



# Dark Past, Bright Future

## Environmental Cooperation in Central and Eastern Europe and the New Independent States

Neglect, mismanagement, and overuse of the environment and its natural resources were among the many unfortunate byproducts of the centrally-planned economies in Central and Eastern Europe and the former Soviet Union. The heavy industrial activity characteristic of the post-World War II period took a heavy toll on both the region's population and its environment. The case of the city of Ostrava (in what is now the Czech Republic) was not unusual. By the late 1980s, Ostrava had become a sprawling industrial center dedicated to the production of coke, iron, and steel. Plumes of black smoke streamed into the sky, and on especially bad days, atmospheric conditions kept the pollution hemmed in over the town's 330,000 residents. Respiratory illness, cancer, and infant mortality were on the rise.

Working closely with Czech counterparts, the U.S. Environmental Protection Agency (EPA) was able to help address the severe pollution problems in Ostrava. As a result of this collaboration, the Ostrava city government and a local coke producer signed a landmark environmental compliance agreement to close coke ovens and reduce air pollution. This was only part of the story, however. Environmental information, once very difficult to obtain, was becoming more accessible and reliable. Municipal officials were beginning to use tools such as risk assessment to improve their decision-making. As a result, Ostravans — and many others in the region — are today breathing cleaner air.

The dismantling of the socialist bloc provided an opportunity for the United States and other nations to work with the peoples of Central and Eastern Europe (CEE) and the New Independent States of the former Soviet Union (NIS) in addressing their environmental problems. The U.S. government responded by including funding for environmental programs in the Support for East European Democracy (SEED) Act of 1989 and the Freedom Support Act of 1991, which also authorized EPA to

assist in the effort. While EPA had been involved with several countries of the region prior to 1989, these new U.S. initiatives greatly increased EPA's ability to provide technical assistance, with financial support from the U.S. Agency for International Development (USAID) and in partnership with other U.S. agencies.

Although EPA takes great pride in the results of its work since 1990, the most satisfying results have been better environmental management practices that have become self-sustaining. At the same time, while EPA is glad to be "working itself out of a job" in the region, the job is far from finished.

The following pages recount some of the formidable environmental problems faced by the region in 1989, and the ways in which EPA has helped meet these challenges. In the process, EPA is contributing to the region's recovery and its goal of sustainable development, as well as to the strengthening of new democratic institutions.

### A Legacy of Pollution

The outmoded, energy-intensive technologies that were such an integral part of the CEE and NIS region's economy in the post-war era not only wasted resources, but also caused severe local, regional, and transboundary pollution problems. Government subsidies for energy and raw materials kept prices artificially low, eliminating a key incentive to conserve natural resources. And while environmental laws were on the books in many countries, their implementation and enforcement were too inconsistent to significantly alter behavior.

Central planning left other obstacles behind in the region. Effective environmental management requires easily accessible data; however, the flow of

## RUSSIA

### *Integrated Risk Management*

Located in a "hot spot" of severe environmental pollution in the Ural Mountains, Nizhni Tagil (population 430,000) has the highest rate of lung and stomach cancer in Russia; the incidence of bronchial disease in children is twice the national average. For these reasons, Nizhni Tagil has been designated as an *ecological emergency zone* under Russian law. Since 1994, EPA has worked with the U.S.-based Institute for Sustainable Communities (ISC), along with local and national Russian authorities, to improve environmental conditions and human health in Nizhni Tagil. Project activities have included implementing pollution prevention and control strategies at local industrial facilities, introducing the use of scientific risk assessment to local officials, and

soliciting public participation in environmental decision making. The results include a 70% reduction in the frequency and severity of children's asthma attacks, significant improvements in the quality of the city's drinking water supply, and reductions in metals discharged to the city's wastewater treatment plants.

information in most countries in the region was hampered by a tradition of secrecy and poor communication between local and national agencies and between ministries. This deficiency weakened environmental institutions, especially at the local level. Due to a shortage of skilled staff, local institutions were poorly prepared to deal with the shift of authority away from the central government.

Environmental neglect in the region has resulted in a staggering array of problems affecting the air, surface water, ground water, soil, and coastal and marine zones. The impacts can be found in almost any setting; rural and urban areas, forests, and agricultural lands. Where geography has lent itself to concentrated industrial activity, "hot spots" of environmental pollution have emerged, such as the "Black Triangle" area (which includes portions of the Czech Republic, Poland, and eastern Germany) and the Nizhni Tagil area in Russia. Many of these hot spots continue to threaten human health and impair the function of local and regional ecosystems.

The pressing need for infrastructure improvements and the demands of social programs have made competition for environmental project funding intense. Decision makers in the region therefore are faced with difficult choices regarding which problems to address now and which to defer, and how to use very limited budgets to achieve meaningful environmental improvement.

In addition, environmental issues must compete not only for monetary resources, but also for public attention and participation. Environmental activism was one of the few outlets for public dissent permitted under the old system; logically, it became a major focus of protest in many countries during transition. However, the tradition of constructive public involvement in the region is generally underdeveloped, and other problems (like unemployment) are overshadowing environmental interests. The attitude that the "environment can wait" for better economic conditions is reemerging in some parts of the region, making the job of environmental managers and decision makers even more difficult.

In spite of these problems, many aspects of the region's past bode well for the future of its environment. Vast tracts of land poorly suited for industry have been left virtually untouched. There is a good supply of trained scientists, engineers, and other environmental and planning professionals. Infrastructure in the major urban areas often was well planned and included efficient systems of mass transit. And given the limited availability of goods under communism, people did not develop the consumer habits so common in the West, although this is rapidly changing.

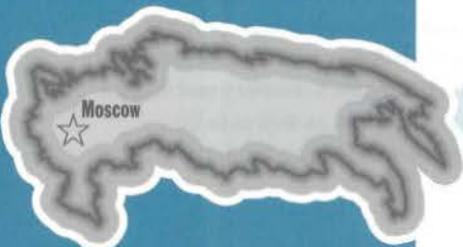
Environmental conditions in the region have not been static since 1989. The economic difficulties of the transition led to a decrease in industrial production and a large number of facility shutdowns, which in turn translated into a significant drop in pollutant emissions. This improvement may be short-lived, however — production is on the way back up, consumption patterns are changing, and more people are purchasing and commuting in cars. As these trends continue, the pressure is mounting on an already compromised environment, making it essential to continue efforts to improve environmental protection and management throughout the region.

### Partners in Transition

Although EPA had been working cooperatively with environmental institutions in the region prior to the fall of the Berlin Wall, such activities increased dramatically once political change began to take place. As work in the environmental sector expanded, the U.S. Department of State and the U.S. Agency for International Development (USAID) requested EPA's assistance in implementing projects in CEE, Russia, and Ukraine. To date, total funding for EPA-led environmental projects in the CEE and NIS regions exceeds \$60 million.

EPA's 25-plus years of domestic and international experience has proven invaluable for the job. The Agency is able to draw on its own experience and experts from its headquarters and ten regional offices, as well as from many other cooperating agencies at the federal, state, and local level. EPA's long list of governmental and multilateral partners in CEE and NIS projects includes USAID; the U.S. Departments of State, Commerce, Agriculture, and Energy; the World Bank; the Organization for Economic Cooperation and Development (OECD); the United Nations (UN); the European Bank for Reconstruction and Development (EBRD); and the European Union (EU). In addition to these institutions, EPA has developed partnerships with many state environmental agencies, non-governmental organizations (NGOs), universities, as well as engineering and other professional associations.

CEE and NIS organizations have also played a central role in shaping and implementing EPA's environmental work in the region. Mirroring the range of U.S.-based partners, CEE and NIS project partners have included national, regional, and local governmental organizations, as well as NGOs and private sector interests.



## Environment for Europe

One of the most comprehensive attempts to coordinate regional efforts thus far has been the Environment for Europe process, which brings together countries committed to a sustainable future, with a special emphasis on the CEE and NIS regions. Environment for Europe seeks to direct resources to the most critical environmental problems and avoids duplication of effort. It also provides an international forum for developing new policies and for setting regional priorities.

Since its inception in 1991, Environment for Europe has held three conferences attended by the environment ministers of all the member countries, including the United States. Through recommendations adopted at the 1993 ministerial conference held in Lucerne, Switzerland, the **Environmental Action Program for Central and Eastern Europe (EAP)** was created.

EAP activities concentrate on three major goals: 1) to promote the integration of environmental and economic considerations to ensure sustainable development; 2) to make the business of managing the region's environment more efficient and effective by "building institutional capacity" ("capacity building" refers to a broad array of activities, ranging from enhancing the skills of individual staff members to improving an organization's structure, management, and strategic planning); and 3) to conduct technical assistance and investment programs to improve environmental conditions in areas experiencing the

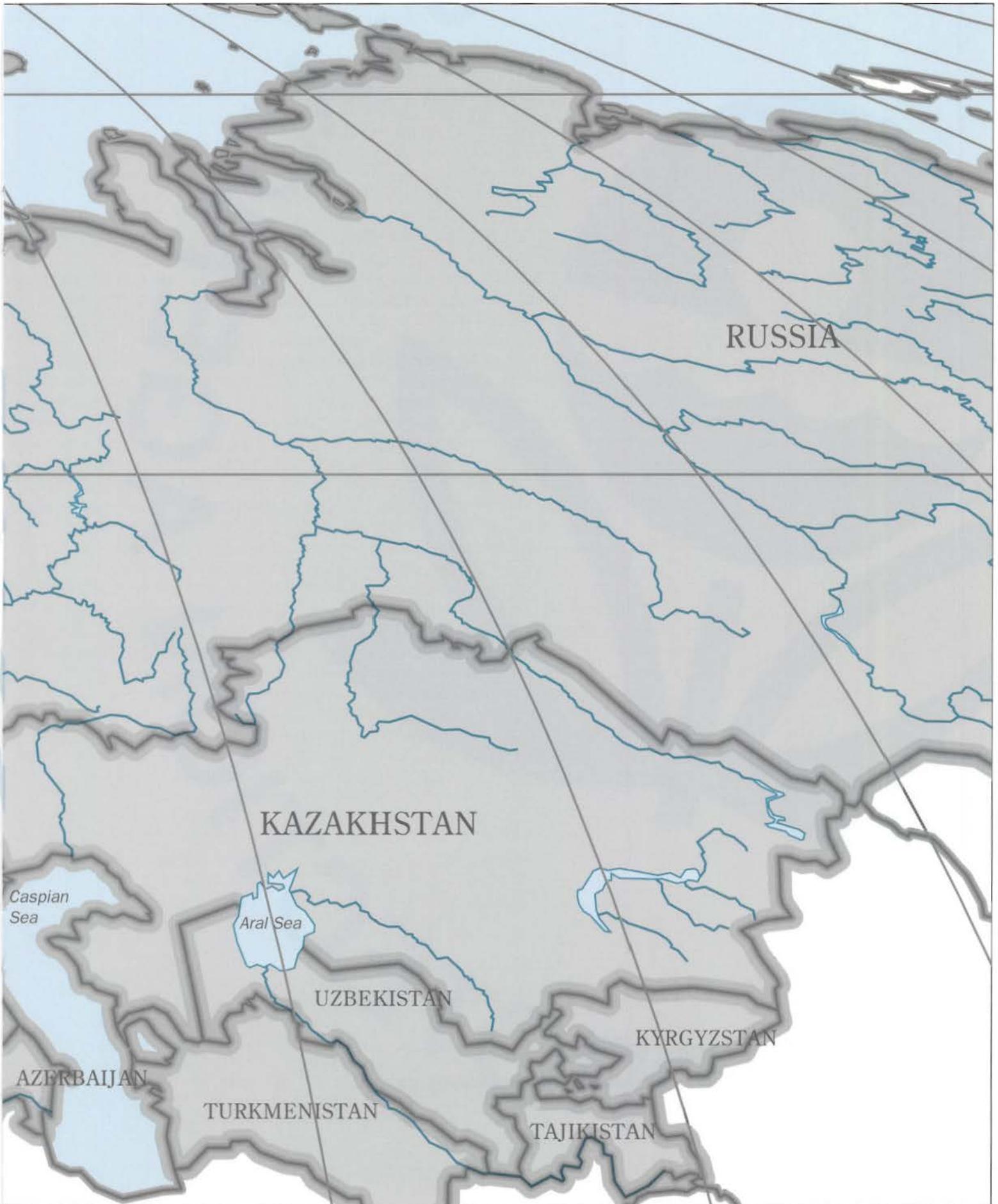
most acute human health or ecosystem threats. EPA, in cooperation with USAID and the Department of State, has sought to advance each of these goals throughout the region.

## Guiding Principles

EPA's activities in the CEE and NIS region are guided by several fundamental principles — to ensure that the Agency's projects not only achieve significant environmental results, but also serve as catalysts for other environmental improvements. Environmental projects and programs are developed with the following in mind:

- Problems should be prioritized based on health risk and sound technical and economic principles;
- Conditions that pose serious near-term threats to human health or ecosystems should be addressed first;
- Practical and low-cost solutions should be used whenever possible;
- The public should be involved in environmental decision making;
- Local and national expertise should be developed through training and professional exchange programs;
- Successful projects should be replicated in new locations to build expertise and momentum;
- Investment in environmental infrastructure should be strongly encouraged; and
- Regional cooperation to address common problems should be promoted wherever feasible.







# Environmental Solutions: EPA Project Highlights

Since 1990, EPA has conducted over seventy environmental projects in the CEE and NIS region. The following pages present a representative sample of EPA's accomplishments in the region to date.

## Air Pollution

Airborne pollution has been one of the greatest environmental risks identified in the region. The main human health concerns are typically associated with sulfur dioxide (SO<sub>2</sub>) and particulate matter, which are byproducts of various types of older industrial facilities, including coal-burning power plants.

**Project Teplice** focused on air pollution problems in northern Bohemia in the Czech Republic — part of the infamous “Black Triangle” area. EPA, along with the Czech Ministries of Environment and Health, monitored air quality and conducted assessments to identify health effects from air pollution and select the most effective pollution abatement strategies. Analysis of information collected by the monitoring network demonstrated that household coal furnaces were a major source of the airborne pollution, a finding that convinced decision makers to seek ways to reduce these emissions. In response, the Czech government accelerated its program to convert homes from coal to natural gas by establishing a special fund (six billion crowns or \$240 million) to subsidize conversion costs.

While air pollution may be an obvious problem in many areas, local agencies often lack the equipment needed to assess the problem and to identify effective solutions. Under the **Krakow Air Monitoring** project, EPA and Polish environmental experts worked together to identify and measure the major sources of industrial, residential, and vehicle emissions. First, a network of continuous

air monitoring and meteorological instruments was purchased and installed to provide real-time air quality assessments in Krakow. As a result, several major industries in the area were required to redesign their processes, install pollution controls, or shut down. With the stationary source problem now well understood, the focus of the Krakow air project has shifted to the more challenging “non-point” and “mobile” sources. EPA is continuing to work with Krakow authorities to develop effective pollution control strategies, especially in the transportation sector. The success of the Krakow air monitoring network has generated great interest in other Polish and CEE cities.

In addition to introducing new monitoring and control technologies, EPA also has transferred some very low-cost techniques, such as the “visible emissions evaluation” (VEE) method for air emissions monitoring. VEE is a qualitative but standardized method for determining the relative severity of air pollution from stationary sources based on the visual characteristics of the “plume.” This inexpensive monitoring technique greatly simplifies inspections and, when properly applied, strengthens local enforcement efforts. Tested at the local level in **Volgograd**, Russia, VEE's success prompted the Russian Federation State Committee for Environmental Protection to expand use of the technique to several other regions. Other approaches tested in Volgograd, such as emissions standards based on a given pollution control technology, provided input to the development of Russian air quality legislation.



## RUSSIA

### *Air Quality Management*

The **Russia Air Management Program (RAMP)**, begun in 1993 by the Russian Ministry of Environmental Protection and Natural Resources and EPA, seeks to improve air pollution control methods and policies throughout Russia. The first step in the project is being conducted in Volgograd, an important industrial city with a diverse economic base. It focused on improving air monitoring, emissions inventories and inspections, and air management policies. Results of the Volgograd project to date include significant reductions in particulate emissions from local industries, the introduction of energy-saving and cleaner electric arc furnace covers at the Red October Steel Works, the founding of a children's environmental education school, and many other successful public outreach and educational activities. The Volgograd project is now serving as the basis for the RAMP program's efforts to improve air quality management throughout Russia, including new national legislation and changes in regional and local air quality management policies.

## POLAND

### *Rural Water Quality*

Water quality in rural areas is a particular health problem in Poland. Agricultural practices cause irrigation water and runoff contaminated with animal waste, pesticides, and fertilizers to enter shallow ground water supplies that are used for drinking. In response to this situation, EPA sponsored the **Agriculture and Water Quality Protection** project to demonstrate environmentally sound agricultural and household management practices. One of the most effective was an animal waste containment system that dramatically reduces the volume of contaminated runoff from livestock operations. Polish farmers in the area rapidly embraced this and related approaches, and what began as four small-scale demonstration



Warsaw

projects has now been replicated at more than 200 Polish farms and has attracted additional funding from the European Union. The World Bank also has used these demonstration projects as the basis for promoting a national effort along similar lines.

## Water Pollution

CEE and NIS communities face a range of water-related problems and health risks similar to those of the United States, and EPA's programs have sought to address these issues in many locations.

Providing safe drinking water to city residents was one of the main goals of the **Krakow Water and Wastewater Improvement** project. This joint EPA-Polish effort used an integrated approach to the problem, focusing not only on improving water treatment, but also on protecting the water's source and developing local awareness of the issues. With co-financing provided by the Poles, this project resulted in the installation of modern ozonation and chlorination equipment to disinfect the drinking water supply for 400,000 residents. EPA-supported watershed protection efforts, led by the University of Iowa and the Water Environment Federation, focused on improving the quality of agricultural runoff and on forming the Raba River Watershed Association. The Association has helped to improve local water quality, and to institutionalize environmentally sound practices in the watershed. Finally, the U.S. non-profit association Water for People helped establish a Polish "Blue Thumb" group, which is a highly successful program that educates school children on the importance of clean water.

The **Drinking Water Quality Improvement** project in Latvia's second largest city, Daugavpils, demonstrated how to enhance the performance of existing treatment systems without large capital investments. Many of the improvements resulted from no- or low-cost process modifications recommended by EPA and Wisconsin state experts who had evaluated the city's treatment plant operations. In addition to the process modifications, the EPA team provided chlorination system equipment and upgraded laboratory capabilities. The training of treatment plant operators and laboratory technicians has played a key role in making the process and equipment upgrades work. A team of EPA, Wisconsin, and Latvian environmental managers also tackled the problem of how to protect future ground water supplies in Daugavpils. The team developed a wellhead protection plan for the city, identifying strategies for addressing current and future threats to ground water quality. Finally, at the request of the Latvian government, U.S. experts assisted in the development of a national ground water protection strategy based on the Daugavpils experience.

In Ukraine, more than thirty million people, including the residents of fifty urban and industrial

centers, rely on water from the Dnipro River Basin. The **Kaniv Reservoir Assessment** project was undertaken to help Ukraine's Ministry of Environmental Protection and Nuclear Safety to protect public health and aquatic resources in the Dnipro Basin. EPA introduced water quality management techniques and provided equipment for water quality monitoring and analysis. This three-year partnership between EPA and Ukrainian scientists improved their procedures for collecting and analyzing water quality data, as well as for modeling basin water quality. As a result of this project, Ukrainian scientists are adapting these approaches to other portions of the Dnipro as well as to other river basins in their country.

## Solid and Hazardous Waste

Primarily due to intensive industrialization, there are many solid and hazardous waste sites located throughout the CEE and NIS region. Left uncontrolled, contaminants from these sites can seriously impact drinking water sources, topsoil, river and ocean sediments, and even air quality. Some of the most contaminated sites are often found at active or former military bases.

To help tackle these problems, EPA is working in two communities in **Romania** where industrial wastes containing large amounts of lead were improperly disposed, contaminating the local soils. As a result, many of the children in these communities have very high blood-lead levels. EPA provided equipment and training to help local environmental health officials assess the impacts of lead exposure on the population and to map its principal sources. Additional technical support was provided to help Romanian officials design a cleanup plan for the most contaminated soil using cost-effective technologies.

As part of **Project Silesia**, EPA and Czech experts used risk assessment, benefit-cost analysis, and other tools to identify safe and cost-effective cleanup options for an abandoned coke oven "brownfields" site in Ostrava. The site, located in the city's center, had not been redeveloped due to extensive ground water contamination and other health risks. However, the strength of the analysis provided by the EPA-Czech project team prompted the Czech Council of Ministers to commit approximately \$40 million to clean up the site for future redevelopment.

Rocket and jet fuel spills and leaks, along with other military wastes disposed at the **Stauliai Airfield** in Lithuania, have contaminated a shallow ground water source used as drinking water by local residents. This site is one of the Lithuanian Environment Ministry's highest priorities. EPA helped Ministry officials to assess the extent of the contamination problem and to develop a site cleanup and control plan. As ground water contamination posed significant health threats elsewhere in the region, EPA also was asked to assist in developing a wellhead protection plan similar to the one in Daugavpils, Latvia. The plan helped initiate a national ground water quality monitoring program and promoted better cooperation among Lithuanian environmental interests.



### BULGARIA

#### *Solid Waste Management*

In Bulgaria, as in many countries in the region, the proper disposal of solid waste is a high priority item on the national environmental agenda. The **Solid Waste Policy Demonstration** project was initiated by EPA and the Institute for Sustainable Communities (ISC) to help the Bulgarian Ministry of Environment formulate new national policies to address this problem. EPA, along with its U.S.-based partners, has conducted training and provided technical assistance to improve the ability of national and local-level waste management officials to develop and carry out more effective policies. The Bulgarian Ministry of the Environment and ISC then helped two communities to develop and implement new solid waste action plans. The pilot programs included curbside recycling, public outreach, cleanup of existing landfills, and the construction of new sanitary landfills. The progress made and lessons learned by these two communities have been integrated into Bulgarian environmental legislation, and the approach is being replicated in additional communities.

## POLAND

### *Biosolids Technology*

EPA is working with Polish experts to use biosolids (sewage sludge) to revegetate and detoxify land in Katowice that had been contaminated by the improper disposal of coal mining and metal smelting wastes. This land reclamation technique helps to control dust emissions and prevent the contamination of surface and ground water supplies. Revegetation also improves the appearance of the affected area, and provides a beneficial use for the biosolid waste. Results of the demonstration project have been very promising, and additional sites are now being identified by the Polish government to continue the effort on its own. A similar project is currently underway in Nizhni Tagil, Russia, to test different methods of reclaiming land contaminated by copper mining waste. If effective, the reductions in airborne and waterborne contaminants from the site will help clean up and protect a nearby drinking water reservoir. The low cost and promising results of these projects has prompted U.S. officials to investigate the application of this technique to similar land reclamation problems in the United States.



Warsaw

## Technology Transfer

Technological innovations have prompted countless changes in how environmental data are collected, analyzed, and used to make decisions since EPA first opened its doors in 1972. High quality and accessible environmental information has become one of the cornerstones of effective environmental management. Similar changes have been occurring in the CEE and NIS regions, where greater access to new technologies and information are rapidly changing how the public and decision makers view the environment. EPA has played a key role in this transformation by incorporating many new environmental and information technologies into “capacity-building” projects that promote improvements in environmental management institutions and greater public involvement. For example, a significant component of previously described air quality work in Poland, the Czech Republic, and Russia involved the transfer of monitoring equipment and the training of local experts in its use.

One of the main tools used to create a more informed public and promote better decision making is the **Geographical Information System (GIS)**. GIS is a computer-based mapping system which can be used to store and display environmental and other related information to identify pollution sources and track trends over time. Use of GIS has been central to several EPA projects in the region, including the GIS project conducted with the Slovak Environmental Agency (SEA). Through this project, EPA and the SEA have built a national GIS infrastructure, enabling environmental management decisions at the national level to be made with more and better information. The SEA uses the national GIS to help local districts incorporate environmental components into their annual urban planning process. The GIS system also has made environmental information more accessible to the public, for example, by providing maps depicting local and national environmental conditions.

Lack of adequate environmental data can severely restrict the ability to address priority issues. In Ukraine, radioactive contamination resulting from the Chernobyl reactor accident and from uranium mining clearly represents a major environmental threat. Budget constraints and a lack of adequate information, however, have greatly hampered decision makers. The **Radiation and Nuclear Safety Management** project was undertaken by EPA at the request of Ukraine's Ministry of Environmental Protection and Nuclear

Safety. The focus of the project was to provide a means of obtaining high-quality, quick-turnaround radiochemistry data to identify and assess potential health threats from various radiation sources throughout the country. The solution identified for this problem was a “mobile radioecology laboratory.” EPA, in cooperation with the United Nations Development Program and USAID, provided Ukraine with one of the world's best-equipped mobile radiation monitoring laboratories. The EPA project team worked closely with Ministry officials to design the lab and train its operators. The mobile lab is now conducting on-site contamination assessments of potential public health threats around the country.

## Policy Reform

CEE and NIS governments are certainly no strangers to the idea of reform. However, government institutions everywhere struggle with the effort required to integrate economic, financial, technical, and political information into a coherent planning process. Environmental policies have entered this complex planning arena, but they frequently suffer in CEE and NIS countries due to a paucity of information and relevant experience within key government agencies.

In the **Strategic Planning** project in Hungary, EPA is assisting the Hungarian Ministry of Environment and Regional Planning (KTM) to develop long-term strategic and operational plans. EPA has trained KTM staff and managers on benefit-cost analysis, conflict resolution, and strategic planning. Response within KTM has been enthusiastic, and the project already has led to improvements in how the Ministry integrates its budget and program planning. The project will continue to assist KTM in the development and implementation of a comprehensive strategic plan to set national environmental and economic goals.

Balancing the needs of economic development with those of environmental protection is a challenge facing all nations, especially countries in transition. In Estonia, this problem was brought into focus by the mining of oil shale near the Kurtna Lakes National Reserve. To resolve the potential conflict between protecting the Reserve with the need to obtain energy from the oil shale, EPA and the Estonian Environmental Ministry conducted a demonstration **Environmental Impact Assessment (EIA)** project for the mining operation. Project activities included training on EIA principles, public participation, and other “capacity-building” efforts. The public participation process was a novel experience for Estonia, and its success helped the EIA project develop an economically sound mining plan that protected the Reserve’s water resources and ecosystem. As a result of the project, the EIA process is now part of Estonia’s national environmental policy framework. EPA also has plans to replicate the project at a proposed oil field in Ukraine.

## CZECH REPUBLIC

### *Project Silesia and Risk Assessment Policy*

Beginning in 1991, EPA sought to demonstrate the effectiveness of risk assessment through **Project Silesia**, an integrated risk management project focused on the heavily industrialized city of Ostrava in the Czech Republic. First, EPA trained Czech officials on the use of risk assessment to identify



and evaluate environmental sources of human health risk, and to develop a risk management plan to address these problems. Next, Czech officials, working with EPA experts, determined that coke oven emissions were a major health threat, and that closure of certain ovens and installation of pollution control equipment on others would substantially reduce the risk of cancer in neighboring residential areas. Based on these findings, the City of Ostrava signed a precedent-setting agreement with Ostrava-Karvina Coal Mines to implement needed pollution controls and close several coke ovens. The Czech Republic also has shown its long-term commitment to this risk-based approach by including risk assessment as a fundamental tenet of its National Environmental Policy.

## Technical Exchanges and Partnerships

One of most successful capacity-building approaches employed by EPA in the region has been the use of professional partnerships, or "twinning." Through twinning relationships, professional links are established between organizations or individuals that promote information exchange and technical assistance. These relationships often last long after the formal close of a specific project.

EPA has established such programs in many countries in the region. In the Baltic countries of Latvia, Lithuania, and Estonia, EPA's Region 5 office in Chicago focused on improving environmental data management capabilities. EPA technical experts worked closely with their counterparts to identify equipment, training, and technical assistance needs in this area. Results of this effort have included improvements in Baltic area data management hardware and software, development of GIS capabilities, and establishment of environmental information repositories.

Similar EPA twinning programs have been conducted successfully in a number of other countries in the region. For example, EPA's Region 3 (Philadelphia) office, along with Polish experts, jointly developed a **Hazardous Waste Management** program which includes reclamation and redevelopment of industrial sites. EPA's Region 1 (Boston) office and experts from Hungary worked together to establish an alliance to promote water quality improvements in the **Altal-er Watershed** region, an area important for recreation and tourism. Expert teams from EPA's Region 2 (New York) office worked with the Bulgarian Ministry of Environment to improve analytical laboratory procedures, hazardous waste disposal methods, sewage treatment plant operations, and **public information and outreach**.



### SLOVAKIA

#### *Public Information on Toxic Releases*

EPA is assisting the Slovak Ministry of Health to develop a national **Pollutant Release and Transfer Registry (PRTR)**. A PRTR is a database used to track the generation, release, and fate of pollutants in the environment. The PRTR will be accessible by government, industry, and the general public. Goals of the project include boosting public awareness of the sources of environmental risk, promoting better compliance by industry with applicable emissions standards, and improving decisions made by government and industry on how to manage toxic compounds. An effective PRTR also can help establish a dialogue between industry and the public on how to control pollutant releases. This program is viewed as critical for Slovakia, due to its degree of industrialization and its high concentration of chemical manufacturers.

## Training and Education

Among the first needs identified by EPA when developing its programs in the CEE and NIS region, training and environmental education have played key roles in the Agency's capacity building efforts. A wide variety of training courses were developed specifically for EPA's work in this region, ranging from technical topics such as risk assessment and hazardous waste management to environmental policy, financing, and strategic planning. The audiences targeted by these courses and educational materials include environmental decision makers, technical staff, the business community, and NGOs.

In spite of the broad range of topics and audiences, EPA's training courses share a common approach — the trainings are interactive, using real-world case studies wherever possible, and typically are conducted as "train-the-trainer" exercises to equip the course participants to become facilitators and trainers in the future. The courses typically are conducted as intensive three- to five-day workshops, and serve to promote interaction among the participants who often learn as much from each other as from the trainers.

Recognizing the need to coordinate regional training needs and opportunities, EPA supported the establishment of **Environmental Management Training Centers (EMTCs)** in Bulgaria, Poland, Russia, and Hungary, as well as similar organizations in Ukraine and the Czech Republic. The EMTCs not only deliver training workshops, but also adapt courses for specific local needs and languages, publish training materials, and serve as general sources of environmental information. Many centers also coordinate a collaborative network of professors, trainers, scientists, and environmental organizations within each country. The success of the EMTCs and the training program can in part be measured by the fact that more than 3000 people have participated in these courses since the program began.

Focusing on a somewhat younger but very important audience, EPA also has fostered extensive environmental education efforts in primary and secondary schools. The **Environmental Curriculum Development** project in Poland, for example, trained teachers to develop community-based environmental curricula and provided them with hands-on teaching experience. Fifty of the Polish professionals trained through this program are now not only teaching environment in their schools, but also are leading training workshops for another three hundred educators. The success of this project has prompted similar efforts to be undertaken in three other regions in Poland, with more likely to begin in the future.

## Public Awareness and Participation

Giving a voice to public desire for environmental improvement can be a powerful and effective way to bring about change in a democratic society. EPA's activities in the region therefore have consistently included efforts to increase public awareness of environmental issues and to promote greater public participation in the decision making process.

The **Ecological Television Center (ECO-TV)** in Ukraine serves to do both. Established at the request of the Ukrainian Ministry of the Environment, it produces and broadcasts programs on national television each week, providing up-to-date environmental information to an otherwise insufficiently informed public. ECO-TV programs cover global, national, and regional environmental issues. The primary focus, however, has been on community-based projects and increasing public awareness. As a major provider of media services for national environmental campaigns, ECO-TV has produced programs for such initiatives as "Living Water," which promotes grassroots citizen action to improve the quality of the Dnipro River watershed.

The **Blue Thumb** project in Krakow, Poland builds public awareness of, and involvement in, drinking water issues. Sponsored by EPA and implemented by the Regional Environmental Education Center in Krakow and the U.S.-based Water For People association, Blue Thumb works primarily with school children to raise public awareness regarding critical local water issues. Citizen's water monitoring committees, field trips to local water treatment plants, and the formation of "Blue Thumb" Clubs are among the major activities. Over sixty Blue Thumb clubs have been formed, with more than 2,000 students participating. Membership in Blue Thumb has expanded to include business owners, city officials, water and sewage utility operators, civic leaders, and the media. Blue Thumb's success has led to the startup of similar programs in Lviv, Ukraine.

## RUSSIA

### *Ecological Art in Nizhnii Tagil*

The Nizhnii Tagil Environment Project (described elsewhere in this brochure) has given rise to an unusual public awareness and outreach project — the **Russian Children's Art Exhibition**. The Exhibition came about when a Russian NGO, with financial support from EPA and the assistance of the Institute for Sustainable Communities, organized an ecological poster contest to promote public awareness of local environmental issues. The response was unexpectedly enthusiastic; more than four hundred posters and drawings were submitted by local children and then displayed to three thousand viewers. A selection of these posters has formed a traveling exhibit shown throughout the United States, bringing attention to the environmental problems faced by young people in the Russian Federation. In addition, proceeds from sales at the exhibit were used to support Russian NGOs.



Moscow

## Community-Based Environmental Action

While EPA has worked closely with counterpart environment ministries to develop national action plans and policies, it also has been recognized that a similar process needs to be conducted at the community level, where most environmental management actually takes place. In support of this, EPA has helped pioneer **Local Environmental Action Programs (LEAPs)** in the region. Through the LEAP process, a community identifies its environmental assets and problems, and then takes action to address the most critical issues. The process is built upon a foundation of public participation, and seeks to create partnerships between citizens, industry, NGOs, and the local government. EPA has supported several LEAP demonstration projects in the region. In most cases, the projects have been guided by EPA and several U.S.-based partners — mainly the Institute for Sustainable Communities and the Green Mountain Institute for Environmental Democracy.

In **Troyan, Bulgaria**, project managers organized a group of interested citizens into committees which gathered environmental and health information, evaluated the problems, and ranked the relative importance or severity of each. The committees identified the town's drinking water supply problems as their highest priority. The Troyan City Council provided financial support to implement the water conservation measures identified in the action plan, including a leak detection campaign.

LEAP pilot projects also have been conducted in the towns of **Radom and Elk, Poland**. These projects successfully demonstrated how LEAPs can be used to identify and prioritize local environmental problems, encourage public participation, build consensus for action, and facilitate investment. The success of the Radom and Elk projects has prompted many other Polish communities to seek technical assistance to start LEAPs. EPA and the Polish National Fund for Environmental Protection and Water Management are collaborating on a second phase of LEAP demonstrations to further build Polish expertise in this field.

Additional LEAP demonstration projects also are being conducted in the towns of **Oroshaza and Púspökladány, Hungary** in cooperation with the Institute for Environmental Management. In addition, a LEAP "information network" is being established to provide communities in the CEE region with information on how to conduct LEAPs of their own.

## Regional Cooperation

Since countries of the CEE and NIS region face similar environmental challenges, they can benefit tremendously by sharing their experiences. EPA therefore encourages regional cooperation through institution-building, technical projects, and the development of creative solutions to transboundary problems.

The **Regional Environmental Center for Central and Eastern Europe (REC)** has played a key role in fostering this type of approach. Established in 1990 by the United States, the European Union, and Hungary, the REC is an independent, nonprofit, international organization located in Hungary. The mission of the REC is to promote cooperation among the diverse environmental interests in the CEE region. Originally intended to support the emergence and growth of environmental NGOs through an active grants program, the REC now offers a much wider range of services to governments, industries, and environmental institutions. The REC now has more than 100 staff, including those in local outreach offices operating in all fifteen CEE countries. The main REC complex is a modern facility located in the town of Szentendre, on land donated by the Hungarian government. The REC has built a very strong regional presence and has become an important focal point for environmental policy negotiations, a source of support for the NGO community, and an information resource for businesses. Since 1990, nine additional donor countries have become sponsors of the REC's activities — a testament to its visibility and success.

EPA also is supporting regional initiatives endorsed by the nations participating in the Environment for Europe Conference held in Sofia, Bulgaria in 1995. These include CEE-wide initiatives to address **lead and urban air pollution**, and to promote the use of **environmental impact assessments (EIAs)**.

Lead contamination is a major environmental concern for the region, especially because it disproportionately affects the health and development of children. EPA therefore has been a principal supporter of the Bulgarian-led regional working group devoted to phasing out lead from gasoline and to improving urban air quality. EPA also is helping to coordinate the U.N. Economic Commission for Europe (UNECE) lead phase-out initiative with the Bulgarian-led effort.

Ensuring broad public review of proposed industrial or public sector projects through the EIA process was one of the first and most successful of

EPA's programs in the United States. EPA also sees the EIA process as one of the primary tools by which people of the CEE and NIS region can review and promote the environmental sustainability of both national policies and local development projects. EPA is supporting the REC in its effort to establish a network of EIA experts to develop improved techniques and practices for the region.

EPA will continue its support of these and other regional cooperation efforts through the next Environment for Europe conference and beyond. This approach will increase in importance as the nations of the region further develop, and as their attention shifts to regional economic integration and the harmonization of environmental standards.

## CENTRAL EUROPE

### *REC Services to the Region*

The **Regional Environmental Center for Central and Eastern Europe (REC)** offers a number of specialized programs in the environmental, business, and government communities. The **REC's Information Exchange Service** provides information about environmental financing, important events, and environmental conditions to regional and international clients. The Service maintains a library, a computer database, and provides uplinks to various electronic networks through its World Wide Web page. The **Environmental Management Training Center Network (EMTC Network)** unites thirteen environmental training institutes throughout the region to promote the exchange of information, expertise, and experience. The Network seeks to improve the training courses, expand the curricula of individual centers, and gain recognition for the EMTCs from the international community. Finally, through their **Grants Program**, the REC has helped many new environmental NGOs get established, and has provided timely assistance to many existing NGOs, especially to promote public participation in key environmental issues.

# Future Directions

Governments participating in the June 1998 Environment for Europe Conference in Aarhus, Denmark will be celebrating their past successes, but they also will recognize the need to further improve Europe's environment. As nations such as Poland, the Czech Republic, and Hungary join Western Europe in strategic and economic alliances (e.g., OECD, NATO and the European Union), greater emphasis will be placed on the role of the Environmental Action Program (EAP) in countries of the NIS and southeastern Europe. This refocusing of priorities is reflected in the completion of U.S. assistance programs in Estonia and the Czech Republic, and the upcoming phase-out in Hungary, Poland, Slovakia, and the two remaining Baltic states over the next few years.

Environmental programs of the type described above are likely to continue in the NIS and southeastern Europe at least until the end of the decade. Future U.S. programs likely will evolve from projects that deliver "technical assistance" to projects that emphasize investment, sustainable economic development, and democratization. Global environmental issues such as climate change and long-range transport of toxic chemicals will likely become major areas of focus.

Responding to urgent environmental problems such as highly contaminated "hot spots" will continue to be an EPA priority. Many of these activities in the NIS will take place under the auspices of either the U.S.-Russia Binational Commission's Environment Committee, or the U.S.-Ukraine Binational Commission's Environmental Working Group, both of which are co-chaired by EPA.

The U.S. role will continue to evolve in response to future political changes in the region. Membership in the European Union and NATO will change the nature of U.S. relations with CEE nations from bilateral (country-to-country)

assistance to the promotion of their involvement in regional and global issues. It signals that these countries are capable of working more independently and that the United States will play an increasingly peripheral role in their policy reform and capacity-building processes.

The planned refocusing of assistance initiatives to the east will be facilitated by the establishment of a new Regional Environmental Center network in the NIS. EPA, along with the European Union and other donors, is helping to set up "New REC" offices in Russia, Ukraine, Moldova, and Georgia. Expansion of the network to Central Asia also is expected.

The covers of environmental magazines and journals no longer feature soot-covered faces of children in the Black Triangle or the faceless statues of Krakow's monuments, dissolved by acid rain. Some may even believe that the problems have been solved. Unfortunately, while environmental conditions have improved during the past decade, this trend is being reversed due to increased consumption and renewed economic activity.

One of the greatest successes of U.S. and multinational environmental cooperation in the CEE and NIS region has been the creation of a dialogue between the development sectors (transport, agriculture, energy, industry) and the environment and public health sectors. It is essential to maintain this dialogue through continued East-West and intensified East-East cooperation. It is through this dialogue that the nations of the region will grow more capable of restoring their environment and of building a truly sustainable future. EPA remains committed to working closely with its partners in the region to ensure that these challenges are met.