875	0.002	***
Mg (total)	1006.33	354.56	2551.00	1033.64	-6.019	0.002	***
K (total)	570.17	57.46	4190.17	1548.00	-5.722	0.002	***
Cd (total)	1.14	0.38	1.81	0.62	-2.024	0.099	*
Cr (total)	7.90	1.86	33.89	12.61	-4.770	0.005	**

Cu (total)	4 58	1 18	18 52	6 39	-4 637	0 006	**
Fe (total)	9637 17	2633 15	18207 50	5909 79	-2 827	0 037	*
Ca (total)	2988 33	997 53	1530 66	2026 63	1 963	0 107	
Ni (total)	5 15	3 46	13 32	6 12	-2 555	0 051	*
Pb (total)	55 67	15 55	124 50	58 28	-2 582	0 049	*
B (total)	15 52	4 40	41 50	17 17	-3 573	0 016	*
C/N	28 63	3 89	20 15	3 34	6 085	0 002	***

B. Mineral soil ($\mu\text{eq/g}$)

Exch. acid	30 22	10 07	56 44	38 72	-1 685	0 153	
Al (total)	26 84	9 68	49 74	35 62	-1 635	0 136	

C. Soil water (μM)

NO ₃	132 72	269 18	238 67	281 88	0 582	0 585	
Al	101 17	77 67	53 05	49 50	-1 612	0 168	
Na	547 38	336 31	71 07	38 09	3 450	0 002	***
Cl	661 83	487 18	42 33	16 62	-3 074	0 027	

D. Needle (mg/g)

Mg	1 03	0 25	0 84	0 09	2 363	0 064	*
S	1 00	0 14	1 33	0 13	-4 050	0 009	**
As	1 12	0 07	0 22	0 25	-0 100	0 423	
Cd	0 01	0 00	0 45	0 31	-3 402	0 019	*
Cr	0 07	0 00	0 21	0 17	-1 924	0 112	
Pb	0 28	0 17	0 66	0 56	-2 211	0 027	*

† * = 90% sig.; ** = 95% sig.; and *** = 99% sig.

of Ca in the humus of the Swedish plots. In comparison, in the soil water Na and Cl were found to be much higher in the Swedish plots (effects of sea salt), than in the Czech plots, in contrast to the concentrations of K, Fe and NO₃.

The needle analyses showed that the elements were at a similar level. Swedish plots had lower amounts of K, Fe, Cu, Zn, B, and other metals. Concentrations of Mg were higher in the Swedish plots than in the Czech plots.

Interrelations between tree damage and soil characteristics

The indices of tree damage were correlated with variables such as exchangeable acidity (Fig. 2A) and aluminum (Fig. 2B) and with the total amount of arsenic in the humus (Fig. 2C). The index of damage to mycorrhizae was particularly correlated with exchangeable aluminum and the total amount of S in the humus (Figs 2D and 3E).

Correlations between elements in different fractions of the soil

The C/N ratios of the humus were correlated with pH (Fig. 3F). Total S and C values of the humus treated separately, were positively correlated for the study sites in each country (Fig. 3G). The C values were much higher in the Swedish plots due to the thicker layer of the raw humus. Many heavy metals such as total cadmium in the humus were correlated

with acidification parameters, such as the free hydrogen ions (Fig. 3H). Although there were different levels of total As in the humus, the values strongly correlated with the exchangeable Al values (Figs 4I and 4J). Most metals in the humus were correlated with each other (Figs 4K and 4L). Also Mg and the heavy metals such as Cd showed significant correlations (Fig. 5M).

Interrelations between elements in the soil and in the needles

The interrelations between the chemical composition of the soil and the tree foliage might indicate the methods of uptake of elements by the trees. Heavy metals in the humus and needles were frequently correlated (Fig. 5P). Exchangeable amounts of K in the mineral soil correlated well with the K/N ratio of needles (Fig. 6Q).

Interrelations within the soil water composition

In the soil water the K and NO₃-N concentrations were noticeably correlated (Fig. 6R). The S contents of needles and TOC (total organic carbon) of the soil water were positively correlated (Fig. 6S).

DISCUSSION

The experimental sites used in this study were representative of each geographic region (Sweden and the Czech Republic) and the analyzed chemical parameters probably reflect the general characteristics of spruce stands of those regions. Southern Sweden was exposed to relatively low levels of gaseous air pollutants, but in general to relatively high wet deposition rates of sulfur and nitrogen, resulting in a high rate of soil acidification during the last decades (Falkengren-Grerup, 1986; Sverdrup et al., 1991). In contrast, the Beskydy Mountains area in the Czech Republic is directly affected by the emissions of a nearby iron smelter and other local industries, 40-100 km away from the study sites. Here nitrogen deposition is known to be in the same range of values as in southern Sweden. At sites >40 km away from the industries, acidic rain and sulfur input was very high (NORD, 1988).

Stand characteristics and tree damage

The damage index expresses the mean damage status of the trees. It correlated well with parameters connected to the acidity of the soil (Fig. 2A). This was expected for the Swedish plots, but not entirely for the Czech plots, since the Beskydy Mountains are one of the most productive forested areas in the Czech Republic and the soil condition was expected to be better than what it proved to be. The direct sulfur dioxide effects causing increased tree damage were expected in the Czech region. The damage indices for both canopy and the mycorrhizae (Fig. 3E) were positively correlated to the total sulfur content of the humus layer. However, from the analyses of sulfur in the needles, no such obvious relationship to forest damage could be shown. Relationships between acidic deposition to the humus and subsequent effects on the roots seem to be more likely. Strong correlations between exchangeable Al, both in the humus and in the mineral soil and the damage index (Figs 2B and 2D), seemed to support the hypothesis of Al toxicity to the roots (Ulrich, 1986).

The correlation between the status of mycorrhizae and the status of the aboveground parts of trees was positive and significant. However, direct toxicity from Al in the soil water was not supported, nor was there any obvious relationship between the damage indices and the Ca/Al-ratio of soil water. Mycorrhizal damage might also be caused by high N-deposition, as indicated by the nitrate content in the soil water (Table 2).

The As, Pb and Fe contents in the spruce needles correlated well with the forest foliage damage parameters. These correlations were significant for all plots, including the Swedish sites. In the Czech plots, damage to mycorrhizae correlated well with some of the heavy metals in the humus. Surprisingly a highly significant correlation was found between the damage index and arsenic levels in the humus (Fig. 2C). According to Ormrod (1978) elevated arsenic concentrations were associated with needle abscission, death of fine roots and sparse mycorrhizal development in conifers. It is only the soluble arsenic that is important in causing direct plant injury (Treshow & Anderson, 1989). Soluble arsenates might be harmful to soil micro-organisms, possibly slowing down the organic matter decomposition rate and thus contributing to soil acidification. Soils with high total As levels may become more toxic after liming, as Ca-arsenate is more soluble than Al-arsenate and can be absorbed by the roots (Nriagu, 1994). This theory seems to be supported by the positive relationship between the As in the needles and the Ca in the humus layer in one of the limed plots. However, in most of the plots, As probably did not have a crucial effect on the trees.

Soil boron concentrations were within the normal range, except at Skogaby, Sweden. In all plots, B content in the humus correlated negatively with the difference between pH(H₂O) and pH(KCl) values, a difference that could be related to the content of organic acids. This difference in the B value was the highest at Skogaby, where signs of boron deficiency might be expected in the future.

The hypothesis of soil acidification linked to sulphur deposition and increased leaching of organic matter into the soil water was supported by the positive correlation between total organic carbon (TOC) in the soil water and the S content in the needles (Fig. 6S). The Czech plots had high S levels in needles, but there was no correlation between the damage index and this S content.

In all Swedish plots and in one Czech plot, green algae were found on the spruce needles indicating high atmospheric deposition of N (Göransson, 1988). The vegetation cover in three other Czech plots was below 5%, which meant that the understory vegetation could not absorb much N. Thus deposition of surplus N and sparse vegetation cover would be sufficient to explain why NO₃ was leached from the soil. NO₃ and K in the soil water were positively correlated (Fig. 6R), indicating their simultaneous leaching.

Soil parameters

The obvious differences between the Czech and the Swedish plots were the higher total content of many minerals in the humus layer, including the heavy metals (Al, As, Mg, K, Cr, Cu, Fe, Ni, Pb, B, see Table 2). This was partly an effect of higher organic content in the humus layers of the Swedish sites (Table 2) and presumably an effect of both higher clay content and higher metal deposition in the Czech plots.

In the Czech plots, the total K content in the humus were generally very high, greater than in the Swedish plots, so was the K content of the soil water, the exchangeable K

amounts in the mineral soil and the needle K content (Table 2). The amounts of exchangeable K in the humus layer were comparable among the Swedish sites. Generally, K is bound and is much less mobile in soils with a high clay content, especially in the presence of vermiculite, illite and weathered micas (Pelisek, 1956; Saly, 1978; Mengel & Kirkby, 1987). This is the case with Czech plots which had high content of illite minerals (Pelisek, 1956).

There was a higher content of exchangeable Na in the humus in the Swedish plots. This was most likely caused by a higher deposition of sea salt, owing to the proximity of the study sites to the sea. From the overall chemical analyses of the humus it might be concluded that many elements in the Czech plots were the result of emissions from nearby iron smelters leading to their accumulation in the humus; most heavy metals accumulated simultaneously and correlated well with the soil acidity and with each other (Figs 3H and 4L). This suggests a relationship to the occurrence of acidic rain or acidifying substances. Positive correlations among other heavy metals (e.g., Fig. 5O) provide evidence for a common deposition process and elemental accumulation in the humus. These heavy metals may cause indirect damage to roots and mycorrhizae, especially under acidic conditions, but the critical levels for these stress factors are not well understood (Tomlinson, 1990). With increasing acidity, elemental simultaneous leaching and mobility can be promoted, e.g., cadmium. The normal mineral nutrients were found in relatively high concentrations in the soil water, which might be explained by simultaneous deposition and accumulation of heavy metals.

It is not surprising that the heavy metal contents in the humus were correlated to factors linked to the soil acidity (exchangeable Al in humus, H ions in humus, etc., Figs 3H - 4J). Positive correlations among other heavy metals (Figs 4L and 5O) offer evidence for common patterns of deposition and accumulation in the humus. All of these metals may cause damage to feeder roots and the mycorrhizae, especially under acidic conditions, but the critical levels of these stress factors are still not very well understood (Tomlinson, 1990).

Soil acidification also promotes the leaching of nutrients (Reuss & Johnson, 1986). In all plots, there was a negative correlation between Mn and Al concentrations and the pH of soil water. Both metals are easily leached and high concentrations in soil water indicate soil acidification. This is the condition in three Czech plots, which also had the highest concentrations of NO₃ in the soil water. The coincidence of these elemental concentrations indicates both soil acidification and nitrogen saturation, i.e., the low ability of the ecosystem to utilize all of the available nitrogen.

In the two Czech plots with younger trees, the increased nitrification in the soil resulted in high concentrations of NO₃ in the soil water. One reason for the increased nitrification was a strong defoliation in one locality due to a high pollution (SO₂ and particulate matter) episode three years earlier. The stand has since begun to recover, but during the defoliated period, temperature and light penetration increased at the soil surface and the nitrification was probably promoted. Another plot was accidentally subjected to liming. Liming increases the rate of nitrification and can result in increased NO₃ leaching for a period of some years (Rodenkirschen, 1992).

Other correlations in general, support known less than additive or more than additive relationships between elements. Arsenic reacts with Al, Fe and Ca to form insoluble or

sparingly soluble compounds (Adriano, 1986). This finding was supported by the very high correlation between As and Al in the humus layer (Figs 4I and 4J), strongly indicating that As was immobilized by Al through the formation of aluminum-arsenates.

CONCLUSIONS

Forests in both southern Sweden and the northeastern Czech Republic seemed to suffer from both direct and indirect effects of air pollutants. Though different causes and processes of damage were expected due to the known variation in the sample plots, some common features were found:

- (1) Increasing acidity of the soils correlated well with increasing damage index of trees.
- (2) Exchangeable Al content was related to the tree damage index. This served as an indication of increasing acidity in the humus layer in the study plots from both countries. The hypothesis of direct Al toxicity was supported by the mycorrhizal data; however, there was no obvious relationship between the tree damage index and the Ca/Al-ratio of the soil water.
- (3) The damage to mycorrhizae probably was also caused by high N deposition, as indicated by nitrate concentrations in the soil water. In some Czech plots, soluble heavy metals in the humus, especially As, might have contributed to mycorrhizal damage.
- (4) Heavy metal pollution in the Czech plots was evident from their high levels in both the needles and the humus. Heavy metals in the humus layer might have contributed indirectly to root damage, while metals that accumulate in needles might affect enzyme activation and the rate of photosynthesis. These processes may trigger a long chain of consequences resulting in increased susceptibility of conifer forests to other stress factors.
- (5) Even though the Czech plots had high levels of S in the spruce needles, there was no correlation between the damage index and the S content. Deposition of SO₂ was probably only one of the contributing factors to the acidic conditions. Total S content in needles did not prove to be a good indicator of the air pollution damage.
- (6) The effects of nitrogen deposition were expected at all sites, especially in the Swedish plots for which deposition data were available. In the Czech plots, leaching of NO₃ in the soil and high occurrence of green algae on tree trunks and needles were an indirect evidence of a N deposition greater than what could be utilized by the forest ecosystems.
- (7) Despite ecological, environmental and geographic differences in the study sites between Sweden and the Czech Republic, this study indicated that there were similarities in the processes of damage to the spruce forests in both countries. Additional research, focused on nutrient cycling and energy flux in these damaged forests, is needed to verify the hypotheses presented here.

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FIGURE LEGENDS

- Fig. 1.** General schematic diagram showing the geographic locations of the study sites. (A) Sweden and (B) The Czech Republic.
- Fig. 2.** Study sites: = Sweden; = Czech Republic. Relationships between: (A) tree damage index and the exchangeable acidity (EA) of the humus layer (*H*) from the Swedish and the Czech study sites combined ($p = 0.0001$); (B) tree damage index and the exchangeable aluminum in the mineral soil horizon (M) of the Swedish and the Czech study sites combined ($p = 0.0001$); (C) tree damage index and total arsenic of the humus layer (*H*) in the study sites in the Czech Republic ($p = 0.01$); and (D) damage index of mycorrhizae and exchangeable aluminum of the humus layer (*H*) in the Swedish and the Czech Republic study sites combined ($p = 0.002$). Corresponding values for the mineral soil layer were $R^2 = 0.62$, $p = 0.012$.
- Fig. 3.** Study sites: = Sweden; = Czech Republic. Relationships between: (E) total sulphur in the humus layer (*H*) and the damage index of mycorrhizae from the Swedish and Czech Republic study

sites combined ($p = 0.0007$). For the tree damage index the corresponding values were $R^2 = 0.45$, $p = 0.016$); (F) pH(KCl) and C/N ratio of the humus layer (*H*) of the tree stands from Sweden and the Czech Republic combined ($p = 0.002$); (G) total sulphur and total carbon in the humus layer (*H*) in the study plots from Sweden and the Czech Republic combined; and (H) free hydrogen and cadmium in the humus layer (*H*) in study plots from Sweden and the Czech Republic combined ($p = 0.01$).

Fig. 4.

Study sites: = Sweden; = Czech Republic. Relationships between: (I) total arsenic and exchangeable aluminum in the humus layer (*H*) in the study plots from the Czech Republic ($p = 0.001$); (J) total arsenic and the exchangeable aluminum in the humus layer (*H*) in the study plots from Sweden ($p = 0.013$); (K) total copper and boron in the humus layer (*H*) in the study plots from Sweden and the Czech Republic combined ($p = 0.0001$). (L) Relationships between total nickel and cadmium in the humus layer (*H*) in the study plots from Sweden and Czech Republic combined ($p = 0.0001$).

Fig. 5.

Study sites: = Sweden; = Czech Republic. Relationships between: (M) total magnesium and cadmium in the humus layer (*H*) in the study plots from Sweden and the Czech Republic combined ($p = 0.0001$); (N) total N in the humus layer (*H*) and the S content in the spruce needles in the study plots from Sweden and Czech Republic combined ($p = 0.0002$); (O) total Cu in the humus layer (*H*) and the Cd content in spruce needles in the study plots from Sweden and Czech Republic combined ($p = 0.0003$); (P) total Zn in the humus layer (*H*) and Zn in spruce needles in the study plots from Sweden and Czech Republic combined ($p = 0.0001$).

Fig. 6.

Study sites: = Sweden; = Czech Republic. Relationships between: (Q) exchangeable K in the mineral soil layer (M) and the K/N ratio in spruce needles in the study plots from Sweden and Czech Republic combined ($p = 0.02$); (R) K and NO₃-N contents of the soil water in the study plots from Sweden and Czech Republic combined ($p = 0.0001$); and (S) S content in spruce needles and total organic carbon (TOC) in the soil water of the study plots from Sweden and the Czech Republic combined ($p = 0.004$).