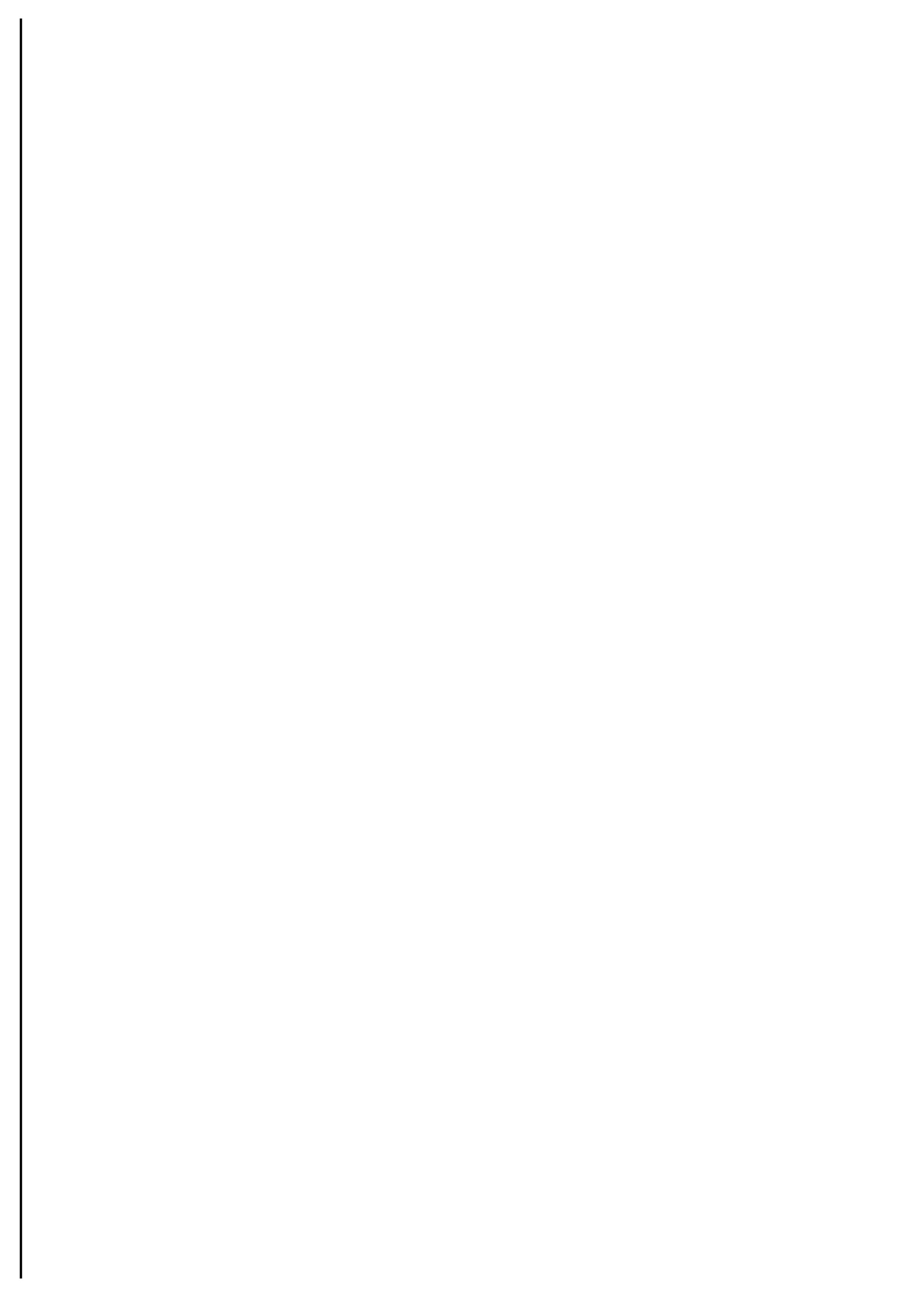# Introduction: **What is a Local Environmental Action Program?**

Introduction: **What is a Local Environmental Action Program?**

*"To cherish what remains of the Earth and to foster its renewal
is our only legitimate hope of survival." — Wendell Berry*

Overview

Local Environmental Action Programs (LEAPs) hold enormous promise for helping to solve environmental problems at the local level in Central and Eastern Europe (CEE). LEAPs involve developing a community vision, assessing environmental issues, setting priorities, identifying the most appropriate strategies for addressing the top problems, and implementing actions that achieve real environmental and public health improvements. LEAPs are founded upon meaningful public input in local governmental decision-making.

LEAPs provide a forum for bringing together a diverse group of individuals with different interests, values, and perspectives. LEAPs are often led by a Stakeholder Group (SG) composed of representatives from all major institutions in the community, including businesses, nongovernmental organizations (NGOs), academic and scientific institutions, and government agencies. These individuals work together over a period of 12-24 months to forge a consensus on recommended priorities and actions for addressing environmental concerns. These recommended priorities and actions are compiled in an Environmental Action Plan (EAP) that serves as a blueprint for future environmental investments in the community. Recommendations from the EAP are then incorporated into the decisions of the Municipal Council and other implementing bodies.

LEAPs in CEE have included the following goals, among others:

a) To *improve environmental conditions* in the community by implementing concrete, cost-effective action strategies;

b) To *promote public awareness* of and responsibility for environmental issues, and to increase public support for action strategies and investments;

c) To *strengthen the capacity of both local government and NGOs* to manage and implement environmental programs, including their ability to obtain financing from national and international institutions and sponsors;

d) To *promote partnerships* between citizens, local government officials, NGO representatives, scientists, and business people, and to learn to work together in solving community problems.

e) To *identify, assess, and set environmental priorities for action* based on community values and scientific data;

f) To *produce a local EAP* that identifies specific actions for solving problems and promoting the vision of the community; and,

g) To *fulfill national regulatory requirements to prepare EAPs*, as required by national governments in some CEE countries.

Over the last several years, LEAPs have been implemented in several CEE countries — providing a broad base of experience to assist in the development of new LEAPs. LEAPs are supported by international agreements. In April 1993, the Ministers of Environment from Western and Eastern Europe and the United States agreed upon a broad strategy for tackling environmental problems in the region known as the "Environmental Action Programme for Central and Eastern Europe."[1] The Action Programme outlines a multi-step process for national governments to set environmental priorities and take appropriate actions to improve environmental conditions in the region. It emphasizes the importance of identifying priority actions based upon environmental threats to human health and the health of local ecosystems, and the need to identify a range of actions for reducing these threats. Further, the Action Program emphasizes pollution prevention and resource conservation strategies that require modest expenditures while achieving substantial environmental improvements.

The new emphasis on local control of environmental problems recognizes that local governments and their citizens have the best understanding of local problems, issues and needs.

A Shift Toward the Local Level

Over the last several years, a litany of environmental problems has surfaced in CEE countries that pose severe ecological, public health, and economic impacts to the region. Under recent laws, local governments in most CEE countries have been given broad, new responsibilities to address environmental problems. Local governments in CEE countries often have the following environmental responsibilities:

- Managing solid waste,

- Controlling the disposal of dangerous substances on their territory,

- Providing clean and adequate supplies of drinking water,

- Managing wastewater,

- Protecting and maintaining green areas,

- Planning for and controlling land-uses,

- Educating the public about environmental issues, and,

- Controlling air pollution emissions from transport and local heating sources.

The shift to decentralization is an important aspect of the transition to democracy. The new emphasis on local control of environmental problems recognizes that local governments and their citizens have the best understanding of local problems, issues, and needs. By decentralizing decision-making authority, environmental actions can be tailored to meet the specific needs of a community or region.

From Environmental Action to Sustainable Communities

Citizens from communities around the world are starting to embrace a new way of thinking and acting about their future. These citizens are interested in pursuing a new approach to community development that simultaneously seeks to protect the environment, alleviate poverty and disease, improve the quality of life, and secure a strong and vibrant local economy. In response, the concept of "sustainable development" has emerged as a multi-faceted development approach that strives to strengthen local economies, while respecting the limits of the natural environment to function and sustain human activities over time.

According to the International Council for Local Environmental Initiatives,

Sustainable development can be defined as development that delivers basic environmental, social, and economic services to all residents of a community without threatening the viability of the natural, built, and social systems.[2]

In 1992, sustainable development received a major boost when representatives from 140 countries joined together for the United Nations Conference on Environment and Development and adopted "Agenda 21" — a sustainable development action plan for the 21st century.[3] Among other features, Agenda 21 encourages local governments in each country to work closely with their citizens to develop a "Local Agenda 21 (LA21)." Under LA21, local governments are encouraged to:

- Learn from citizens and from local, civic, community, business, and industrial organizations about their priorities, values, and proposed solutions;

- Acquire information needed for formulating the best implementation strategies, and to implement appropriate policies, laws, and regulations to move toward sustainable development in their communities; and,

- Develop local sustainable development action plans in cooperation with their citizens.
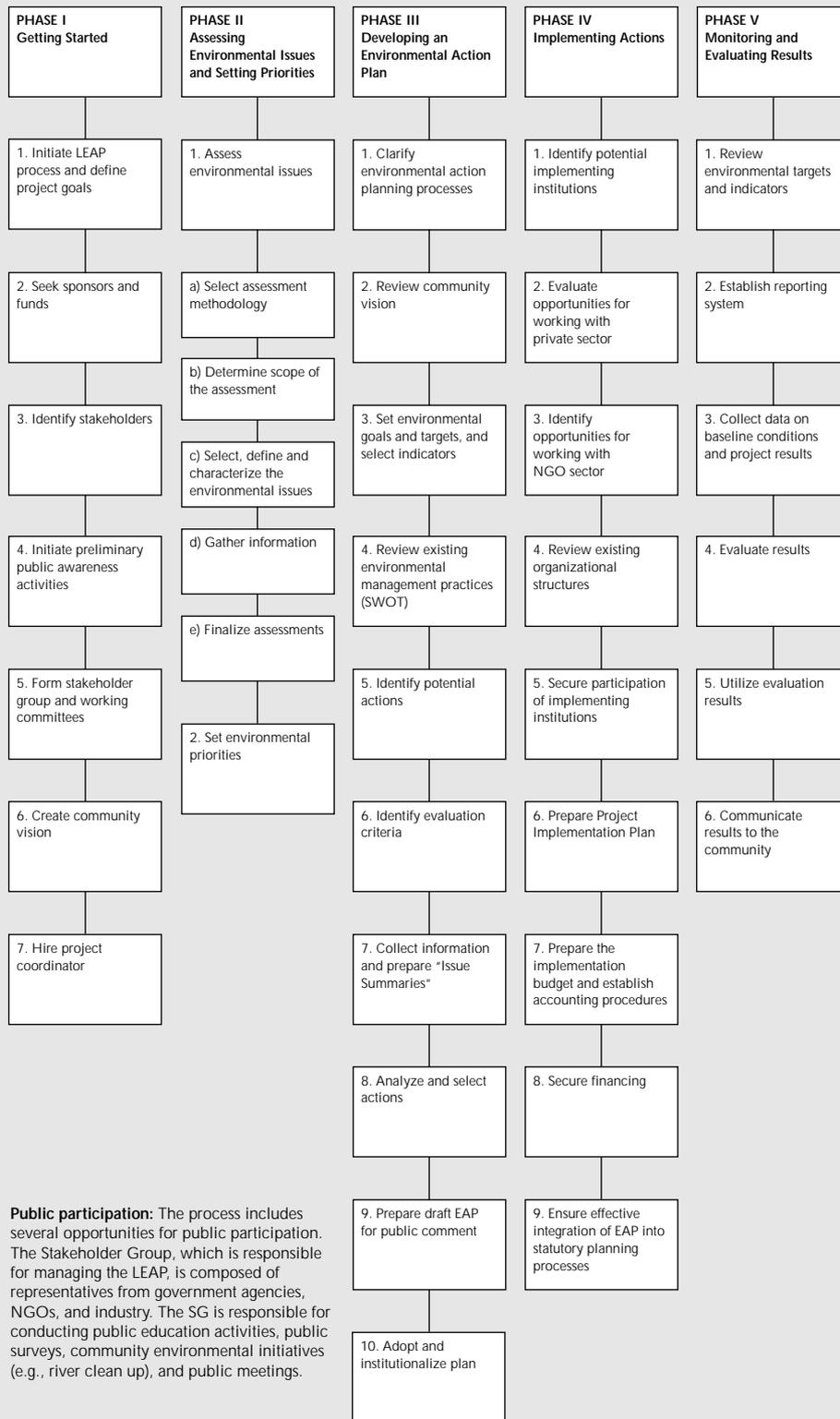
Thousands of communities worldwide are implementing LA21s — striving to become sustainable communities. Sustainable communities can be defined as those communities that value healthy ecosystems, use resources efficiently, and actively seek to retain and enhance a locally-based economy. They have a vision that is embraced and actively promoted by all of the key sectors of society, including businesses, disadvantaged groups, environmentalists, civic associations, government agencies, and religious organizations. Sustainable communities emphasize ecosystem protection, meaningful and broad-based citizen participation, and economic self-reliance. *(See Attachment A: Elements of a Sustainable Community).* According to Concern, Inc.,

A sustainable community uses its resources to meet current needs while ensuring that adequate resources are available for future generations. It seeks improved public health and a better quality of life for all its residents by limiting waste, preventing pollution, maximizing conservation and promoting efficiency, and developing local resources to revitalize the local economy.[4]

LEAPs provide an excellent starting point for developing a sustainable community. They help ensure that your community has

FIGURE 0.1

Local Environmental Action Project
Flowchart of Project Activities

PHASE I Getting Started	PHASE II Assessing Environmental Issues and Setting Priorities	PHASE III Developing an Environmental Action Plan	PHASE IV Implementing Actions	PHASE V Monitoring and Evaluating Results
1. Initiate LEAP process and define project goals	1. Assess environmental issues	1. Clarify environmental action planning processes	1. Identify potential implementing institutions	1. Review environmental targets and indicators
2. Seek sponsors and funds	a) Select assessment methodology	2. Review community vision	2. Evaluate opportunities for working with private sector	2. Establish reporting system
3. Identify stakeholders	b) Determine scope of the assessment	3. Set environmental goals and targets, and select indicators	3. Identify opportunities for working with NGO sector	3. Collect data on baseline conditions and project results
4. Initiate preliminary public awareness activities	c) Select, define and characterize the environmental issues	4. Review existing environmental management practices (SWOT)	4. Review existing organizational structures	4. Evaluate results
5. Form stakeholder group and working committees	d) Gather information	5. Identify potential actions	5. Secure participation of implementing institutions	5. Utilize evaluation results
6. Create community vision	e) Finalize assessments	6. Identify evaluation criteria	6. Prepare Project Implementation Plan	6. Communicate results to the community
7. Hire project coordinator	2. Set environmental priorities	7. Collect information and prepare "Issue Summaries"	7. Prepare the implementation budget and establish accounting procedures	
		8. Analyze and select actions	8. Secure financing	
		9. Prepare draft EAP for public comment	9. Ensure effective integration of EAP into statutory planning processes	
		10. Adopt and institutionalize plan		

Public participation: The process includes several opportunities for public participation. The Stakeholder Group, which is responsible for managing the LEAP, is composed of representatives from government agencies, NGOs, and industry. The SG is responsible for conducting public education activities, public surveys, community environmental initiatives (e.g., river clean up), and public meetings.

adequately examined and addressed major environmental issues that adversely affect both human health and the health of the ecosystem. LEAPs emphasize minimizing pollution and waste, efficiently using natural resources, promoting pollution prevention, and assuring sustainable resource use over the long-term. LEAPs stress the importance of meeting economic needs while respecting the limits of the natural environment to function and sustain human activities over time.

Both LEAPs and LA21s involve the participation of a broad spectrum of stakeholders to guide the planning processes, and both involve identifying key issues facing communities and developing plans of action to address these issues. However, as noted above, LA21s encompass all elements of sustainability, while LEAP are more narrowly focused on environmental

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FIGURE 0.2

Aarhus Convention on Public Participation

In June 1998, delegates from 36 European countries signed the Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters. The Convention, pending approval by each country's respective parliaments, binds the signatory countries to abide by a set of principles and practices pertaining to the public's rights to environmental information, decision-making, and justice. The Convention lays out procedures for public participation in decisions related to specific development activities, plans, programs and policies, executive regulations, and other legally binding regulatory instruments. This Convention is significant because it establishes a uniform set of standards for involving citizens in environmental decision-making and emphasizes the importance of fully integrating environmental considerations in governmental decisions. It recognizes that each person has the right to live in an environment adequate to his or her health and well-being. It recognizes that, in order for citizens to be able to assert this right and observe this duty, citizens must have access to information, be entitled to participate in decision-making, and have access to justice in environmental matters. The Convention states that improved access to information and public participation in decision-making means better environmental decisions and greater public awareness.

Source: *Convention on Access to Information, Public Participation in Decision-Making, and Access to Justice in Environmental Matters,* June 1998. Fourth Ministerial Conference on Environment for Europe, Aarhus, Denmark.

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issues. For communities that are just starting to think about becoming "sustainable," the process of tackling all major issues may be somewhat daunting. Thus, LEAPs provide a manageable "entry point" for communities to start to address the broader issue of sustainability.

Citizens in your community may decide to add specific non-environmental considerations into the LEAP. For example, the SG in Elk, Poland identified economic development strategies that complimented their efforts to improve and protect the local environment. The Municipality and SG identified eco-tourism and sustainable food production/processing as two primary target areas for economic development. The SG selected "Clean-up of Lake Elk" as the highest priority action, in large part because it would further the goal of promoting eco-tourism.

It is important to point out the concept of "sustainable communities" is still emerging and continually evolving. There is no one "right" path to sustainability, and communities worldwide are struggling to define "sustainability" and interpret what it means for their future development. These communities are constantly exploring innovative approaches that seek to meet human needs within the limits of the natural world.

Elements of LEAP

LEAPs require the active engagement of the public throughout the entire process, and successful public outreach requires two-way communication. First, public participation means raising awareness by informing and educating community members about the scope and goals of your efforts, environmental issues and priorities, and potential actions for addressing the highest priorities.

Second, LEAPs involve soliciting the ideas, concerns, and opinions of citizens to help ensure that the priorities and solutions developed by your SG reflect those of the community as a whole. Effective public outreach efforts ultimately help to "build community" by informing people and getting them involved in issues that affect their lives. Educating the public is not an end in itself but rather a means toward increasing citizens' voices in decision-making processes. Thus, LEAPs provide a unique chance to promote participatory decision-making practices — the foundation of any democratic society. Further, delegates from 36 European countries

FIGURE 0.3

Case Study: **Troyan Environmental Action Project Phase I**
Launching the Project

Troyan is a community of 46,000 people that rests in the northern foothills of the Balkan Mountains at the edge of a biosphere reserve and National Park. Located 90 miles east of Sofia, its natural beauty and historic monastery make the area a popular recreational site. Environmental problems have compromised Troyan's beauty and economic prosperity. Severe shortages in potable water are common throughout the year, and water is often of poor quality. Untreated and inadequately treated municipal, industrial, and agricultural wastewaters pollute the Osam River, which flows through the heart of Troyan. An uncovered municipal landfill situated on the riverbanks, containing hazardous and solid wastes, pollutes the river as well. Air pollution is prevalent throughout much of the year from the combustion of high sulfur coal and oil for home heating and industrial processes.

With these and other pressing problems facing the community, the Troyan Environmental Action Project had the following goals:

- Evaluate the public health, ecological, and quality of life (i.e., economic and social) risks associated with environmental problems;

- Rank these problems based upon their relative risks;

- Develop and implement an action plan to address the most severe problems; and,

- Involve community members throughout the process.

In early 1992, the Troyan Environmental Action Project was officially launched with a kick-off conference attended by over 60 members of the community, including representatives from the local government, industries, scientific institutions, and NGOs. The conference familiarized participants with the goals of the project and gave them first hand experience in practicing some of the project's methodologies.

Two citizen committees were formed to undertake the work of the project. The Policy Committee was responsible for educating the public, soliciting public opinion, and actively involving the public in improving the local environment, and the Technical Committee was responsible for collecting and analyzing information about the risks associated with various environmental problems and potential solutions.

Individuals were selected to participate on the Committees based upon the following criteria:

- Those who were committed and willing to work on the project as volunteers;

- Interests in the community were represented, including local government, business, NGOs, farmers, small villages in the municipality, students, teachers, media, and technical experts; and,

- Members representing institutions that have various environmental responsibilities, including: the Regional Environmental Inspectorate, Regional Health Inspectorate, and water utility.

The Committees established a project office to serve as the focal point for project activities, and hired a local coordinator to provide logistical support for the Citizen Committees. A Peace Corp volunteer was assigned to Troyan to help with the Project. The Institute for Sustainable Communities provided technical and financial support. The Project was funded through a grant from the U.S. Environmental Protection Agency (USEPA).

Source: *Bulgarian Community Environmental Action Project: Final Results and Evaluation*, July 1994. Institute for Sustainable Communities, Montpelier, Vermont, USA.

signed a recent convention on public participation that strongly encourages governments to actively involve citizens in environmental decision-making. LEAPs can help local governments fulfill these obligations. *(See Figure 0.2 — Aarhus Convention on Public Participation, above).*

The different phases of LEAPs can vary in duration. The planning phases can take from between 15-30 months, while the implementation and monitoring/evaluation phases are on-going. SGs in some communities have found that longer planning timelines can result in more comprehensive EAPs. On the other hand, citizen-based volunteer efforts may be difficult to sustain over a long period of time. In addition, your community may feel some urgency to move ahead with implementation efforts. Your SG will need to select a planning horizon that balances its desire to prepare a detailed EAP with the energy and time availability of your members.

The five phases of a LEAP are outlined in more detail below, along with a case study of the Troyan Environmental Action Project.

GETTING STARTED (3-6 MONTHS)

Starting a LEAP involves gaining the support of the local government, forming a SG, and developing a community vision. First,

FIGURE 0.4

Case Study: **Troyan Environmental Action Project Phase II**
Involving the Public and Ranking Environmental Problems

The Policy Committee immediately undertook a public opinion survey of residents to determine what environmental problems the public considered to be most dangerous to human health, ecosystems, and their quality of life. Four thousand residents identified lack of adequate supplies of clean drinking water, air pollution, deforestation, and surface water contamination as the most serious problems. The Technical Committee used this information in compiling the list of environmental problems. The Policy Committee also implemented numerous activities to educate the public, including holding several public information meetings, publishing dozens of articles in the local paper, and setting up information displays.

Meanwhile, the Technical Committee began the process of ranking environmental problems using a methodology known as "comparative risk analysis," developed by the USEPA. Comparative risk analysis utilizes the best available scientific information on the health, ecological, and economic/social risks associated with various problems. Combined with public priorities, this scientific information is used to develop a relative ranking of environmental problems in the community.

The Technical Committee, with input from the Policy Committee, developed a list of problems facing the community, collected data on the risks associated with each problem, and developed analyses summarizing each problem's associated risks. Jointly, the committees ranked the environmental problems and determined that inadequate supplies and poor quality of potable water, and air pollution from industrial, household, and transportation sources, were the most severe problems facing the community.

Source: *Bulgarian Community Environmental Action Project: Final Results and Evaluation*, July 1994. Institute for Sustainable Communities, Montpelier, Vermont, USA.

LEAPs require a close working relationship between citizens and local officials. Local officials hold the key to implementing environmental programs — from financing capital investments to adopting local ordinances. Overwhelmed with a wide range of environmental problems that need immediate attention, some local officials are collaborating with citizens to help address these problems. This collaborative approach can only be successful if it is built upon a foundation of common purpose and trust between local governments and citizens.

LEAPs begin with a core group of committed individuals who are interested in bringing the community together to address environmental issues. In some communities, local governments have taken the lead, while in others, NGOs have initiated the idea and encouraged their local governments to participate. As mentioned earlier, the involvement of different institutions and affected individuals is usually manifested through the formation of a multi-representative body called a Stakeholder Group (SG). The SG guides the community through the steps of the LEAP process. Perhaps most importantly, the SG is responsible for reaching out to the rest of the community, soliciting their views on environmental priorities and solutions, educating them on the problems facing the community, and actively involving community members in improving the local environment.

The SG often develops a Community Vision as one of its first steps. A Community Vision is a description or a picture of what you would like your community to look like several years into the future. By developing a community vision, you will be creating a framework to help your community make choices about environmental goals and solutions as you develop your EAP.

ASSESSING ENVIRONMENTAL ISSUES AND SETTING PRIORITIES (6-12 MONTHS)

Environmental issue assessments and priority setting are one of the most critical components of a LEAP. An environmental issue assessment is a profile of environmental conditions in the community — as it exists today. It helps citizens paint a portrait of the place where they live given the current environmental status of the air, water, and land. Some environmental assessments describe the impacts of these problems in terms of the threat (or risk) they pose to human health, ecological health, and the quality of life.

Environmental issue assessments generally fall into two broad categories: participatory and expert assessments. Participatory assessments rely primarily on lay people to collect data and information on environmental problems in the community, while "expert" assessments are more formalized methodologies that scientifically and statistically evaluate and document environmental conditions in the community. Oftentimes,

these two approaches are blended to develop issue assessments that are based upon both scientific data and broad public input.

Many communities use information gathered during the assessment stage as the foundation for setting environmental priorities. Priority setting helps target environmental improvements toward the most critical problems and can help ensure that your community achieves the greatest public health and environmental benefits for its money. A successful priority setting process will require the support and cooperation of representatives from government, businesses, and NGOs.

DEVELOPING AN ENVIRONMENTAL ACTION PLAN (6-12 MONTHS)

The Environmental Action Plan (EAP) is the cornerstone of a LEAP. The EAP focuses on the most serious environmental problems identified during the priority setting phase. The preparation of the EAP begins with establishing environmental goals, targets and indicators. *Environmental goals* provide an opportunity to build consensus among the SG on what it hopes to accomplish over a set period of time, e.g. three-five years. *Targets* are measurable commitments to be realized within a specified time frame and are used in evaluating and measuring progress in implementing the EAP, while *indicators* measure whether environmental goals and targets have been achieved.

The next step in developing the EAP involves reviewing existing environmental practices. This process can include examining your community's capabilities to address environmental problems, as well as external factors that may either assist or hinder your community. The SG then identifies a set of actions to help achieve the goals and targets. These actions include educational activities, economic incentives, technological measures, community programs, and regulatory actions to address various problems.

After identifying a range of possible actions, it is important that the SG choose evaluation criteria that serve as the basis for selecting its preferred actions. Your SG will probably need to undertake specific economic, engineering, and/or environmental analyses to ensure that the selection of actions is based upon sound information. In order to maximize the effectiveness and usefulness of the EAP, it is critical to link the EAP with statutory planning processes at the local and regional levels.

The SG then prepares a draft EAP that summarizes the results of its work. The draft EAP is submitted to the public for comment and ultimately adopted by the Municipal Council. This EAP then serves as a long-term guide for environmental actions in the community. The EAP will need to be revised periodically — ideally every 3-5 years — to reflect new information, technological advances, and new environmental requirements.

IMPLEMENTING ACTIONS (ON-GOING)

All the planning efforts of the SG — developing a vision, assessing issues, establishing priorities, and developing an Action Plan — lead to implementation. The environmental planning process helps ensure that the community is targeting the serious problems, as well as the "ripest opportunities," i.e. those actions where environmental improvements can be readily achieved.

As the primary institution responsible for implementing recommendations from the EAP, it is absolutely critical that your Municipality takes full "ownership" of the recommendations. This ownership can be manifested by integrating specific recommendations from the EAP into statutory

The Environmental Action Plan (EAP) is the cornerstone of a LEAP. The preparation of the EAP begins with establishing environmental goals, targets and indicators.

FIGURE 0.5

Case Study: **Troyan Environmental Action Project Phase III**
Developing an Environmental Action Plan and Selecting Strategies

With a focus on drinking water and air pollution, the Committees established long-term goals and gathered information on alternative actions from the U.S., Western Europe, and CEE. The Committees then evaluated these actions based upon their relative cost-efficiency, effectiveness in addressing the problem, and the amount of time needed for implementation, among other criteria.

The Committees summarized this information in an EAP. A draft EAP was then circulated for comment to the public, Municipal Council, and staff of the Municipality. After comments were received and incorporated into the draft, the Troyan Municipal Council approved the final EAP. ISC provided a grant to the Municipality to help implement recommended actions.

Source: *Bulgarian Community Environmental Action Project: Final Results and Evaluation*, July 1994. Institute for Sustainable Communities, Montpelier, Vermont, USA.

FIGURE 0.6

Case Study: **Troyan Environmental Action Project Phase IV**
Implementing Actions

As a framework for action implementation, the Committees developed a detailed Implementation Plan that identified specific steps, specified responsible groups and agencies, proposed a timeframe, and established a budget for each action. The Committees decided to focus on three specific implementation actions: detection of leaks in underground pipes, industrial water consumption, and environmental education.

The Committees, in cooperation with the Municipality and the local water utility, established a comprehensive program to detect and repair leaks in the underground water main and distribution pipes. The Committees discovered that almost half of Troyan's drinking water escaped from these leaks. The Municipality purchased leak detection equipment, and a western expert helped local water utility staff design and implement the program.

The Committees decided to target industrial water usage — since industries consumed more than 60 percent of Troyan's drinking water supply. A Bulgarian-born, Canadian wastewater specialist conducted wastewater audits for five largest industries in Troyan; these audits revealed enormous opportunities for saving water and reducing wastewater flows. As a result, the Municipality implemented an industrial water audit and control program to reduce industrial water consumption.

Finally, the Citizen Committees supported the establishment of the Troyan Environmental Education and Information Center. Based in the school system, the Center promoted environmental education in schools and for the public.

Source: *Bulgarian Community Environmental Action Project: Final Results and Evaluation*, July 1994. Institute for Sustainable Communities, Montpelier, Vermont, USA.

FIGURE 0.7

Case Study: **Troyan Environmental Action Project Phase V**
Monitoring and Evaluation

The Citizen Committees and Municipality established a joint management team to oversee project implementation. Further, the Municipal Water Utility established a special unit to detect and fix leaks, and digitize the map of the underground pipe network.
Results of the implementation efforts included the following:

• Repaired 70 leaks in the underground pipe network and replaced almost one kilometer of pipe resulting in water savings of approximately 10%.

• Digitized the map of the underground pipe network.

• Adopted a new environmental ordinance that requires industries to pay based upon the amount of water they use and to file information on water consumption with the Municipality. The ordinance requires the largest industrial water users to develop their own water supply, where feasible.

• Conducted an audit of the entire water system and detailed water audits of the largest industries. Industries were provided with information on how much they were wasting, how much money it was costing them, and specific measures they could undertake to decrease water use.

• Established a new environmental education center that promoted environmental education in the schools and for the public.

Source: *Bulgarian Community Environmental Action Project: Final Results and Evaluation*, July 1994. Institute for Sustainable Communities, Montpelier, Vermont, USA.

planning processes of the Municipality, such as the preparation of a land-use plan or municipal budget.

The first step in project implementation is identifying all agencies and institutions with potential responsibilities for project implementation, including local, regional, and national governments, the private sector, and NGOs. The private sector offers one effective option for project implementation. Many communities in the United States and Western Europe have found that private companies can play a valuable role in implementing a range of environmental programs — from collecting solid waste to operating wastewater treatment plants. NGOs also offer enormous promise for implementing specific actions.

Any implementation action involving multiple institutions and private companies will require an appropriate organizational structure to ensure effective implementation

— either by modifying an existing structure or creating a new one. Once the proper organizational structure is established, the participation of these institutions can be secured through a written agreement.

After securing the participation of all implementing institutions, the next step is to prepare an Implementation Plan. The Implementation Plan integrates each of the different actions into one overall, comprehensive program. It helps ensure that each of the different actions work synergistically toward a common set of goals and targets. One of the biggest implementation challenges is project financing. A "Project Financing Plan" can help ensure that your SG and Municipality have addressed all major issues related to securing adequate funding.

MONITORING AND EVALUATING RESULTS (ON-GOING)

Once implementation has begun, it is important to monitor and evaluate results. An effective monitoring and evaluation system provides an opportunity to: a) compare your implementation efforts with your original goals and targets; b) determine whether you are making sufficient progress toward achieving expected results; and, c) determine whether you are adhering to the project time schedule.

The first step in preparing a monitoring and evaluation program is to review the environmental targets and indicators developed in the EAP to make sure they are still current and reflect the latest information. Next, it is important to establish a reporting system that will record the performance of all institutions with implementation responsibilities. This reporting system provides a system of accountability for all responsible parties on how well they are achieving the goals and targets established in the EAP.

Once you have finalized your targets and indicators, established your reporting system, and collected your data, you are ready to conduct your project evaluation. The evaluation process involves comparing your actual results to the targets identified in the EAP. One of the most important aspects of an evaluation process is that it actually provides usable results to project implementers — information that can be utilized by project managers and staff to improve results. The evaluation also provides valuable "lessons learned" that can be incorporated into future implementation activities. Finally, it is important to communicate the results of the evaluation process with community members and to report their responses to various implementing agencies.

Conclusion

This LEAP planning guide has been prepared to assist municipal government officials, representatives from NGOs, and citizens to better manage environmental problems at the local level. It is presented here as a preliminary and introductory reference on basic planning methods and tools that have been used by some local governments and citizen groups in CEE.

This Guide is designed to provide a step-by-step "how-to" approach to developing and implementing LEAPs. While we recommend that you consider each of the steps described here, this Guide is *not* intended as a "strict cookbook" that must be adhered to precisely. Rather, your SG will need to design a LEAP to meet local circumstances, needs, and priorities. You will need to define your own process. This means adapting materials from this Guide, as well as other relevant guidance documents, to create a process that works for your community.

Good luck in your efforts!

Attachment A: **Elements of a Sustainable Community**

FIGURE 0.8

Elements of a Sustainable Community

The Institute for Sustainable Communities has identified the following components of a sustainable community:

Ecological integrity	• Satisfaction of basic human needs for clean air and water and nutritious, uncontaminated food;
	• Protection and enhancement of local and regional ecosystems and biological diversity;
	• Conservation of water, land, energy, and nonrenewable resources, including maximum feasible reduction, recovery, and reuse and recycling of waste;
	• Utilization of prevention strategies and appropriate technology to minimize pollution emissions;
	• Use of renewable resources no faster than their rate of renewal.
Economic security	• A diverse and financially viable economic base;
	• Reinvestment of resources in local economy;
	• Maximization of local ownership of businesses;
	• Meaningful employment opportunities for all citizens;
	• Provision of job training and education to help the workforce adjust to future needs.
Empowerment and responsibility	• Equal opportunity for all individuals to participate in and influence decisions that affect each of their lives;
	• Adequate access to public information;
	• A viable, NGO sector;
	• An atmosphere of respect and tolerance for diverse viewpoints, beliefs, and values;
	• Encourages individuals of all ages, gender, ethnicity, religions, and physical ability to take responsibility based upon a shared vision;
	• Political stability;
	• Does not compromise the sustainability of other communities.
Social well-being	• A reliable food supply that optimizes local production;
	• Adequate health services, safe and healthy housing, and high quality education for all members of the community;
	• Maintains a place that is safe from crime and aggression;
	• Fosters a community spirit that creates a sense of belonging, a sense of place, and a sense of self-worth;
	• Stimulation of creative expression through the arts;
	• Protection and enhancement of public spaces and historic resources;
	• Provision for a healthy work environment;
	• Adaptability to changing circumstances and conditions.

Source: Institute for Sustainable Communities, 1995. Montpelier, Vermont, USA.

Chapter 1: **Getting Started**

Chapter 1: **Getting Started**

"A journey of a thousand miles begins with a single step." — *Confucius*

1.0 Introduction

Local Environmental Action Programs (LEAPs) offer a proposed process for getting citizens involved in local environmental decisions. They involve a close working relationship between citizens and local government officials, and the participation of a diversity of individuals and groups who are directly affected by environmental decisions. This diversity of views is often facilitated through the formation of a Stakeholder Group (SG) composed of individuals representing local government, businesses and industries, schools, academia, and nongovernmental organizations (NGOs), among other institutions.

The SG guides the community through each step of the LEAP, including developing a community vision, setting environmental priorities, identifying potential solutions, and helping to implement preferred strategies. Perhaps most importantly, the SG is responsible for reaching out to the rest of the community and ensuring that the actions of the SG reflect those of the community as a whole.

1.0.1 COLLABORATION: A NEW MODEL FOR COMMUNITY DECISION-MAKING

Central and Eastern Europe (CEE) communities are faced with many different challenges. Whether it is providing clean drinking water, ensuring a strong local economy, or providing a range of social services, local government officials are being asked to address an increasingly complex set of issues. In addition, they are finding it more and more difficult to develop solutions that are satisfactory to all community members. Local officials are besieged with unresolved conflicts and plenty of headaches.

In recent years, local officials from communities worldwide have started to take a different approach to making decisions —

they are inviting citizens to help them address local concerns and issues. Local officials are finding that it is in their self-interest to engage citizens in addressing environmental problems and sustainable development issues. Municipal council members and other elected officials are often faced with immediate problems — and don't have the luxury of undertaking long-term planning and addressing issues that require long-term solutions. They are finding that community members bring a wealth of energy and expertise to help solve community problems.

Citizens can play an important role in providing information, monitoring compliance with governmental laws and regulations, and formulating innovative solutions. Further, local government officials are realizing that when citizens are involved in helping to make decisions — and thus have some ownership of the solutions — that they will be much more likely to support specific investment decisions by the local government.

Citizen involvement and collaboration are the cornerstones of a LEAP. Collaboration means getting people involved in creating their own solutions — rather than responding to and modifying someone else's. LEAPs provide a collaborative process for ensuring that the views of those individuals who are directly affected by environmental issues are reflected in local decisions. LEAPs are designed to hear and respond to the needs of all participants.

Collaboration requires exploring mutual interests rather than taking positions. Once you take a position, you are usually prepared to defend that position. Taking positions immediately puts you in a defensive mode. Exploring mutual interests requires looking for common ground that can bring you and those with different views together. Usually the collaboration process involves working with individuals and groups that might normally be considered

adversaries.[1] For example, LEAPs bring environmental advocates and polluters together to work on mutually acceptable strategies for improving the environment. Working side-by-side, these individuals are provided with the opportunity to learn each other's perspectives and chart a common future for the community. Thus, collaboration requires a very conscious effort to reach out to nongovernmental groups, government agencies, business associations, and individuals who can provide a valuable contribution to your efforts.

1.1 Initiate LEAP Process and Define Project Goals

Anyone can initiate a LEAP! LEAPs begin with a core group of committed individuals who are interested in bringing the community together to address environmental issues. In some communities, local governments have taken the lead in initiating LEAPs, while in others, NGOs have initiated the idea and encouraged their local governments to participate. Sometimes, several NGOs have joined together to initiate a LEAP. Still, in other communities, LEAPs have begun with a few interested individuals discussing the idea, developing a common purpose, and inviting others to participate. There is not one "right" way to initiate a LEAP!

Whoever initiates a LEAP, local government support and leadership is absolutely critical to success. Local governments have direct responsibilities for implementing most of the actions that evolve from the LEAP planning process, including adopting local ordinances, approving capital budgets and borrowing funds, and overseeing or managing such municipal services as electric, district heating, and solid waste. The active participation and support of both the Mayor's office and Municipal Council throughout the LEAP process is absolutely essential. *(See Figure 1.1 — How Municipalities Can Help Foster Citizen Participation, below)*

The initiator's primary responsibility is to bring key individuals in the community together to help organize the SG. These individuals include representatives from the Mayor's office and the Municipal Council, environmental NGOs, regional government institutions, media, large industries and businesses, academic institutions, and environmentally concerned individuals. It is important that representatives from each of these major institutions be included to help ensure their future participation in the SG (i.e. if key

institutions are involved in organizing the LEAP then they are much more likely to participate in the LEAP itself.) The initiators can ask representatives from each of these institutions to help launch the LEAP process and establish the SG. Responsibilities related to organizing a LEAP include:

- Defining a draft project scope and goals of the LEAP;
- Raising funds to help cover start-up costs;
- Initiating preliminary public awareness activities;
- Identifying potential stakeholders; and,
- Facilitating the formation of the SG.

By developing a draft LEAP scope and goals, you can help tailor the LEAP to your community's unique needs and provide a starting point for the SG. You can help define the scope of the LEAP by considering some of the following questions:

- Are environmental problems in the community clearly understood or is an environmental assessment needed?
- Are there already clear environmental priorities in the community that have broad public support or do you need to set priorities? How extensive and elaborate should the environmental priority-setting process be?
- To what degree will your LEAP address sustainable development issues, i.e., should your efforts incorporate economic, community development, social, and equity concerns?
- How will the LEAP tie in with other planning processes underway, such as the preparation of the municipal land-use plan or development plan?
- What should the geographic focus of your efforts be (neighborhood, city, watershed)?
- How informed are community residents about local environmental problems?
- Is there already an Environmental Action Plan in existence? If so, does it need to be updated?
- How long do you want the planning process to be and what period of time should the LEAP cover?

Once you have decided on the scope of the LEAP, you can identify project goals that describe what you hope to accomplish. As described in the Introduction, LEAP goals can include to:

- Identify, assess, and rank the most serious environmental problems;

> **LEAPs begin with a core group of committed individuals who are interested in bringing the community together to address environmental issues.**

How Municipalities Can Help to Foster Citizen Participation

The more people have an opportunity to engage successfully and collaboratively around public issues — the more eager they become to participate in other aspects of society. When citizens succeed in working together to address common concerns, new networks and standards of civic engagement are established. If you bring the appropriate people together in productive ways, they can produce authentic visions of the future and strategies for addressing the shared concerns of the organization or community.

Municipalities can play a vital role in fostering civic participation — principally by creating an atmosphere of openness and transparency. Some municipalities are re-establishing the government's role as "resource provider" rather than "leader" in solving community problems, and supporting citizen problem-solving initiatives by identifying available resources (expertise, facilities, etc.). Municipalities can contribute to fostering citizen involvement by:

- Creating a clearly defined mission and goals for the local government;

- Educating citizens about how decisions are made and how they can get involved;

- Convening SGs to address community problems rather than maintaining control of the problem;

- Engaging citizens in the process of creating a vision for the community, setting goals, identifying problems, and crafting creative solutions;

- Stimulating public discussion on values, aspirations, and fears;

- Building collective action and recognizing that everyone — citizens, local officials, local government employees, and the news media — has civic responsibilities and a unique contribution to make; and

- Empowering citizens by helping them build the knowledge, skills, and abilities they need to become a full partner in the decision-making process.

Sources: "American Renewal: Reconnecting Citizens with Public Life," Winter/Spring 1994. By David Chrislip in *National Civic Review;* "Civic Journalism and Local Government," April 1997. By Monica Bowman in *Public Management.* International City/County Managers Association, Washington, DC, USA.

- Improve local environmental conditions;

- Promote public awareness and solicit public opinion on environmental issues;

- Promote partnerships between local government and other sectors of the community;

- Strengthen the capacity of local institutions to manage and implement environmental programs;

- Produce a local Environmental Action Plan (EAP); and,

- Fulfill national regulatory requirements.

The project scope and goals can be used as the foundation for preparing publicity materials in order to "sell" the LEAP to the community and to prospective members of the SG. Once the SG has formed, one of their first responsibilities can be to fine tune and finalize the LEAP scope and goals.

1.2 Seek Sponsors and Funds

LEAPs cost money. These costs can be divided into two major categories: start-up costs and operational costs. Start-up costs include those expenses for initially publicizing the LEAP concept in the community and helping to create the SG, including preparing publicity materials, conducting

mailings, and organizing a Community Forum or public meeting. There are also operational costs associated with the LEAP itself, including maintaining an office (telephone/fax, copying, mailings, and office supplies), conducting studies and research, and paying a coordinator. A paid project coordinator can play a critical role in managing the logistical matters associated with a LEAP. *(See Figure 1.2 — Sample: Budget Format, and Section 7 of this chapter: Hire/Appoint LEAP Coordinator.)*

One of the organizer's primary responsibilities is to raise enough funds to cover start-up costs, and if possible, some of the operational expenses. Below are several useful hints for raising funds:

- *Seek a diversity of funds:* Seek funds from a variety of sources, including local and regional governments, industries, local businesses, and NGOs. This diversity will help establish the fact that the LEAP is truly a community-wide effort. It will also help avoid over-reliance on one funding source and potential problems associated with a particular funding source seeking to "control" the process.

- *Seek "in-kind" contributions or donations:* Not all expenses require cash expenditures. For example, your local government or an NGO can provide office space and access to

computers, phones, and other office equipment. Printing companies and copy centers can be asked to print posters and brochures free-of-charge or at reduced fees.

- *Pursue grants:* Grants provide one viable source of funds for LEAPs. For example, your Municipality might have monies available in a local environmental fund. Private foundations or National Environmental Funds are other possible sources of grants.

As you pursue funding for your LEAP, remember the adage: "Leave no stone unturned!"

1.3 Identify Stakeholders[2]

Who are the key people to get involved in a LEAP? Who are the people, organizations, businesses, and public agencies that might have a direct interest in environmental protection? Who are the principal stakeholders or people/groups with a vested interest in your work? What individuals and institutions will be expected to make specific environmental investments? Some potential LEAP stakeholders are identified below, including representatives of:

- *Local governments* are the most critical stakeholders in a LEAP. As noted earlier, local governments have direct responsibilities for implementing most of the actions that evolve from the LEAP planning process. If possible, it is valuable to include representatives from both the staff of the Municipality, as well as the Municipal Council.

- *Environmental and civic organizations* that are concerned with the environment, such as: environmental NGOs, hiking and bicycling groups; boating organizations; fishing or hunting clubs; Scouts; public health organizations; housing estate associations; church organizations; and student groups at local schools and universities.

- *Businesses and industries* that are major environmental polluters.

- *Businesses and industries* whose livelihoods depend on local natural resources, such as paper companies, fishing and hunting tour guides, resorts and local hotels, commercial fishing or other industries dependent on renewable resources, and businesses that require clean water for manufacturing.

- *Public or private utility companies* that manage drinking water, solid waste, and wastewater systems who are knowledge-able about environmental issues and the conditions of existing facilities.

- *Environmental professionals*, including ecologists and other natural scientists, physicians, landscape architects, and land-use and natural resource planners.

- *Regional government institutions*, including regional environmental inspectorates, regional health inspectorates, and regional tourism offices.

- *Local colleges, universities, and public schools* — especially departments in environmental studies, biology, ecology, geology, and other natural sciences as well as economics, urban planning, public policy, and other social sciences.

- *Private landowners* whose properties may be directly affected by environmental problems, such as individuals living adjacent to a landfill.

- *Religious and ethnic groups*.

- *Labor unions* and other workers' organizations.

- *Community residents* who represent specific interests or the "general public."

- *Media:* representatives of local newspapers, radio, and television.

Stakeholders may exist outside the immediate geographic area. For example, a river restoration effort in your community may affect many communities downstream. Conversely, the economic activities of people and businesses outside of your community (e.g., air pollution) may cause your community environmental problems.

Engaging stakeholders early in the process is key to success — as this helps ensure that these individuals feel ownership of the decision-making process. People are much more likely to work together successfully if they are involved at the onset of a decision-making process rather than after decisions have been made!

1.4 Initiate Preliminary Public Involvement Activities

Raising public awareness is a good first step toward getting the LEAP off the ground and forming the SG. The primary purpose of these public awareness efforts is to inform and educate community members about the scope and goals of your efforts and to solicit their input in the design of the LEAP. Further and perhaps most importantly, your public awareness efforts can help stimulate the interest of community members to participate on the SG. Successful public outreach

FIGURE 1.2

Sample: **Budget Format for a Local Environmental Action Program**

Cost Item	Start-Up (3-6 months)	Operational Costs for LEAP Planning Period (12-24 months)
Core Expenses		
Project coordinator		
Supplies/training materials		
Public awareness activities		
Photocopying/printing		
Telephone/fax		
Postage		
Office overhead (rent, heat, electricity)		
Other		
SUB-TOTAL		
Additional Expenses		
Travel		
Consultants		
Computer and related equipment		
Community environmental initiative		
Translations (if necessary)		
TOTAL		

efforts require two-way communication. It means both educating the citizens and seeking their ideas, concerns, and opinions. This process of "educating and opinion seeking" can help ensure that the priorities and solutions developed by your SG reflect those of the broader community.

To raise public awareness about your LEAP, you might consider the following options:

• *Hold a Community Forum:* This Forum provides an opportunity for bringing together concerned residents to learn about a LEAP, develop a Community Vision, and begin to identify environmental issues. The Community Forum also provides an opportunity for identifying individuals who might be interested in serving on the SG. *(For more details, see Attachment 1A: Conducting a Community Forum).*

• *Work with the Media:* Local television, newspaper, and radio coverage of project events and results is absolutely critical. You might consider the following approaches to working with the media: 1) meeting with newspaper editors or reporters to inform them about the project; 2) conducting a newsworthy event, e.g., hold a press conference at a pol-

luted site; and, 3) providing the media with regular news releases and information updates.

• *Survey community residents:* Consider surveying town residents either through the mail, phone, or directly in public places or at meetings. Be sure to solicit their views on the need for a LEAP, what environmental issues they believe are most serious, and who they think should be on a SG. You might consider offering incentives to survey respondents, such as a lottery drawing for products or services donated by local businesses.

• *Prepare publicity materials:* Consider publishing a brochure describing what a LEAP is, what the purpose and goals are, how long it will take, and what the benefits to the community will be of undertaking one. Be sure to distribute the brochure widely throughout the community. You might also consider preparing a poster publicizing the LEAP or specific events, such as the Community Forum, leading up to the formation of the SG.

• *Hold a community celebration:* People like to enjoy themselves! Promoting environmental awareness and protection can be mutually complementary. Consider sponsoring events such as fairs, outdoor

It is essential that the Stakeholder Group have the clear support from the local government to help ensure that its recommendations are fully considered by the Municipality in its planning and investment activities.

activities, dances, and community actions or holding contests for school children, such as a recycled art competition or sponsoring a contest for all residents to develop a logo for your project. You might combine a celebration with an activity that gets citizens involved in improving the local environment, such as collecting trash along a stream bank, planting trees on Earth Day, or even painting a mural on a prominent building.

Some of your public awareness efforts can be specifically targeted toward potential stakeholders. For example, you might consider attending a meeting of the local business association to explain the LEAP goals and solicit their participation on the SG. You may want to survey residents surrounding a polluted site to find out their views on the severity of environmental problems in the community. *(See Appendix A: Conducting a Public Outreach Campaign for a step-by step approach)*.

1.5 Form Stakeholder Group and Working Committees

The public awareness and outreach efforts set the stage and create a positive atmosphere for creating the SG. The SG guides the community through each step of the LEAP. It is responsible for soliciting the views of community residents on environmental priorities and solutions, educating them on the problems facing the community, and actively involving the public in helping to improve the local environment. As noted earlier, it is important that the SG have adequate representation among various constituencies within the community. This diversity of views will help provide the SG with both legitimacy and credibility in the eyes of the public.

In most communities, the SG serves in an advisory capacity and makes recommend-ations to the local government. Local governments have primary responsibility for managing a broad range of environmental problems — from drinking water to land-use issues to transportation planning. As the democratically elected body, the Municipal Council has the authority to make decisions on behalf of the community. Thus, the SG makes recommendations and passes these on to the Municipal Council. These recommendations will ideally form a roadmap for future environmental investments by the Council. Thus, it is essential that the SG have the clear support from the local government to

help ensure that its recommendations are fully considered by the Municipality in its planning and investment activities. It is important to note that the SG is not a legal entity — at least initially (though it may decide to incorporate as an NGO at some future point). Rather, the SG draws its effectiveness and influence from the diversity it represents.

1.5.1 FORMING THE STAKEHOLDER GROUP

To form a SG, the Municipality and/or organizers can prepare a list of potential stakeholders they believe should be represented on the SG and invite these individuals to participate. It is important that this selection process be open and fair to help legitimize the SG in the eyes of the public. It is important to use a variety of methods to encourage, and in some cases persuade, individual stakeholders to participate on the SG. These methods can include sending personal letters, holding one-on-one discussions, and conducting small focus group meetings with certain groups of stakeholders, such as representatives from industries, environmental NGOs, or universities.

As you "sell" the LEAP concept, be sure to explain why you are seeking their participation and why it is important that they participate. For example, point out that the SG will be developing a long-term environmental plan for the community that will guide future municipal investments. By joining the SG, they can ensure that their viewpoints are adequately reflected!

In addition to formal invitations, consider opening the SG to interested citizens from the community. Citizen participation can be fostered by holding a Community Forum or through other public awareness activities. Community Forums can be an especially effective method for bringing citizens together in smaller communities. *(See Figure 1.3 — Case Study: Formation of LEAP Citizens' Committee, Kavadarci, Macedonia, above, and Figure 1.4 — Case Study: Program Committee for Sustainable Development in Elk, Poland below for examples of how two communities achieved diverse representation on their SGs, below.)*

Before you form the SG, consider whether there is a limit to the number of people you want on the SG. A larger SG means that each individual has less time to contribute to the discussion, and may make it more challenging holding effective meetings and making decisions. On the other

Case Study: **Formation of LEAP Citizens' Committee in Kavadarci, Macedonia**

The Municipality of Kavadarci in Central Macedonia launched a LEAP in 1998. The organizational structure of the program consists of a Coordination Body of 9 members in which each of the three major stakeholders (local government, business and NGO sector in the community) are represented equally. The project has two committees: the Citizens' Committee and the Technical Committee. The first makes the major decisions in the project, while the second gives expert support.

The formation of the Citizens' Committee was done in December 1998 at a public meeting in which the Coordination Body invited a wide range of stakeholders. Invitees included representatives from: twenty major companies in the Municipality, all the local government departments, all local NGOs, five regional inspectorates, the Health Institution in Kavadarci, all of the local schools, and 5 journalists from the local media. All of these institutions and individuals were invited to learn about the LEAP effort and to delegate a representative that would contribute to the 14 month long process of creating an open, participatory, and community-based process to develop an action plan. Invitees were sent information on the LEAP goals and approach so that they could prepare themselves for the meeting.

Approximately 120 people attended the meeting. The meeting organizer introduced the chronology of the events related to the proposed LEAP in Kavadarci, explained the meaning of the LEAP, stated a set of reasons why their community should go through such a process, and talked about the LEAP goals. At the end the meeting, participants agreed to form the Kavadarci LEAP Citizen's Committee. 27 individuals were selected to serve and represent different interests in the community. This group includes:

Kavadarci LEAP Citizen's Committee

- The Secretary of the Municipality Council of Kavadarci;
- President of the Public Enterprise for Managament of Forests;
- Principal of the High School in Kavadarci;
- Local Government councilors;
- Representatves of all the NGOs;
- Representatives of all the major companies;
- Representatives of 10 educational institutions;
- Representative of the biggest industrial facility "Feni."

Source: *Summary of LEAP Activities for Municipality of Kavadarci,* 1999. Institute for Sustainable Communities, Skopje, Macedonia.

hand, the larger the number of people on the SG, the greater the number of stakeholders that can be represented and the more people available to share the workload. You will need to balance these considerations in forming your SG.

It is important that the Mayor give a planning mandate to the SG to undertake the LEAP. This mandate gives the SG the full support of the Municipality to proceed with implementing the LEAP.

At the first meeting, the SG can review the LEAP scope and goals prepared by the organizers, and make any modifications that are necessary. In some communities, the SG members prepare and sign a Memorandum of Agreement (MOA) or Terms of Reference that serves a basis for cooperative work.[3] The MOA is reviewed periodically to assure that it is being observed and is up-to-date. The MOA can include the following components:

- LEAP goals;
- Specific activities that are to be jointly undertaken;

- Respective roles and responsibilities of SG members;
- Responsibilities of chairperson(s) and other positions within the SG;
- Types of information to be shared and standards for sharing of information in the process, including agreements on confidentiality;
- Timeframe for completing each LEAP phase;
- Methods for group decision-making and conflict resolution;
- Resources to be provided by each member of the SG; and,
- How recommendations of the EAP will be integrated into the statutory planning and regulatory activities of the Municipality.

Many LEAPs involve the formation of specific Working Committees — especially in larger communities where the workload may be significant. While the SG supervises the planning process and ensures that all viewpoints are heard, the Working

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FIGURE 1.4

Case Study: **Program Committee for Sustainable Development in Elk, Poland**

The City of Elk, Poland launched its LEAP by holding a two-day Community Forum in the Fall 1994. The Municipality formed an organizing group to help prepare for a Community Forum. The organizing group sent hundreds of invitations to identified stakeholders and initiated a broad public awareness effort to invite citizens to attend the Forum. 125 people participated over the two days. The Forum introduced community members to the LEAP scope and methodology, and provided hands-on opportunities for citizens to work in small groups to identify environmental problems and share their visions about the future of the community. At the conclusion of the Forum, interested participants were invited to join the SG. The Group named itself the "Komitet Programowy Ekorozwoju Elku" or "Elk Program Committee for Sustainable Development." Thirty-five individuals representing a broad range of institutions and the community-at-large agreed to join the SG.

Elk Program Committee for Sustainable Development	
	• Mayor, City of Elk;
	• Director, Environmental Protection Department, City of Elk;
	• Deputy Governor, Regional Government;
	• Member, organic farmers' association;
	• Member, Elk Community Center;
	• Geography teacher, primary school;
	• Environmental Inspector, City of Elk;
	• President, Friends of the Elk Steam and Narrow Gauge Train Service Association;
	• President, Regional Chamber of Commerce;
	• Chief Production Engineer, local engineering company;
	• President, Elk Municipal Water and Sewage Company;
	• Member, Elk City Council;
	• Managing Director, local construction company;
	• Student, Economics College;
	• Retired pediatric doctor;
	• Biology teacher, primary school;
	• Translator/interpreter;
	• President, Voluntary Fire Brigade;
	• Chemistry student, Technical University;
	• Owner, sanitary systems company;
	• Former Mayor, City of Elk;
	• Legal counsel, City of Elk;
	• Environmental Officer, large industry;
	• Urban Green Areas Inspector, City of Elk;
	• Teacher, College Scuba Diving Club;
	• Employee, local trading company;
	• Principal, local high school.

Source: *Final Report: Polish National Environmental Action Program Pilot Project,* June 1997. Institute for Sustainable Communities, Montpelier, Vermont, USA.

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Committees help implement distinct elements of the planning process. Each Working Committee is composed of a small group of stakeholder representatives, usually appointed by the SG, who have a particular interest or expertise in a specific issue or problem. In order to ensure that all planning efforts are fully integrated, it is important that the Working Committees report and make recommendations to the SG.

Working Committees are often composed of individuals with specific expertise from outside of the SG, although representatives from the SG can also serve on the working committees if their skills or experience are appropriate. For some tasks, such

as risk assessment, some SGs hire paid experts and these experts participate on one of the Working Committees. Working Committees can be involved in conducting research, preparing technical analyses, and implementing public outreach activities. They contribute information and conclusions, as well as action recommendations, to the SG for review and discussion. Based upon these recommendations, the SG negotiates and approves a final Action Plan and submits this to the Municipal Council for approval. *(See Figure 1.5 — Proposed Organizational Structure for a Local Environmental Action Program, below.)*

1.5.2 ESTABLISHING GROUND RULES FOR THE STAKEHOLDER GROUP

Soon after the formation of the SG, it will be important to consider a number of ground rules or logistical issues related to the efficient operation of the SG. You may want to include these ground rules in your MOA (see above).

First, the SG will need to decide how often it will meet, how long its meetings will be, where meetings will be held, and at what times. Consider choosing meeting dates in advance so that SG members can make their plans around these dates and so interested members of the public can attend. Also, consider establishing a specific day of the week for a meeting time, such as the second and fourth Tuesday of each month, and agreeing upon a set length of time for each meeting (such as two hours) and stick to it! Meetings that go beyond the agreed upon timeframe usually tend to frustrate participants.

It will be important for the SG to select a Chairperson or Co-Chairpersons to help guide the SG in its work. He/she can facilitate meetings (although this role is not limited to the chairpersons), officially represent the SG at public forums or events, help prepare the meeting agenda, work with and supervise the project coordinator, coordinate activities among the Working Committees, and resolve conflicts among SG members. *(See Figure 1.6 — What is Collaborative Leadership, below, for desirable skills of effective leaders, below.)* It is important to note that the Chairperson has the same amount of power and rights as any other SG members, but has been elected by the SG to help guide its efforts. You might consider establishing term limits for Chairpersons, i.e. change Chairpersons every six-to-nine months in order to give other members an opportunity to serve in leadership roles. Alternatively, you may

decide to allow a Chairperson to be re-elected to additional terms.

Another issue that SG will need to address is how to receive and expend funds. Since the SG is not a registered organization (at least, not initially), it will need to be affiliated or associated with a legal entity such as the Municipality or a local NGO acting on its behalf.

As a group of individuals who have never worked together before, SG members will benefit by participating in some workshops on how to work collaboratively. *(Figure 1.7 — Putting Collaboration to Work, below.)* These workshops can cover such topics as:

• Team building and leadership development,

• Effective communication and conflict resolution,

• Brainstorming,

• Negotiation,

• Effective meetings,

• Facilitation skills,

• Decision-making methods.

These workshops will help you function more effectively as a group by providing you with the skills to make decisions, work through conflicts, and become an effective team. *(See Appendix B: Skills for LEAP Development.)*

Finally, it is important to note that the composition of the SG can and will change over the course of the LEAP. Individuals will leave the SG as their time, availability, and interests change. Thus, you will probably want to establish a process for accepting new members to replace those who leave. For example, you may wish to establish a process of requesting nominations for new members and their approval by the SG. Be sure to consider the composition of SG as you evaluate potential new members, e.g. are you seeking new members with specific technical expertise or who represent specific constituencies? This review and approval process will help ensure that the changes in your SG's composition will be done thoughtfully.

1.6 Create Community Vision[4]

"A vision without a plan is just a dream. A plan without a vision is just drudgery. But a vision with a plan can change the world." — Author Unknown

One of the most important actions you can undertake as a SG is to create a Community Vision. A Community Vision is

Soon after the formation of the Stakeholder Group, it will be important to consider a number of ground rules or logistical issues related to the efficient operation of the group.

a shared concept or picture of what residents want the community to be like in ten or twenty years. The Community Vision provides an opportunity for the SG and residents to step outside their immediate and most pressing problems and to look toward the future. A Community Vision:

- Provides a common framework and an agreed upon direction for your work,

- Promotes bold, creative, and imaginative thinking that can lead to fundamental change,

- Provides continuity and consistency as people come and go from the LEAP planning process, and,

- Offers an excellent opportunity for engaging people in the community.

The Community Vision asks residents: "If you are walking down the streets of your community 20 years from now, what do you see? What does your community look like? What does it feel like?" Typically, Community Visions encompass a broad range of issues affecting a community's well-being. Community Visions usually include the following elements:

- *Natural environment:* Are natural resources being adequately protected and can pollution levels be reduced?

- *Land-use and population growth:* Can future development and population growth

be guided to improve the quality of living and minimize adverse impacts?

- *Civic participation, leadership, and diversity:* Are citizens actively engaged in helping to make the community a better place to live?

- *Infrastructure:* Are there opportunities for improving roads, environmental facilities, schools, and other public facilities?

- *Economic vitality:* Is the local economy strong and vibrant, are local businesses meeting local needs, and are workers making a sufficient wage?

- *Education, social services, and recreational opportunities:* Are students getting the education they need and are residents receiving adequate health and social services? Are their sufficient recreational opportunities in the community?

- *Cultural heritage:* Does the community celebrate its heritage and provide opportunities for music and the arts?

Some citizens may ask, "If we are focusing on environmental issues, why develop a Community Vision that addresses these broader issues facing the community?" The Community Vision is an important first step in developing an EAP. It provides a consistent framework for developing and implementing your environmental goals and strategies, and can provide a starting point for addressing the broader issues of how to

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FIGURE 1.5

Proposed Organizational Structure for a Local Environmental Action Program

Municipality		Stakeholder Group (includes work of LEAP Coordinator)		Working Committee
• Helps form the Stakeholder Group and provides a formal planning mandate • Provides data and information • Reviews action strategies and proposals • Integrates stakeholder planning decisions with formal planning processes • Appoints liaison/ representative to serve on Stakeholder Group	*Support and information* → ← *Recommendations and plans*	• Provides and oversees policy and management for the planning process • Establishes and oversees Working Committees • Develops the Community Vision • Consults with public and establishes priorities • Negotiates consensus positions and action recommendations • Reviews and finalizes Environmental Action Plan	*Guidance and management* → ← *Research and analysis*	• Appointed by Stakeholder Group • Conducts research and analyzes problems and opportunities • Proposes action strategies • Prepares draft action plans • Helps conduct public outreach • Develops indicators • Documents activities

Source: Modified from *The Local Agenda 21 Planning Guide,* 1996. International Council for Local Environmental Initiatives, Toronto, Canada.

What is Collaborative Leadership?

"A good leader is a person who takes a little more than his share of the blame and a little less than his share of the credit." — John C. Maxwell

Collaborative leaders operate under very different assumptions from those of traditional leaders. Instead of pitting groups or coalitions against one another, they look to the public for power and serve in a very different leadership role. Their role is to convene, catalyze, and facilitate the work of others. They know that the will to solve problems comes not from them or from elected leaders, but from citizens engaged in addressing public issues.

Collaborative leaders possess new and different skills. They know how to analyze and understand the challenge of leadership and how to develop strategies that will overcome resistance and inertia. They know how to bring citizens together and help them build trust and the skills for collaboration. They help design constructive processes to collaboratively solve problems and create shared visions.

Collaborative leaders:

- *Inspire commitment and action:* Energize others to create visions and solve problems. Create new alliances, partnerships, and forums. Bring people together, help them work together constructively, and keep them at the table.

- *Lead as peer problem solver:* Promote commitment and involvement by the participants — creating a credible, open process in which participants have confidence. Facilitate ownership of the process among all participants. De-emphasize power and status among participants and help peers solve problems.

- *Build broad-based involvement:* Make a conscious and disciplined effort to identify and bring together stakeholders who are necessary to define problems, create solutions, and get results. Take great pains to be inclusive, recognizing that many collaborative initiatives fail because the right people were not included.

- *Sustain hope and enthusiasm:* Sustain confidence by promoting and protecting a process in which participants believe. Help set incremental and obtainable goals and encourage celebrations of achievement along the way. Help people do hard work when it would be easier to just quit.

Source: *Collaborative Leadership,* 1994. David Chrislip and Carl Larson, Jossey-Bass Inc., San Francisco, CA.

achieve a sustainable community. Further, the Vision can help your community identify potential cross-sector actions, such as implementing community-based recycling programs to reduce waste while reducing unemployment by hiring residents to operate the recycling program. *(See Figure 1.8 — Case Study: Community Vision, Barlinek, Poland, below.)*

One approach to developing a Community Vision is for the SG to develop a draft Vision Statement *(See Attachment 1B: Questions for Creating a Community Vision.)* Ideally, the Vision Statement represents a consensus view of the SG since it provides a unifying statement of what the SG envisions for the future. Further, the Vision can shape important decisions about the community's future, and it is important that the Vision represent the views of the entire community. Thus, the SG will need to solicit the views of community members on the draft Vision Statement. (In fact, the Community Vision offers a excellent opportunity to actively involve the community in the LEAP process!)

As an alternative, the SG might consider inviting residents to a Community Forum to help create the Community Vision. As noted above, the Community Forum provides an opportunity for expanding the pool of community residents involved in the LEAP process. The SG can then take the ideas from the Community Forum, develop a draft Vision Statement, and then seek further public comment.

It is important to acknowledge that some citizens may have a difficult time undertaking a visioning process. They may find it difficult to leave reality behind and look 20 years into the future and may consider the whole process as "wishful thinking." It is precisely because of these difficulties that visioning is important. Visioning provides an opportunity for people to break out of their traditional, and sometimes pessimistic, ways of thinking of the future.

1.7 Hire/Appoint LEAP Coordinator

Many communities have found that a project coordinator(s) can play a critical role in completing the numerous logistical tasks associated with a LEAP. Where financially feasible, the coordinator can be paid to help ensure that they devote

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FIGURE 1.7

Putting Collaboration to Work

Collaboration is a challenging art. It often means talking seriously with people you do not know, agree with, or even like. It means dealing with people you may fear or those you think have power over you. To make your collaboration efforts more successful (not to mention more fun and less stressful), consider the following principles.

- Hear their concerns and ideas before telling them yours. In important discussions, many of us tend to state our own ideas first. But you are far more likely to be heard if you first listen to the ideas of others. Once they have stated their views, their minds will be clear to hear your ideas.

- Understand their interests before describing yours. Look for the interests, fears, and values that underlie the things they are saying. Repeat what you think you are hearing. Ask if your understanding is correct.

- Describe your interests instead of defending your position. Most of us have a good idea of how our interests can be fulfilled. That is our "position." If, instead, we talk about what we want — our problems, needs, and interests — before seeking solutions, the discussion may lead to alternative ways of fulfilling those interests.

- Join them before asking them to join you. Look for ways in which their interests are consistent with yours. Then work with them to focus on how you can both get what you want.

- Set aside differences and disagreements to solve mutual problems. If you are talking with people with whom you have disagreed in the past, do not ignore those differences. Instead, clear the air by acknowledging them. Agree to disagree respectfully on certain points, but keep in mind that what is most important is that you are part of the same community and you're eager to collaborate on this particular effort, regardless of past differences.

- Employ active listening. Acknowledging, empathizing, and clarifying are the most valuable skills that can be brought to any important communication.

- Pursue easier issues first. Your collaborative effort may go smoothly, but if it is a highly charged discussion and the issues are difficult, tackle the easiest one first. That success will give you confidence and momentum to take on the more difficult issues.

Source: *Economic Renewal Guide,* 1997. Michael Kinsley, Rocky Mountain Institute, Old Snowmass, Coloardo, USA.

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sufficient time and energy to their job. As an alternative, the Municipality can appoint a staff person, such as the municipal environmental expert, to serve as a part-time coordinator. (Or the municipal staff person can work in conjunction with a paid coordinator.) A paid coordinator can be especially important because the SG is composed of volunteers who often have other full-time commitments, and thus are limited in the amount of time they can devote to the project.

The coordinator's responsibilities can include:

- organizes SG meetings (including taking minutes at meetings and mailing meeting agendas);

- arranges for meetings with government agencies and other information sources;

- facilitates data collection and other necessary research;

- performs logistical tasks associated with public education and involvement activities, and,

- helps prepare drafts of the problem descriptions, environmental action plan, and other key documents.

When selecting a coordinator, consider using an open, transparent process to help ensure that the most qualified individual is hired and that the process is bias-free. An open process will send a message to the community that the selection process is fair and that the best person has been hired for the job. Consider including the following information in the job description:

- background about the LEAP;

- coordinator's responsibilities;

- qualifications (educational and experience);

- time commitment and salary;

- application requirements (submit resume, cover letter, etc.);

- deadline for submitting applications.

In preparing the job description, consider the following qualifications: experience in an environmental field and understanding of environmental issues; familiarity with the community and local environmental problems; ability to work well with people; strong organizational abilities; and skills in writing, facilitation, and financial management. These same qualifications can also serve as the criteria by which

FIGURE 1.8

Case Study: **Community Vision, Barlinek, Poland**

   This Community Vision was developed and approved by workshop participants in the Municipality of Barlinek, Poland within the framework of the United Nation Development Program's Umbrella Project. Participants expressed their wish that the Municipality will modernize as a result of sustainable development practices over the next 10-15 years.

Natural and cultural environment	• Harmonious landscape; • High quality of environment; • Preserved cultural heritage; • Replenishing of high green areas in parks and along the transportation routes; • Health/recreational paths, educational and recreational bicycle routes in the community; • Organized water supply and wastewater treatment; • Community without air pollution; • Environment without waste; • Preserved natural resources.
Technical infrastructure	• Road bypass of the town Barlinek; • Train connection in the Municipality; • Parking lots for cars in the town; • Developed technical infrastructure; • Minimised energy use; • Developed retention system; • Developed waste management system.
Economy	• An economically developed Municipality; • Developed tourism and recreation; • Minimal unemployment; • Developed services sector; • The use of renewable energy sources.
Social infrastructure	• The developed third (nongovernmental) sector; • The public with a high regional/municipal identity; • Secured/provided housing needs; • Developed education at all levels; • Secured/provided social needs; • Safe community; • Public with high environmental awareness; • Active public.
Management of municipality	• Municipality is open to cooperation; • Decentralized tasks; • High quality of service to the public; • High level of social communication systems; • Public participation in decision-making.

Source: *Strategy of Sustainable Development of the Barlinek Municipality,* December 1998. Town and Municipality Council of Barlinek, Warsaw-Barlinek, Poland.

to select your coordinator.

After adequately publicizing the availability of the position, the SG may want to establish a hiring committee to review the applications, interview the most qualified candidates, and recommend a candidate(s) to the full SG. The SG can then either approve the top candidate or decide to interview the top two or three candidates.

Conclusion

LEAPs rely on collaboration among the major stakeholders in a community. Successful LEAPs ensure that those individuals who are affected by environmental issues are actively involved in the decision-making process. This requires reaching out to the various interests within your community, and bringing them into the LEAP planning process. Collaboration is the key to an effective LEAP. Collaboration requires strong leaders, the support of the Municipality, and a credible and open process. It involves hard work, patience, and commitment. This collaboration process is usually facilitated through the formation of a SG that guides the LEAP and involves the general public. An effective SG can play a significant role in charting a plan of action for future environmental investments that have broad-based support throughout the community. And while this collaboration process may not always be easy, the rewards of an involved and supportive citizenry are well worth the effort!

Attachment 1A: **Conducting a Community Forum**

A Community Forum offers one useful approach to informing community members and potential stakeholders about a LEAP. Community Forums are open to the public. They offer an opportunity to review the basic components of the LEAP, to start a Community Vision, and to identify environmental issues.

Organizing a Community Forum involves the following steps, which are described in further detail below.

a) Prepare the agenda

b) Coordinate logistics

c) Select speakers and facilitators

d) Invite participants

A. PREPARE FORUM AGENDA

The Forum can provide a unique opportunity to introduce people to participatory, interactive small group working sessions wherein participants have an opportunity to share their views and contribute in a meaningful way. Be sure to use plenty of visual aids, such as slide shows, photo displays, and maps to help capture participants' attention. A sample agenda for the Forum is provided below.

B. COORDINATE LOGISTICS

Preparing for a Community Forum involves numerous details and tasks. Consider the following logistical arrangements in preparing for the conference:

Space

Secure a large meeting room that can comfortably hold 50 to 100 people or more — depending on the size of your community. In addition, several smaller rooms are desirable for the small group work sessions that are sufficient to seat 10-to-15 people each. Plan on conducting a walk-through of the space prior to the forum to be sure the lighting and other mechanical details are in full working order.

Materials

Purchase large pieces of plain paper that are approximately one by two meters (often referred to as "flip charts") for the small group work sessions. Each small group will also need tape and different colored markers.

Equipment

You will need access to audio-visual equipment. Use audio-visuals, such as slides, overheads, and videos, to improve the quality of presentations and generally increase audience attentiveness.

Food

Provide refreshments such as coffee, juice, and lunch. Volunteers may be willing to make snacks and bring food. You might want to make arrangements with a nearby cafeteria or restaurant to prepare lunch.

C. SELECT SPEAKERS AND FACILITATORS

You will need individuals to moderate the Forum, give presentations, and facilitate the small group work sessions. The moderator's job is to welcome people and explain the purpose of the workshop, introduce speakers, explain the Forum logistics, and make sure the Forum schedule stays on track. The Mayor and Chairperson of the Municipal Council can offer introductory remarks and encourage community members to participate in the project. Consider inviting technical experts to speak about the severity of environmental problems in the community and/or individuals from other communities with LEAP experience.

You will also need individuals to help facilitate the small group work sessions. Facilitators can help assure that the objectives of the group work sessions are accomplished and that all participants have an opportunity to share their perspectives. A few days prior to the Forum, conduct a facilitator training to acquaint facilitators with the materials, brief them on their responsibilities, and provide them with practical experience in facilitating small group sessions.

D. INVITE PARTICIPANTS

To ensure that you reach out to as many people as possible, consider sending direct invitations to identified stakeholders and publicizing the Forum to the general public through the media, posters, and promotional materials. Send invitations to identified stakeholders that include a LEAP description, forum goals, and agenda. Be sure to ask the Mayor and/or Municipal Council Chairperson to serve as one of the

FIGURE 1.9

Sample: **Agenda, Community Forum for a Local Environmental Action Program**

Registration and refreshments	
Welcoming remarks from Mayor and community leaders	
Purpose and goals of forum	• Review each of the major phases of a LEAP.
	• Develop a community vision statement.
	• Identify major environmental problems facing the community.
	• Solicit interest of community members in participating on the SG.
What is a Local Environmental Action Program?	• Goals and purpose of a LEAP.
	• Review the major project phases and timeline: involving the public, assessing and ranking environmental problems, developing an environmental action plan, and implementing strategies.
	• Role of the public.
	• Questions and answers.
Break	
Developing a draft Community Vision statement	• What is a Community Vision? How can it help a community?
	• Pointers on how to conduct a brainstorming session.
	• Small group session: "What do we want our community to look like in 20 years?"
	• Groups report back on brainstorm ideas of Community Vision; identify common elements from each small group.
Lunch	
Assessing environmental problems	• Conducting a community environmental assessment.
	• Sources of data on environmental conditions.
	• Tools for setting environmental priorities.
	• Small group session: "What are the major environmental problems facing our community and why are we concerned about them?"
	• Groups report back on problems identified.
Wrap-up and next steps	• Summary of the results of the day.
	• Who is interested in serving on the SG?
	• Time and place of first SG meeting.
Adjourn	

Forum co-sponsors and even to review the invitation list.

Media announcements and general publicity are important in order to reach a broad range of community members. Consider asking your local radio stations and newspapers to publicize the Forum as a public service. This will help reach a broad spectrum of participants. Also, ask reporters to publish articles describing the project, conduct radio interviews, and put up posters around town to spark community interest.

Attachment 1B: **Questions for Creating a Community Vision**[5]

A Community Vision is usually composed of multiple components, such as environmental, economic, and community health. The Community Vision is not intended to address specific problems or solutions; rather, it is meant to be forward-looking and intended to describe what could be possible in the future. The following list of questions is designed to help stimulate your thinking in developing a Community Vision.

A. NATURAL ENVIRONMENT

- Are there any trends, such as loss of natural resources or increasing pollution levels, that should be reversed?

- Are there major natural resources in the community that should be protected?

- Is pollution being reduced at its sources as much as possible?

- Are water supplies sufficient for the future, are they used as efficiently as possible, and are public water supplies adequately protected?

- What problems are associated with existing patterns of energy use, is energy being used as efficiently as possible, and are local sources of renewable energy being fully utilized?

- To what extent does the community rely on local sources of food, fuel, and materials? How does the community manage its wastes and what percentage of materials are being recycled?

B. LAND-USE AND DEMOGRAPHIC PATTERNS

- Is the current mix of land used for industrial, commercial, residential, and recreational purposes a good balance?

- Should some areas be used differently in the future?

- Should the planning area be enlarged to address environmental and economic impacts outside the town's geographic area? What does the regional comprehensive plan call for?

- Are there ways to guide population and economic development to allow for the healthy functioning of natural resources?

- How much could the population grow without seriously straining the infrastructure, resources, and the environment?

C. CIVIC PARTICIPATION, LEADERSHIP, AND DIVERSITY

- Are there civic NGOs in the community active in addressing a range of community issues?

- To what degree do citizens volunteer to serve on the boards of local organizations?

- Do civic organizations and local businesses actively contribute to community functions?

- Do citizens have an active voice in the decisions of the Municipality?

- Do schools, churches, youth and civic groups provide citizen education and promote community service?

- Is there active leadership in all three sectors — public, private, and non-profit — in the community?

- Do community leaders represent diverse community interests, i.e., age, gender, length of time resided in the community?

- Are local government leaders responsive to citizen needs?

- Do leaders demonstrate accountability, transparency, professionalism, and the ability to innovate?

- How much communication is there among diverse interest groups in the community, such as natives/newcomers, youth/pensioners, and people of different ethnic backgrounds?

- Are these different interest groups involved in identifying community goals and resolving community issues?

- Does the community deal with critical issues before they become crises?

D. INFRASTRUCTURE

(roads, environmental facilities, parks, schools, libraries, police, housing and fire departments, etc.)

- What level of services should the community provide?

- Are there problems with the current infrastructure that need correcting?

- How old are components of the infrastructure, and how long will they last?

- If we expect the population to grow, what new services or facilities will be needed?

- How can any new facilities be optimally integrated with existing services and facilities within the community and neighboring communities?

- Are public buildings, such as schools and town/city hall, adequate for the community's needs?

- Does the town have a plan for financing the maintenance, expansion, and replacement of its public facilities?

- Is there adequate housing available for elderly, lower income, and disabled individuals?

E. ECONOMIC VITALITY

- What can be done to improve the economic climate and tax base of the community?

- Do the citizens want to attract new businesses to the community, and if so, what types of businesses do they want to attract, and what resources should be devoted to attracting these businesses?

- Are there locally available education and job training opportunities that provide residents with skills that match the needs of local businesses?

- What types of jobs are available to residents in terms of security, wage levels, skills levels, and benefits?

- What percentage of the community's businesses, industries, and organizations are locally owned?

- What additional business services are needed that could be both locally provided and owned?

- Is there an adequate supply of locally owned and controlled credit available for local businesses?

F. EDUCATION AND SOCIAL SERVICES

- Do all residents have access to adequate educational and social services (i.e., health, clothing, shelter, and food)?

- Does the community need to address health problems, such as infant mortality, childhood lead poisoning, nutrition, or access to health care?

- What special programs for youth — such as after-school recreation, drug counseling, and job training — are available in the community?

- Are the public schools meeting the needs of the community's youth?

- Do the community's elderly residents have access to programs that meet their unique needs for food, health, and social interaction?

- What services does the community provide to its neediest citizens?

- Do sufficient recreational opportunities exist within the community?

G. CULTURAL HERITAGE

- In what ways does the community celebrate itself through the arts and music?

- What are the special cultural centers, events, and festivals within the community?

- Does the community preserve and enhance what is special and unique about its cultural heritage?

- How does the community celebrate its cultural and social diversity?

- How strong is the community's "sense of community?"

Chapter 2: **Assessing Environmental Issues and Setting Priorities**

Chapter 2: **Assessing Environmental Issues and Setting Priorities**

"The significant problems we face cannot be solved at the same level of thinking we were at when we created them." — *Albert Einstein*

2.0 Introduction

2.0.1 WHAT IS AN ENVIRONMENTAL ISSUE ASSESSMENT?

An Environmental Issue Assessment is a profile of environmental conditions in your community — as it exists today. It helps citizens paint a portrait of the place where they live given the current environmental status of the air, water, and land. More than a dozen communities in Central and Eastern Europe (CEE) have undertaken Local Environmental Action Programs using some type of issue assessment process. These assessment methodologies range in their level of sophistication, data needs, cost, and time requirements. Some communities undertake Issue Assessments primarily as a means of inventorying environmental conditions, while other communities use assessments as a critical step toward setting environmental priorities. An Environmental Issue Assessment:

- Provides a clear and shared analysis of the key environmental issues facing the community;

- Provides information about the environmental impacts from the activities of public and private institutions, and individuals, and what these institutions and individuals are doing (or not doing) to improve and protect the environment;

- Establishes a "baseline" of environmental conditions from which to measure the effectiveness of actions taken to improve them;

- Raises public awareness of environmental issues, and potentially leads toward engaging citizens in improving the environment; and,

- Helps build relationships and partnerships among stakeholders that can lead to new opportunities for action.

Environmental Issue Assessments generally fall under two broad categories: *participatory* and *expert* assessments. Participatory assessments rely primarily on lay people to collect data and information about environmental problems in the community. Participatory assessment tools, such as a "Community Environmental Inventory," involve gathering information from a variety of sources to determine the state of environmental conditions in the community. This often involves soliciting community residents and businesses on their knowledge, concerns, and insights into the history and root causes of environmental problems. *(See Figure 2.1 — Assessment Tool 1: Community Environmental Inventory, and Figure 2.2 — Assessment Tool 2: Rapid Urban Environmental Assessment, below).*

Expert assessments are more formalized methodologies that scientifically and statistically evaluate and document environmental conditions in the community. Expert assessments, such as "Risk Assessment," require trained and experienced scientists or "risk assessors." They often do not include any significant public involvement. *(See Figure 2.3 — Assessment Tool 3: Risk Assessment, and Figure 2.4 — Assessment Tool 4: Comparative Risk Analysis, below.)* Expert assessments generally require greater amounts of scientific knowledge, analytic expertise, access to valid data, and funding. It is important to note that many communities use a hybrid of these two approaches. For example, some communities start their assessment process by conducting public opinion surveys to determine what environmental problems to focus upon, and then use this information as the foundation for a more expert-based assessment.

Your Municipality may have recently prepared an assessment or may already have clearly defined environmental issues.

FIGURE 2.1

Assessment Tool 1: **Community Environmental Inventory***

Community Environmental Inventories provide a tool for assembling large amounts of information on the status of a community's environment, natural resources, economic activity and physical conditions. In general, this approach asks participants to assemble information on environmental conditions. A Community Environmental Inventory involves the following components:

• Identification of who is discharging pollutants into your community;

• Identification of what pollutants are being discharged in what quantities;

• Determination of whether those industries or individuals that are polluting are in compliance with environmental laws;

• An inventory of natural resources (such as parks and natural areas) in your community;

• Mapping environmental and natural resource information;

• Analysis of the possible impacts of pollutants on human health; and,

• Analysis of whether specific populations within the community, e.g. low income residents or particular ethnic groups, receive more pollution than others.

Community Environmental Inventories can be performed on:

• *Environmental concerns:* identifies the types of environmental issues and who causes the pollution.

• *Natural resources:* catalogues the natural features of the community, including those that are or are not protected. The inventory provides a means to begin assessing the natural features and determining their relative health or status.

• *Facilities:* inventories specific environmental facilities within the community, such as individual industries and drinking water treatment facilities.

Community Environmental Inventories can help citizens and local governments gain a better understanding of environmental problems facing their communities in an easy and accessible format. However, it will not necessarily help individuals identify the relative scale and severity of issues that may be needed to rank environmental problems.

Source: *Where We Live: A Citizen's Guide to Conducting a Community Environmental Inventory,* 1995. Donald Harker and Elizabeth Ungar Natter. Island Press, Washington, DC, USA.

* The results of Community Environmental Inventories can be used in compiling a "State of the Environment Report (SER)." SERs are typically structured around a number of environmental indicators for each topic that graphically illustrate how conditions or problems have changed over time. This provides a strong visual sense of possible future trends.

Before you embark on an assessment, be sure to check on what information related to environmental conditions has already been compiled in your community.

2.0.2. FACTORS TO CONSIDER IN DECIDING WHETHER TO SET ENVIRONMENTAL PRIORITIES

Setting priorities helps target environmental investments toward the most critical problems first. It can help ensure that your community receives the greatest public health and environmental benefits for its money. Many communities use their Environmental Issue Assessments as a foundation for setting environmental priorities for action. In preparing for a priority setting process, consider the following:

• *Who is making environmental decisions now?* If your SG is seeking to influence priorities, you will need to determine who is responsible for making environmental

decisions and what kind of decision-making processes they are using to set priorities. These decisionmakers include the Municipality, regional environmental and health inspectorates, industries, national government, and utility companies (such as solid waste, water, and wastewater), among others.

• *What kinds of information do decision-makers need to change priorities?* Government and non-government decisionmakers may need a range of different types of environmental information, including risk assessment information, data on environmental trends, costs of proposed action strategies, and/or survey data on the public acceptability of proposed priorities and solutions. It is important that the SG work closely with key decision-makers to get a clearer sense of what information they are using to make decisions and what types of information will be most effective in helping them set new priorities.

Assessment Tool 2: **Rapid Urban Environmental Assessment**

Rapid Urban Environmental Assessment (RUEA) is an environmental auditing methodology developed by the World Bank, United Nations Development Program, and UNCHS Urban Management Programme. RUEA is designed to enable local experts to rapidly assess the state of the urban environment as input into a strategic urban environmental management process. The RUEA has three main components:

1. *Environmental data questionnaire:* The questionnaire is designed to provide a comprehensive picture of existing conditions and to rapidly collect data from existing sources. The questionnaire covers the following categories of information: baseline social and economic statistics, baseline housing conditions, baseline health conditions, the natural environment, land-use, urban transportation, urban energy use, air pollution, noise pollution, water resources, and solid/hazardous waste.

2. *Urban environmental profile:* Using data collected from the questionnaire, an Urban Environmental Profile is prepared to analyze the nature, trends, and factors that influence environmental quality in the city. The environmental profile provides background information on historical, geographical, and socioeconomic aspects of urban development. The profile summarizes information on the quality of and key hazards to the air, water, and land. Another section of the profile includes an analysis of how development-oriented activities and services in the public and private sectors influence environmental quality and how environmental factors constrain or promote development.

3. *Public consultation:* Following the completion of the environmental profile, a series of public consultations are organized to allow for public dialogue on environmental priorities and options as well as to partially validate the results of the questionnaire and profile through public discussion.

The RUEA has been found to be an efficient and relatively low-cost method of assessment. While this methodology does facilitate the collection of an extensive amount of data, it generates purely descriptive information and provides little foundation for setting priorities for action.

Source: *Rapid Urban Environmental Assessment: Lessons from Cities in the Developing World,* 1994. Joseph Leitman, World Bank, Washington, DC, USA.

• *How receptive are decision-makers to changing priorities?* Local government, private businesses, and other institutional leaders will ultimately be responsible for incorporating recommendations from the Environmental Action Plan (EAP) into their own decision-making processes. Thus, their support and cooperation at the outset of the LEAP is essential. Hopefully, your SG will be composed of most of the key decision-makers, and your meetings can be used to solicit their support. For those decision-makers not represented on the SG, you will probably want to personally inform them of your efforts and seek their cooperation.

A successful process for assessing environmental issues and setting priorities will require the support and cooperation of representatives from government, businesses, and nongovernmental organizations (NGOs). In some cases, your SG may need to use its powers of persuasion to convince some reluctant decision-makers of the benefits of undertaking a community-wide process to assess issues and establish environmental priorities.

Some communities decide not to undertake a formal priority setting process because certain environmental problems clearly pose the most severe threat to human or ecological health, such as communities with a single large polluting industry. If this is the case, it is important that the SG share this information with the community and solicit their opinions and support. In this situation, Issue Assessments can be used to gain a better understanding of environmental problems in the community and provide baseline data for measuring progress toward environmental improvements.

2.0.3 WHO CONDUCTS ENVIRONMENTAL ISSUE ASSESSMENTS AND SETS PRIORITIES?

Many SGs have established Technical Advisory Committees (TAC) to develop reliable information about environmental problems in the community. Their primary responsibilities include identifying environmental issues, reviewing and collecting existing sources of data, determining how to best fill critical data gaps, and analyzing scientific data. Once the TAC completes its assessment, the SG is responsible for making any relevant decisions — such as setting environmental priorities — based upon the assessment.

The challenge in putting together a Technical Advisory Committee is finding enough knowledgeable people who have appropriate expertise, as well as the time and willingness to participate.

The composition of the TAC will depend on the type of assessment tool selected, individuals' expertise and interest related to the assessment, and the availability of technical resource people. The challenge in putting together a TAC is finding enough knowledgeable people who have appropriate expertise, as well as the time and willingness to participate. Some Stakeholder Groups (SGs) have hired technical experts to undertake discreet portions of the Issue Assessment, such as conducting a risk assessment. For example, the SG in Radom, Poland hired outside experts from the Institute of Occupational Medicine in Lodz, Poland to produce valid risk estimates for their health risk reports. The TAC usually consists of:

- Scientists,
- Teachers and professors,
- Doctors and professionals from public health or environmental fields,
- Representatives from NGOs,
- Citizens with technical interest or experience,
- People with access to useful information or perspectives on environmental conditions, and,
- Staff and officials from governmental institutions with environmental responsibilities.

This chapter provides a step-by-step approach for assessing environmental issues and setting priorities based upon experiences in CEE, the United States, and Western Europe. The methodology presented here is drawn in large part from the Comparative Risk Analysis methodology. This chapter is intended to provide a structure for helping your SG become better informed about the impacts of environmental problems on your community, and if your community chooses to do so, provide a guide for comparing and ranking environmental problems.

2.1 Assess Environmental Issues

2.1.1 SELECT ISSUE ASSESSMENT METHODOLOGY

As discussed earlier, assessment tools range in the level of technical expertise required. Historically, experts in the United States and Western Europe have prepared assessments that provided detailed scientific analyses in technical language with minimal or no public involvement. As citizens became more interested in local environ-

mental conditions, planners developed new tools to engage citizens in helping to conduct these assessments. These participatory assessment tools engaged citizens in defining and describing issues of importance to the community using non-scientific language and approaches.

There are several key questions to consider in choosing an assessment methodology. These questions include:

- How will the information generated from the assessment be used and by whom?
- Who is available to help conduct the assessment?
- How will the information generated from the assessment be used and by whom?
- Do you intend to set environmental priorities for action?

These questions are discussed in more detail below.

- *How will the information generated from the assessment be used and by whom?* For example, will the information be used in a community dialogue on environmental priorities or will the Municipality use the information to help it make environmental investment decisions? If the results are intended to change government policies, then the assessment will need to stand up to the scrutiny of government decision-makers. In such cases, the final results may be viewed more seriously if they are conducted or supported by recognized technical experts. On the other hand, if the assessment is intended primarily as a public information tool, then a less technical and more participatory assessment tool may be more appropriate.

- *Who is available to help conduct the assessment?* Are there scientists or technical experts within the community who can help conduct the assessment? Larger communities usually have a greater number of individuals to choose from whom can serve as technical experts either on the SG or TAC. These volunteers can significantly reduce the costs of hiring outside expertise. The availability of local experts may be a deciding factor in choosing your assessment methodology.

- *What is the availability of data, funds, and time?* Issues related to costs, data availability, and time will also determine your choice of an assessment tool. Generally, more expert-oriented assessments involve greater costs, more data, and longer time-frames to complete. However, expert assessments generally provide a greater

FIGURE 2.3

Assessment Tool 3: **Risk Assessment**

Risk Assessment is a an assessment tool that is used to measure the probability of an adverse impact (risk) on either human health, ecosystems, or quality of life. Risk is the probability of adverse effects. Health risk assessment is a tool for determining the probability of contracting illness, usually cancer, from exposure to a particular chemical, substance or activity. Adverse health effects are caused by exposure to harmful substances and can vary widely, ranging from lethal effects to more subtle biochemical, pathological, or physiological effects. Researchers employ sophisticated models based on human and laboratory animal exposures to chemicals to determine the chances of contracting cancer and non-cancer illnesses.

The traditional human health risk assessment process is comprised of four interrelated phases:

1. *Hazard identification:* Evaluates available evidence on the presence and hazards of substances likely to cause adverse effects.

2. *Dose-response assessment:* Determines the likelihood that a substance will produce a given effect at different dose levels;

3. *Exposure assessment:* Estimates the magnitude, duration, and frequency of human exposure to pollutants of concern and the number of people; and

4. *Risk characterization:* Combines the information obtained from the hazard identification, dose-response assessment, and exposure assessment to estimate the risk associated with each exposure scenario considered. Effects are often characterized as "acute" — short-term immediate effects — and "chronic" or long-term effects.

Risk assessment can also be applied to natural ecological systems to assess the risks to natural systems from human activity. Ecological risk assessment is similar to the human health methodology, but differs in two distinct ways. First, ecological risk assessment evaluates negative impacts on a myriad of species' interactions and ecological processes, instead of assessing impacts on only a single species (i.e., human beings). Second, whereas human health assessments focus on chemical stressors, physical stressors often adversely affect ecosystems. Thus, ecological risk analyses assess physical impacts, such as rivers that are dammed, wetlands that are drained, forests that are cut, and wildlife habitats that are eliminated.

Risk Assessments require individuals with adequate training, sufficient data, and funds. Further, some risk assessment critics believe risk assessment is a flawed methodology because it is based upon numerous assumptions and uncertainties.

understanding of the underlying causes associated with environmental problems and their impacts to human and ecological health compared to participatory assessment tools.

Technical and participatory environmental assessments are not mutually exclusive; several communities have conducted environmental assessments that combine the two approaches. For example, project participants from both Troyan and Stara Zagora, Bulgaria used information about the views and concerns of the public as the foundation for conducting a more technical assessment of the risks to public health and the natural environment. By combining the two approaches, these communities developed assessments that were based on both scientific information and public concerns and provided a solid foundation for future investment. Furthermore, the Stara Zagora SG determined which assessment tools to use based upon its LEAP goals of setting environmental priorities and public outreach. *(See Figure 2.5— Case Study: Linking Environmental Assessments to Project Goals, Stara Zagora, Bulgaria, below.)*

• *Do you intend to set environmental priorities for action?* Another important factor to consider in choosing an assessment tool is whether or not your SG intends to rank environmental problems and set priorities. Most environmental assessment tools describe environmental conditions without drawing conclusions about their relative impacts on human beings and the natural environment. In order to effectively compare and rank environmental problems, you will need a common "denominator" that enables your SG to compare and rank problems. Comparative Risk Analysis is one of the few assessment tools that allows for this comparison by using "risk" as a common denominator for ranking environmental problems. *(See Figure 2.4 — Assessment Tool 4: Comparative Risk Analysis, below.)*

Finally, while your SG will probably not be directly involved in preparing the Issue Assessment, it is very important that you feel "ownership" of the results. Therefore, it is important for your SG to choose a model that you trust and to involve people you trust in the assessment process. Before you select an assessment tool, it is important

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FIGURE 2.4

Assessment Tool 4: **Comparative Risk Analysis**

Comparative risk analysis (CRA) is an analytic methodology for comparing environmental problems in a systematic way based upon the best available information about the relative risks these problems pose. CRA attempts to answer the question, "given what we know at this time, which environmental problems pose the greatest risks to our health, the natural environment, and the quality of our lives?" CRA provides a means for describing and comparing environmental problems. This technique has been used as a component for setting environmental priorities in the United States, CEE, and other parts of the world.

Developed by the U.S. Environmental Protection Agency in the late 1980's, CRA uses a framework for comparing issues based on extensive data preparation and standard risk assessment approaches. Using criteria such as health, ecological, and quality of life risks, participants determine the relative magnitude and severity of issues by comparing problems against one another. This information, generated through a risk ranking exercise, can lead directly into a priority setting exercise in which risk information can then be integrated with other non-risk factors to establish "environmental priorities for action."

Risk provides a common denominator for comparing different problems. For example, ranking environmental problems in terms of emission levels or violations of ambient concentration standards is insufficient. These indicators do not clearly reveal the likelihood of a negative health or ecological impact. However, a comparison of emission levels to health-based standards can be used to determine the associated health risks.

Many people believe that CRA does a disservice to communities due to its reliance on flawed risk assessments. Further, CRA can require large amounts of data and money to conduct a relatively rigorous analysis, often making it beyond the reach of many communities.

Source: *A Guidebook to Comparing Risks and Setting Environmental Priorities,* 1993. U.S. Environmental Protection Agency, Washington, DC, USA.

FIGURE 2.5

Case Study: **Linking Environmental Assessments to Project Goals, Stara Zagora, Bulgaria**

The Stara Zagora Community Environmental Action Project identified six major project goals:

1. Identify, study and rank local environmental problems by means of data collection, analysis, and prioritization.

2. Institutionalize a more efficient decision-making process with respect to greater municipal responsibility for managing environmental problems and economic restructuring.

3. Improve the quality and flow of information between the national ministries, regional environmental health agencies and municipalities in order to improve environmental management decision-making capabilities.

4. Establish a process by which the city's residents are better informed and involved in decision-making.

5. Provide a mechanism for NGOs and industries to constructively participate in environmental policy formulation and implementation.

6. Select and implement low-cost and cost-effective solutions to improve environmental protection through better management practices, pollution prevention, waste minimization, and improved efficiency.

These goals helped define the assessment tool used by the Policy Committee (i.e. Stakeholder Group). The Policy Committee used a public process to help define environmental problems, analyze the community's concerns, and generate priorities for action by making use of citizens and the technical expertise of community members and government officials. This assessment approach, using Comparative Risk Analysis, contributed toward achieving the first, third and fourth goals above.

Source: *Developing Local and Regional Environmental Action Plans: Case Studies of Bulgaria, the Czech Republic, Hungary, Poland and the Slovak Republic,* July 1996. Edited by Tomas Hak, The Regional Environmental Center for Central and Eastern Europe. Budapest, Hungary. Case study on Stara Zagora by Paul Markowitz, Elena Petkova, and Katya Dyankova.

that SG members have sufficient knowledge about various approaches and their relative advantages and disadvantages. You may want to contact participants from other projects to help inform your choice about which assessment tool to use.

2.1.2 DETERMINE SCOPE OF ISSUE ASSESSMENT

Your SG can save itself time and money by addressing issues related to scope at the outset of the assessment process. The first step in defining the scope of your assessment is to review your Community Vision. The Community Vision provides some parameters on the types of issues your community would like to see addressed. For example, what issues do community members care about? Where does the community see itself being in 20 years and what issues will impede its ability to achieve this vision?

After reviewing the Community Vision, you may want to consider the following questions related to defining the scope of your Issue Assessment:

- What types of issues will be addressed in the assessment?

- What geographic area will be covered under the assessment?

- Will the assessment address future as well as current issues?

These questions are discussed in greater detail below.

2.1.2a What types of issues will be addressed in the assessment?

There are usually a number of factors to consider in determining which types of issues will be analyzed and which ones will not, including:

- Will the assessment address environmental issues that are traditionally regulated by public health agencies? For example, participants in the Troyan Environmental Action Project included cigarette smoking and worker exposure to toxic chemicals in their environmental assessment.[1]

- Will the assessment address issues beyond purely environmental considerations? For example, the City of Elk, Poland used a process that placed environmental concerns into the broader economic context of sustainable development.[2]

- Will the analysis examine certain global issues, such as ozone depletion, even though they may be beyond the community's ability to control or influence these problems? Many communities have decided to include all environmental problems of concern in their assessment, while addressing the issue of the community's ability to control and influence the problem during the priority setting process.

Generally, the more comprehensive the assessment — the more complex the assessment will be, and the greater will be the need to involve other relevant national, regional, and local agencies and organizations.

2.1.2b What geographic area will be covered under the assessment?

Many Environmental Issue Assessments confine themselves to the legal boundaries of the municipality; however, your SG may want to consider environmental issues beyond these geographic boundaries. For example, will your assessment address pollution that is generated outside the municipality, such as particulate emissions from a neighboring city that may result in adverse human and ecological health impacts to your community? Will your assessment address environmental problems that are generated within the municipality, such as the transfer and disposal of hazardous wastes, but are "exported" to other regions? Will your assessment include an entire watershed? Strictly adhering to political boundaries (e.g. borders of the Municipality) may be the easiest approach, but may not be the most appropriate approach from an environmental point of view, i.e. "pollution doesn't stop at the border!"

The question of geographic scope also influences what institutions will be involved in the project. For example, if your SG decides to address cross-boundary issues (i.e. the transport of pollutants across political boundaries), then you will probably want to involve appropriate national or regional environmental officials in your efforts. It is important that your SG determine the geographic scope prior to actually conducting the assessment, and once the assessment has begun, to consistently use the same geographic scope in analyzing each environmental issue.

2.1.2c Will the assessment address future as well as current issues?

As you begin to shape your environmental assessment, you will probably want to consider whether your efforts will focus solely on issues facing your community today (a "snapshot" approach) — or will it

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FIGURE 2.6

Problem Lists from Selected LEAPS in Central and Eastern Europe

Leap project	Troyan, Bulgaria	Stara Zagora, Bulgaria	
Issues	• Quality and quantity of drinking water; • Air pollution; • Nutrition and health status of population; • Loss and degradation of forests; • Radiation and electromagnetic pollution; • Direct discharge of industrial and household waste waters; • Air pollution in the working environment; • Noise pollution; • Sewage from pig farms; • Soil erosion; • Emergency releases of toxic substances; • Effects of certain chemicals in industry; introduction of new production processes; • Industrial waste disposal; • Smoking; • Landfills for solid household waste.	• Urbanization of the environment; • Degradation of Ayazmo Park; • Soil pollution; • Waste collection and disposal; • Drinking water pollution; • Lead contamination; • Ambient air pollution.	

also include threats that loom in the future? For example, should a community look at the future threat to underground drinking water supplies from existing solid waste landfills — even though current drinking water quality meets national standards? Taking the "snapshot" approach is analytically easier — it does not involve making future projections about contamination or exposures levels. However, it ignores one of the most important aspects of environmental problems: the changing magnitude of these problems over time. By examining potential future threats, the community might be able to take corrective or preventive actions today. Further, some environmental problems such as habitat and species loss, may have irreversible consequences if actions are not taken in the near future to avert or minimize their adverse environmental impacts.

In practice, it may be difficult to assess future threats for all environmental issues. Some communities have assessed future threats for a few well-studied (and mod-

eled) problems, such as global warming and stratospheric ozone depletion. Alternatively, if your SG has limited capacity to examine future threats, but feels uncomfortable ignoring them altogether, a simplified approach might be to ask the question, "Is the problem likely to get better, worse, or staying the same over time?"

By systematically defining these scoping issues at the beginning of the Issue Assessment, you can help ensure that your data collection efforts will be well-tailored, that you will have the resources to complete the necessary steps, and that you will involve all key information agencies and organizations in the process.

2.1.3 SELECT, DEFINE AND CHARACTERIZE ENVIRONMENTAL ISSUES

Once the SG has set boundaries for the Issue Assessment, the TAC will need to agree on which specific environmental issues will be included in the assessment. Community

Satoraljaujhely, Hungary	Radom, Poland	Elk, Poland
• Collection and disposal of solid waste;	• Depletion of deep water aquifer for drinking water;	• Lake and river pollution;
• Water pollution;	• Air pollution from transport;	• Air pollution from low emission sources;
• Air pollution;	• Air pollution from domestic and industrial sources;	• Degradation of plant and animal life as a direct result of human action;
• Destruction of natural world;	• Surface water pollution;	• Air pollution from high emission sources;
• Radiation;	• Sewage management;	• Noise.
• Transportation;	• Solid communal waste;	
• Hospital wastes, animal wastes;	• Industrial and hazardous waste;	
• Galvanized sludge;	• Condition of green areas;	
• Agricultural chemicals, paints;	• Impact of working landfills and old and illegal landfills;	
• Noise;	• Noise and vibrations;	
• Passive smoking;	• Electromagnetic and ionic radiation;	
• Yard waste.	• Exceptional dangers resulting from catastrophes;	
	• Incineration of hospital waste;	
	• The quality of drinking water from deep wells and ground water;	
	• Health protection;	
	• Ecological awareness of the community.	

residents offer a good starting point for developing an environmental issue list. Using a variety of outreach methods — such as surveys, focus groups, and public information meetings — the SG can effectively solicit the views and concerns of community members. *(See Appendix A: Conducting a Public Outreach Campaign, for more information.)* During this outreach effort, you might consider asking community residents to answer the questions, "What are the environmental problems facing the community and why do they cause us concern?" In this initial phase, it is important that the process be open-ended to encourage creative thinking. For example, in Stara Zagora, the SG conducted a public opinion survey related to local environmental problems, as well as a survey of its members, to form the issue list.[3]

Your SG will need to balance the number of issues it wants to address with its own capacity to perform the required work. Obviously, the larger the issue list, the greater the workload. While larger lists tend to reflect the interests of the public, they may result in less thorough assessments. On the other hand, smaller issue lists may allow for greater depth and rigor, but may not reflect all the concerns held by members of the public or the stakeholders.

The actual number of issues assessed in a LEAP varies from community to community. *(See Figure 2.6 — Problem Lists from Selected LEAPs in Central and Eastern Europe, above.)* Most of these assessments began with more issues on their lists than they ended with. For example, the Radom LEAP began with 17 issues generated from a community survey and brainstorm session, and ended with a list of ten broad categories.

It is critical that your SG is clear about why specific environmental problems pose concerns. In other words, why are you concerned about a specific problem? What is being threatened that you value? For example, are you concerned about increased lung cancer rates from low-emission air pollution? Are you concerned about destruction of wildlife habitat from unsound log-

One of the most critical and time-consuming stages of the environmental assessment process is identifying appropriate information sources, collecting data and putting the data into a usable form.

ging practices? Are you concerned about reduced learning capabilities in young children from lead poisoning? By answering the question of why, you can help target and focus your data collection efforts on these particular areas of concern.

Following the initial identification of environmental issues, the SG, with assistance from the TAC, can develop a more refined list of problems using a consistent set of terminology to characterize and describe the problems. By using consistent terminology, the TAC can develop comparable definitions that are critical to eventually ranking environmental problems. It is important to point out that there are a variety of approaches for characterizing environmental problems and developing the initial environmental problem list. One approach for characterizing problems, used in Comparative Risk Analysis, includes the following terminology to help define environmental problems:

- *Stressors:* Stressors are chemical pollutants or physical impacts affecting individual species (including humans) or complete ecosystems. Some examples of chemical pollutants include: heavy metals such as lead, nickel, mercury; gases such as sulfur dioxide, nitrogen oxides, and carbon monoxide; radiation; toxic chemicals such as pesticides, volatile organic chemicals, and polychlorinated bi-phenyls; and pathogens such as bacteria from sewage or animal wastes. Some physical impacts include soil erosion, draining a wetland, and clear-cutting a forest.

- *Sources:* Sources are human activities that result in the release or exposure of stressors to the environment. Sources include industries, power plants, mining, automobiles, and home heating furnaces. Some stressors have a single source while other stressors may come from multiple sources over time and space. Similarly, many sources release multiple stressors.

- *Impacts:* Impacts help you evaluate which environmental problems pose a greater concern than others do and provide a common denominator for evaluating various environmental issues. Some impacts used in comparative risk analysis, include:
  - *Human health:* Chemical and biological stressors can cause a variety of health problems. Health threats are generally divided into those threats leading to cancer and those leading to non-cancer conditions.
  - *Ecological health:* This includes threats to ecological systems (rivers, lakes, forests) and to individual species of plants and animals within those systems.

- *Qualify of life:* Quality of life encompasses threats to social and economic values, such as diminished recreational opportunities, losses to natural resource-based businesses (e.g. fisheries or eco-tourism companies), damages to crops and forest, and aesthetic losses of beautiful places.

These impacts are usually evaluated in light of:
- *Scale:* How big or widespread is the impact? For example, if the threat is to human health, how many people or what percentage of the population is affected? If the threat is to ecological systems, such as a forest, how much of the forest is affected?
- *Severity:* How serious or intense is the impact? For example, if the threat is to human health, does it kill people or just make them ill? If it is a threat to an ecological systems such as lake or wetland, does it destroy the entire ecosystem or just impair it?
- *Persistence/Reversibility:* How long will the impact last, i.e., will the impact last for a few years or for centuries? Can the impact be reversed? If so, how long would it take — after the source of the problem is removed — for the impact to disappear? For example, radiation persists for a long time, while many types of water pollution can be reversed in a short time.

Putting these terms together, a sample definition for the environmental problem "water pollution from animal wastes" might read as follows:

Nitrogen from manure produced at animal feedlots runs off into surface waters causing increased aquatic plant growth and biological oxygen demand, decreased levels of dissolved oxygen, and decreased fish populations.

In this example, the *stressor* is nitrogen, the *source* is manure from animal feedlots, and the negative *impacts* are increased aquatic plant growth and biological oxygen demand, decreased dissolved oxygen, and decreased fish populations. Together, these terms — sources, stressors, and impacts help characterize the issues in a consistent manner. Whatever Issue Assessment tool you decide to use, these terms may be useful in helping to characterize your environmental issues.

2.1.4 GATHER INFORMATION

One of the most critical and time-consuming stages of the environmental assessment process is identifying appropriate information sources, collecting

FIGURE 2.7

**Data Collection Recommendations from the
Troyan Environmental Action Project**

As one of the first LEAPs in Bulgaria, the Citizen Committees from Troyan, Bulgaria identified several recommendations for future data collection efforts. These recommendations include:

1. Conduct a preliminary survey of information providers to determine what information is readily available to the public and in what form the information exists.

2. Meet with key information sources at the beginning of the information collection process to explain the goals of the project and to solicit cooperation. Consider including key information providers on the Citizen Committee.

3. Address critical data gaps and questions about data accuracy as early as possible. This will allow time to generate any supplemental data needs through monitoring or collecting relevant information from communities with comparable problems or situations.

4. Establish close working relationships with regional and national government bodies that can assist in preparing and reviewing problem analyses. Further, identify critical areas of technical expertise and make strong efforts to solicit expert participation. Expertise may include medical doctors, biologists, chemists, hydro-geologists, foresters, agricultural specialists, economists, financial managers, and survey experts.

5. Strive toward drawing a relationship between specific environmental concerns in the community and the impacts they pose to human health, the environment and social and economic welfare. Early in the process, ask "Why does this problem pose a threat or risk?" then gear information collection efforts toward answering this question.

Source: *Bulgarian Community Environmental Action Project: Final Results and Evaluation,* July 1994. Institute for Sustainable Communities, Montpelier, Vermont, USA.

data, and putting the data into a usable form. Your TAC can save itself considerable time and money by carefully identifying what kind of data and how much data it will need prior to starting its data collection efforts.

The issue characterizations provide a useful starting point in helping to target your data collection efforts. For example, your TAC might characterize one problem as "particulate matter and nitric oxides released from coal-burning power plants have a negative impact on human health-related illnesses, such as bronchitis and lung cancer." This characterization will help you understand the need to collect data on particulate emissions and nitric oxides from the regional environmental inspectorate, and information on lung cancer and bronchitis incidences from the local hospitals and regional health inspectorate.

There is no magic answer to the question, "how much data is enough?" Ideally, the TAC should strive to collect enough data to provide a descrption of the threats to human health, natural environment, and other impacts associated with each problem. In reality, data is often incomplete, inaccurate, out-of-date, tangential, or in a form that is difficult to use. Thus, the TAC will find itself constantly balancing the need to collect enough data to prepare meaningful Issue Assessments

with the need to keep its data collection efforts both manageable and completed within the agreed-upon timeframe. It is important to remember that no matter how much data you collect, your assessment will always be a blend of data and judgment. *(See Figure 2.7 — Data Collection Recommendations from the Troyan Environmental Action Project, above.)*

Your TAC should be sure to allocate sufficient time for collecting data. How much time you need depends largely on the geographic size of the assessment area, the number of issues being assessed, the technical nature of the assessment, and the degree of coordination among organizations managing different types of information. Data collection can be very time-consuming, particularly if multiple organizations have overlapping responsibilities. Thus, the SG will need to establish a time frame for data collecting activities, and then make sure the TAC adheres to the schedule to the greatest degree possible.

In some cases, government agencies and private organizations may charge a fee for copying and other related costs. Most CEE countries have laws governing how government agencies provide environmental information to the public and what information they must provide. These laws often expressly state that environmental information belongs to the public and should be

provided free-of-charge.[4] Your TAC will want to review environmental information laws to be clear on its rights.

The following questions will help guide your information gathering efforts:

a) What steps can be taken when there is a lack of data?

b) How reliable and accurate is the information?

c) What are some key information sources?

These questions are addressed in further detail below.

2.1.4a What steps can be taken when there is a lack of data?

Most environmental assessments are based upon existing data. However, sometimes your TAC may identify data gaps that are so significant that your ability to assess a particular issue may be severely impeded. There are a variety of steps you can take to try to fill these information gaps, including:

- *Collect data from other communities:* Consider obtaining data from other communities with comparable environmental conditions or health problems, and then interpolate this data for your own community. For example, you might obtain information on human health-related impacts from air pollution from communities with the same climate conditions and similar industries. You can then try to draw conclusions about the health impacts to your own community. As a cautionary note, this process of "interpolation" is based upon numerous assumptions and has a large degree of uncertainty — but it may be better than no data at all. These limitations need to be expressly stated in your Issue Assessment.

- *On-site tours:* Pertinent information may be relevant through site tours and community surveys. TAC members can design their own methods for gathering and organizing relevant information. For example, group members may visit a landfill and interview the staff and surrounding residents to learn more about the facility and its impacts.

- *Monitoring:* Your TAC might consider initiating new monitoring activities. In the context of an Issue Assessment, it is important to conduct new monitoring efforts only after careful consideration. Monitoring data is usually only valid if samples are taken over a period of time, and this time requirement might conflict with the schedule for the overall LEAP. Further, you will need to determine how

much the monitoring will cost and how these costs will be paid for. Whether or not you choose to initiate new monitoring activities during the assessment, be sure to carefully document any data gaps you find and prepare recommendations for future data collection efforts.

- *Public:* While technical experts can describe many aspects of environmental concerns, citizens remain one of the most valuable sources of information. Asking citizens about their concerns and what they know about particular issues will help your TAC learn information that may not be recorded elsewhere. Previous LEAP participants have conducted surveys, held public meetings, and conducted focus groups to learn what community residents knew about environmental issues.

2.1.4b How reliable and accurate is the information?

The TAC will need to take special care in checking the reliability and accuracy of the data it uses. First, you will want to thoroughly understand the origins of any data, when the data was collected, and how frequently samples were taken. Second, it will be important to understand the sources, collection methods, and original purpose of the data to help determine whether the information is useful and accurate. You may want to ask specific information sources about the sampling and analytical methods they used in collecting the data to determine whether the data is reliable and representative. If there are various sources for the same type of information, you will need to determine the best information source to use.

2.1.4c What are some key information sources?

Sources of data for an Environmental Issue Assessment depend greatly on the study area. You can assemble relatively basic but sufficient information from a variety of sources. In CEE, key information sources include the regional environmental and health inspectorates; national Ministries of Environment, Health, Agriculture, and Regional Planning; universities and academic institutions; and your municipality. Other information sources include:

- Hospitals and health clinics;

- Libraries;

- International organizations and NGOs (World Health Organization, United Nations Environment Program, US EPA, World Bank, etc.);

FIGURE 2.8

Sample: **Information Request Letter**

Vladamir Minkov, Director
Blovech Regional Environmental Inspectorate
467 Anton Miroslav St.
3200 Blovech BULGARIA

Dear Director Minkov:

The citizens of Avikov have joined together, in cooperation with the municipality, to initiate the Avikov Environmental Action Program. The Avikov Environmental Action Program is a 21-month effort to identify and rank the environmental problems facing the community, develop an environmental action plan that identifies strategies for addressing these problems, and implement selected environmental protection and improvement strategies. Your assistance in this project will help improve the environmental quality in our community and region.

The Avikov Technical Advisory Committee is currently identifying environmental problems facing the community. We are collecting information on the health, ecological, and economic, and social impacts associated with environmental problems in Avikov. This information will be used as the foundation for setting environmental priorities in our community.

We are asking you to provide us with information and analytic results regarding pollution levels and standards, and threats associated with these pollution levels for the territory of the Municipality. We would like to receive data for the last five years, and where possible, in a summary form. We understand that all the information we request may not be available, and we ask you to understand that we are unfamiliar with the extent of information you have available for our community.

We request the following information:

a) Water quality data on the Tuva River;

b) Air quality data for the Municipality;

c) Water quality standards and a comparison of how the data compares to the standards;

d) Air quality standards and a comparison of how the data compares to the standards; and,

e) Information on the relative health, ecological, economic and social impacts from existing pollution levels.

We ask that you view this information request as the first step in what we hope will be a continuing dialogue and working relationship to help solve environmental problems in our community. This information will be used in the preparation of Environmental Issue Assessments summarizing the threats associated with each problem. We would like to set up a time to meet with you or your staff to discuss our information needs and to gain a better understanding of the available information.

I will call you within the next week to answer any questions you may have regarding our information request. In the meantime, please feel free to call me at the number below.

Sincerely,

Velislava Yankova, Chairperson
Avikov Technical Advisory Committee
(23) 56 10 31

• Private enterprises and companies;

• Individual citizens;

• Community groups (environmental NGOs, historical societies, etc.);

• Experts (health risk assessors, ecologists, economists, planners, etc.);

• Individuals from similar projects in your country or region; and,

• The internet.

Your TAC might consider initiating a dialogue with key information providers by sending them information request letters. These letters can include a description of the LEAP, what information you need, and an explanation of how you will use the information. You might then meet with these sources to more fully explain your request, solicit their cooperation, and collect the information. *(See Figure 2.8 — Sample: Information Request Letter, above.)* This type of cooperative approach can help facilitate data collection and analysis, improve the completeness and accuracy of the assessment, and lay the groundwork for future cooperative activities with these agencies and organizations.

2.1.5 FINALIZE ASSESSMENTS

After collecting available data, the TAC synthesizes and analyzes the information into an Issue Assessment Report. This report includes all relevant information pertaining to the assessment, a summary of the findings and conclusions, baseline data

FIGURE 2.9

Sample: **Issue Assessment Report Format**

This general outline provides a proposed structure for preparing an Issue Assessment Report. It is drawn from Issue Assessment Reports prepared for use in Comparative Risk Analysis.

Summary	A. Project description
	B. Findings: Agreements; disagreements
I. Project overview	A. Goals
	B. Participants
	C. Intended use for report
	D. Topics included in the assessment and reasons for their inclusion
II. General description of the community and baseline data	A. Population and other demographic information
	B. Cultural highlights
	C. Natural environment
	D. Relevant history
III. Description of assessment methodology	A. Steps in the methodology
	B. Assumptions
	C. Limitations of the methodology
IV. Individual issue assessments	A. Issue 1
	1. General definition of the issue
	2. Stressors
	3. Sources
	4. Relationships between sources/stressors and the human activities
	5. Effects: known and suspected endpoints that result from exposure
	6. Human health impacts: scale ,severity ,reversibility ,uncertainties
	7. Ecological impacts
	a) Scale, severity, reversibility, uncertainties
	8. Social and economic impacts
	a) Scale, severity, reversibility, uncertainties
	9. Conclusions (optional)
	B. Issue 2, etc.

about relevant conditions, and a description of the quality and sources of data used. Furthermore, it is important to prepare a summarized version of the report in non-technical jargon that can be easily understood by the SG and the public.

Ideally, the Issue Assessment Report explicitly addresses areas of uncertainty and areas where professional judgement has been used. Uncertainties cannot be avoided when reporting on environmental conditions. By clearly acknowledging these uncertainties, the TAC will improve the credibility of the reports because readers will have a clearer understanding of the strengths and limitations upon which you have drawn your conclusions. Whether this uncertainty is related to a lack of data on pollution levels or on exposure levels to a particular chemical, it is impor-

tant that the TAC identify these uncertainties and how they affect the conclusions.

In preparing the assessment, it is important that the TAC members clearly understand whether they are expected to merely summarize the data collected — or whether they are expected to use their best professional judgement to draw conclusions from these facts. Providing only the findings — without conclusions — means placing responsibility on the reader to interpret and analyze the data.

In preparing the Issue Assessment Report, consider the following factors:

- *Audiences:* Your audience will probably be a range of readers with different technical abilities. You might consider preparing a technical version of the assessments for the SG and a non-technical summary document for the general public.

- *Attractive presentations:* The use of tables, maps, and illustrations and captions can help illustrate concepts and describe impacts in ways that help people understand the reports. If the information will be used during a problem ranking session or public meeting, you might consider developing large-scale displays, slide shows, or other visual ways to make the findings engaging.

- *Document and define:* Carefully document and reference all data sources and assumptions, and define any technical terminology used.

The TAC might consider having colleagues with relevant scientific background review draft reports. This review can be especially important to ensure that assumptions and uncertainties have been sufficiently documented. In preparing each Issue Assessment, consider whether the assessment:

- Describes the history of the problem, i.e., is the problem getting better or worse?

- Identifies the major sources of pollution and stressors related to these sources.

- Describes specific impacts associated with the issue, such as human health and ecological health impacts.

- Describes how human activities have directly caused or exacerbated the impacts.

- Describes the specific impacts to the community, to the greatest degree possible, rather than relying on national statistics.

- Relates environmental degradation levels to environmental standards, and any possible health, ecological, or other impacts associated with exceeding the standards.

- Describes the magnitude and severity of the impacts.

- Specifically acknowledges data limitations, assumptions, methods used, degree of uncertainty in results, and sources of information.

After the Issue Assessments have been sent out for review, the TAC should present its findings to the SG for review. In presenting these findings, TAC members should consider providing summary documents, clearly documenting results, and using graphic presentations as much as possible. This review period might also be a good time to engage in a dialogue with elected officials, other stakeholders, and members of the public on the conclusions. *(See Figure 2.9 — Sample: Issue Assessment Report Format, and Attachment 2A: Summary Descriptions of Selected Problems in Radom, Poland.)*

2.2 Set Environmental Priorities

As discussed earlier, your SG may decide to establish environmental priorities for the community. Priority setting will enable your Municipality to focus its limited financial and human resources on the most critical issues first, and thus allow you to achieve the biggest improvements in environmental and public health. It can also help identify the "ripest" opportunities for environmental improvements, i.e. those areas where improvements can be most easily achieved. If you decide to set environmental priorities, your SG will find itself faced with many challenging questions, such as:

- Should an environmental problem that results in cancer that kills a few people each year outweigh gastro-intestinal illnesses that create short-term discomfort for a large percentage of a given population?

- Should depletion of groundwater supplies that will affect everyone's drinking water in the future take precedent over extinction of local fauna from unmanaged industrial practices occurring today?

- Should the SG focus on issues that its members recognize as a major environmental threat, but which few community members care about?

- How should the community address serious human and environmental health threats that are linked directly to the major source of employment for the community?

Setting priorities forces the SG to grapple with the hard choices facing the community. When SG members and the public agree on the relative degree of harm from environmental problems, they have a solid foundation for deciding the top priority issues for which corrective action should be taken.

2.2.1 DISTINGUISHING BETWEEN "RANKING ENVIRONMENTAL PROBLEMS" AND "SETTING PRIORITIES FOR ACTION"

It is important that your SG distinguish between "ranking environmental problems" and "setting priorities for action." For example, under comparative risk analysis, a "problem ranking" will provide you with information on which environmental problems you consider to be the most severe based upon their relative human health, ecological health or other impacts. However, communities incorporate a number of

Priority setting will enable your Municipality to focus its limited financial and human resources on the most critical issues first, and thus allow you to achieve the biggest improvements in environmental and public health.

FIGURE 2.10

Case Study: **Setting Environmental Priorities for Action in Radom, Poland**

In 1994, the City of Radom, Poland initiated a LEAP whose primary goal was to set environmental priorities and develop a plan of action to address the top priority problems. A volunteer SG was formed, the Radom Public Sustainable Development Committee (or Spoleczny Komitet Ekorozwoju Radomia — SKER) to lead the effort. With assistance from the Institute for Sustainable Communities and the U.S. Environmental Protection Agency, SKER's TAC began assembling data on the size and scope of the issues. While committee members were able to complete most of the assessment papers, they sought assistance from outside technical consultants for parts of the assessment that were beyond their capacity.

The TAC members presented this information to the full SG and public at a two-day priority setting retreat in September 1995. Consequently, SKER developed the following priority list:

High priority	• Depletion of deep water aquifer for drinking water;
	• Air pollution from transport and industrial sources;
	• Surface water pollution;
	• Solid waste from communal, industrial, and hazardous sources (the Wincentow area);
	• Condition of green areas.
Medium priority	• Solid waste from communal, industrial, and hazardous sources (closed and illegal dumps);
	• Solid waste from communal, industrial, and hazardous sources (the Nowa Wola Golebiowska area);
	• Noise and vibration.
Low priority	• Exceptional dangers resulting from catastrophes;
	• Incineration of hospital waste;
	• The quality of drinking water from deep wells and ground water.

Source: *Final Report: Polish National Environmental Action Program Pilot Project,* June 1997. Institute for Sustainable Communities, Montpelier, Vermont, USA.

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additional criteria for setting environmental priorities for action, including:

- *Public preferences:* what do community members consider to be the most serious issues facing the community?

- *Municipal authority to control:* does the local government have the authority or legal jurisdiction over the issue or problem?

- *Community ability to influence:* does the community have the ability to significantly address or influence the problem, such as global environmental issues?[5]

- *Legal requirements:* do national laws or regulations require the local government to achieve specific national standards by a certain date? Where does the problem stand in relationship to national environmental policy directions, such as the National Environmental Action Program?

Many communities have first ranked environmental problems — based upon their relative seriousness they pose, and then used this information as the foundation for setting priorities for action. For example, participants in the Radom and Elk (Poland) LEAPs ranked environmental problems over a two-day period. On the first day, participants ranked environmental problems based upon their relative health, ecological and quality of life risks. During the second day, participants examined other factors such as public preferences and the local government's ability to control the problem in order to set priorities for action.[6] *(See Figure 2.10 — Case Study: Setting Environmental Priorities for Action, Radom, Poland, above.)*

2.2.2 PREPARING FOR THE RANKING SESSION

In preparing for a ranking session, the SG will want to consider a number of factors:

- *Decide on decision-making processes:* The SG will need to decide what decision-making process it will use, such as consensus or majority voting. Most SGs strive toward achieving consensus during the ranking session, and if consensus can't be achieved, they resort to a large majority (80% or more) vote. If you decide to vote, be clear whether the balloting will be secret or open. *(See Appendix B: Skills for*

FIGURE 2.11

Sample: **Matrix for Examining Relative Health Threats**
Severity and Persistency of Health Threat

Percentage of population affected	Low	Medium	High
1%			
10%			
50%			
90%			

FIGURE 2.12

Sample: **Table for Setting Environmental Problems**

Environmental issues	CRITERIA				Priorities for action
	Problem ranking results	Municipality's ability to control	National legal requirements	Public preferences	
Issue 1					
Issue 2					
Issue 3					
Issue 4					
Issue 5					
Issue 6					
Issue 7					

LEAP Development, B.8 Group Decision-Making, below.)

- *Determine role of the public:* Carefully consider what role the public will play during the ranking session. For example, will the session be open to the public? Will the public be allowed to speak at certain points? Most communities open their ranking sessions to the public in order to legitimize the process. Some SGs provide designated times for community members to share their views.

- *Familiarize Stakeholder Group with ranking approach:* SG members will be asked to consider large amounts of information and make judgments about environmental priorities. Thus, it is critical that they fully understand and feel comfortable with the ranking methodology. At a minimum, it is important for each SG member to receive copies of the Issue Assessment before the priority setting session begins. Your TAC might also consider holding a briefing session for SG members to explain information in the reports and answer questions. For example, the Elk and Radom SGs held "practice ranking sessions" to provide SG members with an opportunity to become familiar with the methodology before actually setting priorities.

- *Consider hiring a professional facilitator:* A facilitator can help assure that the ranking session is open and unbiased, and that all SG members are given ample opportunity to express their views.

- *Prepare an agenda and document results:* You will want to establish an agenda with a set time schedule. Then, try your best to adhere to the schedule! Be sure to allocate ample time to ensure a meaningful ranking process. Also, consider asking individuals to serve as recorders during the priority setting sessions to ensure that a careful written record has been maintained that explains what took place during the ranking.

The following guidelines are suggested for steering your priority setting session:

- One person speaks at a time. Everyone has a turn to speak. Facilitator will recognize participants in order.

- Respect everyone's opinion and integrity. Focus discussion on content, not person.

FIGURE 2.13

Case Study: **Assigning Quantitative Values to Risk, Chelm, Poland**

The City of Chelm, Poland assigned the following values to varying degrees of risk associated with:
a) Additional cases of terminal cancer per year; b) Impact on elements of the plant ecosystem. These are two of several tables used by the SG to quantify the relative seriousness of these negative impacts or risks.*

Additional Cases of Terminal Cancer Per Year

Qualititative scale	Description	Qualitative scale
Very high risk (extreme)	At least 1 additional case per 1,000 people (at least 15% of national statistical average)	4
High risk	1 additional case per 10,000 people (about 10% of national statistical average)	3
Significant risk	Not more than 1 additional case per 100,000 people (0.5% of national statistical average)	2
Low risk	1 additional case per 100,000 people (about 0.05% of national statistical average)	1
No risk	Nor more than 1 additional case per 1,000,000 people (less than 0.05% of national statistical average)	0

Impact on Elements of the Plant Ecosystem

Qualititative scale	Criterion Description	Qualitative scale
Very high risk (extreme)	Disappearance of some ecosystems off throughout the town	4
High risk	Disappearance of particularly sensitive species	3
Significant risk	Changes in the functioning of ecosystems and changes in the numbers of species	2
Low risk	Small changes in the numbers of species without disrupting the functioning of ecosystems	1
No risk	No noticeable changes	0

Source: *Summary of Problem Ranking Methodology for the City of Chelm, Poland,* 1999. COWI, Warsaw, Poland.

* Other impacts that the SG quantified included:
• Sense of discomfort among Chelm inhabitants in a specific area;
• Increased financial costs for inhabitants or system users;
• Negative influence on natural resources; and
• Possible restrictions for using the natural resources, e.g., water shortages

• Listen with an open mind. Be willing to change your mind.

• Speak and listen as individuals, not as representatives of a group or institution.

• Keep comments brief and on topic.

• Strive for consensus. If you cannot reach consensus, set the proposal aside for later consideration.

• Be prepared to substantiate your views.

• Notify the facilitator if something is not working for you.

2.2.3 A PROPOSED PROCEDURE FOR SETTING PRIORITIES FOR ACTION

The following procedure has been used in setting priorities for action in selected Hungarian, Bulgarian, and Polish LEAPs.

This approach is a combination of voting and consensus decision-making. *(See also Attachment 2B: Alternative Decision-Making Processes for Setting Priorities.)*

2.2.3a Rank Environmental Problems

• *Present oral summaries:* TAC members summarize the basic information and conclusions of the Issue Assessments.

• *Fill in matrices:* Prepare flipcharts in advance that include a matrix to see how different problems compare to each other. Each individual marks a spot (using a marker or round sticker) for each environmental issue on selected matrices to identify the relative threats. These charts can be prepared for threats to ecosystems and

quality of life. *(See Figure 2.11 — Sample: Matrix for Examining Relative Health Threats, above.)*

- *Conduct relative problem rankings:* Each SG member individually develops a relative ranking based upon the matrices. Your SG can assign numerical values to each problem (e.g. 1-5) to determine relative rankings or use categories such as high, medium, and low. *(See Figure 2.13 — Case Study: Assigning Quantitative Values to Risk, Chelm, Poland, above.)*

- *Identify easy highs and lows:* The SG collectively identifies which problems are easily considered to pose relatively high threats and which ones are easily considered to pose relatively low threats.

- *Discuss rationale for relative rankings:* SG members discuss relative ranking for easy highs and lows.

- *Present proposals for rankings:* For environmental issues that have not been ranked, one SG member makes a proposal about whether a particular problem should receive a high, medium or low ranking.

- *Discuss and decide on ranking:* SG members discuss and decide how the problem should be ranked. This process continues until all the problems have been ranked.

- *Review and finalize problem-ranking list:* After all the problems have been ranked, the SG reviews the relative rankings and makes any necessary changes. The final problem ranking then serves as the foundation for setting priorities for action.

2.2.3b Set Priorities for Action

- *Review additional criteria:* The SG reviews additional criteria, such as public preferences, national legal requirements, and municipal authority to control.

- *Discuss problems in light of criteria:* SG members discuss each problem in light of the criteria.

- *Set priorities for action:* The SG incorporates the results of the problem ranking and other selected criteria by assigning relative scorings to set priorities for action. These scorings can have numerical values (e.g. 1-5) or "high-medium-low" values assigned for each problem according to the selected criteria. These scorings provide a relative sense of the environmental priorities for the community. *(See Figure 2.12 — Sample: Table for Setting Environmental Priorities for Action, above).*

Conclusion

Undertaking Environmental Issue Assessments and establishing environmental priorities is a powerful means for engaging citizens and government officials in discussions about the future of your community. Previous LEAPs have demonstrated the ability of CEE communities to engage in democratic evaluation and decision-making. The environment priorities identified during this phase of the LEAP provide a solid foundation for developing a plan of action for the priority environmental issues facing your community.

Attachment 2A: **Summary Descriptions of Selected Problems in Radom, Poland**[7]

A. DEPLETION OF THE AQUIFER AND DISAPPEARANCE OF THE SURFACE FLOWS

Health risk

Because of lack of a proven cause-effect relationship between the depletion of the aquifer and disappearance of the surface water flows and the health of people, this problem was not looked at in the health risk category.

Ecological risk

The result of excessive exploitation of the ground waters is the depletion of the aquifer in relation to its natural level of about 30-35 meters. The existing depression cone covers the area of about 320 square kilometers and it includes the areas between the rivers Mleczna and Pacynka from Skaryszew and Kowala to Lesiow and from Wolanow to Jedlinsk between the river Mleczna and Radomka. The excessive exploitation of the deep waters has exceeded renewable levels.

The consequences of these are:

- disappearance of the Malczewski stream, the upper cone of the Mleczna, the South stream, the Kosowka, Cerkiewianka and disappearance of the Kobylanka river in a large part of its course;

- drying out of the wetlands (among others the "Piotrowka" wetland) and extinction of animals and water plants in the area of about 150 square kilometers;

- drying out of the Lake Borki;

- the lakes in Jedlinsk are at risk of drying out — they are the breeding sites of over 800 birds belonging to at least 70 species (including the species at risk of extinction); and,

- degradation changes of the quality of exploited ground waters.

Quality of life risk

The main negative impacts connected with depletion of the aquifer and disappearance of the surface flows are:

- threat of causing species changes among flora and fauna and the disappearance of the water flows and also adverse changes in the urban landscape (dying out of trees and grass);

- increased infiltration of the pollutants leading to the deterioration of the drinking water quality from the deep water intakes,

- need to cover the costs connected with building new water intakes and piping from transporting it — directly or indirectly — by the inhabitants;

- lack of open spas in the town because of the Borki lake which is drying out;

- uneven distribution of profits and losses (water works are used by the inhabitants of the town, but the financial results of building deep wells or buying water from the water works are taken by the inhabitants of the suburbs);

- all high costs connected with removing all the negative effects of the excessive exploitation of deep water will have to be covered by future generations.

B. RISK ASSESSMENT CONNECTED WITH THE AIR POLLUTION FROM INDUSTRIAL AND DOMESTIC SOURCES IN THE AREA OF THE RADOM MUNICIPALITY

Radom is located in the part of the country with a high level of air pollution. The biggest emitters influencing the air in Radom and supplied with high stacks are the following power stations: Belchatow, Kozienice and Polaniec. Because of the western winds, the biggest impact probably comes from the Kozienice power station that annually emits 489 tons of dust, 1,277 tons of sulfur dioxides, and 614 tons of nitrogen oxides.

The basic air pollutants in Radom are formed during the combustion of coal. These are:

- suspended particulate matter,

- sulfur dioxide,

- nitrogen oxides,

- aromatic hydrocarbons.

Petrol stations are probably the sources of other pollutants. Among the emissions from those, we can distinguish benzene, toluene and xylene. In this report, the dust and sulfur dioxide are assumed to be the main risk connected with the emissions from the point sources active in the area of the Radom Municipality. Nitrogen oxides and the aromatic hydrocarbons present both in the point sources and the combustion gases from vehicles were qualified as transportation risks.

Health Risk

The whole population of Radom is exposed to the impact of sulfur dioxide and suspended dust. With a high degree of certainty, it can be assumed that the annual average concentrations of dust and sulfur dioxide are not exceeded in Radom. Only about 10% of the population living in the town center might be exposed to sporadic average daily exceedances occurring during the heating period.

These pollutants, emitted from the point emission sources, create insignificant health risk to 90% of the population. Short lasting attenuation of the lungs can occur among the remaining population during the heating period. The risk assessment was conducted on the basis of very little measurement data for Radom.

Ecological risk

The impact of stressors takes place in the whole area of the town, especially for green areas.

Sulfur dioxide is the main stressor for the vegetation in Poland. The concentration of sulfur dioxide in Radom is quite high. In most of the measurement points, it exceeded the highest tolerance concentration for the protected areas.

Sulfur has the ability to penetrate all elements of the environment: air, soil, water, plants and animals. The most sensitive to this stressor are the lower plants, such as lichens. The central part of Radom is already a "non-lichen" zone. This zone covers about 5% of the town area, inhabited by about 33% of the population. A slightly larger area is the area with reduced vegetation (8% of the areas, 30% of the population). The lack of lichen causes significant changes in the microclimate of the plant groups, especially in the coniferous forests. Lichens play an important role in the water management of the green areas.

The particulate emissions in Radom does not exceed the tolerance level for ordinary areas, but it is always higher than it should be for the protected areas. Particulates are harmful for people and animals and they have a negative impact on plants through the change of the soil environment and the change of the leaf qualities.

The reduction of the air pollution effects can be achieved by reducing emissions and increasing green areas by planting trees and bushes, appropriate management of the protection zones around factories, and creating protection belts of trees and bushes along busy streets. Only the soil pollution with heavy metals caused by the accumulation of these from the air will remain for a very long period of time.

The risk assessment is based on very little measurement data for Radom. An analogy to other towns of similar size, industrial structure and comparative potential of air pollution was used.

Quality of life risk assessment

In the area of Radom, there are no adverse effects to the environment caused by the air pollution. The future generation's well-being demands mainly protection of the biologically active areas (including most of all the river valleys as ventilation channels) against investments and compact forms of high vegetation.

The emissions of dust and gas into the atmosphere cause: limitation of visibility, dirty buildings, surfaces, green areas, snow, unpleasant smells and odors. They also cause lack of satisfaction with the place of living.

The main negative effects of air pollution are:

- increased costs of health care,

- increased costs of communal services connected with keeping the streets and buildings clean, and caring for the green areas;

- increased individual costs connected with maintaining apartments;

- investment costs connected with changing the technologies, technical installations, etc.;

- costs connected with improving the functioning of the ecosystems (renovating the species state of the roadside vegetation, forests, refilling parks and other green areas).

In the next twenty years, we can expect important changes for the better in air pollution in Radom:

- the concentration of sulfur dioxide from distant locations will be reduced by installing de-sulfuring devices in big power stations,

- air pollution from ozone will increase because of the rise in the number of vehicles,

- particulate concentrations will be reduced thanks to electrostatic filters, and removing coal-fired heating boilers and furnaces;

- pollution from heavy metals will be reduced along with the reduction of the particulate emissions and modernizing of industrial processes,

- carbon monoxide will be reduced after modernizing the domestic heating plants and vehicles.

Attachment 2B: **Alternative Decision-Making Processes for Setting Priorities**[8]

There are three basic kinds of decision-making processes that have been used to set environmental priorities for action, including negotiated consensus, voting, and formulas. Most priority setting approaches don't rely on a single approach, but use a combination of these three methods.

A. NEGOTIATED CONSENSUS

The objective of this approach is to reach agreement. Open discussion is often used, allowing the group to analyze and argue about data, values, and uncertainties. Some problems will receive intense scrutiny and debate, while others may be subjected to only cursory review. Most iterations of negotiated consensus roughly conform to the following steps:

- *Review data:* Participants present and discuss analyses of individual problems, answering questions about the risk estimates, analytic methods, and assumptions.

- *Take proposals for how individual problems should be ranked:* Participants then propose that problems are placed into particular categories of risk. Unless there is an objection or alternative, the ranking is not changed.

- *Briefly discuss objections or alternatives to proposals:* If the issue cannot be quickly resolved, then additional discussion is reserved for a later time. The group settles on those problems on which there is general consensus on their placement in one of the risk categories.

- *Discuss and debate unresolved objections and rank remaining problems:* The bulk of discussion is then focused on the remaining unresolved problems. In each case, discussion hinges on disagreements — clarifying positions, explaining criteria, and taking informal polls to monitor progress. Debate continues until consensus is reached.

- *Review results, employ other methods if necessary:* If consensus cannot be reached, then another method can be used to produce a ranking.

Some of the strengths of negotiated consensus are that the process is relatively easy to design and is fair as long as discussion is vigorous and thorough. It also provides a healthy environment for the mutual education of participants since all participants can contribute equally. Once consensus is reached, group commitment to the results can be very strong.

One of the weaknesses of negotiated consensus is that it can be difficult to keep participants focused on the agreed-upon criteria. Documentation can be difficult because discussion is typically fluid and wide-ranging (audio recorders can be very helpful in this regard). If the discussion is not vigorous and thorough, then the process may be inaccurate, imprecise, or unfair. This can be particularly true if there are very dominant or reserved personalities in the group; if the group is not diverse in skills, experiences, and beliefs; or if facilitators are not available to manage the discussion.

B. VOTING

Voting is the most familiar and frequently used method of ranking problems. Recognizing that there will often be unresolvable disagreements, your SG may decide to use voting as a way to determine the will of the majority of the group. There are at least three different voting methods, including secret balloting, open voting, and multi-voting.

- *Secret balloting:* Each individual has a single, secret vote to indicate how each problem should be ranked. Vote totals are then tabulated. Problems typically are ranked according to pluralities if no outright majority exists. For example, if a problem receives seven "high" votes, four "medium" votes, and nine "low" votes, the problem would be ranked "low," even though a majority thinks it should be ranked higher. An alternative approach that is more sensitive to differences of opinion would be to assign a value to each category (e.g., high=3, medium=2, low=1). The arithmetic mean or average of the scores would then be used to determine where "natural" breaks in the distribution of scores occur so that problem areas could be placed into different categories of risk.

- *Open voting:* Requires each person to identify his or her vote. Each person is given only one vote. Tabulation can be somewhat difficult with open voting since participants may change their votes based upon what they observe from others. There are various ways to avoid vote

changing, such as having everyone vote simultaneously, or initially casting their votes in secret, and only revealing how individuals voted after the ballots are collected. Similar tabulation methods as described above for secret balloting can be used.

- *Multi-voting:* In multi-voting, all participants have the same number of votes. Participants can allocate their votes any way they prefer among the problem areas, although an upper limit can be set on how many votes can be assigned to a single problem. This method allows participants to express the intensity of their opinions. For example, if each participant is given 10 votes to divide among 20 problems, the group may decide to allow a participant to cast no more than 5 votes for any single problem. This prevents any one participant from having too much influence over the ranking of problem areas. Problem areas are then ranked on the basis of votes received. Participants then usually use consensus, secret ballots, or open voting to decide where the breaks fall between the high-, medium-, and low-risk categories.

In general, voting is simple and fair in that all problems are voted upon, all participants vote, and each participant has the same number of votes. Because it is so easy to produce a ranking with voting, there may be a temptation to cut discussion off too early. This can cause the group to ignore complexity, magnify biases, and/or overlook data. Regardless of which voting method is chosen, methods are typically repeated several times during the project, or are used in combination. This gives participants a chance to explain their reasoning and persuade others to change their votes.

In secret voting, participants are often asked to write down their reasons along with their votes in order to facilitate discussion and ensure that the agreed-upon criteria are being used to evaluate problem areas. In open and multi-voting, participants who voted in opposite ways typically present their reasons. Revealing the sources of disagreement can often lead to agreement once the reasons for disagreement are clarified. However, some disagreements reflect differences in values or priorities among participants and may not be resolved. One approach to resolving this disagreement is to have additional rounds of votes. When voting results cease to change with each round of voting and participants have a clear sense of why the rankings came out as they did, the rankings are complete.

C. FORMULAS

Formulas share certain characteristics. Each formula attempts to manage the complexity of analysis by breaking environmental problems into parts. Each of these parts is then evaluated and mathematically recombined to produce an output. Formulas can be applied to the entire ranking process or used only in particularly complex or difficult portions. Although it may not be apparent, it is important to recognize that value judgments play as large a role in a formula approach as they do in other less quantitative methods. Value judgments are needed to determine what criteria are useful, how they should be weighted, and how they are combined arithmetically.

One formula approach is best described as "weighted scoring" and involves five steps:

1. Identify criteria for evaluating risks.

2. Score each problem for each criterion.

3. Assign weights to each criterion.

4. Multiply the criteria scores by the weights and add up the results to produce a total score.

5. Rank problems according to total scores.

In general, formulas can be very explicit about the relationships between different criteria, and are inherently fair, since the same criteria and equations are applied to all problems. Formulas can also provide a clear record of how the rankings were generated. However, poorly constructed formulas can produce inaccurate results. Generally, this is not because of mathematical errors, but because participants do not fully understand the consequences of their choice of weights and/or equations. Another weakness of formula approaches is the false impression of precision and level of understanding about risks to human health and the environment. In addition, while formulas can be very explicit about how ranking results were reached, they provide no insight into why the group chose certain criteria or assigned certain values to factors. Complex formula approaches may also be unfair to participants who do not have quantitative skills. Converting judgments and data to numeric scores requires that formulas be hypothesis-tested to ensure that they behave as intended. Careful thought needs to be given to the appropriate mathematical operations (i.e., adding, multiplying, or dividing) within a formula. Finally, complex formulas can be difficult for readers and users of the rankings to understand.

Chapter 3: **Developing an Environmental Action Plan**
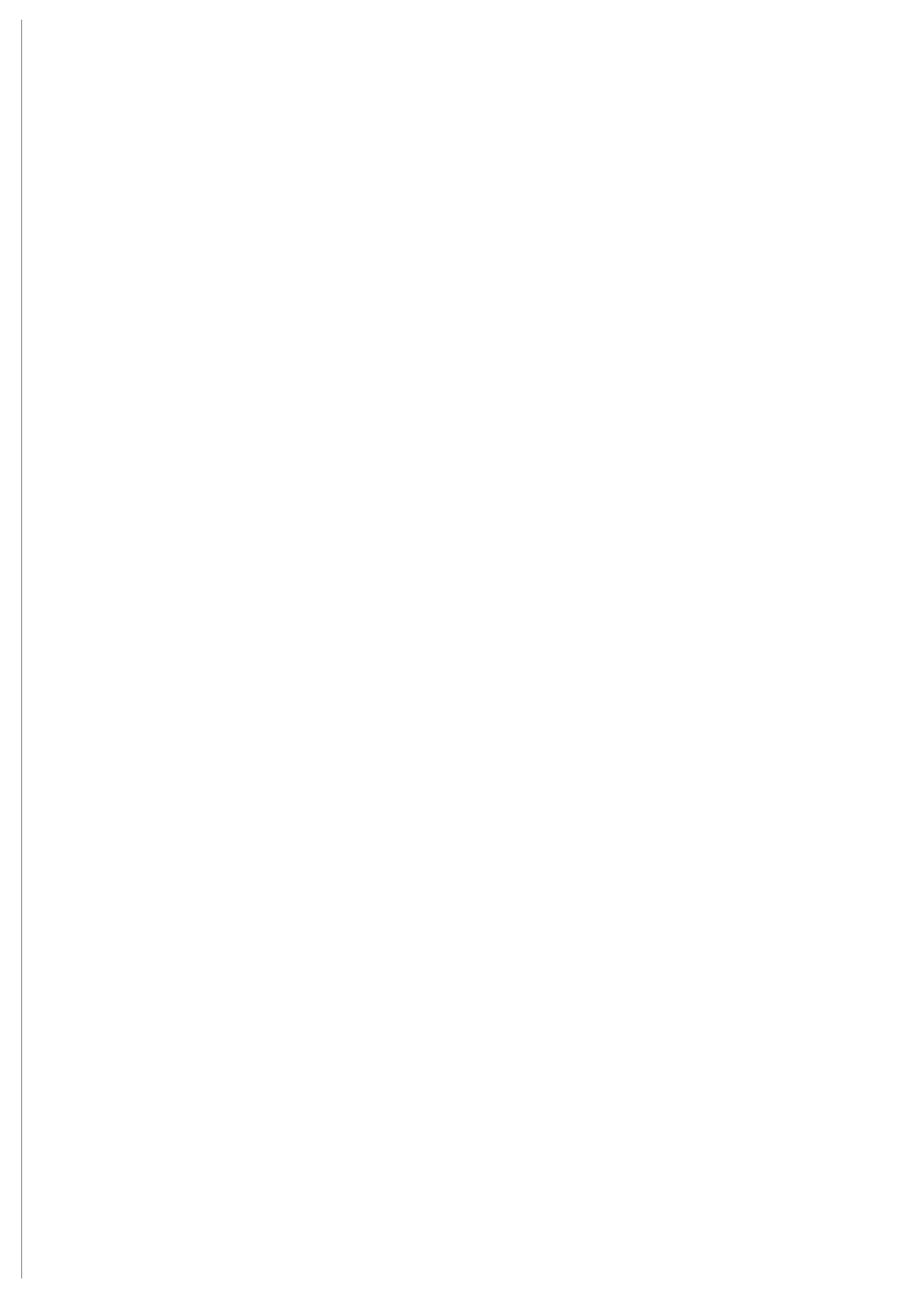
Chapter 3: Developing an Environmental Action Plan

"A society grows great when old men plant trees whose shade they know they shall never sit in." —*Greek Proverb*

3.0 Introduction

The Environmental Action Plan (EAP) is the heart of a Local Environmental Action Program (LEAP). The core of the EAP is the goals, targets, and actions for addressing the top environmental problems. Preparing the EAP involves examining your community's existing environmental management practices, identifying evaluation criteria, and conducting specific economic, engineering, and other types of analyses to provide a solid foundation for selecting preferred actions.

The EAP builds upon the previous work of the Stakeholder Group (SG), including the:

- *Community Vision:* guides the development of goals and targets.

- *Issue Assessments:* defines the problem and helps determine the most appropriate actions to include in the EAP.

- *Priority setting process:* focuses the EAP on the most serious environmental problems facing the community.

Essentially, the EAP can be seen as a multi-stakeholder agreement on the best ways to solve environmental problems in the community. Thus, a successful process to develop an EAP will ensure that the views of all individuals either directly or indirectly affected by proposed actions are solicited and given serious consideration. Further, it is important that the general public is kept informed throughout the development of the EAP to ensure that proposed actions reflect their priorities. An effective public outreach effort can help educate community members about the costs and benefits of proposed actions and solicit their views on the most appropriate solutions.

Ideally, the Municipal Council approves the EAP to emphasize its support for the EAP. To maximize the effectiveness of the EAP, it is critical that recommendations from the EAP be linked with statutory planning and regulatory processes of the Municipality, such as the development of a land-use plan, capital infrastructure plan, and annual budgets. The EAP then serves as a long-term guide for environmental actions in the community.

The following methodology is proposed as one approach to preparing a local EAP. We encourage you to explore other methodologies as well to develop an approach that is most suitable to your community.

3.1 Clarify Environmental Action Planning Process

Before actually beginning the preparation of the EAP, it is important that the SG answer a number of process-related questions to minimize potential headaches later on. These questions include:

3.1.1 WHAT IS AN APPROPRIATE STRUCTURE AND CONTENT FOR THE EAP?

It is important that your SG clarify *what* the EAP will include and how it will be structured at the outset. EAPs can include a Community Vision, description of the major issues/problems (i.e. Issue Assessments), results of the priority setting process, goals and targets and indicators, evaluation criteria, and an identified set of preferred actions for addressing the top priority environmental problems in the community. The EAP can also include project history, description of responsible parties for implementation, time schedule, a proposed budget, and appendices. In deciding on the structure and content, the SG will need to consider any national environmental planning requirements and regulations. Further, it is important that the SG consult with the Municipal Council to consider specific information needs or preferences they may have. Some EAPs are focused exclusively on one environmental issue, such as solid waste management or air pollution reduction. *(See Figure 3.1 — Case Study: Regional Solid Waste Management Plan, Vratza and Mezdra, Bulgaria, below.)*

The Environmental Action Program is usually not considered to be a legal document; rather, its strength comes from the fact that it represents a consensus of vested interests in the community on the most appropriate methods for solving environmental problems.

3.1.2 WHAT DECISION-MAKING PROCESS WILL BE USED TO SET ENVIRONMENTAL TARGETS AND SELECT ACTIONS?

Deciding on specific targets for pollution level reductions or environmental improvements and how to achieve these improvements can often be contentious. This may be especially so considering the fact that the SG is composed of representatives from organizations, businesses, and governmental agencies with diverse views. While consensus may be the ideal decision-making process, it may not always be achievable when deciding on goals and targets, evaluation criteria, and actions. Thus, the SG needs to agree on how it will make decisions in the absence of consensus. For example, if consensus cannot be initially achieved, the group can decide to allocate additional time for discussion to better understand any objections to a proposed decision. If consensus can still not be reached, the group may decide to use a "high majority" rule, such as 80% or 90% majority (rather than simple majority of 51%). Further, it can agree that any decision that does not achieve a high majority approval will no longer be considered. If majority vote does become necessary, the SG may agree to allow dissenting views to be included in the EAP. In any case, the SG will want to establish a process for "agreeing on how to disagree" at the outset of developing the EAP.

3.1.3 HOW WILL THE EAP BE LINKED TO OFFICIAL PLANNING PROCESSES?

The EAP is usually not considered to be a legal document; rather, its strength comes from the fact that it represents a consensus of vested interests in the community on the most appropriate methods for solving environmental problems. In order to maximize the effectiveness and usefulness of the EAP, it is critical to link the EAP with statutory planning processes at the local and regional levels. Thus, the SG will want to identify these planning processes as well as the most appropriate mechanisms for ensuring that specific recommendations in the EAP are incorporated.

For example, many local authorities are required to prepare land-use development plans that specify how and where development should occur. The EAP could include specific language for the land-use plan that recommends creating new green areas and parks, establishing greenbelts around the city, or encouraging development patterns that minimize impacts on agricultural and forest lands. In addition, the EAP can include specific budget requests in the municipality's annual operating budget or long-range capital investment plan. Some foresight at the onset of the EAP development process can help ensure that the SG is strategic in developing appropriate recommendations.

3.1.4 WHO WILL BE INVOLVED IN PREPARING THE EAP?

It is important that the SG continue to play the lead role in the preparation of the EAP. However, your SG will want to consider ways to incorporate other affected and interested groups and individuals in the process of developing the EAP. As noted in Chapter 1, one approach to incorporating broader stakeholder involvement is to form Working Committees that focus on specific environmental issues. Working Committee members are usually appointed by the SG and include members of the community, as well as SG members. For example, if one of your priority issues is drinking water quality, you might consider forming a "Drinking Water Working Committee" that would be responsible for conducting research and analyses and preparing recommendations for the SG on the most appropriate actions for improving water quality. The Drinking Water Working Committee might include representatives from the water utility company, Municipality and/or Municipal Council, residents, large water users, regional health inspectorate, and chemists.

3.1.5 WHICH PRIORITIES WILL THE STAKEHOLDER GROUP FOCUS ON?

While the priority setting process results in setting environmental priorities for action, it does not answer the question of which problems to develop an EAP for. This decision will be determined by a number of factors, including:

- How many high priority problems were identified and how imperative is it that these problems be addressed in the near term?

- How much time do you have to complete the EAP?

- How much work can the SG take on?

- What are the short-term and long-range prospects for funding plan implementation? What can we do now to improve our prospects for receiving funding?

- What is our planning horizon? Are we planning for the next year? Two years? Five years? Twenty years?

FIGURE 3.1

Case Study: **Regional Solid Waste Management Plan, Vratza and Mezdra, Bulgaria**

As part of a national demonstration project on solid waste management sponsored by the Bulgarian Ministry of Environment and Waters (MOEW), the Municipalities of Vratsa and Mezdra were selected to develop and implement a regional solid waste management plan. Each Municipality appointed representatives to serve on a joint Citizen Committee composed of representatives from each Municipality, the municipal solid waste companies, nongovernmental organizations, and citizens to guide and oversee the development of the Plan. The Plan identifies goals and a range of specific actions for addressing a range of problems associated with solid waste. The Citizen Committee identified a number of priority actions including:

- Constructing a state-of-the-art lined landfill;

- Modernizing the collection and transportation of solid waste;

- Developing a system for the separate collection and recycling of waste;

- Developing a program for the treatment of hazardous waste from households, industries, and government;

- Improving opportunities for private businesses in waste management;

- Incorporating villages into the waste collection system; and,

- Developing a regulatory program for implementing the Plan.

In May 1996, the MOEW approved Vratsa's plan and awarded a grant to Vratsa to implement a drop-off recycling program and public education program. The Municipality also successfully received international assistance to help construct the landfill as a direct result of having a comprehensive solid waste management.

Source: *Solid Waste Management Regional Plan for Vratza and Mezdra,* May 1996. Municipalities of Vratza and Mezdra, Bulgaria.

For example, the SG may decide that it will develop plans of action for each problem with a "high priority" status. Or if human resources are very limited, the SG may decide to focus on developing a plan of action for only one or two problems. Obviously, the greater the number of problems chosen, the more comprehensive the overall EAP will be, and the more the EAP will serve as a long-term guide for the community.

Once you have addressed some of these process issues, its time to begin preparing the EAP.

3.2 Review Community Vision

As described earlier *(See Section 1.6),* the Community Vision is a description or a picture of what you would like your community to look like several years into the future. As you reflect on the identified priority issues and begin to establish environmental goals and select actions, take a moment to review the Community Vision and consider:

- Where would your community like to see itself in 20 years?

- How will the environmental goals and targets for the next 3-5 years serve as suffi-

cient guideposts to help achieve your Community Vision?

- How will the environmental actions you choose move your community significantly toward the Community Vision?

The Community Vision serves as the guiding framework in developing goals and targets for your top environmental problems. Your SG may find it valuable to reference the Community Vision throughout the development of its EAP.

3.3 Set Environmental Goals and Targets and Select Indicators

"The most important thing about having goals is having one." — *Geoffrey F. Abert*

The EAP process begins with the development of environmental goals, targets, and indicators. *Environmental goals* provide strategic direction for your long-term efforts to solve environmental problems and an opportunity to build consensus among stakeholders on what you hope to accomplish over a set period of time, e.g. three-five years. *Targets* are measurable commitments to be realized within a specified time frame and are used in evaluating

FIGURE 3.2

Case Study: **Setting Goals, Targets and Indicators, Sveti Nikole, Macedonia**

Priority problem	Goal	Targets	Indicators	Data sources
Low quantity and quality of drinking water	Healthy and clean drinking water	• Elimination of the sources of the water contamination by 2003	• 90% of the population of the settlement where the city water supply system functions uses its water for drinking purposes • Optimal use of chemical substances to process the water A12(SO4)3; 10-20 mg/l; Cl2-0.2-1 mg/l • Increase of the number of village water supply systems from the present 8 to 16	1. Phone inquiry of the Environmental Association "Izgrev", Sveti Nikole 2. Institution for Health Protection, Veles 3. Public Communal Enterprise "Edinstvo" 4. Communal Fund of Sveti Nikole
Pollution of the River of Sveti Nikole	Bringing life back to the "Svetinikolska Reka"	• Elimination of fecal substances disposed and being disposed in the river by 2003 • Elimination of polluted industrial waste water by 2005	• Appearance of signs of life in the river • BPK measurement 30 mg/l - HPK measurement 20 mg/l - Dissolved Oxygen higher than 50% - Super saturation 110-125%	1. Environmental patrols of EA "Izgrev" and the Fisher's NGO "Mrena" 2. Institution for Health Protection, Veles
Quality of food	Production of healthy food	• Initial introduction of sustainable agricultural practices (pilot projects) by 2003 • Establishment of sustainable agricultural practices on the arable land situated along the irrigated area by 2015	• Extensive food analysis from animal and herbal origin produced in the areas of the pilot project	Institution for the Research of Food Quality
Insufficient forest lands	Increase the size of forest lands	• Protection of the present forest size, land protection belts, the parks and the green zones • Planned increase of the forest size	• Increase of the size of forests, parks and green zones for __%	1. Public Enterprise "Macedonian Forests" 2. Public Communal Enterprise "Edinstvo" 3. Eco-patrols
Disposal of solid waste	• Elimination of the impact of the city landfill and illegal dumps	• Controlled disposal of solid, communal, technological and organic waste by 2010	• Elimination of all the illegal dumps in the Municipality of Sveti Nikole • Streets and public without trash	1. Communal inspector 2. PCE "Edinstvo" 3. Eco-patrols

and measuring progress in implementing the EAP, while *indicators* measure whether environmental goals and targets are being achieved and whether these outcomes are improving the lives of people in the community. *(See Figure 3.2 — Case Study: Setting Goals, Targets, and Indicators, Sveti Nikole, Macedonia, above.)*

3.3.1 ESTABLISH ENVIRONMENTAL GOALS

Environmental goals provide strategic direction for your long-term efforts to solve environmental problems. Goals provide an opportunity to build consensus among stakeholders on what you hope to accomplish over a set period of time, e.g. three-five years. Goals should be practical, achievable, and linked to the Community Vision. They provide a framework for helping to ensure that a coherent and consistent set of environmental targets and actions are formulated and implemented.

Goal development begins with a review of the Issue Assessments. Each Issue Assessment ideally describes why a particular problem poses a concern and describes the negative impacts from human activities. Goals rephrase the problem in an affirmative, forward-looking manner that express the kinds of milestones you want to accomplish over a period of time. For example, consider the following description for solid waste:

Toxic and organic materials disposed in unlined and uncovered landfills from industry and households are causing groundwater pollution which pose health and ecological threats, while landfill space is rapidly diminishing because trash generation has increased significantly.

Two goals articulated for this problem area might be:

- *Goal 1:* To reduce groundwater pollution associated with solid waste; and

- *Goal 2:* To reduce the amount of solid waste disposed in the landfill.

It is important to note that the problem description above actually identifies two distinct problems: 1) pollution to groundwater; and, 2) diminishing landfill space due to large quantities of trash being generated. These two problems have distinct but related goals. In turn, each goal will dictate different actions. For example, reducing groundwater pollution may involve building lined landfills and installing collection systems for rainwater that percolates through the waste.

Reducing the amount of solid waste involves implementing programs such as recycling collection and waste reduction initiatives. Thus, it is important to dissect each environmental problem to identify discrete components of the problem — especially since these discreet components may require different solutions. There is no set formula for determining how many goals you should establish for each problem. The key is to establish enough goals that sufficiently describe what you hope to accomplish over time, but not too many as to make each goal indistinguishable from another.

3.3.2 ESTABLISH ENVIRONMENTAL TARGETS

Once your SG has agreed upon a set of goals, it is vital that you develop concrete targets for each goal. A target is a measurable commitment to be realized within a specified time frame. Targets focus resources and guide the selection of actions. They are used in evaluating and measuring progress in implementing the EAP. Targets imply very concrete actions and behavior changes by different stakeholders; thus, they are usually the products of negotiation.[1] Some questions that a SG may wish to discuss in formulating targets, include:

- Are there specific environmental targets or requirements mandated under national laws or regulations? For example, do national laws require that drinking water quality meet specific standards by a target date?

- Are there local, environmental goals and targets already? If so, what changes need to be made?

- Do you have the baseline information necessary to evaluate changes over time?

- Can the proposed target level be achieved within a realistic timeframe? On the other hand, are the targets sufficient to achieve the desired level of environmental improvement?

Some specific targets related to the solid waste problem described above might be:

- *Goal 1:* To reduce groundwater pollution associated with solid waste.
  Target: To reduce groundwater pollution associated with solid waste disposal by 75% over the next 5 years.

- *Goal 2:* To reduce the amount of solid waste disposed in the landfill.
  Target: To reduce the amount of solid waste requiring disposal by 50% within five years.

FIGURE 3.3

Sample: **Environmental Indicators**

Some sample indicators, along with their corresponding goals and targets, are identified below:

	Goals	Targets	Indicators
Drinking water quality	Improve the quality of drinking water to eliminate human health-related illnesses in the community	Reduce bacterial levels in drinking water to meet national health standards within five years	1. Number of days per year that bacteria levels exceed standards 2. Percentage of days when water quality exceeds allowable levels
Green areas	To increase the amount of Green Areas that is meeting the needs of the community	To increase the amount of Green Areas within the community by 20% over the next five years	1. Square meters of Green Areas per capita 2. Citizen satisfaction with quality of green areas
Solid waste	To reduce the amount of solid waste disposed in the landfill	To reduce the amount of solid waste requiring disposal by 50% within three years	1. Tons of solid waste disposed 2. Tons of solid waste recycled

Once you have established your targets, you are ready to select indicators that can be used to measure the effectiveness of your actions.

3.3.3 SELECT INDICATORS[2]

Indicators help you understand where you are and how far you are from where you want to be. They provide a mechanism for community members to identify what they value, drawn from the Community Vision. Indicators measure whether environmental goals and targets are being achieved, and whether these outcomes are improving the lives of people in the community. Finally, indicators provide a means for holding implementing institutions accountable for achieving desired results. *(See Figure 3.3 — Sample: Environmental Indicators, below.)*

Good environmental indicators are:

- *Results oriented:* measure actual results, i.e. reduction in lead levels in ambient air, rather than efforts to address a particular problem, i.e. amount of money spent on lead reduction;

- *Reliable:* are based upon statistically valid and quantifiable data, and data that is available at the level of aggregation and frequency desired;

- *Measurable:* can be quantifiably measured;

- *Simple:* are easy to understand, but as precise as possible; and,

- *Cost-effective:* relatively inexpensive to monitor without diminishing the effectiveness or quality of the data.

It is important to consider the following factors when developing and utilizing indicators:

- *Involving stakeholders:* It is important that indicators are developed based upon broad support among various concerned groups and reflect the values of many constituencies. Without this level of involvement, indicators will not receive widespread acceptance, and important indicators will be ignored.

- *Develop clearly defined planning goals and targets:* Indicators should be based upon and directly linked to clearly defined planning goals and targets. For example, if the goal is to decrease the amount of fossil fuels consumed, then relevant indicators might include fossil fuel consumption per capita and the percentage of energy provided from non-fossil fuel sources.

- *Create action from indicators:* Indicators should be tied directly to the implementation of specific actions and should be used to measure progress toward achieving stated planning goals. Implementing agencies can then incorporate this information into their decision-making processes.

- *Establish a monitoring, reporting and evaluation system:* Once indicators have been selected, it is important to establish

a system for standardizing data collection procedures and reporting results on a regular basis. This data can be used to evaluate what is working well and what is not and to identify recommended improvements that need to be made. Recommendations can then be incorporated into program design. *(See Chapter 5: Monitoring and Evaluating Results for more information.)*

3.4 Review Existing Environmental Management Practices

"Obstacles are things a person sees when he takes his eyes off his goal."
— E. Joseph Cossman

Reviewing and assessing your community's current management practices can be a valuable step in assessing your capabilities to solve environmental problems. Further, this assessment can provide useful insights in designing and selecting appropriate actions. One commonly used tool to evaluate a community's or organization's capabilities is called a "SWOT" analysis or "Strengths, Weaknesses, Opportunities, and Threats" analysis. *Strengths and weaknesses* are generally considered "internal" to the community, whereas *opportunities and threats* are considered "external." It is important to examine both the internal strengths and weaknesses of your community's environmental capabilities, as well as the external forces that will affect your community. *Strengths* are unique capabilities that you can build upon while *weaknesses* are the areas you need to work around or where you need to strengthen your capacity. Opportunities are external forces that can help you achieve your goals, while *threats* are forces that can work against you and you need to avoid or minimize their influence.

For example, expertise on the staff of the Municipality could be considered an internal strength, while environmental grants and loans from the National Environmental Fund would be considered an external opportunity. Conversely, lack of appropriate expertise would be considered an internal weakness, while lack of national support for environmental programs would be considered an external threat.

In general, a SWOT analysis can help you build upon demonstrated strengths and take advantage of opportunities. It can help develop specific actions for overcoming weaknesses and avoiding or minimizing

potential threats. Some weaknesses may be relatively easy to control or correct if they are specifically identified and addressed early in the process. Some threats may require you to seek alternative solutions. *(See Figure 3.4 — Case Study: SWOT Analysis, Pehcevo, Macedonia, below).*

3.4.1 INTERNAL STRENGTHS AND WEAKNESSES

Every community has assets and liabilities. The more you take advantage of your strengths and compensate for your weaknesses, the more successful you will be in developing appropriate actions. As you assess your strengths and weaknesses, think about the following questions:

Staffing

- Do local and regional government agencies have sufficient staff to effectively manage environmental problems?

- Do the staffs of these agencies have sufficient expertise? If not, what expertise is lacking?

Financial Resources

- What is the ability of local government, industries, and individuals to make investments that are sufficient to achieve the desired level of protection or improvement?

- Does the local government have (or provide) sufficient financial resources to comply with environmental laws?

Environmental Facilities

- Does the community have environmental management facilities (e.g. wastewater treatment plant, landfill) to manage environmental problems?

- Are these facilities sufficient to meet environmental standards and goals? If not, in what ways are they deficient?

Political/Cultural Factors

- What is the level of environmental awareness in the community?

- What is the public sentiment for increased expenditures on environmental protection?

- How do public attitudes toward environmental protection affect your ability to implement specific programs?

- Do specific environmental programs require the active participation of community members?

Indicators measure whether environmental goals and targets are being achieved, and whether these outcomes are improving the lives of people in the community.

FIGURE 3.4

Case Study: **SWOT Analysis, Pehcevo, Macedonia**

	INTERNAL	EXTERNAL
	Strengths	*Opportunities*
Water supply	• Technical expertise and documentation available for the main water supplying project. • Readiness of the Municipality to solve the problem. • Citizen's support for the project.	• The National level legislative supports the solutions. • It is a National Environment Action Plan (NEAP) priority. • There is interest of foreign donors to support this kind of projects.
Solid waste	• Local expertise available. • Readiness of the Municipality to solve the problem. • Build infrastructure.	• Network of contacts established with professionals and institutions. • There are institutions and donors that can support the projects. • There is national-level legislation.
Urban development	• Local Urban Plan developed. • Local expertise available. • Natural wealth and endemic species.	• The problem has been included in the NEAP. • The problem is covered in the national-level Urbanization Plan. • Interest of national institutions is present for the initiative.
Forests	• Wide public support. • Interest of the Public Enterprise for Forests — Local Office in Pehcevo. • Expertise available locally to address the issue.	• There is certain level of cooperation with the national institutions.

	INTERNAL	EXTERNAL
	Weaknesses	*Threats*
Water supply	• Lack of local financial resources. • Lack of equipment of the Public Enterprise. • No underground plan of pipes.	• No loans available to finance projects. • Low level of initiative of the National Ministry.
Solid waste	• Lack of mechanization. • Low economic power of the local industry. • Lack of local practices to classify and recycle the solid waste. • Low level of awareness among citizen's for proper disposal of the trash. • Absence of local inspections and sanctions. • No feasibility study and technical project for the problem.	
Urban development	• Resistance among some citizens. • Inaccuracy of the responsible agencies. • Lack of any protection measure and system in the area. • Lack of planning/documentation in the rural settlements.	• Lack of financial resources in the community. • Possible resistance among sections of the population.
Forests	• Lack of discipline among some citizens. • Low mechanization of the public enterprise.	• Low interest of the State Ministry to solve the problem.

FIGURE 3.5a		
Environmental Management Practices: Strengths and Weaknesses		
	Strengths	*Weaknesses*
Staffing		
Communication and coordination		
Environmental facilities		
Political/cultural factors		
Financial resources		

FIGURE 3.5b		
Environmental Management Practices: Opportunities and Threats		
	Opportunities	*Threats*
Legal and regulatory framework		
Information and technology		
Logistical issues		
Financial and regulatory factors		

- How does the community's environmental consciousness level affect your ability to implement these programs?

- Is there support on the Municipal Council for environmental investments?

Communication and Coordination

- If different government agencies share responsibilities for managing specific environmental problems, do these agencies communicate and coordinate their efforts?

- Have procedures for effective communication and coordination been established among these agencies?

- Has a formal or informal coordinating body been established to foster communication and coordination?

Based upon the questions identified above, your SG can determine whether the above factors are either strengths or weaknesses of your community, and then explain why. You may want to assign nominal values to each strength and weakness to get a sense of their relative significance. *(See Figure 3.5a — Environmental Management Practices: Strengths and Weaknesses, above.)*

3.4.2 EXTERNAL OPPORTUNITIES AND THREATS

The list of questions below can help provide insights on whether sample external factors are either opportunities or threats:

Legal and regulatory framework

- Is the authority and responsibility to implement environmental laws placed at the level of government where it is most appropriate?

- Does the local government have clear legal authority to manage specific environmental problems in the community? Which problems are these?

- Are there conflicting or overlapping legal jurisdictions, either in terms of geographical boundaries or regulatory responsibilities, for specific environmental issues?

- Do any laws contradict or conflict with other laws? What difficulties does this pose?

- Has the national government provided sufficient regulations and guidance on how to address specific environmental problems?

- Do the government agencies (national, regional, and local) responsible for planning and implementing environmental programs have sufficient enforcement authority?

Information and technology

- Is information and data necessary to manage environmental problems available and accessible?

- Is this information reliable? Accurate? Valid? Compiled in a manner that meets your needs?

- Are appropriate technologies available to your community?

Logistical issues

- How do geography, communication systems, transportation, and other logistical factors influence the local government's ability to perform its responsibilities and duties?

- How does your community's geographic location affect the costs and availability of specific energy services, e.g. natural gas pipelines?

Financial and economic factors

- What is the availability of funding for environmental investments compared to the need for environmental improvements? What are the future prospects for acquiring external funding?

- Are grants and loans available from the national government or from other sources for environmental protection? If so, what type of and how much funding is available, and what are the conditions for acquiring this funding?

Based upon the questions identified above, identify whether you consider the above factors to be either opportunities or threats to your community, and then describe why. Again, you may want to assign nominal values to each opportunity and threat to get a sense of their relative significance. *(See Figure 3.5b — Environmental Management Practices: Opportunities and Threats, above.)*

3.5 Identify Potential Actions

The next step of the EAP process is to identify specific actions. While the Community Vision provides the overall framework, the environmental goals and targets serve as guideposts in identifying actions, i.e. how can a particular action move us toward achieving our goals and targets. Information generated during the SWOT analysis can be used to help identify specific actions designed to either take advantage of strengths and opportunities, or directly address specific weaknesses and threats. For example, if your SWOT analysis revealed a serious deficiency in environmental enforcement due to a lack of coordination among different government agencies, one action might be to establish a coordination mechanism among government agencies.

You SG might begin the process of identifying potential actions by conducting a brainstorming session. Consider convening a group of stakeholders associated with each specific environmental problem and brainstorming a list of possible actions. This approach will help ensure that you identify the broadest possible set of actions by tapping into the expertise and knowledge of those individuals and businesses directly affected by or involved with the problem.

Five types of actions are identified below:

- *Public Education and Training:* Public education programs play a crucial role in educating residents and businesses on how to comply with new environmental requirements and can build public support for environmental programs. Public education activities include: preparing and distributing brochures, writing newspaper articles and conducting radio/TV interviews, conducting contests, reaching out to school-age children, and holding public information meetings. *(See Appendix A: Conducting a Public Outreach Campaign, for more details).* Training programs can often be essential in improving staff expertise of local and regional government staff, nongovernmental organizations (NGOs), and other institutions on how to effectively implement environmental programs or operate new facilities.

- *Economic Incentives:* Economic incentives alter polluters' behavior by increasing the costs of continuing to pollute or waste. Unlike regulatory approaches, these incentive-based policies influence rather than dictate the actions of individuals and firms, and ideaaly allow them to find the most efficient means of reducing pollution in order to reduce their costs. Some of the most common economic incentives used by local governments are user fees, emission fees, and fines. User fees provide a positive economic incentive to individuals and businesses by requiring them to pay for the cost of environmental services based upon how much they use or how much waste they generate. Emission fees are financial charges for the release of pollutants to the environment within admissible limits, while fines are negative incentives applied to businesses or individuals that pollute above allowable limits or violate other regulatory requirements. *(See Section 4.6 for more information.)*

- *Community Programs:* Community programs are activities that involve either collective or individual actions by community members to address environmental prob-

lems, such as curbside recycling collection programs, community tree plantings, and community-wide distribution of low-flow showerheads. These programs can be managed either by the Municipality, utility company, NGO, or private contractor.

• *Technological Measures:* These actions involve the design, construction, and operation of environmental facilities, such as wastewater treatment plants and sanitary landfills. They also include installing pollution devices or making process modifications in industrial facilities. An emerging and promising area of technological opportunities is known as "pollution prevention" — or preventing pollution before it occurs. *(See Figure 3.6 — Waste Minimization and Pollution Prevention, below.)*

• *Regulatory or Legal Action:* Regulatory actions require businesses and residents to comply with specific environmental regulations and to implement measures to reduce environmental pollution. For example, these actions include municipal ordinances to require industries to pre-treat their wastewater prior to discharging to the municipal treatment plant, or requiring residents to install water meters to reduce water consumption.

In selecting actions, it is important to note that these various types of actions are often mutually complementary. In fact, an effective EAP will include a combination of actions to creative an overall "environmental strategy or program." For example, a curbside recycling program can not be suc-

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FIGURE 3.6

Waste Minimization and Pollution Prevention

Waste minimization means the reduction of any waste that is generated, treated, stored and disposed of. Waste minimization techniques focus on source reduction (reducing waste before it is generated) or recycling activities that reduce either the volume or toxicity of waste.

Pollution prevention is an extension of the concept of waste minimization and involves minimizing the generation and release of all waste materials into all environmental media (air, water, and soil). Pollution prevention activities focus on improved operations and maintenance, product reformulation to eliminate the need for toxic materials, substitution of less toxic alternatives, process redesign or modernization, and recycling and reuse of wastes.

Pollution prevention does not mean that all wastes can be eliminated. Rather, it offers a more cost-effective means of minimizing the generation of waste. Prevention is the first step in a hierarchy of options for reducing the risks to human health and the environment from pollution. The next step in this hierarchy is the recycling of any wastes that cannot be reduced at the source. When recycling is conducted in an environmentally-sound manner, it shares many of the same advantages as prevention, such as conserving energy and other resources and reducing reliance on raw materials and the need for end-of-pipe treatment or containment of wastes. Wastes that cannot feasibly be recycled should be treated in accordance with environmental standards that are designed to reduce both the hazard and volume of waste streams. Finally, any residues remaining from the treatment of waste should be disposed of safely to minimize their potential for release into the environment.

Some examples of pollution prevention include:

• Chemical companies who change from toxic to non-toxic raw materials in their production process or who modify equipment so that waste materials are returned to production as raw materials.

• Farmers who use low input agricultural methods that eliminate or sharply reduce the need for fertilizers, pesticides, energy, and water; and who use soil conservation and land management practices that prevent erosion of sediment and the runoff of pesticides and fertilizers.

• Electric utility companies that promote energy efficiency to reduce the generation of pollution associated with extraction, refining and use of fuels, and who increase their reliance on clean renewable energy sources or alternative less-polluting fuels.

• Residents that install low-flow showerheads and water flow restricting devices and repair leaking fixtures to reduce water consumption.

• Manufacturing firms who reduce their use of toxic chemicals through low-cost measures such as improved inventory control, materials handling, spill and leak prevention, and improved maintenance.

• Municipalities who establish community recycling programs to reduce the amount of solid waste disposed and institute hazardous waste collection programs to reduce groundwater contamination.

• Pollution prevention is both sustainable and efficient. Efficient equipment and processes and more judicious use of natural resources and other inputs — whether energy, chemical, water, or pesticides — can help meet environmental protection goals while saving raw materials and other costs.

Source: *U.S. Environmental Protection Agency Pollution Prevention Action,* January 1991. US Environmental Protection Agency, Washington DC, USA.

FIGURE 3.7	
Sample: Actions for Reducing Solid Waste Disposal	
Public education and training	• Prepare and distribute pamphlets for residents on how to recycle.
	• Train municipal or solid waste utility staff on how to design and manage a community recycling program.
Economic incentives	• Establish a waste fee system that charges individuals and businesses in direct proportion to the amount of solid waste they generate.
	• Make recycling free and waste disposal expensive.
Community programs	• Institute a curbside recycling program for all households in the community.
	• Place containers throughout the community for residents to drop-off recyclable materials.
Technological measures	• Construct a new recycling processing facility to prepare materials in a form acceptable to recycling manufacturers.
	• Send materials unprocessed to neighboring community.
Regulatory and legal actions	• Adopt an ordinance requiring all residents to separate out recyclable materials from their trash.
	• Adopt an ordinance requiring all waste hauling companies to offer curbside recycling collection services.

cessfully implemented without an extensive program to educate residents on what materials to recycle, how to prepare materials, and what days to place materials at the curbside. Further, many communities in the United States have adopted municipal ordinances that require residents to separate recyclable from non-recyclable material. These actions all work synergistically toward the goal of reducing the amount of solid waste disposed. In selecting actions for your community, be sure to look for these "synergistic" opportunities that will enable your community to maximize the effectiveness of its implementation efforts. *(See Figure 3.7 — Sample: Actions for Reducing Solid Waste Disposal, above.)*

3.6 Identify Evaluation Criteria

Criteria provide a basis for selecting among a broad number of possible actions. Due to limitations in time, money, and human resources, it is important that the SG identify a common set of criteria to evaluate the relative advantages of each action and to select the most appropriate set of actions to meet environmental goals and targets. Evaluation criteria also provide an objective and transparent foundation for making decisions that can help to eliminate nepotism or even the appearance of patronage.

In selecting and applying criteria, you might want to consider the following:

• *Apply criteria appropriate to each type of action:* Some criteria may not be applic-

able to all types of actions. For example, "technical feasibility" is not relevant when considering which public education actions to choose, while "financial impact" (i.e. financial impact on community members) might most appropriately be applied to technological measures and community programs. In selecting criteria, you will want to review each type of action (e.g. public education, economic incentives, etc.), and consider which criteria are appropriate.

• *Criteria are not necessarily considered equal:* Your SG might consider certain criteria to be more important than others. For example, most communities place a heavy emphasis on "cost-effectiveness," i.e. which action will achieve the biggest environmental improvement per unit of money? Thus, your SG may want to "weight" its evaluation criteria according to their relative importance.

• *Threshold versus evaluative criteria:* You may want to consider some criteria as threshold criteria, i.e. unless a specific action can be positively evaluated against a particular criterion, it is not given further consideration. For example, "effectiveness" might be considered as a threshold criterion when applied to technological measures, or "statutory authority" might be considered as a threshold criterion when evaluating regulatory or legal actions. Once actions meet or pass the threshold criteria, they can then be compared against each other based upon the "evaluative" criteria.

FIGURE 3.8

Evaluating Cost-Effectiveness of Alternative Actions

Cost-effectiveness is one of the most important criteria for evaluating alternative actions. It answers the question, "How can we achieve the greatest level of environmental improvement for a given amount of money?" Cost-effectiveness involves standardizing or normalizing project costs by dividing costs by a common environmental indicator, such as tons of waste abated/reduced or reductions in ambient air concentrations of specific pollutants. Some care must be taken when using cost-effectiveness analysis to compare only control or reduction actions that provide environmental improvements that are sufficiently similar.

When conducting cost-effectiveness analysis, keep three key issues in mind. First, existing studies may supply the necessary information on pollution control effectiveness, thus, avoiding the need for original research. Second, the objective of the cost-effectiveness analysis is is to arrive at a ranking of possible actions. Precise measurement of cost-effectiveness is often not necessary. In many cases, the pollution control achieved by different actions may be so great as to preclude the need for extensive engineering analysis or even research of secondary literature sources. Finally, it is important to focus on pollutant releases and other outcomes that can be easily measured and are relevant to your goals.

The basic steps in conducting cost-effectiveness analysis include:

1. *Analyze project costs:* estimate total capital (i.e. construction and equipment) and operating maintenance, and replacement costs over the life of the facility or project.

2. *Conduct life cycle cost analysis:* life-cycle costs are the sum total of all costs associated with a particular project over a particular period of time (typically considered to be the expected useful life of the capital asset). Since life-cycle costs are incurred over an extended period of time, the analysis usually includes consideration of how the value of money changes over time due to factors such as inflation and interest rates.

3. *Spread out project costs on an annual basis:* determine the amount of money needed each year to pay for the project.

4. *Analyze cost-effectiveness by standardizing cost measures:* determine the costs per unit of pollution control achieved by dividing the annual costs by the annual pollution reduction expected to be achieved.

Sources: *Financial Capability Guidebook,* March 1984. U.S. Environmental Protection Agency, Office of Water, Washington DC, USA; *Evaluating Cost-Effectiveness,* 1996. Memorandum from Industrial Economics to Institute for Sustainable Communities, Boston, MA.

Several criteria are identified below. Your SG will want to review this list, consider other potential criteria, and agree upon a set of criteria for evaluating actions. This list is intended to provide a starting point for your discussion. Evaluation criteria include, among others:

- *Cost-effectiveness:* what are the relative costs for achieving a measured improvement in environmental protection compared to other actions? *(See Figure 3.8 — Evaluating Cost-Effectiveness of Alternative Actions, above).*

- *Technical feasibility:* has the technology been successfully used elsewhere and does it have a proven record?

- *Effectiveness:* how well does the action achieve environmental goals and targets? How effective is the action in reducing or preventing an associated public health or ecological threat?

- *Financial impact:* What will the financial impact on community members be to pay for the total capital and operating costs associated with the project over its lifetime?

- *Statutory authority:* Does the local government or do other implementing agencies have the statutory authority to implement the action?

- *Equity:* how evenly are the benefits and costs of the action distributed among affected individuals and the community? Are certain segments of the population disproportionately affected by the impacts of the proposed action, e.g. siting an environmental facility near a low-income residential neighborhood?

- *Flexibility:* can the action be modified after a period of time to accommodate changes in demographic, economic, environmental, or legal circumstances?

- *Implementation time:* how much time will it take for the action to be implemented?

- *Acceptability/supportability:* is the proposed action acceptable to the public or Municipal Council? Do stakeholders support the action?

- *Employment impacts:* will the action result in new jobs in the community? Will employment be reduced as a result of a particular action?

- *Environmental impact:* are there environmental impacts from construction or operation of the action? If so, how significant are these impacts?

Your SG may want to limit the number of criteria it uses to make the selection process more manageable. Once you have selected your evaluation criteria — its time to start the information and data collection process.

3.7 Collect Information and Prepare "Issue Summaries"

"Informed decision-making" — this phrase lies at the center of the information collection process. The more information you collect, the more informed your decisions will be; and more informed decisions generally lead to better decisions. However, information collection requires time and costs money. Thus, you will need to balance how much information you need with how much time and money you want to spend in collecting it. As you undertake your information collection efforts, consider the following questions:

- What data and information is important to collect?

- Where do we look for data?

- How should we compile the information we collect?

Evaluation criteria provide an excellent checklist for determining the types of information you need to collect. For example, if you are investigating different types of recycling collection programs, you might want to collect information based upon the following criteria:

- *Cost-effectiveness:* How much does it cost to recycle a ton of materials for different types of recycling programs?

- *Effectiveness:* How effective are different recycling programs in diverting waste from disposal?

- *Implementation time:* How long does it take each type of recycling program to implement?

- *Economic benefits:* How many jobs are created with different types of recycling programs?

Be sure to seek information from a wide-range of national and international sources. National ministries, NGOs, and universities are the obvious places to start. These institutions will hopefully have information on how other communities in your country have addressed similar problems, how well specific actions have worked, and potential problems these programs have encountered. Further, these institutions might have experts who can provide your SG with technical assistance and consultations.

Your SG will want to obtain resource documents that include compilations of how different communities have solved specific problems. Keep in mind that actions from other countries will need to be modified and adapted to your community's unique situation. You will also want to conduct a literature review and Internet search on environmental management actions utilized elsewhere in the region.

Once you have collected information, consider preparing "Issue Summaries" for each priority problem. These Issue Summaries are a compilation of information collected to date and provide valuable reference points for SG members during the action selection

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FIGURE 3.9

Sample: **Matrix of Technological Measures for Increasing Potable Water Supplies**

Environmental target	Increase the amount of potable water by 30% in the next five years					
Action category	Technological measures					

	EVALUATION CRITERIA					
Potential Actions	*Cost-Effectivness*	*Effectiveness in Achieving Goals*	*Economic Benefits*	*Implementation Time*	*Flexibility*	*TOTAL SCORE*
Repair underground water main						
Build new reservoir						
Install low-flow showerheads to residences						
Control industrial water consumption						

FIGURE 3.10

Sample: **Issue Summary on Solid Waste**

Problem description	Toxic and organic materials disposed in unlined and uncovered landfills from industry and households are causing groundwater and air pollution which pose health and ecological threats, while landfill space is rapidly diminishing because trash generation has significantly increased.
Goals	1. To reduce groundwater and air pollution associated with solid waste disposal by 75% over the next five years.
	2. To reduce the amount of solid waste requiring disposal by 50% by the year 2000.
Action category	Community programs.
Evaluation criteria	Cost-effectiveness, flexibility, economic impacts, effectiveness, and public support.

Actions	*Information on Actions*
Curbside recycling collection program	Information from programs in U.S. communities indicates that curbside recycling programs have high participation level. They cost relatively more per ton of material than drop-off programs and create more jobs.
Drop-off recycling collection program	Drop-off programs have been found to have lower participation rates and thus lower amount of material diverted from the landfill. They are generally most applicable for low-density areas.

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process. Each Issue Summary can include the following information:

- Summary of problem description;

- Environmental goals and targets;

- List of potential actions: It may be helpful to group these actions according to some agreed-upon categories, such as those identified earlier, e.g. public education/ training, economic incentives, technological applications, etc.;

- Evaluation criteria; and,

- Information collected on each action.

Once you have completed the Issue Summaries, be sure to distribute copies to each SG member prior to process of selecting actions. This will help ensure that all SG members are making decisions based upon the same information. *(See Figure 3.10 — Sample: Issue Summary on Solid Waste, above.)*

3.8 Analyze and Select Actions

Analyzing and selecting actions is the core of your decision-making process. This is the step when the SG decides what actions will be most effective in achieving its environmental goals and targets. A two-step process is proposed here for narrowing the initial brainstorm list of actions and ultimately selecting a set of items for action: a) develop preferred list of actions; and, b) select actions based upon community-specific analyses.

3.8.1 DEVELOP PREFERRED LIST OF ACTIONS

The first step in the action selection process is to develop a preferred list of actions, which is then subjected to more rigorous and detailed analysis. The SG can develop the preferred list of actions by applying the evaluation criteria to the brainstorm list of actions. To start this process, it is important that the SG engage in a vigorous and open discussion on the relative advantages and disadvantages of each action. Using the Issue Summaries as a starting point, pose a series of questions to help stimulate discussion, such as, "Based upon the information compiled to date, which actions appear to be the most effective in achieving our environmental goals and targets?"

After you have allowed ample time for discussion, SG members can select actions for the preferred list. One useful tool for structuring this process is to use a matrix with *actions* on one axis and *evaluation criteria* on the other. Each SG member receives a set number of votes that can be placed anywhere on the matrix. The actions receiving the top number of votes are considered for further investigation. For each environmental problem, consider developing a matrix for each category of action, i.e. one matrix for education programs, one matrix for economic incentives, etc. *(See Figure 3.9 — Sample: Matrix for Technological Measures for Increasing Potable Water Supplies, above.)*

The EAP provides a framework document that identifies specific action commitments from different institutions and stakeholders and provides a long-term guide for addressing the community's environmental problems.

It is important to note that this selection process is not based on "in-depth" analysis, but rather, on existing information from other communities' experiences. This screening process can save your community time and money in conducting more in-depth analyses by focusing on the most promising actions. The final selection of actions is then based on more rigorous analyses.

Once you have developed your screened list of actions for each priority problem, be sure to share these results with the community. The action selection process will be more relevant and credible to your Municipal Council if it reflects the broad perspectives of community members, has used appropriate criteria, and has been reported clearly and persuasively.[4]

3.8.2 SELECT ACTIONS BASED UPON COMMUNITY-SPECIFIC ANALYSES

Once you have developed a relatively manageable list of actions, the next step is to conduct community-specific analyses that will provide you with the foundation for making the final list of priority actions. The types of analysis you will need will depend on which actions you are investigating. The types of analyses to consider include:

- *Economic:* identifies the most cost-effective option for achieving a desired goal or result. It examines total capital and operating costs, the life-cycle costs over the life of the project, the annualized costs, and then standardizes these costs based upon the amount of pollution control or reduction achieved, e.g. cost per ton or per liter. *(See Figure 3.8 — Evaluating Cost-Effectiveness of Alternative Actions, above.)*

- *Engineering:* helps determine the technical feasibility and effectiveness of particular actions. This analysis can evaluate the effectiveness of different facilities or process designs in reducing pollution or a particular pollutant.

- *Legal:* examines municipal jurisdiction and authority pertaining to certain environmental provisions. This analysis is especially critical in light of the decentralization of environmental responsibilities in Central and Eastern Europe (CEE) and jurisdictional issues that may arise among different government agencies.

- *Financial:* answers the question of whether or not you can afford a particular action. This analysis looks at potential sources and methods to finance a particular action, the costs of borrowing funds,

and methods to raise revenues to repay loans and cover operating expenses.

- *Environmental:* Environmental analysis measures the relative environmental impacts of different actions designed to achieve the same environmental goal. A typical methodology for evaluating environmental impacts is Environmental Impact Assessment (EIA). EIAs are required in many CEE countries for any new large industrial or manufacturing facility. EIAs are designed to incorporate environmental planning into the earliest stages of development projects in order to prevent or reduce as much as possible the harmful environmental impacts of those activities.[5]

These analyses require specific expertise that can oftentimes be costly. Whenever possible, it is important that the SG find experts within the community who might be willing to donate their time or reduce their consulting fees for projects that benefit the community. University students and faculty might be able provide valuable assistance for little or no cost. You may need to hire consultants to conduct certain analyses that are beyond the abilities of the municipal staff or SG members. If your SG decides to hire consultants, consider preparing a "Request-for-Proposal" (RFP) to assure that you get the most qualified expert at the lowest possible cost. *(See Attachment 4A: Process for Competitively Purchasing Equipment and Services, for more details).*

After your analyses are complete, re-examine the preferred action list in light of your evaluation criteria. You might want to repeat the matrix approach described earlier to help select the most appropriate action or mix of actions. Alternatively, information generated from the analyses might clearly point out the advantages of one particular option over another.

3.9 Prepare Draft Environmental Action Plan for Public Comment

The EAP is the compilation of all the SG's work to date. It includes the Community Vision, Issue Assessments and priorities, goals and targets, indicators, and actions focused on the priority issues. The EAP provides a framework document that identifies specific action commitments from different institutions and stakeholders and provides a long-term guide for addressing the community's environmental problems. *(See*

FIGURE 3.11

Seeking "Win-Win" Solutions between Environment and Economy

"Win-win" solutions enhance environmental conditions and strengthen the local economy. These solutions minimize pollution, waste, and the use of natural resources by optimizing efficiency, promoting pollution prevention, and assuring sustainable resource use over the long-term. They include efforts to strengthen the local economy by improving the viability of existing businesses, stimulating the creation of new jobs that reflect the skills and needs of the community, promoting local business ownership, and reinvesting financial resources in the local economy.

Some examples of "win-win actions" include:

- *Improving municipal environmental services:* Improving municipal infrastructure and services helps increase environmental quality while maintaining the community as an attractive location for businesses and workers. These actions include upgrading wastewater treatment facilities and securing sufficient state-of-the-art waste disposal capacity.

- *Developing eco-tourism capacity:* Ecologically-based tourism works in tandem with environmental protection: the cleaner the local environment — the more attractive a community is to tourists. These actions include promoting recreational opportunities and natural resources, improving environmental conditions, and expanding tourist services and amenities.

- *Improving efficiencies of existing businesses:* Improving the natural resource (e.g. water, energy, raw materials) efficiency of existing businesses improves their economic efficiency and increases their economic viability. These actions include implementing industrial waste and energy audits and pollution prevention programs.

- *Assisting environmental service and manufacturing businesses:* New environmental programs often require the creation of new businesses to implement these programs. These businesses include producing goods made from recycled materials, manufacturing environmental technologies, and conducting environmental audits.

- *Improving human resource capacity:* New environmental programs require people with new skills and services. Institutions of higher education can provide training and offer degree programs that provide individuals with the necessary education to meet new job skills and requirements, such as environmental protection and management, and resource efficiency.

- *Promoting sustainable resource use:* Many local economies are dependent on the use of natural resources, such as timber, crops, farming, and fisheries. These actions include efforts to improve resource management practices to ensure that these resources will continue to be available on a sustainable basis well into the future. Further, these actions include exploring opportunities for new "value-added" businesses that optimize the local use of natural resources by converting raw materials into finished products.

Attachment 3A: Environmental Protection EAP for Municipality of Elk, Poland.)

Public input is extremely important at this stage to assure that all concerns about the recommended actions have been acknowledged and adequately addressed. Thus, it is critical that your SG circulate the draft EAP widely among representatives of the public, Municipal Council, Mayor's office and the executive branch of the Municipality, industries and businesses, affected individuals and groups, regional and national government, and NGOs. Consider seeking input from community members in a variety of ways, including publishing articles, conducting radio interviews, sponsoring focus group sessions, and holding public information meetings. Also, you might want to prepare a short summary of the EAP in brochure form to distribute widely to the public. The SG should seriously consider giving a presentation to the Municipal Council as well. *(See Figure 3.12 — Proposed Format for Environmental Action Plan, below)*

3.10 Adopt and Institutionalize Plan

It is important that the SG allow sufficient time to receive both written and oral comments on the draft EAP, and then review these comments to determine what changes need to be made. You may even consider meeting with individuals who have raised significant points. You might consider preparing a "Comment Response Summary" which summarizes all comments received on the EAP, how these comments are reflected or not reflected in the final EAP, and a rationale for why those suggestions are not included.

After these changes have been incorporated, the SG will want to approve the EAP and submit it to the Municipal Council for formal adoption. Because many of the recommended actions in the EAP will require approval by the Municipal Council, their formal endorsement will help improve the chances that specific recommended actions

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FIGURE 3.12

Proposed Format for Environmental Action Plan

Introductory letter from Mayor and/or Municipal Council	
I. Background information on the LEAP	Includes description of the Project, its goals and project phases, history of the project, and people on the SG and others who have been involved, and Community Vision statement.
II. Summary of plan	Short descriptions of all environmental problems identified, the basis for selecting priority problems, summary of recommended actions to address priority problems, and basis for choosing recommended actions.
III. Issue specific chapters	• *Background information:* related to each specific environmental problem, including description of present regulatory situation, responsible agencies and authorities, and environmental management system currently in place. • *Problem description:* summary of why the problem poses a concern to the community. • *Goals, target and indicators:* related to each environmental problem. • *Evaluation criteria:* list of evaluation criteria and description of how criteria were applied in the selection of the recommended actions. • *Recommended actions:* description of recommended actions, including activities and level of efforts undertaken to date, explanation of how action addresses critical need, review of the technical and economic feasibility of the action, and identification of potential implementation obstacles. • *Time frame:* Schedule of actions arranged in order of proposed implementation time frame, e.g., short-term (six months to one year); medium term (one year to four years); and long term (more than four years). • *Responsible parties:* identify responsibilities of each implementing agency and organization associated with each action.
III. Conclusions	Restating the main points of the plan and the importance of each citizen being involved to ensure the EAP's success.
IV. Appendices	Includes full descriptions/analysis of issues assessments, newspaper articles and brochures, background data and analyses, photos, and bibliography of all reference documents and communications.

will actually be implemented. Further, as noted earlier, it is critical the Municipality "institutionalize" the EAP recommendations into its formal planning processes, such as the preparation of its land-use plan and annual budget.

While the Municipality and other agencies will have primary responsibility for implementation, the SG can continue to play an active role in monitoring and overseeing EAP implementation.

For example, the SG can provide a forum for all implementing agencies to report on their progress toward achieving the goals of the EAP. Further, the SG can continue to implement citizen-based initiatives, such as tree plantings and river clean-ups, and provide a sounding board for the municipal government on how to most effectively solve environmental problems.

The EAP provides a long-term road map for addressing environmental problems in your community. Technologies and priorities will change over time, and this will require periodic revisions to the EAP to assure that environmental priorities are still reflecting community concerns. The EAP will need to be revised periodically — ideally every three to five years — to reflect new information, technological advances, and new environmental requirements.

Conclusion

The EAP provides a framework for addressing the top environmental problems and a long-term blueprint for environmental investments and programs in the community. Ideally, the EAP serves as a multi-stakeholder agreement on environmental priorities for the community. The process of developing the EAP provides a unique opportunity for incorporating public views and preferences, and thus, a forum for improving public support for environmental programs. It provides a document by which to monitor and evaluate the effectiveness of implementation activities.

Attachment 3A: Environmental Protection Action Plan
for Municipality of Elk, Poland[6]

This Environmental Protection Action Plan has been prepared by the Program Committee for the Sustainable Development of Elk, representing the community of Elk in the Pilot Project of the National Action Plan for Environmental Protection. This Pilot Project was a two-year project with the main goals of:

- solving the most serious local environmental problems;
- sustainable spatial and economic development of the town; and,
- support for the local institutions in their environmental protection actions.

The Program Committee was composed of 34 citizen volunteers and the Committee members met frequently over the course of project. Much of the Committee's work was focused on gathering and evaluating the data needed for drafting the Action Plan. This Plan describes the scope of the strategies recommended by the Program Committee. The Action Plan serves the City Council as a set of long-term recommendations for solving the priority problem of pollution of Lake Elk and the Elk River.

OBJECTIVES OF THE ENVIRONMENTAL PROTECTION ACTION PLAN

- *Goal:* Bringing Lake Elk up to Class II purity standards.
- *Target:* Arresting the process of internal delivery as well as the threat of progressive water degradation in Lake Elk.
- *Target:* Reduction in biological oxygen demand (BOD) loads discharged into Lake Elk by the Elk River to a level that does not increase eutrophication.

ACTION TO MEET TARGETS OF THE ENVIRONMENTAL PROTECTION ACTION PLAN

Technical Actions

- Eliminating the inflow of pollution into the lake: pollution stemming from domestic sewage, and pollution stemming from storm sewage.

- Re-cultivation of the lake through aeration.
- Removal of litter and other debris from the lake embankment and the channel of the Elk River.

Economic Actions

- Rational management of the fishing industry in the waters of Lake Elk.
- The economic utilization of the reed beds of Lake Elk, as an element of eliminating biological oxygen demand.

Legal and Administrative Actions

- Increasing the level of conformance with and enforcement of the law with respect to environmental protection.
- The identification and elimination of pollution sources of Lake Elk and the Elk River other than those listed in Action 1.

Education Actions

- The installation of household sewage treatment plants in the area of the Elk River and Lake Elk watersheds — in all areas where the municipal sewage system is not an option.
- The environmental education of the community — causes and effects of eutrfication, the impact of the individual on the environment.

Miscellaneous Actions

- Cutting off of the influx of pollutants into the lake and river originating from the surface runoff of the direct watershed area.
- Restrictions on activities aimed at regulating the course of the Elk River.

FIGURE 3.13

Integration of Activities Aimed at Improving the Quality of the Waters of Lake Elk and the Elk River

Goal 1 Bringing Lake Elk waters up to Class II purity standards

Action	*Form of Implementation*
Action 1a Cutting off the influx of domestic sewage pollution into the lake.	• Expansion and modernization of the ul. Wojska Polskiego Sewage Pumping Station. • Construction of a gravity domestic sewage main, 400 m in length, from ul. Grunwaldzka to the ul. Wojska Polskiego Pumping Station. • Construction of a gravity domestic sewage main in ul. Jagielly. • Construction of a gravity domestic sewage main, 300 m in length, from ul. 11 Listopada to the Kajki Housing Estate. • Construction of a gravity domestic sewage main along ul. Pulaskiego and ul. Nadjeziorna. • Construction of a pressurized domestic sewage main along ul. Pulaskiego and ul. Nadjeziorna. • Installation of a sewage system for the Grunwaldzkiego Housing Estate. • Installation of a sewage system for the Wczasowa Housing Estate, Szyba. • Construction of a domestic sewage system within the limits of the Elk Regional Hospital (municipality of Elk).
Action 1b Cutting off the influx of storm sewage pollution into the lake.	• Construction of separators at the two existing storm sewage discharges into the northern bay of the lake. • Construction of storm sewage along ul. Pulaskiego. • Hooking up the seven existing storm sewage segments into the proposed sewage line along ul. Pulaskiego. • Construction of separators at the storm sewage discharges into the central basin of the lake as well as at the discharges into the Elk River. • Construction of a storm sewage system within the limits of the Elk Regional Hospital (municipality of Elk).
Action 2 Re-cultivation of the lake through aeration.	1. North bay • Aeration in the two deepest spots (depth: ~24 m) using two Stratiflox-type aerators using air pumped 300 m and 200 m through pipelines from the compressor station located on the western shore of the lake. 2. Southern bay (central) • Aeration of the deepest point (58.2 m) using a Stratiflox-type aerator using air pumped 400 m through a pipeline from the compressor station located on the eastern shore of the bay. • Aeration of two deep points (40 m and 34.7 m) using Stratiflox-type aerators using air pumped 300 m through a pipeline from the compressor station located on a peninsula in the area of the Bogdanowicza Housing Estate. 3. Western bay • Aeration of the deep point in the bay near the village of Baranki using D-Flox-type aerators using air pumped 280 m through a pipeline from the compressor station located along the bay. • Aeration of the deep point in the bay at the level of the village of Barany using D-Flox-type aerators using air pumped 200 m through a pipeline from the compressor station located in Barany. • The re-cultivation process, through aeration, should be continued up until the moment when bottom deposits mineralize. Estimated re-cultivation period: four years for every bay.

FIGURE 3.13 (continued)

| *Action*	*Form of Implementation*
Action 3 Elimination of litter and debris from the area of the lake embankment and the channel of the Elk River.	• Cleaning of the sides of the lake basin of litter and debris threatening the purity of the water (parts of mechanical vehicles, batteries, etc.) along ul. Pulaskiego and ul. Nadjeziorna up to a depth of 4 m as well as the channel of the Elk River within the administrative limits of the town. This task may be accomplished by divers in the Elk Diving Club.
Action 4 Rational management of the fishing industry.	• Continuation of current policies in this field — fishing as an element eliminating BOD and the introduction of species restricting the effects of eutrophication through fish stocking. Acting according to the Inland Fishing Act of 27 Sept. 96. Control executed by the Regional Office in Elk.
Action 5 Economic utilization of the reed beds of Lake Elk.	• Utilization of reeds as a bio-renewable fuel.
Action 6 Increasing the level of conformance to and enforcement of laws in the realm of environmental protection.	• More effective collaboration between State administration and local government bodies, WIOS and TSSE, and the State police and municipal police in the enforcement of environmental protection laws; the establishment and equipping of a volunteer Nature Protection Department. • The shaping of a stance demonstrating respect and understanding for the laws of nature.
Action 7 Identification and elimination of Lake Elk and the Elk River pollution sources other than those listed in Action 1.	• Introducing sewers in Siedliska village and Siedliska Communal Landfill and construction of a sewage treatment sub-plant on the landfill, as these areas until now have a negative impact on Lake Sunowo and indirectly on Lake Elk water quality. • More effective collaboration between State administration and local government bodies, WIOS and TSSE, and the State police and municipal police in the enforcement of environmental protection laws; the establishment and equipping of a volunteer Nature Protection Department.
Action 8 Propagation of household sewage treatment plants within the area of the Elk River and Lake Elk watershed in all places where hooking up to the municipal sewage system is not a feasible option.	• Collaboration between the Regional Agricultural Extension Service of Elk and the Elk local government with respect to dissemination of know-how concerning the functioning, technical and economic possibilities of installing household sewage treatment plants.
Action 9 Environmental education of the community — the causes and effects of eutrofication and the impact of the individual on the environment.	• The continuation of the "E3" ecological gazette of the ESE (Elk Environmental Association) as of the second half of 1997. • The establishment of the Environmental Education Center or a permanent office for the ESE. • The establishment of a body within the municipal office concerned with sustainable development.
Action 10 Cutting off of the inflow of pollution into the lake and river originating from the runoff of surface waters in the area of the direct watershed.	• Assessment of the scale of the problem. • Propagation of methods of agricultural use of the lake watershed which minimize the negative impact on agriculture on surface water. • The establishing of tree belts around the lake and the re-creation of rush beds, acting as biological filters, everywhere where this is not in conflict with already-established land management. • Acting to prevent the erosion of the lake embankment (bank reinforcement, tree plantings, sod cultivation). • The tourism-recreational development of the lake shore, including the building of hiking trails and bicycle routes, in line with the concept of sustainable development. • Additionally, points specified in Action 7.

FIGURE 3.13 (continued)

Action	*Form of Implementation*
	• The molding of a stance demonstrating respect for nature and the work of other people.
	• Sensitizing to the aesthetics of the area.
Action 11 Restrictions on actions aimed at regulating the course of the Elk River.	• Implementation of the spatial and economic development of the town and municipality of Elk in line with the concept of sustainable development.
Goal 2 Arresting the process of internal delivery to the lake	
Action 2 Re-cultivation of the lake through aeration.	• As in Goal 1, Action 2.
Goal 3 Reduction in the load of BOD delivered by the Elk River into Lake Elk to a level not threatening eutrophication	
Action 6 Increasing the level of conformance to and enforcement of laws in the realm of environmental protection.	• As in Goal 1, Action 6.
Action 7 Identification and elimination of Lake Elk and the Elk River pollution sources other than those listed in Action 1.	• As in Goal 1, Action 7.
Action 8 Propagation of household sewage treatment plants within the area of the Elk River and Lake Elk watershed in all places where hooking up to the municipal sewage system is not a feasible option.	• As in Goal 1, Action 8.
Action 9 Environmental education of the community — the causes and effects of eutrofication and the impact of the individual on the environment.	• As in Goal 1, Action 9.
Action 10 Cutting off of the inflow of pollution into the lake and river originating from the runoff of surface waters in the area of the direct watershed.	• Assessment of the scale of the problem. • Propagation of methods of agricultural use of the lake watershed which minimize the negative impact on agricultural on surface water. • The establishing of tree belts along the river. • More effective collaboration between State administration and local government bodies, WIOS and TSSE, and the State police and municipal police in the enforcement of environmental protection laws; the establishment and equipping of a volunteer Nature Protection Department.
Action 11 Restrictions on actions aimed at regulating the course of the Elk River.	• As in Goal 1, Action 11.

Source: *Environmental Protection Plan for Municipality of Elk, Poland*, March 1997. Municipality of Elk, Poland.

Chapter 4: **Implementing Actions**
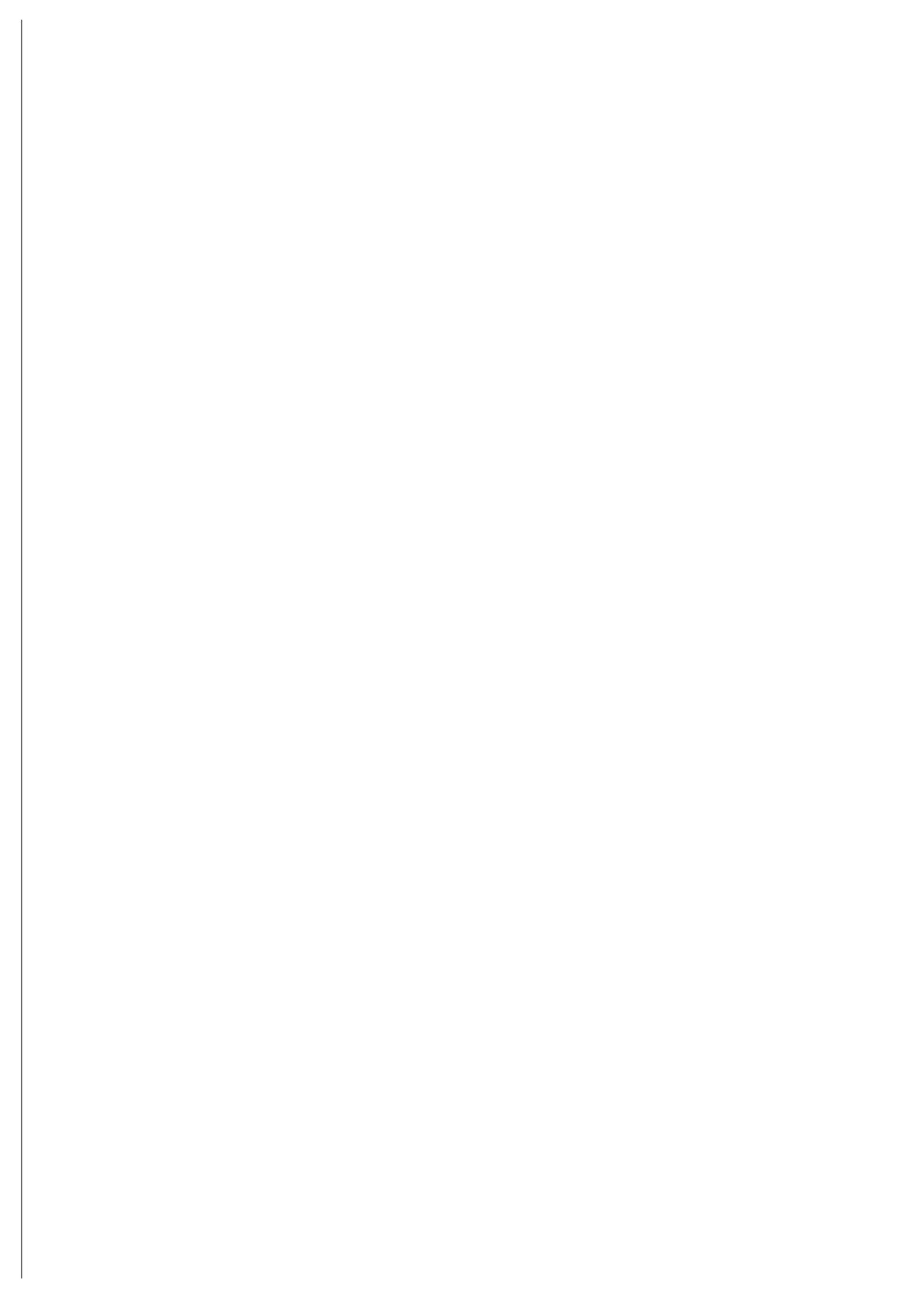
Chapter 4: **Implementing Actions**

"Some of the world's greatest feats were accomplished by people not smart enough to know they were impossible" — Doug Larson

4.0 Introduction

Now that you have completed your Environmental Action Plan (EAP), the next step is to put your plan into action. All the planning efforts of your Stakeholder Group (SG) to this point — developing a vision, assessing issues, establishing priorities, and developing an EAP — lead to implementation. The environmental planning process helps to ensure that your community is targeting its scarce financial and human resources toward the most pressing problems and that you are receiving the greatest environmental benefits for your money.

While successful completion of the EAP may be a laudable achievement, the real measure of your success will be how well the recommendations in the EAP are converted into action. The SG does not have primary responsibility for implementing actions; most of these responsibilities reside with various institutions, such as the municipality, regional government, utility companies, and individual industries. However, the SG — or a reconfigured form of the SG — can play a vital role in helping to ensure that the recommendations in the EAP are fully integrated into municipal statutory planning processes and implemented by other institutions.

The EAP provides a menu of recommended actions for addressing the top priority problems facing the community. It will not be possible to pursue all actions identified in the EAP immediately; thus, the municipality and other implementing institutions will need to focus their efforts on a finite number of actions. In determining which actions to focus upon, implementing institutions will want to take into account the following considerations:

- Pursue a mixture of actions that achieve both short-term and long-term results.

- Select actions that are complementary, and if pursued concurrently, will help improve your chances of successfully achieving your goals.

- Start with small, achievable projects that have a strong chance of success. This will give you experience in project implementation, and these successes can then provide momentum for pursuing more complex and longer-term actions.

One of the major questions you will need to address is "who" will be responsible for overseeing and monitoring implementation. It is important to note that the implementation phase of the LEAP is very distinct from the planning phases. While planning involves the SG *jointly* preparing an EAP to address a range of issues, implementation requires that various institutions take *individual* responsibility to implement these actions. Thus, implementation requires developing agreements among implementing institutions and developing some type of oversight and monitoring body to ensure that the goals and targets of the EAP are being achieved. This will require establishing a new organizational structure and new agreements — perhaps a reconfigured form of the SG — to ensure that your efforts are successful.

This chapter describes some of the basic steps in implementing actions; many of these steps can be pursued concurrently. accounting procedures.

4.1 Identify Potential Implementing Institutions[1]

Implementation will require the active participation and involvement of numerous institutions. (Ideally, the SG will have involved these institutions early in the preparation of the EAP to build support for action implementation.) Your SG can play a critical role in identifying and bringing together key institutions to help ensure

they are involved at the outset of the implementation phase. These institutions include.

- *Municipalities:* Your Municipality will have primary responsibility for implementing the vast majority of recommendations in the EAP. In most Central and Eastern European (CEE) countries, Municipalities are responsible for *managing and overseeing* a wide range of environmental problems, including: managing wastewater, collecting and disposing of solid waste, providing safe and adequate drinking water supplies, and maintaining green areas. Your Municipal Council will have a crucial role to play in approving budgets, adopting ordinances, and seeking funding. If your Municipal Council has an Environmental Committee, you will want to work closely with its members, seek their input on the project design, and keep them apprised of your implementation efforts.

- *Utility companies:* Utility companies play a pivotal role in project implementation. Utilities are *directly responsible* for offering specific services such as providing drinking water, managing wastewater, and collecting and treating solid waste. Depending upon the community, these companies may be owned by the municipality, may be a quasi-independent municipal company with some type of joint private-public ownership structure, or may be an independent private company.

- *Regional Government:* Some CEE countries have regional governments composed of representatives from surrounding municipalities. Regional governments can potentially provide forums for solving problems that extend beyond the jurisdiction of one municipality. For example, your regional government might be able to help facilitate an agreement among several municipalities for managing a regional environmental service or facility, such as a solid waste landfill. Depending on the legal framework, regional governments may also have certain regulatory responsibilities.

- *National Government:* National governments establish environmental policies that provide the legal framework for managing environmental problems. For example, the Ministries of Environment in most CEE countries are usually responsible for establishing regulatory standards that set specific pollution abatement levels. Environmental Ministries are also sources of technical and financial assistance. Depending on your country's regulatory framework, other ministries may share some environmental responsibilities. For example, in many CEE countries, the Ministry of Health oversees and enforces numerous health standards, such as drinking water quality and indoor air quality in the workplace. Many CEE countries have regional inspectorates that serve as the regional representatives for national ministries, such as Regional Environ-mental Inspectorates and Health Inspec-torates. These inspectorates will probably have direct responsibility for implementing specific components of the EAP, such as overseeing enforcement actions against environmental violators.

- *Private Sector:* Municipalities can hire private companies to fulfill public services, such as the collection and management of solid waste. Municipalities can contract and oversee private sector activities, while the private sector can design, construct, and operate environmental facilities. *(See Section 4.2: Evaluate Opportunities for Working with the Private Sector, below.)*

- *Non-Governmental Organizations:* Non-governmental organizations (NGOs) can play an important role in implementing a diverse range of activities related to environmental protection. NGOs are involved in conducting environmental education programs, implementing citizen-based environmental monitoring programs, conducting energy and environmental audits, overseeing wildlife protection areas, and installing environmental equipment and devices. NGOs can be valuable partners in your implementation efforts. *(See Section 4.3: Evaluate Opportunities for Working with NGO Sector, below.)*

- *Industries:* Your EAP will probably identify several industries — both private and government-owned — that will have specific responsibilities for reducing pollution levels. Your Municipality and regional inspectorates will need to work closely with these industries to bring them into compliance with any new environmental standards and programs.

Your community's implementation efforts will probably involve a mixture of these government, non-government, and private institutions. The SG, in cooperation with the municipality, can play an important role in identifying appropriate institutions, agencies, organizations, and individuals to seek their participation in the implementation phase. *(See Figure 4.1 — Case Study: Residential Water Conservation Program, Radom, Poland, below.)*

FIGURE 4.1

Case Study: **Residential Water Conservation Program, Radom, Poland**

Over the last 20 years, Radom has witnessed a significant decline in its underground aquifer — the major source of drinking water supplies in the city. In response, the Radom Public Committee for Sustainable Development (SKER) identified water efficiency programs as the best actions to address the problem. Subsequently, the Municipality implemented a pilot program that involved installing low-flow showerheads and faucet aerators in 1,800 residences. These devices reduced water consumption by 20-30% in each residence. In addition, the Regional Environmental Education Center implemented a water conservation education program throughout the City.

The Municipality and SKER established a Management Committee to oversee project implementation. The Management Committee was composed of representatives from the Municipality, the Environmental Committee of the City Council, the Water Utility, SKER, a local technical university, and a local environmental college. The responsibilities of the Management Committee included:

- Overseeing the implementation of the water conservation program and educational program;

- Informing the local community about the progress of the water conservation program;

- Monitoring data collection activities during program implementation;

- Coordinating the efficient flow of information about water usage and use of the water-efficient devices;

- Assisting in solving problems that occur in the process of implementation.

Now that the pilot program is nearing completion, the Municipality plans to expand the program to the rest of the City after carefully examining the results of the program.

Source: *Final Report: Polish National Environmental Action Program Pilot Project,* June 1997. Institute for Sustainable Communities, Montpelier, Vermont, USA.

4.2 Evaluate Opportunities for Working with Private Sector[2]

Municipalities and the private companies can work in partnership to provide various types of environmental services. This partnership often involves a contractual relationship between a public entity (e.g. municipality or municipal utility company) and a private company that commits both parties to providing a specific service. This contractual arrangement means sharing responsibility and risk for any one or more of the following activities:

- financing the project using public and/or private funds;

- designing and/or constructing the facility; and,

- operating and maintaining (O&M) the facility or service.

Different types of contractual arrangements are described below.

4.2.1 WHAT ARE DIFFERENT TYPES OF PUBLIC-PRIVATE RELATIONSHIPS?

There are five types of public-private relationships that are generally recognized. These relationships can be characterized by the roles played by both public and private sectors:

- *Contract services:* The municipality contracts with the private sector to provide a specific municipal service, such as solid waste collection, or to maintain and operate a facility, such as a wastewater treatment plant. The facility is owned by the public sector.

- *"Turnkey" facility:* A turnkey facility involves the private sector designing, constructing, and operating an environmental facility that is owned by the public sector (i.e. the public sector is presented with the "keys to turn the facility.") While the public sector generally assumes the financial risk, the private partner usually assumes the performance risk for minimum levels of service and/or compliance.

- *Developer financing:* In this type of arrangement, the private sector finances the construction or expansion of an environmental facility in return for the right to build residences, stores, or industrial facilities.

- *Privatization:* In privatization, the private sector owns, builds, and operates a facility. They also partially or totally finance the facility.

- *Merchant facility:* In this type of arrangement, not only does the private sector own and operate the facility, as with privatization, but also they decide to provide an environmental service to a community on their own initiative.

4.2.2 WHAT ARE THE ADVANTAGES OF WORKING WITH THE PRIVATE SECTOR?

There are five basic reasons to consider working with the private sector:

- *Potential access to more sophisticated technology:* Private companies often have greater technical and design expertise that enables them to assess opportunities for using more advanced technologies and making knowledgeable predictions of cost and performance benefits. For this reason, they may be more willing to undertake the risk of using new technologies.

- *Cost-effective design, construction, and/or operation:* Working with the private sector can lead to cost savings in several ways. First, since a private partner often operates similar facilities within the same geographical area, costs for operation and maintenance can be reduced because the private company can buy supplies in bulk and centralize administration. In many cases, the private company has a larger number of employees. This allows the private company to perform a greater number of repairs and maintenance procedures by moving highly trained staff from site-to-site. This can result in cost savings through reduced labor and repair costs.

  Turnkey arrangements provide communities with a second option for saving money. By consolidating responsibility for designing, constructing, and operating a facility into one contractual agreement rather than two or three, many of the delays associated with the procurement process can be avoided. As a result, you can reduce interest costs and achieve compliance goals more quickly. The costs to your community can be more predictable when one private company is responsible for all phases of construction and operation.

- *Flexible financing:* Sometimes private companies can bring private funding to help finance public facilities. For example, a private developer may contribute the initial capital and operate the leased facility under the public entity's overview. The developer contributes funds in exchange for the rights to use the new facility and/or receive future income from user fees. Thus, the developer finances the new capacity, thus shifting the burden away from individuals who are already using the environmental facility or system. The weakness in developer financing, as well as other types of private investment financing, is that the public sector takes the risk of the private developer possibly withdrawing or altering development decisions. Further, the developer is seeking to make a profit on the construction and financing of the public facilities.

- *Delegation of responsibility and risk:* Your municipality may not want the day-to-day burden of managing technologically complex facilities, and/or may lack the experience of raising large amounts of capital. If so, working with the private sector offers a way for your municipality to carry out its responsibilities without the burden of managing the service or facility. The risks involved in providing environmental services can be significant. Risks include design and construction delays, plant performance and environmental compliance, financial and tax liabilities, and labor instability. In working with the private sector, you can transfer certain risks to, and elicit guarantees from, the private sector. However, the private sector, if willing to assume these risks, will increase its prices accordingly.

- *Guaranteed cost:* A partnership between your municipality and a private company can provide certain benefits to a community through guaranteed costs. Guaranteed costs allow your community to accurately budget for an environmental service over a set period of time. This simplifies the budget process since the community no longer needs to make adjustments to provide for contingencies during the budget year.

4.2.3 WHAT ARE THE DISADVANTAGES OF WORKING WITH THE PRIVATE SECTOR?

There are two potential major disadvantages of working with the private sector: loss of local control and financial risks.

- *Loss of local control:* The argument most often heard against privatizing environmental services is that the municipality loses control over the financing, construction, and operation and maintenance of the facilities. By relinquishing ownership, the municipality also loses "hands on" control of the operation and maintenance of the system. That is, even though the municipality can hold the private partner accountable for performance, on a daily basis the private partner controls the method of service, compliance with treatment standards, discharge levels, etc. However, the municipality can specify

performance standards and hold the private owner/operator accountable for meeting these standards.

While loss of local control may raise some concerns, a partnership between the public and private sectors can be structured to provide the municipality with oversight and control of a privately financed and owned facility. With a privately-operated facility, the municipality can still retain control in:

- developing and implementing a user fee system,

- maintaining primary contact and interaction with users of the facilities,

- controlling growth in the service area,

- maintaining responsibility for determining whether the facility will be expanded and under what conditions it can occur,

- keeping responsibility for connections and disconnections,

- preserving the right to inspect the facilities and to perform fiscal, management, and/or operational audits, and,

- sharing any operational savings with the private sector through incentive programs.

- *Financial risk:* Another potential disadvantage of privatizing environmental services is the financial risk associated with a long-term contract. This is especially true if the private company faces financial problems or decides to withdraw from the project. In this case, the municipality could potentially assume unexpected financial risks and face costly litigation. Proper allocation of risks is of great importance, and it is essential that the community protect itself by hiring qualified legal, financial, and technical advisors to assist in the structuring of the service agreement and overall implementation of the privatization transaction.

Working with the private sector can offer real benefits, but your municipality must weigh the benefits with the risks. If you decide to use a private company to implement part of your EAP, choose that company carefully. You will want to identify companies that have experience working with similar problems and technologies. Ask the company for municipal references and then ask these municipal officials about their experiences with the company to make sure the company has a good record.

Hiring private companies to provide public services requires a carefully designed purchasing system to ensure that the selection process is fair and that your municipality uses taxpayer money in the most efficient and cost-effective way possible. *(See Attachment 4A: Process for Competitively Purchasing Equipment and Services.)* Some CEE countries have enacted public procurement laws that regulate how public entities such as municipalities must go about purchasing equipment and services. Your municipality will want to be sure to check on any legal requirements pertaining to preparing bids or request-for-proposals.

4.3 Evaluate Opportunities for Working with the NGO Sector[3]

4.3.1 HOW CAN THE PUBLIC AND NGO SECTORS WORK TOGETHER?

Traditionally, the relationship between government and NGOs has been characterized by mutual skepticism, adversity, and, at times, even acrimony. Increasingly though, both national and local governments and NGOs are recognizing their mutual interests in working cooperatively. Prompted by the enormity of the common challenges they face and the obvious limitations on the resources available to meet those challenges, local and national government agencies and NGOs are increasingly viewing partnerships as appropriate, useful, and even necessary.

There is a wide range of possible partnerships between government agencies and NGOs. Examples of some of the more common partnerships include:

- *Coalition-building:* Governments and NGOs can form powerful, effective coalitions that bolster each institution's ability to solve problems or raise money. For example, a government agency seeking funding from an international organization for environmental improvements is more likely to be successful if it partners with NGOs. This partnership can help demonstrate the local government's commitment to public participation and democratic decision-making.

- *Outreach assistance:* One of the main strengths and strategic advantages of NGOs is that they often have access to large networks of volunteers and citizens. Thus, NGOs can be well suited to help government agencies "reach out" to the public during the development or implementation of specific policies or programs, raising public awareness, and soliciting valuable public input.

Hiring private companies to provide public services requires a carefully designed purchasing system to ensure that the selection process is fair and that your municipality uses taxpayer money in the most efficient and cost-effective way possible.

• *Implementation assistance:* Local governments sometimes do not have the experience or the resources necessary to implement programs. Increasingly, NGOs are able to fulfill that role because they may have more specialized expertise, access to funding (e.g., grants specifically for NGOs), or because they have a greater ability to augment funding with volunteer time and energy. *(See Figure 4.2 — Case Study: Ezerani Nature Reserve, National Bird Study and Protection Society of Macedonia, below.)*

4.3.2 WHAT ARE THE ADVANTAGES OF WORKING WITH THE NGO SECTOR?

There are several reasons for considering government-NGO partnerships, including the following:

• *Making more democratic decisions:* NGOs typically have expansive networks of members and volunteers. By forming partnerships with NGOs, government agencies can take advantage of these networks to increase public awareness of government policies and activities, and to more meaningfully involve larger numbers of citizens in decision-making, policy-making, and implementation.

• *Making better decisions:* By definition, decisions that involve NGOs incorporate a wider array of the community's values and perspectives. Decisions that incorporate a broader range of perspectives are usually better, more durable decisions. In addition, NGOs often have members with experience and expertise that can complement or even exceed the experience or expertise that exists within government agencies. By forming partnerships with NGOs, government agencies can improve the overall quality of the decisions they make and the services they provide.

• *Bolstering resources:* Competition for limited public resources, particularly in CEE countries, is intense. NGOs can help bolster those resources and alleviate that competition through their often-substantial reservoirs of volunteer time, energy, enthusiasm, and expertise. By forming partnerships with NGOs, local governments can augment their own resources and thereby their own capacity to develop and implement policies and programs and solve problems.

• *Building public trust:* NGOs often enjoy more public trust than government agencies, as they are often perceived as more in tune with the values and interests of the citizenry. By forming partnerships with NGOs, governments can "piggy back" on that public trust, and over time, build more public trust in public sector institutions.

4.3.3 WHAT ARE THE DISADVANTAGES OF WORKING WITH THE NGO SECTOR?

There are potentially several disadvantages to working with the NGO sector as well. They include the following:

• *Longer, more difficult decision-making:* While broader-based decision-making may yield better, more durable decisions, it also may take more time and be more complicated. The more interests, values, and perspectives you are seeking to balance and incorporate into your decision-making process, the more time-consuming and arduous that process may be.

• *Questions about readiness:* In some CEE countries, many NGOs are new and relatively inexperienced. Like government agencies themselves, many NGOs are "in transition" — working to make their institutions more professional, effective, and transparent. Before forming partnerships with NGOs, government agencies should ask some basic questions, such as: "Is this NGO ready for partnership?" "Is it working well?" "Is the NGO using its current funding efficiently and effectively?" "Is it functioning in a democratic, transparent way?"

Working with the NGO sector can offer real benefits, but your municipality must weigh the benefits with the risks. If you decide to use an NGO to implement part of your EAP, choose that NGO carefully. You will want to choose NGOs that have demonstrated their experience in implementing similar programs. Ask the NGO for references and then ask these references about their experiences with the NGO to make sure it has a good record.

4.4 Review Existing Organizational Structures[4]

An EAP is only as good as the structures put in place to implement it. In many communities, the existing governmental structures used to manage local environmental services may not be most appropriate to meet new challenges and needs. Your community may need to modify existing organizational structures or establish new structures due to issues related to:

- *Jurisdiction within municipal departments:* Oftentimes, new structures will need to be put in place to assure that municipal departments coordinate their activities. The EAP may identify actions that address systemic environmental problems that pertain to a number of municipal departments. However, the limited disciplinary focus of traditional municipal departments may only permit each department to manage a specific set of problems within its area of responsibility. No one department may have responsibility for the functioning and health of a new multi-faceted environmental program. Therefore, implementing actions to address these systemic problems usually requires careful coordination among different municipal departments, such as green areas, transportation, finance, public health, and environmental protection, among others. Your municipality might want to consider establishing an inter-departmental environmental task force composed of representatives from each appropriate department to coordinate actions during implementation.

- *Overall jurisdiction of municipality:* One of the major problems affecting many communities today is the need for environmental services for new developments that occur outside the legal jurisdiction of the municipality. To address these issues, municipalities have extended existing municipal boundaries, renegotiated service territories, or transferred the powers and resources from one public institution (e.g. municipality) to another. For example, imagine that a new housing development has occurred outside the limits of current municipal waste collection, and consequently, solid waste is disposed in illegal waste dumps. In this case, the municipality may decide to expand its waste collection services to include this new development and to charge residents accordingly.

- *Multiple-municipal jurisdiction:* Economic factors may often point to the need for municipalities to work together to operate or manage an environmental facility. Small-sized communities can cooperate by jointly owning and operating drinking water, wastewater, and solid waste management facilities or by sharing personnel to perform certain common jobs, such as billing customers, purchasing supplies, maintaining equipment, and testing samples. Communities can also pool funds so that they can afford facilities or technologies that one individual community could not afford alone. To cooperate with other municipali-

FIGURE 4.2

Case Study: **Ezerani Nature Reserve, National Bird Study and Protection Society of Macedonia**

The northern shore of Prespa Lake in Macedonia is an important flyway stop for migratory birds. Through a partnership between the Bird Study and Protection Society of Macedonia (BSPSM) and the Macedonia Ministry of Environment (MMOE), the northern shore has been designated as the Ezerani Nature Reserve. The BSPSM worked with the MMOE to have the area declared a nature reserve, and then the MMOE gave responsibility to the BSPSM for managing the reserve. The BSPSM has successfully prepared grant proposals and received funds to renovate an old building on Prespa Lake to create a reserve headquarters and visitors' center. The BSPSM expects to establish a management system and recruit reserve rangers in the Spring 2000. Funding for the project has been provided by the Macedonian Fund for Environment and Nature Protection and international donors.

ties, you will need to decide what role each community will have, how conflict among the communities will be resolved, and how to pay for the cooperative activity or facility. Cooperation can be formally established through the creation of joint commissions or councils with representation from each participating municipality.

- *Ecological jurisdiction:* Many environmental and natural resource management challenges facing communities today are *regional* in nature, thus, suggesting that an approach that uses *ecological boundaries* to managing certain issues might be most appropriate. These issues can include watershed or river basin management, transboundary air pollution, and management of green spaces or forested lands.

Given the above jurisdictional issues, your community will need to determine what organizational changes will be needed to ensure effective implementation.

4.5 Secure Participation of Implementing Institutions

The SG can continue to play an important role to help ensure that recommendations in the EAP are fully implemented. Ideally, the municipality will give the SG a new mandate or "official directive" to facilitate, oversee, and monitor implementation efforts. The SG can be responsible for the following tasks related to implementation:

FIGURE 4.3

Case Study: **Implementation Plan, Chelm, Poland**

General goal	Protection of ground water against pollution
Specific goal	Channeling of all wastewater to a wastewater sewer system and/or treatment
Task	Implementation of the program for the extension of the sewer system (for present and future needs)

Necessary Steps	Responsible Parties	Supervision/ Cooperation	Deadlines	Costs (1999 prices, Polish zlotys)
1. Verification/revision of the chapter of the Water and Wastewater Program for the City of Chelm on the sewer construction	WSP WGPA MPGK	ZM	1999	Operational costs
2. Development of the financial program for the extension of the sewer and allocation of the resources for the program's implementation	WSP WGPA GFOSiGW	RM	2000	Operational costs
3. Preparation of a detailed program and a technical concept for the area of the Old Town	WSP WGPA MPGK	SOZ	2000	PLN 20,000
4. Preparation of the financial analysis for the sewer extension into rural areas adjacent to Chelm	WSP WGPA	WOS, neighboring communities	depending on the interest of local communities	PLN 50,000
5. Implementation of the revised program	MPGK	WOS, neighboring communities	2010	PLN 2,000,000

Expected effects	• Inclusion of 100% generated wastewater within the sewer system and its channeling to the wastewater treatment plant.
	• Elimination of inaccuracies in the water and wastewater management fields.
	• Improvement of the hygiene of the urban areas of the City.
	• Creation of possibilities to further the City's development in accordance with environmental requirements.
Comments	It is necessary to update the information on the progress in the implementation of the chapter of the "Water and Wastewater Program for the City of Chelm" concerning sewer construction, prepared in 1997 by the Central Mining Institute. In particular, the program provides for:
	• the inclusion of almost 100% of existing houses, except the houses at Wschodnia (Eastern) Street, where it is not economically viable to extend the sewer system;
	• provision of infrastructure for the areas designated for housing purposes;
	• for the full implementation of the program, it will be necessary to modernize the pumping station and increase the capacity of some sections of the wastewater system;
	• in view of the existing capacity reserves of the municipal wastewater treatment, there is also the possibility for treatment of some wastewater from rural areas adjacent to the City.

ACRONYMS

GFOSiGW	Municipal Fund for Environmental Protection and Water Management
MPGK	Municipal Enterprise of Public Services
RM	City Council
SOZ	The Historical Monuments Preservation Service
WGPA	The Department of Physical Planning, Architecture and Housing
WOS	The Environmental Protection Department
WSP	The Department of the City's Strategy and Promotion
ZM	City Management Board

- facilitating and securing the participation of institutions with responsibility for implementation,

- collecting data on appropriate indicators,

- monitoring and evaluating implementation efforts,

- conducting educational activities,

- facilitating citizen participation, and,

- advising the municipality or municipal council on environmental issues.

As the SG starts to take on new responsibilities related to implementation, it might be appropriate to consider reconfiguring its membership, as some institutions might be more interested in the LEAP planning phase versus implementation phase. The reconfigured SG could consider continuing to serve in an advisory capacity to the municipality or could even consider incorporating as a NGO.

The SG can play a critical role in bringing together different institutions with implementation responsibilities associated with each priority problem. One approach to ensuring coordination among these different institutions is to form separate Implementation Groups associated with each problem. Each Implementation Group would be composed of representatives from institutions with diverse implementation responsibilities, including investing in pollution control/reduction, enforcing against environmental polluters, undertaking education programs, and conducting research. You will find that many of the institutions represented on the SG will probably be also represented on each Implementation Group, including the municipality, regional inspectorates, industries, research/academic institutions, and environmental NGOs. Further, it will be valuable to have a representative from each Implementation Group serve on the SG to ensure effective coordination.

The SG can help secure the commitment of these institutions through an "Implementation Agreement" wherein each member of the Implementation Group agrees to undertake specific tasks. The Implementation Agreement can include the overall purpose, goals, and functions of the Implementation Group, as well as the specific responsibilities and resource commitments of each institution. In addition, the Agreement can include a summary of the specific tasks agreed to by each institution, along with a detailed time schedule. *(See Section 1.5.1 for items to include in a Memorandum of Agreement.)*

The SG will need to meet periodically to review the progress of each Implementation Group toward achieving the goals and targets in the EAP. Each Implementation Group will ideally provide regular progress reports to the SG, and the SG can provide a forum for sharing information among different Implementation Groups. Finally, it is critical that the SG provides regular updates to the municipal council on the status of implementation efforts.

4.6 Prepare Project Implementation Plan

The Project Implementation Plan seeks to integrate the actions for each priority issue into one overall, comprehensive strategy — helping to ensure that all of the actions work synergistically toward achieving the goals and targets. It is important that the Implementation Plan include the goals and targets established in the EAP; these goals and targets serve as benchmarks to measure the effectiveness of your actions. The Implementation Plan helps ensure that all tasks necessary for implementing each action are clearly identified and responsibilities clearly defined. It identifies specific tasks that need to be undertaken to implement each action, assigns a time schedule for completing each task, determines who will be responsible for completing each task, and identifies associated costs for each task. The Implementation Plan also provides a starting point for identifying cost items that are used in preparing the budget. *(See Figure 4.3 — Case Study: Implementation Plan, Chelm, Poland, above.)*

The first step in developing an Implementation Plan is to bring together implementing institutions, SG members, and other interested individuals. With a focus on one priority issue, this group can first review the set of actions identified in the EAP and brainstorm a list of specific tasks that are necessary to implement each action. After completing the brainstorm, you can re-arrange the list of tasks according to their relative chronological order. Next, determine when you would like the action to be implemented, and then develop a time schedule for each task that helps you meet that deadline. After developing a time schedule, clarify and assign responsibilities for undertaking each task and then identify any associated costs. You can complete a similar process for each action until you develop a comprehensive Implementation Plan for

The Project Implementation Plan seeks to integrate the actions for each priority issue into one overall, comprehensive strategy — helping to ensure that all of the actions work synergistically toward achieving the goals and targets.

FIGURE 4.4a

Sample: **Proposed Format for Project Implementation Plan**

Description of selected actions

Goals and targets

Strategy 1

Specific Tasks	Timetable	Responsible Groups or Individuals	Associated Costs
Task 1			
Task 2			
Task 3			
Task 4			
Task 5			
Task 6			

FIGURE 4.4b

Sample: **Alternative Proposed Format for Project Implementation Plan**

Goals/targets

Strategy 1

Responsible groups/individuals

Associated costs

Tasks	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Task 1	▬	▬	▬	▬								
Task 2				▬	▬	▬	▬					
Task 3					▬	▬	▬	▬	▬	▬	▬	

FIGURE 4.5

Sample: **Monthly Financial Statement**

Budget Categories	Original Budget	Current Expenditures	Cumulative Expenditures	Balance
Staff salaries				
Social insurance/taxes				
Consultants				
Travel				
Communications (i.e. telephone, fax)				
Copying/printing				
Office supplies				
Equipment				
Operation and maintenance				
Capital construction costs				
Debt service (repayment of loan)				
Office overhead/rent				
Miscellaneous				
TOTAL				

each priority issue. *(See Figures 4.4a and 4.4b — Proposed Formats for Project Implementation Plan, above.)*

It is important that the SG or other oversight group periodically review the Implementation Plan to determine whether tasks are being accomplished according to schedule. The Implemen-tation Plan will be a critical document in monitoring and evaluating your actions. *(See Chapter 5: Monitoring and Evaluating Actions.)*

4.7 Prepare Implementation Budget and Establish Accounting Procedures

A critical component of implementation is the creation of a system for accurately keeping track of project costs and revenues. This involves the creation of a budget and use of reliable accounting procedure.

4.7.1 PREPARE IMPLEMENTATION BUDGET

Implementation budgets are financial plans that state how much money you will need and how much money you anticipate receiving. They provide a mechanism for overseeing the expenditure of project funds and help with monitoring implementation activities. A budget also identifies planned revenue sources necessary to cover both capital and operating costs. Budgets can be used to clarify the availability and timing of the receipt of funds. A sound project budget, in combination with effective accounting procedures:

- assigns a monetary value to specific activities;

- guides expenditures so that monies are spent only on activities that directly support stated goals and targets;

- identifies necessary resources and specifies when those resources need to be expended;

- enables examination of the actual costs of specific activities;

- clarifies the relationship between project costs and the administrative and operating expenses necessary to sustain the project; and,

- provides information on potential cash-flow problems before they arrive so that necessary actions can be undertaken.

Two major budget categories are expenses (costs) and revenues (income). Cost estimates flow directly from the cost items identified in the Implementation Plan. It is important that all expenditures necessary to implement a particular action are identified and included in the budget. Budget cost items include salaries, social insurance/salaries, consultants, travel, communications, office supplies, equipment, capital construction costs, operation and maintenance, rent, and, miscellaneous. The project budget also identifies various revenue sources (e.g. municipality, local/regional utility, national government, and international financial institutions) and the expected amount of funds from each source. These revenues can come in the form of grants or loans, user fees and other charges.

4.7.2 ESTABLISH ACCOUNTING PROCEDURES

In order to monitor project expenditures and revenues, it will be important to establish effective accounting procedures. These procedures include the preparation of a monthly transaction report (or expense log) that keeps an accurate accounting of all receipts and related internal financial records. Receipts are legal documents that are kept for all expenditures, including the date of transaction, name of firm or business, description of product or service, and the amount paid or payable. The monthly transaction reports go hand-in-hand with the monthly financial statement that summarizes the budgeted amount for each line item (e.g. office supplies, salaries), how much has been expended during the month, the total expenses to date (cumulative expenditures), and the balance for each budget line item. By comparing budgeted amounts with actual expenditures, financial statements provide valuable tools for helping to ensure that money is being spent in such a way that sufficient funds will be available for planned activities. *(See Figure 4.5 — Sample Monthly Financial Statement, above.)*

4.8 Secure Financing

4.8.1 INTRODUCTION

Your EAP will contain a mixture of actions that will have a range of costs associated with them. For example, adopting a municipal ordinance requires very little or no expenditures on behalf of the municipality, public education programs require moderate expenditure

Raising capital for large environmental facilities will be one of your municipality's most serious implementation challenges.

levels, and building a wastewater treatment facility requires a large capital investment. Your municipality or other implementing institution will need to secure adequate financing for each action identified in the Implementation Plan.

Raising capital for large environmental facilities will be one of your municipality's most serious implementation challenges. Traditionally, in many CEE countries, monies for large environmental facilities have been allocated on an annual basis from national budgets — usually in the form of grants to municipalities. Due to cyclical economic fluctuations, shifting political tides, or the short-term flow of funds — these projects have often taken 10-20 years to build. Oftentimes, many projects have been permanently halted before construction was completed.

In the United States and Western Europe, financing for major environmental facilities is secured *prior* to starting the construction of these facilities. Funding is provided through a combination of national grants and loans, municipal bonds, and other sources. Municipalities usually cannot afford to pay their share of the capital costs in a single year because of the significant financial burden this would impose on its citizens. Thus, they borrow funds to pay for their share of the facilities, and then repay these borrowed funds over a period of years. Annual repayments, known as annual debt service, consist of both the principal, i.e. the original amount of the borrowed monies, and the interest payments on this amount. By borrowing funds, municipalities can help ensure that funds to cover all capital costs are secured before the first brick is laid.

4.8.2 EVALUATE SOURCES OF CAPITAL[5]

The following is a list of potential sources of capital. Some sources of capital, such as municipal bonds, may only be available in selected CEE countries.

- *Loans:* Long-term loans enable communities to pay for capital costs that require a large one-time investment. Lending institutions — whether they are commercial banks or national governments — require that borrowers provide adequate collateral for the loan, i.e. property of equivalent or greater value to the loan. This collateral provides the lender with the financial security they need in the unlikely event that the municipality is unable to repay the loan.

Many CEE countries have established National Environmental Protection Funds that provide loans (and grants) for environmental facilities. *(See Figure 4.6 — National Environmental Protection Funds for Central and Eastern Europe, below.)* In addition, international financing institutions, such as the World Bank and the European Bank for Reconstruction and Development, often provide loans for local environmental projects — usually through financial arrangements with national governments.

- *Grants:* Grants are funds that are set aside by the national government or other institutions to pay for special projects. In the United States, federal and state governments have traditionally covered a large portion of the costs associated with major environmental facilities. In providing these funds, the federal and state governments established a set of stringent requirements and standards that had to be followed by municipalities in order to receive these funds.

- *General Obligation Bonds:* Under bond-related capital financing, a municipality sells its bonds to a financial institution, and the financial institution provides them with monies for their project. The interest rate on the bond can be fixed or can vary each day or month or year. General obligation bonds are secured by the general taxing power of the municipality — which means that the municipality pledges to pay back the principal and interest through taxes over a fixed number of years. For the most part, municipalities that are borrowing for the first time will usually issue a general obligation bond.

- *Revenue Bonds:* Revenue bonds are based on a municipality's ability to repay borrowed funds based upon the projected revenues of the project — usually through user fees and charges. User fees are set high enough to cover the capital costs of the facility as well as the operational and maintenance costs.

4.8.3 EVALUATE POTENTIAL REVENUE SOURCES[6]

Municipalities use a variety of mechanisms to raise revenues to annually pay for capital and operating costs of environmental facilities. Your municipality will need to carefully consider and evaluate these options to see which revenue sources are most appropriate given its legal authority and local political considerations.

FIGURE 4.6

National Environmental Protection Funds for Central and Eastern Europe

National Environmental Protection Funds (Funds) provide financial support for environmental protection investments. These Funds are one of the basic instruments for the implementation of national environmental policies and are either directly managed or supervised by the Ministries of Environment in their respective countries. The first Funds were established in Poland, Czech Republic, and Slovakia in 1991, while Hungary and Bulgaria established national funds in 1993. Most CEE countries have since established a Fund. In 1995, the Funds from Czech, Slovakia, Poland, and Hungary spent over USD 700 million alone.

Most Funds provide financing for national and regional public infrastructure projects, support local projects (such as the construction of wastewater treatment plants and potable water systems) whose costs exceed the capabilities of local budgets, and projects of special concern. Recipients are municipalities, industrial enterprises, research and development institutions, and NGOs. Generally, non-commercial organizations may receive grants, while commercial enterprises may only apply for loans.

The Funds generate revenues mainly from economic instruments for environmental protection, such as user fees, emission fees, and non-compliance fines. Thus, environmental protection does not directly compete with other social programs for limited resources from national budgets. Air emission fees and wastewater charges tend to make up the major source of revenue, although details vary from country to country. National Environmental Protection Funds are set to play a leading role in environmental project financing in CEE in the coming years.

Source: "Environmental Protection Funds," June 1996. *The Bulletin,* Regional Environmental Center, Szentendre, Hungary.

Potential revenue sources include:

- *User Fees:* User fees require that individuals and businesses who receive the benefit of an environmental facility pay for the costs of the facility based upon how much they use (i.e. water or energy) or how much waste they generate. Municipalities in the United States and Western Europe have found that user fees provide the fairest and most equitable revenue source to pay for specific services, such as environmental improvements. User fees promote conservation of resources because people have a direct incentive to reduce their use or waste. User fees also provide a steady flow of funds to finance capital and operating costs. For example, many communities require water users to install meters that measure the amount of water consumed — monthly bills are then based directly on this amount. In some communities, user fees may be politically unacceptable as individuals and businesses that generate large quantities of waste will oppose them.

- *Emission Fees:* Emission fees are financial charges for the release of pollutants to the environment *within* admissible limits. Fees are based on the premise that certain human activities, such as manufacturing certain products or driving a car, cause pollution regardless of emission control requirements, and thus they impose costs (i.e. pollution) that must be born by all of society. Emission fees provide a mechanism for internalizing these costs into the price of a product. Permit fees for construction of new buildings or industries can also be a valuable revenue source.

- *Fines/Penalties:* Fines or penalties are applied to those individuals or industries that pollute *above* allowable limits or violate other regulatory requirements. Fines are mostly designed to provide financial incentives to polluters to comply with environmental laws. Fine amounts need to be set high enough to encourage polluters to make the necessary investments in pollution prevention or control equipment. Fines can not be relied upon as a steady revenue source.

- *Property Taxes:* In general, property taxes are one of the primary revenue mechanisms for providing basic municipal government services, improvements, and administration. The salaries of the mayor and staff, and the general operating costs of various departments, such as police, fire, and sanitation, are usually funded out of general property taxes. In the United States, most municipalities have decided that large-scale environmental projects such as wastewater treatment facilities and drinking water systems should not be paid for out of general property taxes.

- *Special Assessments:* Special assessments provide a mechanism for assessing (or taxing) property owners who receive the benefits of an environmental improvement — usually in direct proportion to the benefit they receive. Assessments are similar to property taxes, except the assessments are charged only to those property owners within the "assessment area" who

are receiving the environmental service. For example, suppose your city needed a wastewater treatment plant for a particular area of the town. The city could create a special "wastewater district" just for that area. The city would then assess or tax properties in the district to pay for the cost of the wastewater improvements, while other areas of the town — particularly undeveloped or less developed areas — would not be burdened by these costs. Creating districts for environmental projects has enabled municipalities to gather support for environmental projects for designated areas.

4.8.4 PREPARE PROJECT FINANCING PLAN

The finance plan assesses the feasibility of securing and repaying the necessary funds to pay for the project. A Project Financing Plan addresses all aspects of raising the necessary capital to construct a large environmental facility or system. (A "system" consists of all the components for adequately delivering an environmental service, such as the treatment facility and pipe collection network for wastewater.) It describes the technical aspects of the project, how much the project is expected to cost, and how the borrower expects to repay borrowed funds to the lender. Preparing a Project Financing Plan provides a systematic process for helping to answer a wide range of questions that financial institutions will need before they will be willing to loan your municipality money. These questions include:[7]

Technical Aspects of the Project

- What environmental improvements will be achieved as a result of the project?

- What analysis was conducted to verify that the selected technology will achieve the desired level of environmental improvement?

- Is the project required to meet national laws or regulations?

- How does the project compare to alternative solutions? Does the project represent the most cost-effective solution?

- Does the project use a proven and demonstrated technology?

- What criteria were used to select the proposed project?

- Are the environmental impacts fully understood and mitigated as appropriate?

Strength and Capacity of the Borrower

- Does the borrower have sufficient assets to secure the loan?

- Does the borrower have a reliable source of revenue to repay the loan? What are the annual revenue projections over the life of the project?

- Does the borrower have sufficient experience and capacity to manage the project from a technical and financial point of view?

- Is the financial management system of the borrower adequate to ensure effective management of financial resources?

- What will the financial impact upon residents and businesses be from the new facility or system? Can they afford the rate increases that will be necessary to pay for the technology?

- Does the project have the support of the local community or region? Describe the basis for your assessment of community support.

- Have all necessary regulations and legal approvals been received by public entities?

Project Financing Needs

- What are the key cost assumptions and total financing requirements of the project?

- What are the sources of revenue for the project? Are the revenue projections reasonable and sufficient to cover all capital, operating, and maintenance costs?

- What are the terms and conditions of all borrowed sources of financing?

It is important to note that preparing a Project Financing Plan is a highly specialized field and will, in all likelihood, require hiring qualified consultants. Your municipality will need to tailor its financing application to the specific requirements of each financial institution from which it seeks funds. Each of the questions identified above will require extensive analysis and documentation to provide assurances to lending institutions that your project is technically feasible and that your municipality or utility company can provide a reasonable assurance of repaying borrowed funds. Thus, the Project Financing Plan provides a framework for identifying the types of analysis and information you need to adequately finance a major environmental facility. *(See Attachment 4B: Developing a Financing Plan for Municipal Environmental Projects.)*

4.9 Ensure Effective Integration of EAP into Statutory Planning Processes

The EAP can only provide effective direction to the municipality's (and other implementing institutions) most fundamental decisions if it is linked with its legal or "statutory" planning processes. These statutory processes include the annual budgeting processes, preparation of municipal development plans, capital infrastructure planning processes, and general land-use plan reviews.[8] (Ideally, your SG has established these linkages with these statutory planning processes at the early stages of the planning effort, thus increasing the chances that these recommendations will actually be incorporated.) Some examples of how recommendations from the EAP might be incorporated into these statutory planning processes include:

- If your EAP recommends the construction of a new wastewater treatment plant, SG members can work with the budget committee or infrastructure planning committee of the municipal council to help ensure that adequate funds are allocated for the treatment facility.

- If your EAP recommends protecting undeveloped lands surrounding the urban core of the City, SG members can work with municipal staff in identifying and mapping areas of the community. This information can then be incorporated into the preparation of the next land-use or development plan.

- If your EAP recommends a new local ordinance requiring residents to source separate recyclable materials from solid waste,

SG members can work with Mayor's Office and Municipal Council to craft legal language and push for passage of the ordinance.

Your SG might also consider integrating EAP recommendations into various regulatory processes to provide adequate enforcement mechanisms. For example, your SG could work with the regional environmental inspectorate to ensure that pollution reduction agreements and resource commitments identified in the Implementation Agreement are reflected in their actions. Ideally, the enforcement agency would be represented on the SG to ensure consistency.

Integrating EAP recommendations into the existing statutory planning processes at the local and regional levels is critical to successful implementation.

Conclusion

Successful project implementation may be the biggest challenge to your LEAP. Your community's efforts will ultimately be evaluated by how well various institutions implement the recommended actions in the EAP and by the improvements in environmental quality. Your municipality and other implementing institutions will face numerous challenges as they implement environmental actions, including securing the participation of relevant institutions, raising sufficient funds to finance large environmental investments, and ensuring that each institution with implementation responsibilities follows through on its commitment. Good luck in your efforts.

Attachment 4A: Process for Competitively Purchasing Equipment and Services[9]

The following is a suggested procedure for competitively purchasing equipment and services (also known as "issuing a tender"). This competitive process can help ensure that your municipality purchases a product or service that is most advantageous to its needs and offers the most responsive and responsible services for the quoted price. Be sure to check any relevant national laws or regulations pertaining to proper procedures for public sector purchases of supplies, equipment, and services.

STEP 1. DETERMINE WHAT YOU NEED TO PROCURE

Whether you need to construct a major wastewater facility, or purchase chemicals for water quality sampling, it is important to specifically determine what services or supplies must be put out for bid.

- *Define your project very carefully:* Describe your project to vendors or contractors in sufficient detail to ensure that you receive responsive bids for your project that can be priced and compared to each other. This is called a purchase description and may include particular information regarding project specifications, quality, performance, warranty, installation, and terms of agreement. For consultant services, the purchase description may also include a "Scope of Services" detailing specific services required, including work products to be produced under the contract.

- *Estimate the value of the contract:* It is important to determine an estimate for what you believe the supplies and/or services are worth in monetary terms. For a lower cost contract, a simple request-for-bids is generally sufficient, while for higher value contracts it is usually desirable to prepare a full request-for-proposal.

FIGURE 4.7

Format for Request for Proposal

Proposal submission requirements

Purchase description

Minimum evaluation criteria

Comparative evaluation criteria

Methodology for determining lowest price

Contract terms and conditions

- *Establish a schedule of performance:* You must specify when you require each supply or service. What are the dates for work products to be delivered to you? It is usually best to have an approximate schedule with a statement that it is subject to minor adjustments. This information could be included in the purchase statement.

STEP 2. DEVELOP EVALUATION CRITERIA

It is important to communicate to contractors in sufficient detail the standards that will be applied to the bids or proposals you receive. The evaluation criteria define these standards. If you are unsure about whether to solicit bids or proposals, defining the evaluation criteria to be used will assist you in making this decision.

- *Minimum evaluation criteria:* These are "yes or no" standards. Minimum criteria are used to evaluate whether a contractor or bidder is "responsive" and to identify "responsible" bidders. A responsive bid or proposal is one which contains all information requested in the Request for Proposals (RFP). A responsible bidder or proposer has the capability, integrity, and reliability to perform under the contract.

  Responsiveness is the most important test to be applied to any bid or proposal. For example, if your RFP stated that the proposal identify a project director with at least five years of experience and the proposer submits a proposal with a project director with only three years experience, the proposal is non-responsive, and should be rejected.

  Experience requirements of a proposal may stipulate that the contractor attest to satisfactory performance on related projects. For example, the proposal can require that a firm has been providing this specific service for a certain number of years. Responsibility may be examined in the bid process when the apparent low bidder has been identified. For example, you may use references to ascertain whether the apparent low bidder has a record of satisfactory performance.

- *Comparative evaluation criteria:* These are only used in evaluating proposals (versus bids). These criteria allow you to compare the relative merits, or quality, of the responsive proposals. In defining the comparative criteria, make them as

specific as possible and tie them in as closely as you can to the tasks contained in the scope of work.

Comparative evaluation criteria reflect those standards or attributes for which you would be willing to spend more money. A rating system can be developed to help classify different proposals. Applicants' proposals can be classified as highly advantageous, advantageous, not advantageous, and unacceptable. For example, if experience were being evaluated, over ten years of experience might be considered highly advantageous, seven to ten years might be advantageous, five to seven years would be not advantageous (but might meet the minimum criteria), and less that five years would be unacceptable.

When establishing evaluation criteria it is helpful to ask the following questions:

- *Are the minimum criteria sufficiently rigorous?* If you are reluctant to award a contract to a vendor meeting your minimum requirements, you probably need to toughen up these "yes or no" standards. Set your minimum requirements high enough to get the services or supplies that best meet your needs.

- *Are there attributes beyond the minimum standards that would be worth a higher investment of public funds?* For example, is a consultant with ten years of directly related experience more valuable than one with a minimum of five years experience? If not, then the five year minimum criterion is adequate. However, if you would be willing to pay more for an experienced consultant, it is appropriate to consider experience both as a minimum criterion and comparative criterion.

- *Are there attributes beyond the minimum standards which are acceptable but risky?* For example, while you believe a consultant with ten years experience would be better than one with five years experience, you might still be willing to award the contact to the consultant with only five years experience if the proposal was significantly lower in price.

Remember when developing evaluation criteria that imposing unimportant or unnecessarily restrictive standards on prospective bidders or proposers will serve to reduce competition for the contract and will be likely to increase the cost of the contract. Thus, it is important to carefully consider which criteria will add significant value to your efforts to evaluate proposals.

STEP 3. SELECT PROCUREMENT METHOD

Two forms of competitive procurement are generally used when contracting for supplies or services: 1) bids, and 2) request for proposals (RFPs). Bidding is a basic procurement method which awards the contract for supplies or services to the competing contractor solely based upon the lowest price. The RFP process permits you to award the contact to the competing contractor whose proposal is the most advantageous to your needs and offers the most responsive and responsible services for the quoted price. The lowest price is not the only factor here.

When an accurate purchase description is produced, and rigorous minimum criteria applied, the bid process will yield a group of responsive bids submitted by responsible bidders. You need only select the bid offering the best price. The RFP process, on the other hand, permits you to weigh the relative merits of competing proposals. This process may not always result in selection of the applicant offering the best price.

STEP 4. PREPARE RFP TO BE OFFERED

A RFP will contain all the information needed for contractors or proposers to make a proposal. Make copies of the RFP equally available to all who request it. In general, an RFP should include the following major components:

- *Proposal submission requirements:* Submission requirements should include: the time and date for receipt of proposal, the address to which proposals are to be delivered, the latest time of day proposals will be accepted, and whether or not you want the price and non-price elements of the bid or proposal to be submitted separately. The advantage of having the prices separate in a proposal or bid process is that the technical specifications can be reviewed separately to insure that minimum criteria are met before you see the price.

- *Purchase description:* This provides a detailed description of the attributes or characteristics of the item or service that you want to procure.

- *Minimum evaluation criteria:* (described above).

- *Comparative evaluation criteria:* accompanied by an explanation of how rating will be assigned (described above).

- *Methodology for the determination of the lowest price.*

- *Contract terms and conditions*; and,

- *Any standard forms* that may be required.

Once your RFP is developed, public notice is made of its availability. Two weeks is considered a minimum time for announcement of a bid opportunity. For complex projects more time is often given between public announcement and completion of proposals by bidders.

The public notice contains: a statement of when, where, and for how long copies of the RFP may be obtained; a description of supply or service desired; a notice that your jurisdiction reserves the right to reject any or all proposals; and, an identification of any board, committee, commission or other body that must approve the contract. If it becomes necessary to amend your RFP after public announcement, make sure copies of the amendment are sent to all prospective bidders who received the RFP. Your public notice can be posted in newspapers and sent to any contractors you have identified as potential bidders. These firms are usually maintained on a bidders list. You may also call prospective bidders to encourage proposals. However, it is important to avoid the appearance of favoritism if you want a fair and competitive process.

STEP 5. DEVELOP CONTRACT TERMS AND CONDITIONS

You should develop the contract terms and conditions prior to issuing the RFP. It is best not to leave contract terms open for negotiation. Setting the terms and conditions within the RFP is in the best interest of your municipality and the selected contractor because you will both know your responsibilities and requirements for the project.

Be sure to write the contract in consultation with your legal advisor or attorney. The amount of detail in the contract will depend upon the size and nature of the procurement. In preparing the contract consider the following items:

- identify the parties to be contracted;

- incorporate by reference the purchase description;

- specify the term of the contract including renewals, extensions, or other options;

- identify the payment terms including when payment will be made and what documents must be submitted;

- specify that payment is subject to appropriation of other available funds;

- specify remedies for default;

- specify contractor's responsibility for providing liability insurance;

- specify that all contract amendments must be in writing and signed by officials with authority to bind the contract;

- specify what constitutes cause to terminate the contract and what notice must be given by both parties prior to termination of contract;

- prohibit any activity that would constitute a conflict of interest; and,

- specify that the document is the entire contract, and that there are no agreements other than those incorporated therein.

These are some of the basic elements that can be included in any procurement contract. The terms and conditions will vary depending on what is to be procured and the type of project involved. Clear and exact terms and conditions will make it much easier to resolve any dispute that may arise during a project.

STEP 6. ACCEPT BIDS AND CHOOSE BEST PROPOSAL

Once your RFP is available to the public, you will begin receiving proposals from bidders. Designate the individual(s) responsible for evaluating the proposals. Once you receive proposals it is best to maintain an official register of proposals received. It is good practice to note on each proposal the date and time it was received, and to provide the bidder with receipts upon request. If a proposal arrives after the designated cut-off period, it usually is rejected as a "non-responsive" proposal.

Proposals are opened at the same time by the individual(s) responsible for evaluation. Generally, proposals are not opened publicly and are kept confidential and not disclosed to the competing proposers until the evaluation process has been completed. Bids that are chosen based on price alone are often opened publicly. In both situations, the RFP or bid opening is done in the presence of witnesses. For proposals in which the technical component is separate from the price component, the evaluators do not see the price components until evaluation of the technical components is completed.

The next step is to screen the proposals for responsiveness and responsibility. Upon determining that a proposal meets responsiveness and responsibility criteria, evaluate the proposal based on any com-

parative evaluation criteria you have developed. For each of the comparative criterion, assign a rating of highly advantageous, advantageous, not advantageous, or unacceptable. The record of proposal evaluations must show the rating assigned for each evaluation criterion, the reasons for each rating, the composite rating assigned to the proposal, and the reasons for each composite rating.

Identify the most advantageous proposal based on your evaluation. In many cases, you will find that the lowest priced proposal is the most advantageous if all your responsive and responsible criteria have been rigorously applied. Upon identifying and accepting the most advantageous proposal, award the contract. Written notice is given to the selected bidder within the time for acceptance you specified in your RFP. If you do not award the contract to the party that submitted the lowest price, you should prepare a written explanation of your reasons.

Following the notification of the award to the successful bidder, issue a written contract containing all the terms and conditions stated in the RFP. The contractor must follow the terms and conditions you established and is not allowed to change them.

SUMMARY

Using a competitive procurement system can prove to be both cost-effective and efficient. Using private sector contractors rather than public agencies is often a more effective and economical way of completing public projects in a timely manner. When using a competitive process it is important to ensure that the process is fair to all parties and that favoritism or special interests do not come into play. Competitive procurement is one tool that can help municipalities and government entities get the best service and products for their needs. *(See Figure 4.7 — Format for Request for Proposal, above.)*

Attachment 4B: Developing a Financing Plan for Municipal Environmental Projects[10]

The questions below provide a frame-work to help your municipality develop a Project Financing Plan. The questions address basic information requirements that financial lending institutions will need prior to loaning funds. The amount of information required will vary with the lending institution. You will want to seek the specific loan application requirements for each lender. *(See Figure 4.8 — Sample: Project Financing Plan, below.)*

A. PROJECT SUMMARY

1. Description of Environmental Project

- A brief narrative description of the proposed project

2. Environmental Problem

- What is the environmental problem being addressed?

- What are the negative health and ecological impacts caused by the problem?

- What percentage of the population and local or regional ecosystem is affected by the problem and how severe are the impacts?

3. Project Benefits

- What environmental improvements will be achieved as a result of this project? Provide any quantitative information available that documents the anticipated level of environmental improvements.

- What other benefits will accrue as a result of this project? For example, will the project result in the creation of new jobs or energy savings?

- Does the project plan include staff training?

4. Basis for Project Selection

- What process was used to set environmental priorities? Is the proposed project part of a long-term action to improve the physical infrastructure?

- Have alternatives to the project been fully examined? Have opportunities for pollution prevention and resource conservation been fully explored? Describe what alternatives have been examined.

- What criteria have been used to select the proposed project, e.g., cost-effectiveness analysis, implementation time, flexibility, public acceptability? What was the basis for selecting the proposed project?

- Does the project represent the least-cost alternative? Has a life-cycle cost analysis been undertaken that examines both capital and operating/maintenance costs over the life of the project? Were the projected operational and maintenance costs discounted (i.e. taking into account the time value of money) to provide a summary of life-cycle costs analysis conducted?

- What complementary actions are planned to ensure effective implementation of the proposed project, e.g., public education and training, economic incentives, and regulatory/legal actions?

- What is the allocation of costs between engineering/design, construction, equipment, land, permanent working capital, and start-up expenses?

5. Project Sponsors

- What primary organization or agency is sponsoring the project? What is the legal structure of the primary sponsor and its primary authority/responsibilities? Who are the primary management personnel and what are their positions?

- What is the financial management system of the primary sponsor? Provide adequate documentation verifying that the primary sponsor has an adequate system for ensuring effective management of financial resources, including information on the process for planning and budgeting, revenue estimation, purchasing, accounting, debt management, and auditing and reporting. Provide biographical information on the financial management team.

- What experience and capacity does the primary sponsor have to manage the construction and operation of the project from both a technical and financial point of view? If there is no experience, what arrangements have been made to provide this resource?

- Are there any project co-sponsors or other organizations and agencies that will be integrally involved in project management, operations, or oversight, e.g., municipality or utility companies? Please describe who they are and what their relationship to the project is.

- What role does the private sector play in the project? To what degree will private

companies participate in the project, e.g., design only, design and build, and operate? Identify and include information on the experience and qualifications of any consultants or private companies that have been or will be involved in the project and the method for determining how they will be selected.

6. Community Support

• Does the project have the support of the local community or region? Describe the basis for your assessment of community support.

• What types of activities have been undertaken to inform community members and solicit their views and support regarding the proposed project? Were efforts to secure community support undertaken throughout the project development? Describe efforts to involve the public and a schedule of activities undertaken.

• Have all necessary regulations and legal approvals been received by public entities, e.g., votes of municipal council, voter approval?

B. PROJECT DESCRIPTION

1. Description of Proposed Technology

• Describe the proposed technology in detail, including the engineering analysis and specifications.

• Describe to what degree the proposed project requires construction of new facilities versus modernization of pre-existing facilities.

• What analysis was conducted to verify that the selected technology would achieve the desired level of environmental improvement?

• Is the proposed project a proven and demonstrated technology? Provide documentation about the proven effectiveness and dependability of the technology.

• Please identify which manufacturers and companies will provide the selected technologies. What type of assistance will the technology supplier provide, i.e., training for operational staff?

2. Description of Environmentally Related Issues

• Have environmental impacts of the proposed project been examined? Describe them.

• Has an environmental assessment been conducted for the proposed project? What

were the results? Are any environmentally mitigating actions proposed as a result of the assessment?

• Are any environmental controls proposed? Describe them.

• Describe the historical and current environmental status of any land used for the project.

3. Compliance with Laws and Regulations

• Have all necessary national, regional, and local permits been obtained? Provide documentation.

C. PROJECT FINANCING COMPONENTS

1. Structure of Project Financing

• What are the sources of financing for the proposed project? Describe all sources of financing, including loans, grants, and reserves.

• Is the combined financing from these sources sufficient to cover all capital costs, planning and design costs, and other fees?

• What are the terms and conditions of borrowed sources of financing? Describe the following:
  - What is the interest rate? Is it variable or fixed?
  - What is the payment term, i.e., the period over which the loan must be repaid?
  - Is there a project grace period (i.e. time period in which no payments are required)? How long is it?
  - Are interest costs capitalized?
  - What is the repayment plan? Is the principal portion of the payment level over the course of the loan or does it decline?
  - Are there any up-front fees?
  - What are the annual debt service (principal plus interest) and the total debt service over the life of the loan?

• What types of collateral (property, equipment) or other guarantees can the primary sponsor offer to secure the loan?

2. Financial Overview

• What are the key cost assumptions for the proposed project, i.e., operational and maintenance expenses, debt service, capital expenditures, and working capital? Provide documentation of cost estimates and projections, and how this information was generated.

FIGURE 4.8

Sample: **Elements of a Project Financing Plan**

A. Project summary	• Description of environmental project (summary);
	• Environmental problem;
	• Project benefits;
	• Basis for project selection;
	• Project sponsors;
	• Community support.
B. Project description	• Description of proposed technology;
	• Description of environmentally related issues;
	• Compliance with laws and regulations.
C. Project financing components	• Structure of project financing;
	• Financial overview.

- What revenue sources will be used to cover project costs? How reliable are these sources of revenue? Are the revenue projections reasonable and sufficient to cover expected costs? Provide documentation.

- If user fees are anticipated as a source of revenue, what is the proposed rate structure? Does the rate structure encourage resource conservation, i.e. increasing rates for greater usage? Describe the proposed rate structure.

- If user fees are proposed, have rate impacts been analyzed for both residential and industrial customers? What percentage of annual income of residential customers will proposed costs of the project comprise? Provide documentation.

- Has a cash flow projection analysis been conducted for the proposed project? Are the projected revenues or sources of cash flow over the term of the loan adequate to
  - provide all the capital required to build, operate, and maintain the project;
  - service the debt; and,
  - make required replacements and renovations.

- Provide a description of how revenue calculations were developed, along with adequate documentation.

Chapter 5: **Monitoring and Evaluating Results**
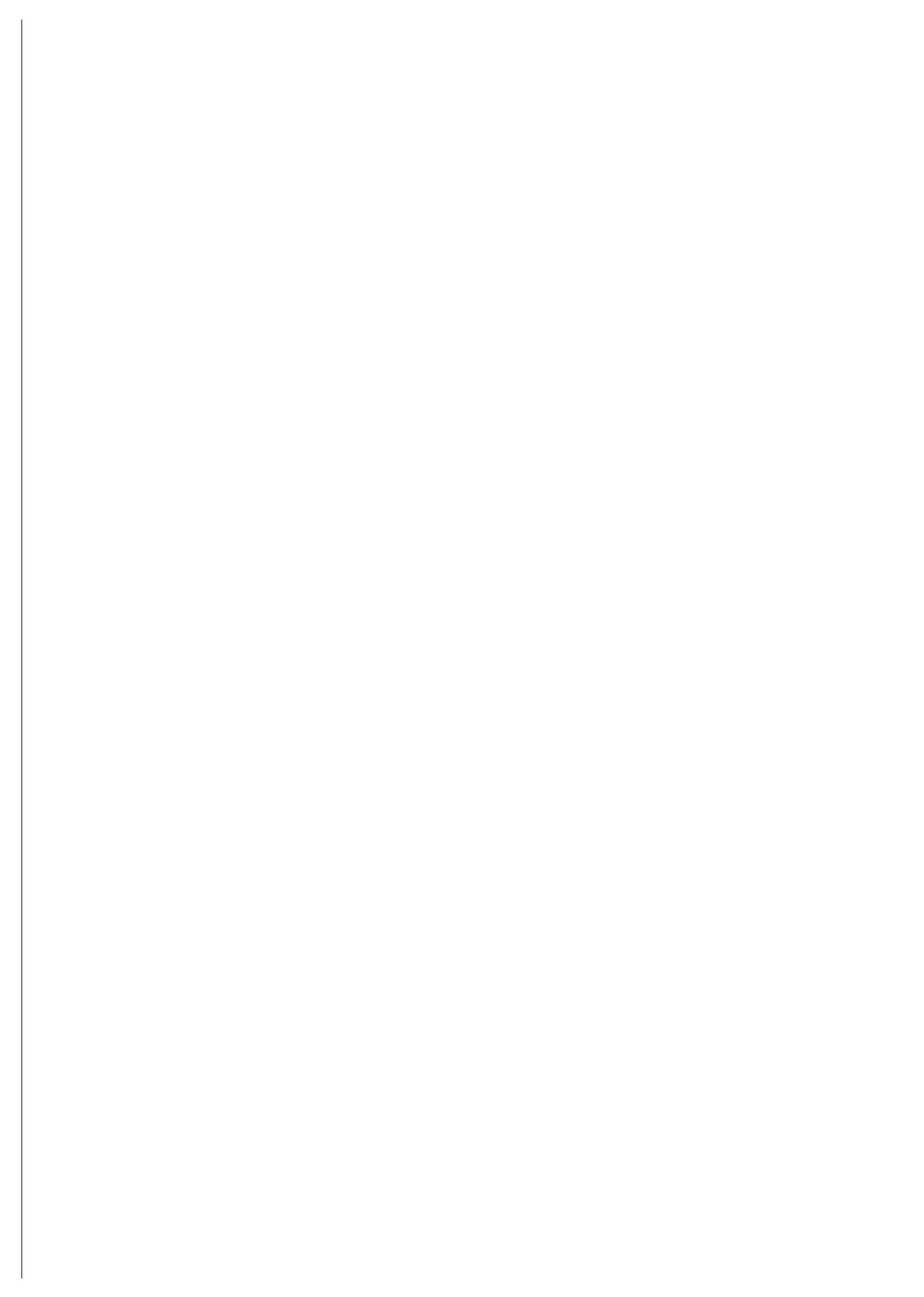
Chapter 5: Monitoring and Evaluating Results

"There is nothing so easy to learn as experience and nothing so hard to apply." — Josh Billings

5.0 Introduction[1]

Monitoring and evaluation is perhaps one of the most often overlooked and under-emphasized elements of action implementation — despite its importance in tracking whether or not the EAP is achieving its intended goals. An effective monitoring and evaluation process provides ongoing, systematic information that strengthens project implementation. The monitoring and evaluation process provides an opportunity to:

a) compare your implementation efforts with your original goals and targets,

b) determine whether you are making sufficient progress toward achieving expected results, and,

c) determine whether you are adhering to the project time schedule.

Monitoring and evaluation is not an "event" that occurs at the end of a project, but is an ongoing process that helps decision-makers better understand the effectiveness of the action or project. An effective monitoring and evaluation program requires collecting and analyzing important data on a periodic basis throughout the life of a project. This process often involves collecting baseline data on existing conditions, reporting on progress toward environmental improvements, making connections between actions and intended outcomes, and making mid-course changes in program design. A good monitoring and evaluation process engages all stakeholders and is useful to those ultimately responsible for improving the project. Evaluation can be viewed as a learning tool for managers and project participants, as well as an important public awareness and educational tool.

To get the monitoring and evaluation efforts off the ground, the Stakeholder Group (SG) can assemble a Monitoring and Evaluation Team (MET) to help design the evaluation approach and to evaluate project results. The MET can be composed of individuals with specific expertise in project evaluation, agencies responsible for providing environmental data, and implementing institutions, such as industries, with specific environmental requirements. For example, if your proposed implementation action involves undertaking a residential water conservation program, the MET could consist of representatives from the water utility, municipality, housing association, environmental group, and local university.

Evaluations cost money, and your SG will need to address the issue of "who pays." Possible funding sources include the Municipal Environmental Fund, municipal budgets, or the National Environmental Protection Fund.

5.1 Review Environmental Targets and Indicators

In preparing your EAP, your Stakeholder Group (SG) has hopefully developed environmental goals, targets, and indicators for environmental issues. *(See Section 3.3: Set Environmental Goals and Targets, and Select Indicators.)* Environmental targets are measurable commitments (e.g. 20 percent reduction in pollution levels) to be realized within a specified time frame (i.e. within 5 years). Thus, they provide a framework for measuring your progress in implementing actions. Indicators measure whether these environmental targets are being achieved.

The first step in preparing your evaluation approach is to review environmental targets and indicators established in the EAP and consider the following questions:

• Since the EAP was prepared have you received new information about the expected impacts from implementing selected actions?

> An effective reporting system records the performance of all institutions with implementation responsibilities. This reporting system, in effect, provides a system of accountability for all responsible parties on how well they are achieving the goals and targets established in the EAP.

- Are the targets realistic and the proposed timeframes reasonable?

- Are the indicators valid measures of selected targets?

For example, in preparing the Implementation Plan, you may have received new information that the planned reduction levels of a specific pollutant (i.e. target) were unrealistic given budgetary limitations. Since these targets were ideally reached through an agreement of the SG, the MET will want to have any proposed changes in targets reviewed and approved by the SG.

5.2 Establish Reporting System

An effective reporting system records the performance of all institutions with implementation responsibilities. This reporting system, in effect, provides a system of accountability for all responsible parties on how well they are achieving the goals and targets established in the EAP. An effective reporting system ideally includes the following elements:[2]

- Clearly articulated environmental targets and a set of indicators to measure performance (as described above);

- A schedule and set of guidelines for all responsible parties to report to each other;

- An opportunity for responsible parties and stakeholders to periodically meet to coordinate actions and to review each others' performance; and,

- A link between the evaluation reports and relevant statutory planning cycles of the municipality, such as annual budgeting and capital planning, so that the municipality can adjust its plans based on the actions taken by other sectors.

The MET may want to consider preparing a standardized report form to facilitate the collection and compilation of data. Each institution submits information to the MET, which in turn compiles this information into a status report. These status reports are ideally circulated to a variety of audiences, including the municipal council, mayor's office and staff, community members, and Implementation Group members. The language and style of reports may change depending on the audience; however, the information conveyed needs to be consistent and accurate. A clear and understandable reporting system provides an invaluable link in the monitoring and evaluation process.

5.3 Collect Data on Baseline Conditions and Project Results

Ideally, most evaluations include collecting both quantitative and qualitative data. Quantitative data is information that can be counted and measured. Quantitative environmental data focuses on actual environmental improvements, such as the amount of waste reduced or energy saved. Mechanisms for collecting quantitative environmental data are usually program-specific, such as using water meters to measure actual water consumption. On the other hand, qualitative data is a more difficult measurement of program success. It includes assessments of problems encountered, consumer satisfaction, and unanticipated benefits. Qualitative data can give a real understanding of the actual impact your project is making on people's lives. It is usually collected through instruments such as surveys and personal interviews.

You can provide your community with a better understanding of the project successes and challenges by collecting both types of data. For example, to address persistent water shortages, a town might decide to implement a pilot water conservation program to install low-flow showerheads in residences. A quantitative data collection effort would focus on how much water has actually been saved, while qualitative data would reveal how satisfied consumers were with the performance of the new showerheads. Both types of information are imperative to determine whether the program was successful.

As you collect data, considering the following questions:

- Which indicators are data currently being collected for?

- What are some key information sources? Are representatives from these information sources currently represented on the MET?

- How valid and accurate is the data?

- Is the data easily accessible and available?

- Are there any costs associated with acquiring the data?

- For those indicators where no data currently exists, what steps are involved in collecting new data? How expensive would a new data collection effort be?

Be sure to collect data on your environmental indicators prior to beginning implementation. This will provide you with baseline data on existing environmental conditions upon which the impacts

of implementing selected actions will be measured.

In collecting data, it is important to distinguish between *compliance monitoring* versus *effectiveness monitoring* — both types of monitoring are important. *Compliance monitoring* measures whether the implementing institution did what it said it was going to do (e.g. install 5,000 low-flow showerheads), while *effectiveness monitoring* measures whether the actions achieved their intended result (e.g. reducing water usage by 20% per household). Of course, the real measure of success is effectiveness, i.e. how well environmental conditions are improving. How-ever, compliance monitoring is a critical piece of the evaluation process to help determine whether implementing institutions have fulfilled their resource commitments.

5.4 Evaluate Results[3]

Once you have agreed upon your targets and indicators, established your reporting system, and collected your data, you are ready to conduct your project evaluation. The evaluation process involves comparing your actual results to the targets identified in the EAP and Implementation Plan, including whether the results were achieved within the designated timeframe. It is important that the evaluation occur periodically throughout the life of the project and at project completion. The evaluation report includes a summary of major activities, results achieved, and the direct impact on project beneficiaries. It identifies lessons learned in order to improve existing and future projects and any needed modifications in project design.

As you prepare your evaluation, consider the following questions:

• Was the action effective in achieving its intended effect?

• Was the Implementation Plan sufficiently clear in specifying who was supposed to do what actions by when? If not, what responsibilities and timeframes were not clear?

• Did each of the steps in the project occur as planned? If not, what mid-course corrections are warranted?

• Were the costs consistent with what had been budgeted?

• Did you accurately predict your ability to manage factors within your control and to address factors beyond your control? If not, why not?

• Has the experience of implementing the project taught you how to improve future projects? If so, what are suggestions for improvement?

One issue your MET will need to address is *who* will be responsible for undertaking the evaluation. In selecting an individual to conduct the project evaluation, consider people with the ability to listen, negotiate, bring together multiple perspectives, and solve problems. Beyond specific skills, you may want to consider whether this person should work within one of the imple-

FIGURE 5.1

Sample: **Project Evaluation Form**

Summary of results

Project description	Overview of project history, participating institutions, evaluation team, goals, and targets.
Data collection information	Selected indicators, reporting requirements, and data collection methods.
Results	• *Quantitative impacts:* how well targets were achieved, actual environmental improvements achieved, how well targets were achieved within specified timeframe, and whether costs were consistent with budgeted amounts. • *Qualitative impacts:* satisfaction level of project beneficiaries, unforeseen benefits beyond original goals. • *Educational impacts:* knowledge acquired, skills developed, attitudes altered or reinforced.
Difficulties encountered	Problems encountered in implementing actions caused by both internal factors (i.e. internal to the implementing institutions) and external factors; response to problems encountered.
Lessons learned	Analysis of what knowledge has been gained as a result of the project and recommendations for future implementation efforts.

menting institutions or should be external to the entire project. External evaluators are contracted from an outside organization. Often, they may have broader evaluation expertise than internal evaluators and can help ensure that the evaluation is unbiased and independent. On the other hand, external evaluators may be relatively unfamiliar with the details of the project and may have limited knowledge of the project's needs and goals. Alternatively, internal evaluations are assigned to an existing staff member. An internal evaluator may have more access to organizational resources and informal feedback from project stakeholders, but may lack the outside perspective and technical skills of an external evaluator.[4]

5.5 Utilize Evaluation Results

The MET needs to think about how the evaluation results will be used at the outset of the evaluation process. Implementing institutions are more likely to use information generated from an evaluation if they understand, participate, and have ownership over the evaluation process. Therefore, the more people who have been actively consulted in the process, the easier it will be to use the results for project improvement.[5]

Some key questions to consider in utilizing evaluation results include:

- What are the "triggers"? In other words, at what point do you make changes to policies or programs based on evaluation results?

- Who decides whether to make these changes?

- Who holds implementing institutions accountable for making those changes? Who "enforces" the situation?

- When are changes made? On an ongoing basis? Every five years? Every 10 years?

One of the most important aspects of an evaluation process is that it actually provides usable results to project implementers — information that can be utilized by project managers and staff to improve results. Useful evaluation results inform decisions and provide information on how to improve project performance. Thus, if you failed to meet a certain environmental target within a specified timeframe, evaluation results can provide critical information in helping to revise your actions. For example, suppose that your municipality established a target to reduce solid waste 10% annually for each of the next five years. At the end of the first year, the municipality discovered that waste disposal had been reduced by only 5%. Further, the evaluation revealed widespread confusion among residents on when and how to recycle. This information strongly indicates the need to significantly improve the educational component of the program in order to achieve target levels. *(See Figure 5.1 — Project Evaluation Form, above.)*

5.6 Communicate Results to the Community

It is important that the SG keep the community informed of its progress toward achieving the EAP and Implementation Plan goals and targets. Community members need to be informed about the status of environmental conditions in the community, what improvements have been made in these conditions, and what action individuals can undertake to help achieve the community's environmental goals. This will require an effective communication program to provide regular information to community members and to report their reactions to implementing institutions.

When communicating with the public about your evaluation findings, be sure to use a variety of techniques such as visual displays, oral presentations, summary statements, interim reports, and informal conversations. Additional ideas include:[6]

- Write separate executive summaries and popular articles using evaluation findings, targeted at specific audiences or stakeholder groups.

- Write a carefully worded press release and have a prestigious public figure deliver it to the media.

- Hold a press conference in conjunction with the press release.

- Make verbal presentations to selected groups; include demonstration exercises that actively involve participants in analysis and interpretations.

- Construct professionally designed graphics, charts, and displays for use in reporting sessions.

- Make a short video presenting the results for use in analysis sessions and discussions.

- Stage a debate or advocate-adversary analysis of the findings in which opposing points of view can be fully aired.

Conclusion

An effective monitoring and evaluation system can help ensure that the actions you have selected are achieving your environmental goals and targets. Indicators provide a basis for measuring results, and are ideally directly linked to your environmental goals and targets. The MET collects data from each implementing institution, and this information is used as the basis for evaluating the effectiveness of your implementation efforts. The monitoring and evaluation process provides an important process for determining whether environmental targets are being achieved, why or why not, and what modifications are necessary to keep efforts on track. As a critical feedback loop, it is then important to share program results with community members, the municipal council, and other stakeholders.

Endnotes

Introduction: **What is a Local Environmental Action Program?**

1   *Environmental Action Programme for Central and Eastern Europe,* March 1993. Environment for Europe, Lucerne, Switzerland.
2   *International Council for Local Environmental Initiatives,* Toronto, Ontario, Canada.
3   *Agenda 21,* 1993. United Nations Conference on Environment and Development, Rio de Janeiro, Brazil.
4   CONCERN, Inc., Washington, DC, USA.

Chapter 1: **Getting Started**

1   *Economic Renewal Guide,* 1997. Michael Kinsley, Rocky Mountain Institute, Old Snowmass, Colorado, USA.
2   Adapted from *Community-Based Environmental Protection: A Resource Book for Protecting Ecosystems and Communities,* July 1997. Office of Sustainable Ecosystems and Communities, Office of Policy, Planning and Evaluation, USEPA, Washington, DC, USA.
3   Modified from *The Local Agenda 21 Planning Guide,* 1996, page 23. International Council for Local Environmental Initiatives, Toronto, Canada.
4   Adapted from *Environmental Planning for Small Communities,* September 1994. U.S. Environmental Protection Agency, Office of Regional Operations and State/Local Relations, Washington, DC, USA.
5   *Community Profiles,* 1998. Antioch New England Institute, Antioch New England Graduate School, Keene, NH, USA.

Chapter 2: **Assessing Environmental Issues and Setting Priorities**

1   *Troyan Environmental Action Project: Final Report and Environmental Action Plan,* August, 1993. Troyan Citizen Committee, Troyan, Bulgaria.
2   *Polish National Environmental Action Program Pilot Project: Final Report,* June 1997. Institute for Sustainable Communities, Montpelier, Vermont USA.
3   IBID.
4   *Manual on Public Participation in Environmental Decision-Making: Current Practice and Future Possibilities in Central and Eastern Europe,* 1994. Edited by Magdolna Toth Nagy et al. Regional Environmental Center, Szentendre, Hungary.
5   All environmental improvements, whether global ozone depletion or industrial air pollution, must ultimately be addressed at the local level. This criteria is not meant to imply that global environmental issues or issues outside of the immediate authority of the local government should not be addressed. Rather, it is intended to emphasize the importance of the SG focusing, at least initially, on those issues where community members can see tangible environmental improvements.
6   *Final Report: Polish National Environmental Action Program Pilot Project,* June 1997. Institute for Sustainable Communities, Montpelier, Vermont, USA.

7   *Problem Descriptions,* September 1995. Radom Public Sustainable Development Committee, Radom, Poland.
8   *A Guidebook to Comparing Risks and Setting Environmental Priorities,* September 1993. US Environmental Protection Agency, Washington, DC, USA.

Chapter 3: **Developing an Environmental Action Plan**

1   *The Local Agenda 21 Planning Guide,* 1996, page 103. International Council for Local Environmental Initiatives, Toronto, Canada.
2   Adopted, in part from *Sustainable Community Indicators: Guideposts for Local Planning,* 1995. Community Environmental Council, Santa Barbara, CA, USA.
3   *A Guidebook to Comparing Risks and Setting Environmental Priorities,* September 1993. US Environmental Protection Agency.
4   *Strategic Planning and Financial Resource Development Workshop,* 1993. Prepared by Progressive Actions for World Wildlife Foundation, Washington DC, USA; and Introduction to Organizational Management, 1993. Institute for Sustainable Communities, Montpelier, Vermont, USA.
5   *Environmental Impact Assessment: Integrating Environmental Protection and Development Planning,* June 1991. Environmental Law Institute, Washington DC, USA.
6   *Environmental Protection Plan for Municipality of Elk, Poland,* March 1997. Municipality of Elk, Poland.

Chapter 4: **Implementing Actions**

1   Adapted in part from *Environmental Planning for Small Communities: A Guide for Local Decision-Makers,* draft, November 1993. Prepared by Eastern Research Group for US Environmental Protection Agency, Cincinnati, Ohio, USA.
2   Adopted from *Public-Private Partnerships for Environmental Facilities: A Self-Help Guide for Local Governments,* July 1991. Office of Administration and Resources Management, U.S. Environmental Protection Agency, Washington DC.
3   Memorandum from Steve Nicholas to Paul Markowitz on Evaluating Opportunities for Working with NGO Sector, 1999. Steve Nicholas, ISC Consultant, Montpelier, Vermont, USA.
4   Adapted in part from *The Local Agenda 21 Planning Guide,* 1996, pages 126-131. International Council for Local Environmental Initiatives, Toronto, Canada.
5   *Municipal Financing of Environmental Project, Bankya,* Bulgaria. June 1993. Adopted from materials prepared by Richard Sigal with Hawkins, Delafield and Wood, New York, New York, USA.
6   IBID.
7   *Developing a Financing Plan for Municipal Environmental Projects,* 1995. Institute for Sustainable Communities, Montpelier, Vermont, USA.
8   *The Local Agenda 21 Planning Guide,* IBID.
9   Modified from *Procurement of Supplies, Services, and Real Property,* 1990. Office of the Inspector General, Boston, Massachusetts.

Appendices
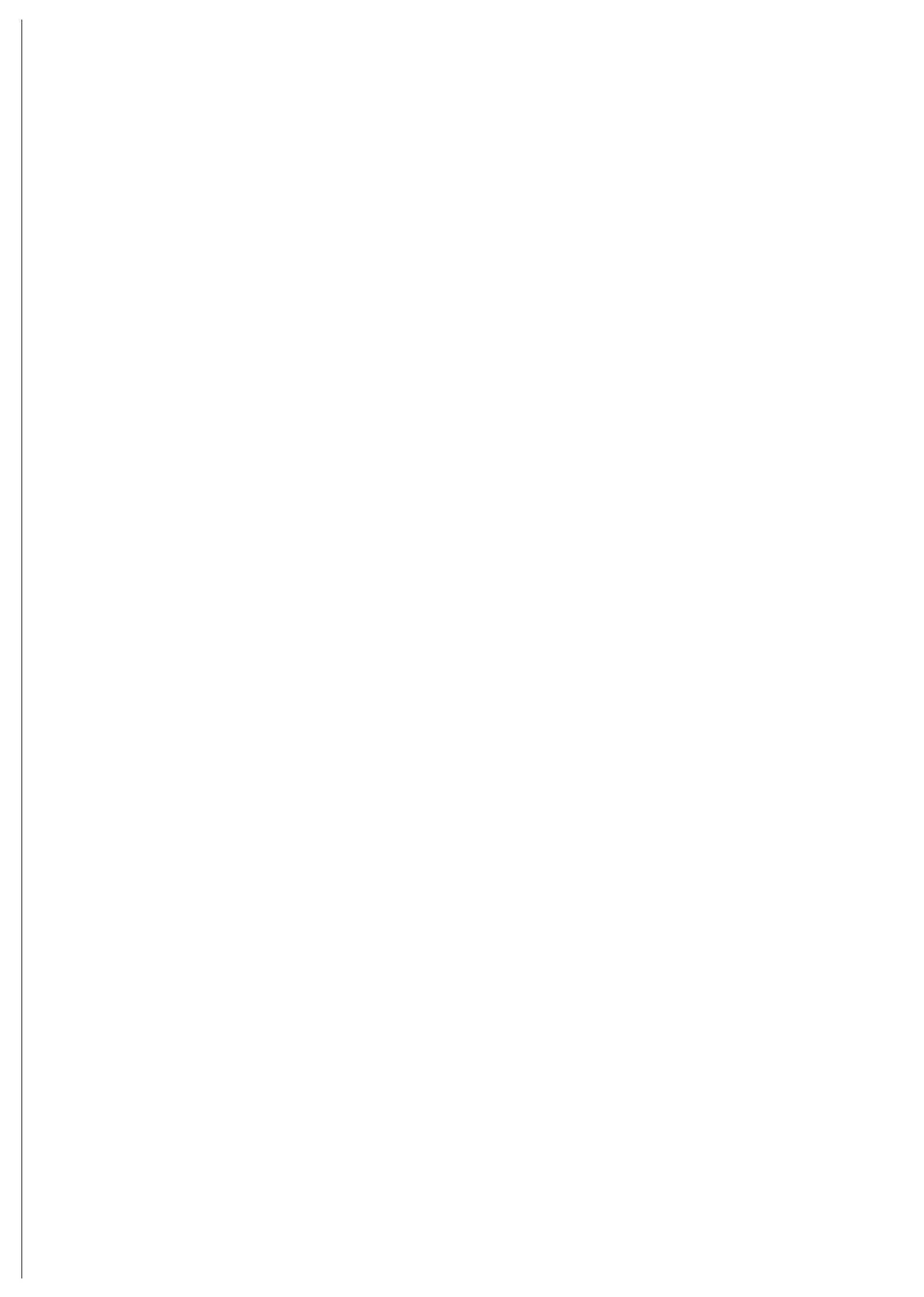
Appendix A: **Conducting a Public Outreach Campaign**[1]

"If you are planning for a year, sow rice; if you are planning for a decade, plant trees; if you are planning for a lifetime, educate people." — Chinese proverb

A.0 Introduction

A.0.1 WHAT IS PUBLIC OUTREACH?

Public outreach involves both informing and seeking the views of community members. For a Local Environmental Action Program, public outreach means educating the public about the scope and goals of a LEAP, on the severity of environmental problems, and on the type of implementation actions your Stakeholder Group (SG) is considering. It also involves providing residents with information on what they can do both as individuals and collectively to improve environmental quality in the community — such as how to recycle or reduce water consumption.

Successful public outreach efforts require two-way communication. Thus, it is important that your SG seeks the ideas, concerns, and opinions of citizens to help ensure that the priorities and solutions you have developed reflect those of the community as a whole. To effectively participate, citizens will need easily accessible opportunities to contribute. They will need to be kept informed about how their views are reflected in the final decisions. Effective public outreach efforts ultimately help to "build community" by informing people and getting them involved in issues that affect their lives. *Educating the public is a not an ends in itself — but rather a means toward increasing citizens' voices in the decision-making process.*

Effective public outreach means providing people with consistent, clear, and accurate information. This message is delivered in partnership with numerous information sources connected to your target audiences and utilizes a variety of outreach methods to reach that audience. Effective public outreach campaigns require reaching individuals in the places where they live, work, and recreate through a decentralized and diverse communications outreach strategy.

A.0.2 WHY IS PUBLIC OUTREACH IMPORTANT?

Why is it important to inform and seek the views of the public? The benefits of conducting a public information outreach campaign include:

- Informed and involved citizens are much more likely to support specific environmental programs. Public education can help citizens gain a greater understanding of the problems facing the community and the limited resources available to solve these problems. When citizens' views are sought and their input reflected in local government decisions, they are much more likely to support proposed community improvements. This can mean either financially supporting new environmental investments or participating in new programs to save natural resources.

- Citizens are a diverse and knowledgeable source of information on the major issues facing the community and on appropriate solutions. Citizens can play an important role in providing information, monitoring compliance with laws and regulations, formulating innovative solutions, and even pressuring the government to act if rules are not being enforced.

- Many community improvements require citizens to modify their behavior, such as saving energy or disposing of litter properly. Public outreach campaigns can help raise people's awareness about the severity of specific environmental problems and expose them to new ideas about what they can do to improve the situation.

The sections of this chapter flow sequentially, and each step builds upon the previous one. This methodology is intended as a framework for your community to build upon and modify, so that you can design an outreach effort tailored to your local needs.

A.1 Clarify Purpose and Set Goals

"What is the main aim of your campaign?"

The first step in developing an environmental public outreach campaign is to develop a clear and unifying purpose. This purpose succinctly summarizes the overall aim of your public outreach efforts. While public outreach campaigns usually have a primary purpose, you will also find it useful to identify several goals that relate directly to the main purpose. The goal setting process can help ensure that the campaign is developed in a consistent and coherent manner.

Goals describe how you propose to achieve your purpose. They express what you hope to accomplish in terms of seeking public opinion, educating the public, and involving the public in addressing environmental problems. Goals can help assure that a coherent and consistent set of public outreach activities is formulated and implemented.

For example, the purpose and goals of your public outreach effort might be:

- *Purpose:* Involve citizens in the decision-making process on how to best address environmental problems within the community.
  Goal 1: Inform the public about the activities and results of the SG.

FIGURE A.1

Case Study: **River Clean-Up and Public Awareness Raising, Mosonmagyarorvar, Hungary**

The Mosonmagyarovar Environmental Committee identified river pollution as a serious problem facing the community. The Committee identified litter along the riverbanks as a main contributor to the problem. In response, the Committee organized a clean-up day for citizens to pick up trash along the riverbanks. The clean-up program provided multiple benefits. First, it significantly reduced visual pollution and trash. It mobilized residents to focus on the river as a valuable community resource and gave citizens first-hand experience on how they can make a difference. Third, the clean-up raised community awareness about the problems associated with the river and helped build support for plans by the Municipality to connect more households to the sewer system.

Source: *Hungarian Community Environmental Action Project,* November 1993. Suzanna McIlwaine, Institute for Sustainable Communities, Montpelier, Vermont, USA.

Goal 2: To engage citizens in actively improving the local environment
Goal 3: To seek a wide range of views among community residents.

Your public outreach efforts could be focused on a specific environmental problem. For example, if you choose to focus your outreach efforts on solid waste, your purpose and goals might be:

- *Purpose:* To reduce the negative environmental impacts of improper disposal of hazardous components on the waste stream.
  Goal 1: Educate residents on the hazardous components of the waste stream and proper methods for disposal of these waste products.
  Goal 2: Inform residents and encourage them to purchase non-hazardous alternative products.

A clear and concise purpose and set of goals is critical to a well-designed public outreach campaign.

A.2 Identify Target Audiences

"Who are the people you are trying to reach?"

The target audience is the people you are trying to reach with your public outreach efforts and is directly linked to the purpose and goals. The broadest definition of the "public" is everyone living or working within the community. However, you can enhance your public outreach efforts by identifying and working with specific groups or organizations within your community. People participate in organizations because they share a common interest, and you can convey your message better by appealing directly to each organization's specific interests.

The following questions can help you more clearly define who your target audience is for a LEAP:

- *Who is affected by environmental problems?* Depending on your LEAP and the types of environmental problems you are trying to address, the target audience could be as small as a group of landowners around a landfill whose drinking water supply is threatened or your audience may be as large as the whole community. Some groups of people will feel the impact more than others, e.g., parents with small children may be especially concerned about environmental problems related to children's health.

FIGURE A.2

Case Study: **Public Outreach Efforts, Municipality of Satoraljaujhely**

Satoraljaujhely implemented one of the first Local Environmental Action Programs in Central and Eastern Europe. This 18-month project began in January 1992 and was designed to demonstrate how local governments in Hungary can set environmental priorities, develop action plans, and implement cost-effective strategies to address the most serious problems in the community through a participatory planning and decision-making process. The Hungarian Independent Ecological Center (IEC) and the Institute for Sustainable Communities provided training and technical assistance to the Citizen Committee members, NGOs representatives, and Municipal officials. The Citizen Committees implemented the following public outreach activities:

- *Adult education series:* an eleven-part adult education series on environmental issues organized by the IEC during the organizational phase of the project. Topics included water and air quality, alternative sources of energy, and traditional Hungarian approaches to community sustainability. This program offered the committee members and the general public an understanding of the fundamentals of environmental issues.

- *Public surveys:* The policy committee surveyed more than two thousand residents in April 1992. The information from the surveys was used to define the list of problems to be studied.

- *Public forum:* A forum was held after the ranking to review the results with members of the public. Sixty people attended in addition to the committee members and the press.

- *Media coverage:* Members of the policy and technical committees participated in three televised call-in shows on local-access television to answer questions related to the project. Major project events were televised, including the ceremonial inauguration of the project, and the public forum.

- *Youth programs:* Several local schools participated in cleanup campaigns and poster contests organized by project participants. A summer camp program on river monitoring was held in July 1993.

- *General awareness of project progress and products:* The Satoraljaujhely Mayor's office and City Council were continually informed of the progress of the project, and their participation was regularly sought. The various organizations, employers, and other interest groups in the city were well represented on the project committees and were kept informed by members of the committees.

Source: *Hungarian Community Environmental Action Project,* November 1993. Suzanna McIlwaine, Institute for Sustainable Communities, Montpelier, Vermont, USA.

- *Who is affected by requirements to reduce pollution?* People who own or manage industrial enterprises or entities that pollute the water, land, or air will be very important constituencies. By involving these individuals at the early stages of your efforts, you can help avoid adversarial situations later on.

- *How do community members group themselves and what are their interests?* Your community can start to seem more manageable once you start to think about how people organize themselves. Schools, labor unions, business groups, social clubs, religious organizations, and sporting groups are just a few of the types of organized groups that might be in your community. By understanding what each group values in terms of specific environmental concerns, such as clean air, places to swim, or wildlife habitat, you can target your message to each group in terms of how a particular environmental problem relates directly to them. The more you know about the interests and concerns of a particular group, the more easily you can convey your message about the need for environmental improvements.

Identifying areas of common concern is a good first step in this process. For example, a school organization might be most interested in the health impact that pollution has on school children, while a hunting club might be most interested in how environmental problems adversely affect wildlife and habitat. Keep in mind that oftentimes the interests of various groups within the community are complementary to environmental protection — although this connection might not always be evident at first. And remember to always have a list of upcoming activities on hand and invite your audience to attend!

A.3 Develop Partnerships with Key Information Sources Connected to Target Audiences

"Who does your target audience look to for reliable information?"

Information sources are those institutions, associations, government entities, organizations, and businesses that can influence your target audiences. (Many of these

Developing partnership with key information sources offers an effective, decentralized approach to deliver your message to your target audiences.

sources may already be members of your SG.) They are those individuals and organizations that your target audiences look to for reliable information. For example, if you were trying to reach parents of school-age children, the public schools would be good "sources" for disseminating information. If you are trying to reach people who value natural areas, a local non-governmental environmental organization would be a good information source.

Information sources can be instrumental in helping you define your message — since they are working with your target audiences on a regular basis. They can help identify what outreach methods are most appropriate for reaching the target audiences. In addition, information sources will play a key role in implementing specific outreach programs. Thus, it is important to consider sources as partners in developing and implementing the campaign.

Using the solid waste example, if you are trying to encourage consumers to use less packaging, supermarkets and retail store-owners would be a primary source. To encourage automobile owners and repair businesses to properly dispose of waste motor oil, a key source would be motor oil manufacturers and distributors. In addition, NGOs often have the public "ear" on environmental issues and can be helpful in getting your message out.

Once you have identified key information sources, consider developing cooperative alliances or partnerships with these sources. You may want to develop written agreements defining respective responsibilities and establishing a timeframe for implementing specific outreach programs. Developing partnership with key information sources offers an effective, decentralized approach to deliver your message to your target audiences.

A.4 Create Effective Message

"What do you want to say?"

A.4.1 DESIGNING THE MESSAGE

Your public outreach campaign needs to have a clear, understandable, and consistent message. It is important that the primary message is derived directly from the purpose, and secondary messages derived from the goals. The message needs to be easy to understand and appealing. You need to convince people that what you have to say is relevant to their lives. Remember, people will need to hear that

same message numerous times before they will start to pay attention!

Your message will change over the course of the LEAP as you achieve various project milestones. At the start of the LEAP, you will want to inform the public about what the goals and phases of the LEAP and to seek their participation. Your message at the beginning of a LEAP might look something like the following:

> We are a group of concerned citizens working in partnership with our local government to develop appropriate solutions to the most serious environmental problems facing the community. We want to hear from you about which environmental problems and other challenges facing the community you are most concerned about. We welcome your suggestions and participation over the next two years as we work together to develop an appropriate course of action to make our community more environmentally and economically sustainable.

As the LEAP progresses, your message will need to be modified to correspond to the specific phases of the LEAP. For example, after you have done a preliminary ranking of environmental problems, your message might be to ask citizens whether the environmental priorities for action of the group reflects their priorities — and if not — what would their priorities be and why.

Public outreach is an on-going and continuous process, and it will be important to inform the public and seek their views as frequently as possible throughout the LEAP. Consider conducting outreach activities before the completion of the following LEAP milestones:

- Forming the SG;
- Developing the Community Vision;
- Identifying environmental issues facing the community;
- Setting priorities for action;
- Identifying and selecting proposed actions for addressing the top priority issues;
- Reviewing the complete environmental action plan; and,
- Implementing priority actions.

If your campaign focuses on a specific environmental problem, it is important that the message explain why the selected problem poses a concern (e.g. polluting groundwater), and what citizens can do to reduce environmental pollution (e.g. buy

FIGURE A.3

Sample: **Public Information Survey**

The (Community name) Environmental Action Project has been established to address environmental problems facing the community. The (Community name) Citizen Environmental Committee, in partnership with the Municipality, has been formed to develop a community vision, set environmental priorities, develop an environmental action plan that identifies specific actions to address the most serious problems; and implement, with the help of the municipal government, the top priority actions.

One of our goals is to determine what members of the public think are the most serious problems facing the community and how these problems are affecting them. We would appreciate a few moments of your time to complete the survey below. The survey results will provide us with invaluable input about where we should focus our efforts. Your individual response will be kept confidential. The survey results also will be published in the local paper. Please return your completed survey to: (name, address).

1. What aspects of the environment are most important to you?

2. What do you regard as some of the community's most important environmental assets (e.g. local river, wetlands, mountain, fresh air)?

3. Do you think that environmental problems in (community name) are:
(please circle the most applicable answer)

Very Severe   Severe   Moderate   Insignificant   Don't Know

4.How have environmental problems adversely affected your life? (Please check all that apply.)

❍ Health of you and your family   ❍ Natural environment

❍ Economically   ❍ Future generations

❍ Sense of belonging to the community   ❍ Visually

❍ Other? (please specify)

5. Which environmental problems do you think are the most serious:
(please list your top 10 priorities by placing the number "1" next to the problem you think is most serious, a "2" next to the problem you think is the second most serious, etc.)

❍ Solid waste from households   ❍ Drinking water quality

❍ Solid waste from industries   ❍ Drinking water quantity

❍ Sewage waters from households   ❍ Tobacco smoking

❍ Sewage from industry   ❍ Loss of wildlife

❍ Air pollution: automobiles, households   ❍ Indoor air pollution for households (i.e. from radon,
   and industry   manufactured products, etc.)

❍ Toxic hazards in the work place   ❍ Loss/degradation of forests and flora

❍ Soil erosion and contamination   ❍ Noise pollution (all sources)

❍ Food safety and poor nutrition   ❍ Depletion of ozone layer

❍ Other (please identify)

6. Would you be willing to volunteer time to help the Citizen Environmental Committee address environmental problems?

❍ Yes   ❍ No   ❍ Unsure

6a) If yes, how would you be able to help? *(please check all that apply)*

❍ Handing out information on how individuals can help the environment.

❍ Making phone calls to encourage people to attend specific events.

❍ Helping to organize a local environmental initiative, such as a river clean-up or citizen monitoring of water quality.

❍ Writing articles for the local paper on environmental problems or other topics facing the community.

❍ Speaking to groups about how they can become more involved in helping to improve the environment.

❍ Other? (please specify in the space below)

6b) Please provide your name, address, and telephone number in the space below if you are interested in helping. *(optional)*

Name ....   Telephone...

Address ....   Age...

....   Education ....

....   Gender ....

....   Profession ....

FIGURE A.4

Tips for Working with the Media

Most of the public outreach activities that your SG will perform should in some way involve the news media. Whether you are simply distributing a news release or holding an elaborate special event, the attention it does or does not receive from the news media will at least partially determine the success of your efforts. The relationship between SG members and reporters can be mutually beneficial. Your SG is interested in obtaining favorable media coverage. Likewise, reporters are interested in obtaining the information they need to better serve their readers, listeners or viewers. Sometimes these two interests are the same. Sometimes they are not. That is why it is so important for you to learn how to maximize your ability to promote your SG through the news media.

Here are some guidelines for successful media relations:

- *Designate a spokesperson or spokespersons:* The person(s) in charge of public outreach for your SG should also be responsible for talking to reporters — all inquiries from the news media should be handled by these persons. A spokesperson(s) ensures consistency of message and unified planning. In addition, it is critical that the spokesperson(s) is informed of all major decisions and actions of the SG.

- *Learn how the news media works:* Reporters work in a place different from any other business or profession. Their job includes intense deadlines, complicated technical equipment, a constant flow of diverse information, etc. You will increase the chances of positive media coverage for your SG if you work to meet the unique needs of reporters. That means learning how reporters do their jobs. Schedule a visit to area newspapers and radio and television stations. Talk to the reporters, editors and news directors about what they do on a daily basis. Ask them how news is gathered, analyzed, processed and eventually disseminated to the public. You will also discover how you can best promote your SG within the unique atmosphere of the media.

- *Develop a media contact list:* Make a list of all the print and broadcast reporters who cover the issues pertaining to your SG. Some of the larger newspapers and stations will have different reporters covering different issues. For that reason, you may find it helpful to categorize your list according to subject area. For example, reporters who cover economic issues are listed on one page; reporters who cover environmental issues are listed on another page, etc. The media contact list can include each reporter's name; the newspaper, radio or television station for which they work; address; and telephone and fax numbers. Include reporters from all the media, not just the large news agencies. Smaller newspapers, for example, may have fewer readers, but they often provide more coverage of your SG.

- *Get to know the reporters:* If you do not already know the reporters on your media contact list, call each one and introduce yourself on the telephone. Tell them who you are and where you work. Then, ask if you can visit them at their newspaper or station. As you are getting to know the reporters, find out from them what kind of information they would like to receive from you and also what they do not want to receive. Record this information on your media contact list and look for opportunities to send them the information they want.

- *Treat all reporters equally:* Treat each reporter the same and avoid playing favorites. Return all telephone calls. Do not give information to one reporter and withhold it from another one. (The exception to this rule applies only to information a reporter has told you that he or she does not want.)

- *Maintain credibility:* Always tell the truth. Do not damage your personal integrity or the credibility of your SG by concealing or disguising information. A reporter who believes he or she has been misled will never forget. You are of no value as a spokesperson if you are viewed as untrustworthy.

- *Create positive news situations:* Look for ways to promote your SG through the news media. Do not wait for reporters to call you. Use your creativity, brainstorm with other SG members, and look for new angles to old issues to attract the media's attention. Even a brief but positive comment about your SG in a news story should be considered successful. Use all the public outreach techniques at your disposal. Do not miss an opportunity to issue a news release, hold a press conference, call a reporter with a piece of new information, arrange for an interview, or write a guest editorial in the local newspaper.

- *Take the good with the bad:* It would be nice if your SG never experienced bad news coverage. However, it will probably happen at some point. Do not be frustrated. Likewise, do not do anything that would damage your long-term relationship with the news media or an individual reporter. Learn from the experience and intensify your efforts to create positive news situations.

- *Prepare for the unexpected:* Life is full of surprises. Therefore, prepare contingency plans for unexpected or emergency situations. Make a list of things that are unlikely to happen and develop a step-by-step plan to cope with each one. You will be glad you did when and if the unthinkable happens.

Source: Modified from *Public and Media Relations Handbook,* 1994. Prepared for the Foundation in Support of Local Democracy by Brian Keeter, Warsaw, Poland.

safe alternatives). To be effective, your message will need to be written in non-technical jargon and easy for the average citizen to understand. Using the solid waste example from before, a sample message might be:

> Solid waste is a serious environmental problem in our community. Every year the amount of solid waste increases. Solid waste pollutes our groundwater. Our landfills are overflowing, and we are running out of safe places to build new landfills. People can reduce the amount of waste disposed in landfills by recycling and reducing waste. Citizens can reduce the negative impacts on groundwater pollution by buying safe alternatives, and where feasible, properly disposing of hazardous waste materials.

A.4.2 GETTING FEEDBACK ON YOUR MESSAGE

You can help ensure that your work reflects the environmental priorities of the community by seeking public opinion at various steps throughout the LEAP. Community members can be instrumental in identifying concerns or information sources unknown to your SG, identifying risks associated with specific environmental problems, and developing alternative implementation actions.

Getting your message across and getting feedback to your message can often occur simultaneously. For example, if you are distributing an informational brochure describing the goals and scope of the LEAP, you can also include a public survey about environmental problems facing the community. Alternatively, a public information meeting provides a forum for both informing the public about your activities and seeking their views about environmental priorities.

Educating the public and seeking people's opinions and information can be viewed as a cycle. It is important that your SG inform community members about how it has incorporated (or not incorporated) the public's opinions and information. For example, suppose a public opinion survey revealed that the community ranked solid waste as a very serious problem, while your SG determined that solid waste posed a low risk to the community. In this situation, it is imperative that the SG inform the public about this discrepancy and explain why. This "inform and comment" cycle can help assure that the SG's work reflects the public's concerns. *(See Figure A.3 — Sample: Public Information Survey, above.)*

A.5 Identify, Evaluate, and Select Outreach Method

"What is the best way to reach people?"

A method is a vehicle for delivering a message — it is how the message gets from the information source to the target audience. An effective public outreach campaign requires taking your message to the people rather than expecting the people to come to you. Members of your community have a wide range of knowledge and interests, and you will need to use a variety of approaches to reach these different audiences. In some instances, you will actually need to be entertaining, such as holding an environmental fair with games and prizes. Also, you can often reach adults through their children — getting young people involved is often the best way to reach their parents.

It will be important to choose outreach methods that reflect how your information sources communicate with their customers or clients (your target audience). Thus, information sources are instrumental in identifying and selecting specific outreach methods that they will be responsible for implementing. For example, if your information source is a student environmental group, they can be effective in conducting door-to-door surveys on environmental problems in the community. If your information source is the association of oil distributors and you want to inform people about proper waste oil management, you might develop a brochure on the negative environmental impacts of improperly managed waste oil and how to properly manage it.

A list of possible outreach methods to get your message out to the public is described below.

- *Media:* Local television, newspaper, and radio coverage of LEAP events and results is absolutely critical. Consider the following approaches to working with the media: 1) Meet with newspaper editors or reporters to inform them about the LEAP; 2) Conduct a newsworthy event, e.g., hold a press conference at a polluted site; 3) Provide the media with regular news releases and information updates; and include members of the media in your SG *(See Figure A.4 — Tips for Working with the Media, above.)*

- *Survey of town residents:* Consider surveying town residents either through the mail, phone, or directly in public places or at meetings. You might consider

People like to enjoy themselves! Promoting environmental awareness and protection are complementary through events such as fairs, outdoor activities, dances, and community actions.

FIGURE A.5

Case Study: **Public Outreach Activities, Radom and Elk, Poland**

The Radom and Elk Project Committees undertook a wide range of activities to reach out to the public. Committee members initiated numerous public outreach activities to involve the greater community, including: sponsoring ecological contests, publishing environmental newsletters, holding dozens of radio and television interviews, conducting public information meetings, and publishing newspaper articles. Each Committee sponsored community environmental initiatives to actively involve the public in making environmental improvements. Combined, these efforts will help ensure that future environmental investments by the local and regional governments reflect the needs and priorities of the local citizenry.

In Elk, the Committee sponsored a series of "family bicycle days" inviting families to tour the recently developed inter-community bicycle route. In addition, during the Winter 1996, over 1200 schoolchildren in Elk competed in an ecological competition, "Step-by-Step." For each action undertaken that benefited the environment (i.e. carried a basket for shopping instead of using a plastic bag), the student made a paper leaf for the school ecology tree. The trees were displayed in City Hall for a month. Finally, the Elk Ecological Association, in cooperation with the Committee, received a grant from the Regional Environmental Center (Szentendre) to enhance citizen awareness of environmental problems. The Elk Committee organized an Earth Day activity that involved 300 young people who stood in front of stores reminding shoppers to shop "ecologically" by avoiding plastics and non-recyclable packaging.

In Radom, the Project Committee initiated a tree planting activity for Earth Day 1996 which involved 2000 residents who planted trees and shrubs in their neighborhoods. Each participant signed a certificate declaring his/her intention to care for the tree. A second tree planting was held in the Fall 1996. The Radom Committee also sponsored a series of ecological competitions with school children and prepared a local ecological newsletter, "Ecologia Radomska."

Both the Elk and Radom Project Committees involved the public by holding public information meetings to seek input in ranking the local environmental problems and in selecting environmental actions. The Committees distributed public opinion surveys to thousands of residents asking them to state their environmental priorities. This information was incorporated into the environmental priorities for action established by each Committee. Each community also developed and adopted a community vision statement.

Source: *Final Report: Polish National Environmental Action Program Pilot Project,* June 1997. Institute for Sustainable Communities, Montpelier, Vermont, USA.

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offering incentives to survey respondents, such as a lottery drawing for products or services donated by local businesses. *(See Figure A.3 — Sample: Public Information Survey, above.)*

- *Newsletters, brochures, and publications:* It is useful to prepare regular publications or newsletters on your goals, the LEAP scope, and your progress. Be sure to write up any results of your work and make it available to the public. Provide copies to your media contacts and post announcements of events and important meetings in public places.

- *Meetings and hearings:* Public information meetings offer an excellent opportunity to both inform the public and seek their opinions on your activities. Your SG will also want to consider making all of your meetings open to the public and publishing notices in the local paper announcing the time and place of your meetings. *(See Attachment A1: Holding Public Information Meetings.)*

- *Special phone number:* A number of local governments and citizen groups offer citizens a number to call to receive information on community programs and services,

report environmental violations, or to learn how to participate in upcoming events.

- *Publicity merchandise:* One popular way to raise public awareness is to sell T-shirts, bumper stickers, coffee mugs and other items with your LEAP logo. This helps build awareness about the LEAP while also raising funds for specific activities.

- *Community Environmental Initiatives:* A community environmental initiative is any activity that gets citizens involved in improving the quality of life in the community. This can include collecting trash along a stream bank, planting trees on Earth Day, or even painting a mural on a prominent building. Education and active citizen participation go hand-in-hand. *(See Attachment A2: How to Organize a Community Environmental Initiative.)*

- *Special events:* People like to enjoy themselves! Promoting environmental awareness and protection are complementary through events such as fairs, outdoor activities, dances, and community actions. You might consider holding contests for school children, such as a recycled art competition, or sponsoring a contest for all residents to develop a logo for your LEAP.

FIGURE A.6

Sample: **Workplan for Conducting a Public Information Survey**

Goals	1. Seek public opinion on environmental priorities and solutions.
	2. Incorporate public opinions into the decisions of the SG.
Target audience	General population
Message	We are a group of concerned citizens working in partnership with our local government to identify and develop appropriate solutions to the most serious environmental problems facing the community. We want to hear from the public about which environmental problems and other challenges facing the community you are most concerned about.
Source partner	Student environmental group at local college.
Selected outreach method	Develop and distribute a survey that assesses the public's opinion of the most serious environmental problems facing the community.

What	When	Who	Cost
Design survey	December 1	Survey working committee and student group	—
Write survey	December 10	Working committee	—
Review and approve draft survey	December 10	SG	—
Print survey	January 1	Contract with printing company	$100
Distribute survey door-to-door	January 15	Student group	—
Collect survey and collate results	February 15	Student group	$50
Print results of survey	March 1	Printing company	$200
Disseminate survey results	March 15	SG	—

- *Speakers' list:* You can recruit prominent and/or articulate members of the community to speak at public events. These events include church groups and union meetings, community dinners, school meetings and assemblies, and business groups and club gatherings.

- *Advocacy campaigns:* Your SG could organize a letter writing or telephone campaign to encourage public officials to undertake certain actions. This helps raise awareness about the issues and offers citizens a chance to participate.

Once you have identified a range of outreach methods suitable for various information sources and particular target audiences, the next step is to evaluate and select the priority outreach methods. Consider using the following criteria, among others, to help in the selection process:

- cost
- ease of implementation
- potential to utilize existing resources
- number of people that can be reached
- personnel requirements
- time frame required to implement

- flexibility
- adaptability of method for other groups or sector of the community
- life time of usefulness (how long before it becomes dated)

Once you decide on what criteria are important, you can apply these criteria to the identified outreach methods and select those methods that rank the highest.

A.6 Identify Resource Needs and Opportunities

"What do you need to get the job done?"

Once you have selected the outreach methods, you are ready to identify your resource needs and opportunities. How much money will it cost to get your message out? Who do you need to help implement the campaign? Many individuals may be willing to contribute their time in a campaign that benefits the entire community. Consider the following questions to help identify potential resources:

- *What expertise is available?* Are there journalists who can write brochures? Are there

local radio stations available to conduct on-the-street interviews? Can college students help in tabulating survey results?

- *What financial resources or in-kind resources are available?* Are radio or TV stations willing to offer public service announcements free-of-charge? Are newspapers willing to offer advertising space without charge? Will printing/publication companies prepare materials at reduced charges?

Be sure to work closely with your information sources in identifying resource needs and opportunities — perhaps they would be willing to use their own resources to contribute to the effort. The most successful and cost-efficient campaigns utilize outreach methods already being used by information sources.

A.7 Develop Workplan, Implement Outreach Actions, and Evaluate Outreach Efforts

"Have you answered the questions of 'what,' 'when,' 'who,' and 'how much'?"
"How will you know whether your public outreach campaign is successful?"

A.7.1 DEVELOPING THE WORKPLAN

Prior to implementing your public outreach activities, meet with your information sources to develop a public outreach workplan. The workplan identifies what specific steps need to be taken, who will be responsible for implementing these steps, when those steps will be implemented, and how much each step/outreach method will cost. The workplan can help you monitor how well each task is being completed and whether these tasks are being completed on time. *(See Figure A.6 — Sample: Workplan for Conducting a Public Information Survey above.)*

A.7.2 EVALUATING YOUR OUTREACH EFFORTS

How will you know whether your outreach efforts are successful? One measure of success is — have you achieved the desired behavioral change or raised the awareness level of your target audiences? In order to evaluate this properly, you will need to have accurate baseline data prior to implementing your outreach efforts. You will need measurable indicators of success that are derived directly from the campaign purpose/goals and message.

For example, if one of the primary goals of your outreach campaign is to raise citizen awareness about environmental problems, then a measurable indicator might be "an increase in the number of people who know about a specific environmental problem (e.g. pollution from a local industrial facility)." This will require surveying people prior to and after your outreach campaign to measure your impact. If the primary purpose of your campaign is to increase recycling, then a measurable indicator might be "the increase in the amount of materials being recycled," and this will require collecting information on quantities of materials recycled before and after initiating your efforts.

Evaluations can help ensure that campaign results are consistent with expectations. They can be used to refine, and when necessary, revise a campaign to better reflect reality and thus develop a more effective campaign. Monitoring and evaluation should be an ongoing process throughout the life of any public outreach campaign. *(See Chapter 5: Monitoring and Evaluating Results.)*

Conclusion

A well-formed citizenry has many benefits. Informed citizens are more likely to support environmental investments, better able to modify their behavior to improve the environment, and more likely to be active members of their communities. Citizens also are a wealth of information on environmental problems and solutions. Developing an effective public outreach effort requires a systematic and well-integrated approach. It requires a clear purpose and set of goals, defined target audiences, identified information sources, a well-defined message, and appropriate outreach actions suited to your information sources and target audiences. A well-designed public outreach campaign can be an effective means of getting your message across and learning from the people you are trying to reach.

Attachment A1: **Holding Public Information Meetings**[2]

A. WHY HOLD PUBLIC INFORMATION MEETINGS?

A public information meeting is both an information giving and information gathering process. It is designed to educate the community on a particular issue as well as to increase public awareness. Further, public meetings provide an opportunity to collect information through people's opinions and suggestions about the problems and possible solutions. A public information meeting is like a discussion. The organization or government agency conducting the meeting explains its activities and asks the public for information related to the issues. People ask questions about these activities and express their views on the information presented.

In the United States, there is a clear distinction between a *public meeting* and a *public hearing*. The main reason for a public hearing is to formally hear and record the comments of the public on the proposal at hand. There is discussion only to clarify and understand the comments being given. There is less interactive discussion at a public hearing. This section focuses on how to conduct less formal public information meetings.

B. SETTING UP AND HOLDING A PUBLIC MEETING

The keys to holding an effective public information meeting are to:

1. Define the purpose;

2. Prepare adequately;

3. Use proper procedures and good communication skills; and,

4. Conduct follow-up activities.

1. Define the Purpose

Being clear on the specific purpose of your public meeting can make your job much easier. It is important that each public meeting be centered around a specific topic to help your SG focus on the type of information you want to convey to the public and input you want to receive. With regard to a LEAP, there are a variety of reasons to hold a public meeting, such as gathering information from the public on what environmental problems they perceive as most threatening, presenting a draft EAP, or explaining the cost implications of a specific action.

2. Prepare Adequately

The following steps will help you to prepare for a public information meeting:

- *Identify the audience for the meeting.* Who will be affected by your efforts, who will be interested, and who has information to offer that will be helpful in your efforts? Develop mailing lists of potentially interested individuals and organizations.

- *Develop informational materials for the public to be handed out at the meeting or distributed in advance.* These materials may include a brief summary of the LEAP or a specific activity you are undertaking, a summary of the information collected to date on the resources and problems of the community, or a summary of the laws and regulations that govern environmental activities.

- *Locate and reserve a place for the meeting that is convenient and accessible for people in the community.* Make sure that the room suits your purposes, including adequate size, lighting, and capacity for audio-visual or presentation equipment. Be sure to select a meeting time and day that will allow the greatest number of people to attend, for example during the week and at night are usually more convenient times for citizens to meet.

- *Notify the public.* Public notification is usually done by either publishing a notice in a newspaper generally circulated in the area, posting notices, putting up posters, or using radio announcements. Notices are published several weeks in advance of the meeting, including the meeting agenda. You may also send an announcement to those on your mailing list of interested individuals and organizations.

- *Provide information before the meeting.* It is important to make any information materials that are lengthy or large in volume available to the public to study and review before the meeting. These materials can be placed in libraries, community governmental offices, or other convenient places. Be sure to inform the public about the availability and location of these materials.

- *Prepare your agenda and materials for the meeting.* Meeting agendas typically include the following items, with a time allocation indicated for each item:
  - Welcome and introduction of yourself and colleagues;

- Explanation of purpose of the meeting;
- Items that will be discussed and who will lead the discussion;
- Questions from the public;
- Questions by the agency to the public (this can be a series of questions related to what information you want from the public);
- Thanking persons attending for their interest and help; and,
- Adjournment.

Consider providing time before and after the meeting for people to review maps and other materials, and to ask questions in an informal setting. This may help those who are less likely to speak up in front of a group. Materials for the meeting include those items that will be helpful in presenting the information, such as flipcharts, slides, and summary handout sheets.

- Do a practice of the meeting. Consider rehearsing the meeting using colleagues as an audience to make sure that all the important items will be covered and that all the materials are available.

- Arrive at the meeting place early to set up the room (chairs, materials, slide projector, etc.). Prepare a sign-up sheet for attendees so you have addresses and phone numbers for future mailings of information or notices.

3. Use Proper Procedures and Good Communication Skills

At the beginning of the meeting, lay out the ground rules, especially if there are many new participants. Describe how the meeting will proceed, introduce the person who will be acting as moderator (and any dignitaries or group members present), and explain the process for audience participation. This procedure may be as simple as raising hands and being recognized by the moderator, or in large public meetings, submitting written requests to speak at the beginning of the meeting. If the issue is controversial, explain that the moderator has the right to ask a participant to stop speaking if they make personal attacks or go beyond their allotted time.

It is important to follow the agenda to accomplish your purpose but also to be flexible and open to new information you did not anticipate. People will be more willing to attend meetings regularly if they feel that they can predict how long the meeting will take. Meetings that go on and on aimlessly will quickly discourage public participation. If necessary, be ready to schedule additional meetings to make sure everyone who has something to say is heard.

Be fair and neutral in selecting people to speak. The idea behind any public participation effort is to hear all sides of an issue. It is important to make sure that when you are calling on people to speak that you don't overlook those with whom you know you will disagree. Also, keep and circulate minutes of the meeting. Minutes serve as a public record and are often used to settle disputes about what was said or agreed upon.

If you are in charge of holding a public meeting, here are some practical things to do and not to do that will help you make the meeting more effective:

To Do

- Convey to the audience that you are there to listen and learn, as well as to provide information.

- Encourage others to talk.

- Give everyone a chance to talk (let everyone speak once before the same person speaks again).

- Avoid using jargon and unnecessary technical language.

- Pause before responding to a question and repeat a summarized version of what was said to let the person know he or she has been understood.

- If the question is not clear, ask that it be repeated (a clear question gets a better response).

- If the information being given is not clear, ask the person to clarify it for you.

- Be clear, calm, and polite.

- Be willing to hear the emotional message of the public and acknowledge it.

- Answer questions on the same level as asked, neither too simple nor too technical.

- In the beginning of the meeting, let people know when the meeting will end, and honor that time.

- Follow up on promises made at meetings (for example, for data and information that you are unable to provide at the meeting).

Not to Do

- Don't go to a meeting with a "script" of how things should go (but do have an agenda to accomplish your purpose and be flexible within that purpose).

- Don't talk too much or too long (you only learn by listening).

- Don't get into debates with individuals in the audience (if this occurs, remind the group of the original purpose of the meeting).

- Don't allow individuals at the meeting to get into debates among themselves (if this happens, remind them of the purpose of the meeting).

- Don't be selective in answering questions; deal with them as they come.

- Don't answer a question if you don't know the answer; just say you don't know and that you will find the information or answer later (be sure to get the person's name and phone number so you can follow up).

- Don't make excuses to the public if people criticize your work, such as telling them you are overworked, understaffed, or don't have time to work on what they are interested in).

- Don't try to impress the audience with how much you know.

4. Conduct Follow-up Activities

It is important to follow up a public meeting with the activities listed below:

- Evaluate with your colleagues how the meeting went and how to improve the next meeting.

- Write up a summary of the points made at the meeting, the follow-up actions needed, and who will be responsible for undertaking these actions.

- Respond to those persons who asked questions for which you couldn't provide an answer or requested information that you didn't have at the meeting. Do this by telephone or letter.

- Incorporate what you learned at the meeting into your planning activities to improve your project or proposal. At the next meeting many of the same people will be present and you can explain how the information they provided helped in the community effort.

Attachment A2: **Organizing Community Environmental Initiatives**[3]

A. MOBILIZE VOLUNTEERS TO IMPROVE THE ENVIRONMENT

A Community Environmental Initiative (CEI) is any activity that involves residents in making your community a better place to live. CEIs can result in short-term, tangible, and visible environmental improvements. People believe what they see. These concrete results provide an important complement to your SG's longer-term efforts of ranking environmental problems and developing an EAP.

Not every environmental improvement requires large capital investments. Many problems can be addressed with a small amount of money and a large amount of volunteer help. As you begin to identify some of the more serious environmental problems facing the community, keep in mind which problems can be addressed by volunteer citizen action.

CEIs and public education go hand-in-hand. For example, a river clean-up or tree-planting project provides an excellent opportunity for distributing brochures to participants about the goals and scope of the LEAP. A public survey can include questions asking people whether they would be willing to participate in a workday to improve the local environment.

Doing something meaningful for your community does not necessarily involve sacrifice. In fact, the only sustainable community initiatives are those built on a foundation of self-interest. You can begin to take control of your life and your community by starting with small projects.

Thinking big and starting small is the only recipe for success!

Simple and practical efforts that produce tangible results are essential to building momentum in any CEI. You can enhance your life, strengthen your community, and save tax dollars by using creativity, common sense, and taking direct initiative. Thus, it is important your SG take a positive approach and incorporate fun and personal benefit in a simple, straight-forward manner to help tap significant citizen energies in undertaking innovative solutions. Building this positive spirit and common ground is a prerequisite to doing any meaningful environmental protection. To succeed, you need to have a strong sense of possibility, and this comes not just from talking, but from working together on constructive activities.

Not every environmental initiative has to be organized by your SG. Sometimes simply suggesting various ideas to different organizations can catalyze a number of activities. Alternatively, your SG can help a particular group in obtaining the necessary resources or providing logistical support.

Some examples of how other organizations might want to get involved in promoting community environmental initiatives and raising public awareness include:

- Churches might create an organic community garden because they want to get people to come to church.

- School teachers might create projects in which students study and work to solve local environmental problems as a means of stimulating their students and trying to get the school to be perceived as a greater asset to the community.

- Businesses might want to learn about how they can save money by improving energy efficiency and reducing waste.

- Libraries might create a special presentation and collection on environmental problems and solutions to get people to come through the library doors.

- A historical society might host a session on past environmental problems and successes as a means of creating awareness about itself.

- Teenagers who hang out in the park and paint graffiti on buildings might be willing and able to create murals with environmental themes.

Because you can only undertake a limited number of initiatives at one time, you might want to keep in mind the following questions when deciding which initiatives to pursue:

- Does the proposed activity address a clear and pressing environmental problem, i.e. will the activity result in a significant improvement in the environment?

- Can the activity be undertaken within a reasonable time frame?

- How much money does the activity cost?

- Will the activity appeal to the public?

- Will the activity attract a large number of people?

B. WORKING WITH VOLUNTEERS

Volunteers form the core of any CEI. People may be motivated to volunteer because they:

• Are personally affected by a particular problem

• Believe their actions can make an actual impact

• Are genuinely concerned about the environmental health of their community

• Value the opportunity to socialize with friends and neighbors

• Have special skills which can be utilized

• Value the prestige associated with an activity

By definition, volunteers donate their time and need to feel that their contribution is valued. Here are a few pointers for working with volunteers:

• Treat volunteers as an equal and integral part of your efforts

• Provide written task descriptions for them that are clear and specific

• Try to assign volunteers tasks at which they can use their natural talents or experiences, or which include their areas of interest

• Train volunteers to perform their tasks — don't just delegate and leave them

• Praise them when they do things right

• Be clear about time demands and then abide by them

• Respect other obligations that volunteers have in their lives

• Reimburse them promptly for expenses they incur

• Have fun!

Be sure to publicly acknowledge the contribution that volunteers make to your efforts. This can be done by saying thank you and offering praise, by providing a letter of thanks or recommendation, by providing food and beverages at an event, and by giving small gifts such as hats or coffee mugs (which could be donated by a local business). A good rule to live by with volunteers is praise should be done publicly, while constructive criticism done privately.

Appendix B: **Skills for LEAP Development**

B.1 Team Building[1]

Imagine a football match between two groups of individuals with the same level of skills. Group A has practiced together for three months, developed specific plays, and agreed on a set signals for communicating during the game. Meanwhile, the individuals from Group B are meeting for the first time at the game. Who do you think will win the game?

Group A is a team. A team is a group of individuals that share common goals. These goals serve as the basis for undertaking a series of actions or activities. These goals recognize the needs of individuals as well as the team, and encourage cooperation and commitment. Team building requires time and practice. A "team" necessarily means that each team member shares in the overall responsibilities according to their ability and knowledge. Decisions are made openly, and whenever possible, the team uses consensus as the primary means for making decisions.

The essential features of a team include:

- Team members share a common goal or goals that unify their efforts.

- Team members have individual tasks and roles that help to achieve group goals.

- Members participate equally in discussion and decision-making, and in sharing the workload. This builds ownership and mutual respect among team members.

- Team members cooperate with and respect one another.

- Honest and open communication is fostered among team members.

- Team members are willing to resolve conflicts quickly.

- A team is united in its efforts. Individual accomplishments are secondary.

Here are a few key factors in fostering a cooperative working atmosphere among team members:

- Team members share in achieving the overall goals of the group — thus promoting the feeling that everyone is responsible for some portion of the work and that everyone can contribute according to their abilities and knowledge. To the degree feasible, each team member has a work assignment. Each team member has a clear understanding of his or her individual responsibilities and the relationship of these individual responsibilities to achieving the group's overall goals. However, it's important that each member has willingly accepted or volunteered for those responsibilities.

- Team members listen actively to all proposed ideas and expressions of feeling. Discussion and participation by team members is actively encouraged.

- Team members make decisions as openly as possible, explicitly stating assumptions and reasons for a decision. Whenever possible, "they" seek consensus, accept different points of view, and attempt to incorporate or to acknowledge differences of opinion — without pretending they don't exist.

Teamwork requires different attitudes and aptitudes than those needed to perform solitary work. Team members need to work together and support one another rather than try to do all of the work or get all the credit themselves. "Stars" or celebrities are often unable to work effectively in a group. The team leader (i.e Chairperson of Stakeholder Group) often plays a guiding or facilitating role in order to allow the team to find and maintain its collective style.

B.2 Effective Communication[2]

"The greatest motivational act one person can do for another is to listen."
— Roy E. Moody

Effective communication is absolutely essential in order for the Stakeholder Group to effectively work together. Communi-

FIGURE B.1

Practical Suggestions for Strengthening a Team

- Do practical problem-solving regularly; use brainstorming whenever possible. This stimulates teamwork and reinforces mutual understanding.

- Conflicts within any group are natural. These conflicts need to be resolved as soon as they become known so that the group can continue to function effectively. Conflicting viewpoints need to be aired and areas of agreement identified. This helps to promote greater understanding based upon mutual self-respect.

- Use meetings as an opportunity to practice and underscore teamwork and to promote good human relations and work habits.

- If new persons join a team, make a special effort to acquaint them with what has been happening and to make them feel welcome. Be sure to make long-term and work planning part of your team's activities, thus strengthening the awareness of all of the group's goals and objectives and reinforcing their sense of commitment.

- Keep a sense of humor and enjoy yourself.

cation means both speaking and listening and is not complete until the person you are communicating with has adequately received your message! The following guidelines can help guide effective communication:

- *Listen actively.* Active listening means conscious listening, and provides both the listener and the communicator with important feedback. Make an effort to really hear what a person is saying. Be open-minded — refrain from making any judgments while the person is speaking. Some basic principles of active listening are: 1) do not interrupt, 2) summarize and paraphrase, and 3) separate the emotional content from what you identify the issue and problem to be.

- *Let the speaker know you are listening.* Show respect for the speaker by giving him or her your full, undivided attention. Create a non-threatening atmosphere in which ideas, feelings, and values can be freely expressed.

- *If you don't understand, seek more information by asking questions.* Your questions can help a speaker to know if he or she is being understood, and if not, to adjust his/her message accordingly.

- *Try to keep the group's goals in mind when giving your own viewpoint.* In other

words, does your idea contribute toward what the group is trying to accomplish? Is your idea or comment relevant and useful for moving the discussion forward?

- *When drawing conclusions about what a speaker has said, be clear about the assumptions you think the speaker is making.* If you are unclear about these assumptions, when responding to a speaker, begin by explaining your assumptions. For example, "Based upon what you have said, I am assuming that .... Is this an accurate assumption?"

- *If you are not clear about what a person has said, try paraphrasing it in your own words.* For example, "I think what I hear you saying is .... Is this what you mean?"

- When responding to a speaker, try to identify points of commonality rather than points of difference. For example, "I like your suggestion regarding this point ...., however, I have a slightly different perspective ...."

- Try to phrase questions in a positive manner rather than a negative manner. For example, "How could we improve upon ....?" rather than, "Why did we do so badly?"

- Feedback and criticism are difficult to give and receive but are helpful in avoiding misunderstandings. Openness and honesty are the keys to good communication.

- For feedback to be useful and effective, it should deal with specific issues, incidents, or behavior. It must be well-timed, so that the event or remark is still fresh and the recipient is open to your comments. Give feedback with concern for the other person. Try not to embarrass another person or to make yourself look good. Sometimes, it may be more appropriate to give individuals feedback privately rather than in public.

B.3 Conflict Resolution[3]

"Pick battles big enough to matter, small enough to win." — Jonathan Kozol

Conflict is a natural part of any group's process. Avoiding and repressing conflict can lead to greater problems later on that can be detrimental to the group. However, if a group handles conflict well, it can be very constructive — leading to greater clarity, creativity, and growth within the group.

Some techniques for managing conflict are listed below:

- *De-personalize the conflict:* Disagree with ideas, not with people. The goal of any

conflict resolution strategy is to find common ground. This is made infinitely more difficult if individuals feel that their personality is being judged rather than the issue at hand. No matter how intense a conflict is, it is important not to turn disagreements over ideas or plans into a personal attack against another person.

- *Define the issues and problems carefully:* Always define a problem as a shared problem or an organizational issue — rather than associating it with a particular individual. Focus on the most important elements of a problem and don't continue to argue just for the sake of argument. Try to avoid problem definitions that polarize an issue by creating mutually exclusive positions.

- *Don't compromise too quickly:* People who don't enjoy conflict will avoid it by giving up their position quickly. This can lead to a less-than-satisfactory result from the group's perspective, especially if the individuals have expressed legitimate concerns. The ideal solution to a conflict is a creative one that addresses the source of conflict, gives all parties what they need the most, and furthers the objectives of the organization in some way.

- *Don't take sides too quickly:* If you are not involved in a conflict, don't take sides too quickly. By remaining neutral you can help resolve the conflict by offering objec-tive feedback to both sides. This doesn't mean that you can't develop and express your opinion, but it does mean that you can try to keep an open mind.

- *Allow for a "cooling-off" period first:* The best time to resolve a conflict is not when you have initially become angry as a result of a problem or difficult situation. Don't immediately rush into an argument. Count to ten, write your feelings down, talk to a neutral party, wait 24 hours — do some-thing to manage your own anger before trying to communicate with someone else. Anger is one of the primary causes of mis-understandings and poor communication. When your blood pressure has dropped, it is still important to be aware of your own feelings and opinions as you discuss the issues with the other person. Are they caused by a fear of a loss of control? If you try to be conscious of your own emotional reactions, you will be much better at com-municating clearly and effectively with the other person.

B.4 Brainstorming

"The best way to have a good idea is to have lots of ideas." — Linus Pauling

Brainstorming is a technique that groups can use to develop as many ideas as pos-sible without evaluating how practical the ideas might be. The atmosphere is relaxed

Conflict is a natural part of any group's process. Avoiding and repressing conflict can lead to greater problems later on that can be detrimental to the group.

FIGURE B.2

A Suggested Procedure for Conflict Resolution

In addition to these techniques, it is important to have a mutually understood procedure in place for conflict resolution. The first step in this process is for the individuals involved to agree that a conflict exists and to agree to try to resolve it. An important part of this process is to have some mutually agreed upon strategies for resolving the conflict. Consider the following process for resolving conflicts:

1. Set aside a special time that is agreeable to both individuals/parties.

2. "Clear the air" first — which means starting the meeting by having each person/party describe the conflict as they understand it, and identify any feelings they have about it.

3. Define the problem — in terms of the interests of each person rather than discussing solutions (at this point).

4. Analyze the problem — this can involve tracing the history of the problem, discussing feelings, and looking at perceived responsibilities. This does not mean discussing who is right or wrong or trying to devise solutions — yet.

5. Brainstorm possible solutions.

6. Evaluate alternative solutions: using mutually agreed upon criteria, discuss alternative solutions and select the best approach.

7. Decide how the solution will be implemented.

8. As a follow-up, have each individual write his or her understanding of the issues discussed and any agreements that were made.

Source: *You Can Work It Out,* 1990. Harvard Negotiation Project, Harvard Law School, Cambridge, MA, USA.

FIGURE B.3

Brainstorming Rules

1. Team members sit in a circle.

2. The facilitator explains the procedure to be used and all participants agree to a specific statement of a simple problem.

3. One person contributes the first idea about how to solve the problem. Then the individual next to that person contributes an idea and so on around the circle until no one has any ideas left to contribute.

4. While team members are contributing ideas, someone records them on a flip chart in full view of all members. The phrasing used by the person is replicated as closely as possible.

5. No criticism, evaluation, or judgment is allowed while the members are contributing ideas. Discussion is limited to clarifying the meaning, rather than the worth, of an idea.

6. Anyone may pass if he/she has nothing to contribute at the moment.

7. Anyone may "piggyback" or build on a previously stated idea (by adding to it, improving on it, or using it as a springboard to another idea), as long you have the consent of the person who originally proposed the idea.

8. Quantity is more important than quality. No idea is too "crazy" to mention. Far-fetched ideas may trigger more practical ones.

9. After all ideas have been exhausted, the team members establish criteria for evaluating the recorded ideas.

10. The members discuss and evaluate all ideas and select the single idea or group of ideas that represents the most viable solution(s).

and participants are urged to be as spontaneous and uninhibited as possible. Brainstorming is a useful technique for:

- Getting as many new and novel ideas as possible before the group for later evaluation.

- Encouraging practical-minded individuals to think beyond their day-to-day perspective.

- Examining a problem from new angles when more conventional techniques have failed to produce a solution.

- Fostering creative thinking.

Many people find the freedom of expression in brainstorming to be intellectually stimulating, and solutions to problems that seemed to be unsolvable can be discovered. Brainstorming also encourages all members of the group to participate so that the more vocal or forceful people do not dominate.

On the other hand, brainstorming can be difficult for certain individuals. Many individuals have difficulty getting away from practicalities. Some people have a difficult time separating the "idea generation" component from the "idea evaluation."

To undertake brainstorming, you will need the following:

- A facilitator to help the group accomplish its task by following the brainstorming rules.

- A meeting room with a chalkboard or flipchart so that the ideas generated can be viewed by all participants and saved for follow-up discussion.

- A conference table or semicircle arrangement of chairs to expedite brainstorming and the following discussion.

B.5 Negotiation and Persuasion Skills[4]

Moving your LEAP from idea to reality will require the support of people in positions of power in your community and from the general population. You can often obtain this support simply through explanation and education, while at other times you will need to negotiate or bargain for support of groups and individuals. The following guidelines may be helpful as you plan your efforts:

- *Everyone is a negotiator.* All of us negotiate in our everyday lives — with families, friends, and job associates. Each of us brings our individual experiences, strengths, and weaknesses to a negotiating situation. Some people are naturally better negotiators than others, but all of us can improve our negotiating skills.

- *Each negotiation is unique.* There are an infinite variety of situations in which negotiation or persuasion takes place. Some situations are relatively simple, while others are enormously complex. Each negotiation develops a life of its own depending upon differences in the nature and number of issues to be resolved, the strengths and character of the parties represented in the negotiation, and the negotiating skills of the participants

- *There is rarely one "correct" solution.* Flexibility, open-mindedness, and creativity — rather than rigid adherence to a preconceived position — are the keys to successful persuasion and resolution of differences. Because there are so many

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FIGURE B.4

Techniques for Effective Persuasion

- *Look for allies.* Form coalitions with other groups and organizations that share your goals or that offer different assets to your campaign or project. They may have different motivations or concerns, and may differ with you on strategy, but you are more likely to achieve your goals if you work together. If you are trying to persuade a certain audience or set of decision-makers, think of other people who can help you — perhaps people who know the key individuals personally. Go to these people, present your case, and ask them to make the case to the target audience.

- *Don't try to win the campaign by yourself.* Don't think that the issue is so complicated that you are the only one who can understand it, or that it is so important that you are the only one who can present or negotiate it.

- *Relate your issue to things people care about.* Determine how your proposal may help them or address the concerns of the other groups, and make your arguments in terms that they can understand. When an issue is particularly complex or technical, look for ways to redefine it in simpler terms that people can understand. Don't let your opponents define your issue for you.

- *Be persistent.* If one tactic or strategy doesn't work, then try another. Remember that only your ingenuity and patience limit the number of approaches to a given problem. Look at your effort as a puzzle — and your role as finding and putting all the pieces together.

- *Be clear about what you want people to do.* With supporters, request some action they can take to become part of the solution — but only ask them to do what they are able. With people who are opposed or undecided, request some action that you think they can take that will give evidence that they are moving toward your position.

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variables in each negotiation, there can be a variety of outcomes. These outcomes will range from highly desirable to highly undesirable from the perspective of each of the interested parties. The goal of a negotiation or persuasion process is to find a solution that is at least minimally acceptable to all parties. Even if the solution is not ideal, at least it is a step forward and better than no solution. To be an effective problem solver, you need to realize that your preferred outcome may not be the only solution.

- *Negotiating does not mean "selling your soul."* While neither side in a normal negotiation ultimately achieves all it had hoped to get before the negotiation began, this does not mean that a side "sold its soul" or compromised its basic principles. You may learn during the course of the negotiations that your original expectations were unwarranted or ill-founded. You may trade a less desired item to get a more desired item. You may give up an unnecessary item to secure agreement, but do not give up what is essential to you.

- *Negotiation may provide the best solution.* In many cases, negotiation is the best approach to a problem — especially when the alternatives involve more formal legal, administrative, or legislative processes — or means confrontation and continued opposition. Negotiation may be quicker and require less use of limited resources (e.g. time, money). It can result in solu-

tions that both sides can live with and that can be more flexibly adapted to their needs and the existing situation.

- *Establish personal relationships and trust.* Establishing a positive personal relationship is important in any negotiating or persuasion situation. This doesn't mean that you have to agree with the other person — or even like them personally. It does mean that you have to behave with mutual respect and honesty. Getting to know the other person can also help you persuade them and help find mutually agreeable solutions. There must be a basic level of trust between negotiating parties before a compromise can result. Compromise agreements are basically exchanges of promises. You don't willingly exchange promises with people you don't trust, and it is difficult (if not impossible) to reach agreement with someone to whom you won't listen.

- *Identify all the parties.* In any negotiation or persuasion situation, it is essential to identify all of the groups and individuals that have an interest in the outcome. All these parties need to be brought together at one time or in sequential fashion. If someone is missing from a negotiation, and their views are not considered, they can undermine any agreements that the other parties may reach. If you are negotiating with someone else on behalf of your respective organization, you must be sure that both you and your counterpart actually represent your superiors. If not, then

Strong facilitation skills are critical to the success of a meeting. A good facilitator is concerned that the objectives of the meeting get accomplished, that the discussion keeps moving toward accomplishing these objectives, that participants do not get stuck arguing or telling irrelevant stories, and that decisions are actually reached.

any agreement you reach may be overturned by those who ultimately have to approve and carry out the results.

B.6 Conducting Effective Meetings[5]

Nobody likes to waste time! When people go to meetings, they want to be sure that the purpose of the meeting is clear, that everyone has a chance to participate, and that decisions are made. Running an effective meeting takes planning and requires strong facilitation.

Some factors that contribute to effective meetings are:

- The furniture is arranged so that everybody can see each other, e.g. semi-circle of circle.

- There is a place to record ideas that is visible to all participants, preferably on a flipchart, so that the information can be saved.

- An agenda is presented, amended, and agreed on by all participants.

- Times are assigned for each agenda item. A timekeeper monitors how much time is spent on each item, and these times are adhered to.

- Someone records the essence of the discussion and decisions that have been made during the meeting. These "minutes" are distributed to all persons involved. The meeting notes indicate who has agreed to undertake what tasks prior to the next meeting.

- Dates of future meetings (not just the next meeting) are set well ahead so that people can make arrangements to attend and can record the information on their individual calendars.

- Those in attendance consider whether anyone else not present at the meeting can be involved and, if so, who.

- At the end of the meeting, the facilitator summarizes any decisions that were made, actions to be taken next, and who will do what steps within what timeframe.

Some techniques for conducting successful meetings or discussions include:

- *Set ground rules:* Adhere to the amount of time allotted for each discussion, encourage everyone to participate, discourage interruptions of one another, monitor the discussion and the speakers, and end the discussion when the allotted time has passed.

- *Establish a non-threatening environment:* Encourage open, relaxed communication and keep the discussion on a positive, constructive note. There are no wrong responses!

- *Ask for volunteers to respond to questions:* Don't demand — invite and encourage participation. If necessary, call on individuals who will not be intimidated by being singled out. You may be able to encourage participation from shy or quiet individuals by engaging them in conversation during a break.

- *Encourage participants to be concise and specific:* Ask them to provide support for their answers.

- *Encourage participants to respond from personal experience:* Participants' personal experiences are important elements of the learning process. Actual experiences help to relate the material to on-the-job applications.

- *Keep the discussion on topic:* If a participant's response is clearly off the subject under discussion, redirect the discussion by asking a question that ties it back to the subject. Or acknowledge the point and recommend that it be brought up again at another more pertinent time in the discussion.

- *Summarize what has been said:* When it is time to move on to another topic or question, summarize what has been said. This provides a valuable reinforcement of key points and eases the transition between topics.

B.7 Facilitation Skills[6]

B.7.1 WHAT IS THE ROLE OF A FACILITATOR?

Strong facilitation skills are critical to the success of a meeting. A good facilitator is concerned that the objectives of the meeting get accomplished, that the discussion keeps moving toward accomplishing these objectives, that participants do not get stuck arguing or telling irrelevant stories, and that decisions are actually reached. When certain participants dominate the group or take the group off track, the facilitator is responsible for gently but firmly bringing the meeting back to its primary task.

The facilitator's job is to allocate time for each agenda item, and whenever, try to achieve agreement or consensus on recommendations. If this is not possible, the facilitator tries to assure that the group's recommendations reflect the views of the

majority within the group. Important points or disagreement may also be reported.

Usually, the person serving as the facilitator does not contribute substantively during the meeting in order to assure that he or she remains a neutral party to the discussion. However, if the person serving as facilitator wishes to offer an opinion, the facilitator needs to make sure the group is aware that he or she is taking off the "facilitator hat" and speaking as any other individual within the group.

A facilitator does not lecture, dominate the discussion, ask several questions at once, allow one person to dominate the discussion, over-control the discussion, talk too much, or get involved in the discussion. A good facilitator uses questions rather than statements to elicit responses from participants.

B.7.2 TIPS ON EFFECTIVE FACILITATION

Some useful tips for being a facilitator include:

- Set aside your needs in favor of the needs of the group. Your task is to manage the group process and the flow of information without taking over or manipulating the group's decisions.

- Establish a friendly atmosphere and open sharing of ideas.

- Encourage group members to take risks.

- When in doubt, check with the group. It's not your responsibility to know everything.

- Be aware of both content (the subject being discussed) and process (the way people are interacting with each other).

- Keep things moving at a lively pace.

- Make sure participants understand the purpose of each item on the agenda.

- Employ active listening: acknowledge, empathize, and clarify.

- Keep the group focused.

- Find consensus. (Remember: Consensus isn't necessarily unanimous agreement; it's a decision that everybody can live with.)

- Keep people focused on their interests rather than their positions.

- Ensure fairness and respect. Respect is probably the most critical ingredient in effective group process.

- Deal with conflict — don't try to avoid it. Create an atmosphere of trust so that disagreements can be discussed and resolved before they fester.

FIGURE B.5

Indications of a Poor Meeting
(or you know you've been to a bad meeting when…)

- Time is wasted.

- People are asked to attend when they do not really need to be there.

- Those attending do not know the reason for the meeting until they arrive (and therefore cannot participate effectively).

- The meeting organizers do not plan carefully so that the objectives of the meeting are not accomplished efficiently.

- Those attending fail to speak up when they disagree with what is happening.

- The people attending are not allowed to put their items on the meeting agenda.

- After the meeting, the people who attended fail to do what they said they would do.

FIGURE B.6

Responsibilities of a Facilitator

- Creating a comfortable atmosphere for learning: warm, open, friendly, and encouraging.

- Introducing written materials such as agendas, minutes, and general information.

- Guiding problem solving.

- Stimulating discussions and asking questions.

- Keeping discussions on track.

- Explaining the goals and methods.

- Setting out the ground rules and agenda.

- Making links to previous exercises.

- Being aware of and sensitive to group dynamics.

- Summarizing and clarifying key points.

- Motivating participants.

B.7.3 SOME HELPFUL LANGUAGE

Below are some phrases that can be helpful for a facilitator during different times of a meeting:

- *To get the discussion started:* "What do you think about this problem?" "What has been your experience on this type of problem?" "Can anyone suggest the information we need at this stage?"

- *To encourage more participation:* "How does what we have been saying so far sound to the rest of you? What other aspects of the problem have we missed?"

- *To limit overactive participation:* "You've made several interesting observations. Does anyone else want to add to them?"

- *To orient the discussion:* "Where do we stand now in relation to our objective?"

- *To keep the discussion moving:* "Do you think we have spent enough time on this phase of the problem? Can we move on to another part of it?"

- *To press for a decision:* "Am I right in thinking that we have reached agreement on this point? We seem to be moving toward a decision now, so can we consider what it will mean if we decide it this way?"

- *To draw people out:* "Has anyone else ever had that experience? Tell us more about that; how it works?"

B.8 Group Decision-Making[7]

There are many ways to make decisions. Two of the most commonly used decision-making methods are: a) majority rule, and b) consensus. Both methods are intended to involve all participants in decisions. Majority rule involves approval or support by more than half of the group and requires that a vote be taken. Consensus seeks to reach a decision that is acceptable to everyone and can involve extensive discussions to make sure that all group members are comfortable with a decision.

You can use either majority rule or consensus or even a combination of both. For example, you might agree to strive for consensus, and if consensus isn't possible, to use a two-thirds or three-quarters majority rule. Below is a brief description of how each decision-making approach functions and the relative advantages and disadvantages of each.

- *Majority Rule:* Majority rule decisions are made by choosing a solution that is acceptable to more than half the entire group with each person having equal power, i.e. one person — one vote. Majority rule can involve a simple majority (51%) or various alternatives that require agreement of a higher percentage of the group members, such as two-thirds, three-quarters, or other fractions. Majority rule decision-making involves voting either through open or secret balloting.

The quality of a majority rule decision will depend on several factors, including: the amount of discussion before voting, whether the group considers many alternatives or only a few, and whether

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FIGURE B.7

Proposed Process for Reaching Consensus

The following steps are typical for consensus decision-making:

1. An individual introduces an idea. The idea may be a specific proposal or suggestion for an approach to a problem.

2. Another individual responds to the idea. The second speaker's statement is a combination of her or his own opinion and that of the previous speaker.

3. A third person develops the idea further.

4. Other people respond to earlier statements and offer their views on the subject. Each contribution builds upon previous statements and yet is unique to that individual's perspective.

5. Each individual and the meeting facilitator assume responsibility for assuring the discussion stays on topic, ensuring that all viewpoints are heard, identifying areas of agreement and disagreement, and clarifying confusing or complicated issues.

6. The facilitator states the general conclusion toward which the group appears to be moving — after all new information has been given and all viewpoints expressed.

7. The group responds by agreement or disagreement. This provides an opportunity for any objections to be heard.

8. Final concerns are discussed until everyone feels comfortable with the decision.

9. There is a call for consensus. If there are still no objections, the decision is made. Once consensus does appear to have been reached, someone repeats the decision to the group so that everyone is clear on what has been decided. The recorder or person taking minutes of the meeting records the exact wording of the decision at the meeting and reads it aloud to everyone so that it is certain that the exact sense of the meeting has been recorded.

If agreement cannot be reached, the group can decide to continue the discussion further to better understand the objections to the proposed decision, and perhaps modify the group decision. If consensus can still not be reached, the group can decide to use majority rule.

FIGURE B.8

Major Decision Rules: **Uses and Implications**

Decision Rule	High-Stakes Decisions	Low-Stakes Decisions
Unanimous agreement (consensus)	This process takes a lot of work, and usually a lot of time, since it involves a lot of discussion. But this is why it has the best chance of producing a sustainable agreement when the stakes are high.	It may not be worth the time and effort when the stakes are low. On the other hand, using this decision rule prevents a group from making a decision that some group members strongly disagree with.
Majority vote	This process produces winners and losers.	When it is more important to make a fast decision than a high-quality decision, this process can be useful.
"Flip A Coin"	This is an arbitrary and random process, never used for high-stakes decisions.	This is a fast way to make low-stakes decisions that nobody really cares about.
Person-in-charge decides *after* discussion	This is often a legitimate way to make high-stakes decisions. However, the group should design a formal procedure for including "devil's advocate" thinking, to counter people's tendency to tell "the boss" only what they think she or he wants to hear.	This is often a good way to make low-stakes decisions, since the person-in-charge is feeling less pressure, and group members may be more willing to take risks in offering advice.
Person-in-charge decides *without* discussion	This may be appropriate in times of crisis. In general, though, the higher the stakes, the more risky it is for the person-in-charge to decide without discussion.	This usually works fine for low-stakes decisions (and, besides, when the stakes are low, even bad decisions usually can be undone.) However, low-stakes decisions often are implemented by someone other than the person-in-charge. The person-in-charge may want to delegate decision-making authority to those most responsible for implementation.

the group's work was cooperative or competitive.

Majority rule is an efficient decision-making process relative to consensus — that is, the decision-making process is straightforward and decisions can be made quickly. The primary disadvantage is that some people win and some people lose, i.e. some people in the group are asked to go along with a decision even though they disagree with it. This can create dissension and cause fractures within the group. The higher the percentage majority required, the closer you move toward consensus decision-making, and thus, fewer people will be dissatisfied with a decision. However, higher percentage majorities can require more time for discussion and can make it more difficult to actually achieve decisions.

• *Consensus:* Consensus decision-making requires listening to everyone's ideas and taking all concerns into consideration in an attempt to find the most universally acceptable decision possible at a particular time. The goal of consensus is a decision that is agreed to by all mem-

bers. Full consensus does not mean that everyone must be completely satisfied with the final outcome; total satisfaction is rare. However, the decision must be acceptable enough that all group members agree to support the group in choosing it.

Consensus decision-making assumes certain circumstances and attitudes, and may not be appropriate for all groups. Consensus requires a certain set of common goals and/or values that all members of the group support. If this commonality does not exist, consensus will not possible. In general, consensus requires more time than other decision-making options, and thus, ample time must be allocated for making decisions.

Appendix C: **Resources**

Below is a list of selected resource documents and information on how you can obtain these resources, as well as a list of selected internet sites.

Selected Resource Documents

ACTION PLANNING GUIDEBOOKS

- *Community-Based Approaches to Addressing Environmental Problems,* May 1993. Available from Institute for Sustainable Communities, 56 College St., Montpelier, Vermont, 05602 USA. (Tel: (802) 229-2900, Fax: (802) 229-2919).

- *Community-Based Environmental Protection: A Resource Book for Protecting Ecosystems and Communities,* July 1997. Office of Sustainable Ecosystems and Communities, Office of Policy, Planning and Evaluation, USEPA, Washington, DC. Available from U.S. Environmental Protection Agency, National Service Center for Environmental Publications, P.O. Box 42419, Cincinnati, Ohio 45242 USA. (Fax: (513) 489-8695, Website: www.epa.gov/ncepihom/nepishom).

- *Economic Renewal Guide,* 1997. Michael Kinsley. Rocky Mountain Institute. Available from Rocky Mountain Institute, 1739 Snowmass Creek Rd., Old Snowmass, Colorado, 81654 USA. (Tel: (970) 927-3851).

- *Environmental Planning for Small Communities,* September 1994. U.S. Environmental Protection Agency, Office of Research and Development, Center for Environmental Research, Cincinatti, Ohio. Available from U.S. Environmental Protection Agency, National Service Center for Environmental Publications, P.O. Box 42419, Cincinnati, Ohio 45242 USA. (Fax: (513) 489-8695, Website: www.epa.gov/ncepihom/nepishom).

- *The Local Agenda 21 Planning Guide,* 1996. International Council for Local Environmental Initiatives (ICLEI). Available from ICLEI, 100 Queen St. West, East Tower, 8th Floor, Toronto, Ontario Canada M5H 2N2 (Tel: (416) 392-1462, Fax: (416) 392-1478).

CASE STUDIES

- *Bulgarian Community Environmental Action Project: Final Results and Evaluation,* July 1994. Institute for Sustainable Communities (ISC). Available from ISC, 56 College St., Montpelier, Vermont 05602, USA. (Tel: (802) 229-2900, Fax: (802) 229-2919).

- *Developing Local and Regional Environmental Action Plans: Case Studies of Bulgaria, the Czech Republic, Hungary, Poland and the Slovak Republic,* July 1996. Regional Environmental Center (REC). Available from REC, Ady Endre ut. 9-11, 2000 Szentendre, Hungary. (Tel: (36-26) 311-199, Fax: (36-26) 311-294).

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Selected Internet Resources

- *Alliance for National Renewal:* www.ncl.org.anr
- *EcoIQ:* www.ecoiq.com/onlineresources
- *European Environment Agency:* www.eea.eu.int
- *U.S. Environmental Protection Agency:* www.epa.gov
- *Community-Based Environmental Programs, USEPA:* www.epa.gov/opptintr/cbep
- *Green Mountain Institute for Environmental Democracy:* www.gmied.org
- *Institute for Sustainable Communities:* www.iscvt.org
- *International City/County Management Association:* www.icma.org
- *International Institute for Sustainable Development:* www.iisd.ca
- *International Council for Local Environmental Initiatives:* www.iclei.org
- *President's Council on Sustainable Development:* www.whitehouse.gov/PCSD
- *Regional Environment Center for Central and Eastern Europe:* www.rec.org
- *Rocky Mountain Institute:* www.rmi.org
- *Sustainable Communities Network:* www.sustainable.org
- *Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe:* www.oecd.org/env/eap
- *United Nations Commission for Europe:* www.unece.org

Appendix D: **Glossary of Terms**

- *Assessment tool:* a methodology for assessing environmental conditions.

- *Baseline conditions:* existing environmental conditions that are used as a basis for measuring environmental improvements.

- *Brainstorming:* a technique used by groups to develop as many ideas as possible without evaluating how feasible each idea might be.

- *Capital:* resources needed for the acquisition, construction or improvement of designated assets such as buildings and equipment.

- *Collaboration:* a process wherein citizens and local governments work together to address issues.

- *Collaborative leadership:* A style of leadership wherein leaders view their roles primarily as convening, catalyzing, and facilitating the work of others. Collaborative leadership focuses on bringing citizens together and helping them build trust and the skills for collaboration.

- *Community Environmental Initiative:* any activity that involves residents in making their community a better place to live and results in visible environmental improvements, e.g. tree plantings and river clean-ups.

- *Community Environmental Inventory:* an environmental assessment tool for assembling large amounts of information on the status of a community's environment, natural resources, economic activity and physical conditions.

- *Community Vision:* a shared concept or picture of what residents want the community to look like and/or feel like in 10-20 years. The Community Vision provides an opportunity for the Stakeholder Group and residents to step outside their immediate and most pressing problems and to look toward the future.

- *Comparative Risk Analysis:* an environmental assessment tool for comparing environmental problems in a systematic way based upon the best available information about the relative risks these problems pose. It attempts to answer the question, "Given what we know at this time, which environmental problems pose the greatest risks to our health, the natural environment, and the quality of our lives?"

- *Compliance monitoring:* measures whether an implementing institution has fulfilled its obligations, e.g. installed 5,000 low-flow showerheads.

- *Cost-effectiveness analysis:* an evaluation tool that helps determine the relative costs for achieving a measured improvement in environmental protection compared to other actions.

- *Economic incentives (or instruments):* a broad set of environmental management tools that provide a direct financial incentive to polluters to reduce their pollution levels.

- *Effectiveness:* a criterion used to evaluate how well a particular action reduces or prevents an associated public health or ecological threat.

- *Effectiveness monitoring:* a type of monitoring that measures whether specific actions are achieving their intended result, e.g. reducing water usage by 20% per household.

- *Emission Fees:* an economic incentive that charges polluters for pollution within admissible limits.

- *Environmental Action Plan (EAP):* a multi-stakeholder plan of action on the best ways to solve environmental problems in the community. The EAP includes goals, targets, and actions for addressing the top environmental problems.

- *Environmental goal:* provides strategic direction for long-term efforts to solve environmental problems and an opportunity to build consensus among stakeholders on what they hope to accomplish over a period of time.

- *Environmental Issue Assessment:* a profile of environmental conditions in the community as it exists today. An Issue Assessment helps citizens paint a portrait of the place where they live given the current environmental status of the air, water, and land.

- *Environmental problem ranking:* ranking of environmental problems based upon the relative seriousness they pose to human health, ecological health, and quality of life.

- *Evaluation criteria:* provides an objective and transparent basis for selecting among a broad number of possible actions.

- *Fines/Penalties:* an economic incentive applied to those individuals or industries that pollute above allowable limits or violate other regulatory requirements.

- *General obligation bond:* A source of capital for municipalities in some Central and Eastern European countries wherein the municipality sells its "bonds" to a financial institution, and the financial institution provides them with monies for their project. General obligation bonds are secured by the general taxing power of the municipality.

- *Impacts:* the threat or risk of an environmental stressor on human health, ecological health or quality of life.

- *Implementation Agreement:* an agreement among institutions with responsibilities for implementing specific actions identified in the Environmental Action Plan. The Implementation Agreement identifies specific tasks, roles, and resource commitments from each implementing institution.

- *Implementation Plan:* a document that integrates the actions for each priority issue into one overall, comprehensive strategy. The Implementation Plan ideally includes goals and targets from the EAP, identifies specific tasks that need to be undertaken to implement each action, assigns a time schedule for completing each task, determines who will be responsible for completing each task, and identifies associated costs for each task.

- *Indicator:* a quantifiable measure of whether goals and targets are being achieved.

- *Issue Summary:* a compilation of information on alternative actions for addressing environmental priorities.

- *Loan:* a borrowed source of capital from a financial institutional wherein the borrower agrees to repay the original borrowed amount plus interest over a period of years.

- *Local Agenda 21 (LA21):* A community-wide, participatory process for addressing sustainable development issues. LA21 was first defined in the Sustainable Development Action Plan (Agenda 21) at the United Nations Conference on Environment and Development (Rio Conference) in 1992.

- *Local Environmental Action Program (LEAP):* A community-wide, participatory process for addressing environmental problems. A LEAP involves developing a community vision, assessing environmental issues, setting priorities, identifying the most appropriate strategies for addressing the top problems, and implementing actions that achieve real environmental and public health improvements.

- *Memorandum of Agreement (MOA):* an agreement among stakeholders to conduct cooperative work that identifies specific activities, respective roles and responsibilities, and timeframe, among other items.

- *Monitoring and Evaluation Team (MET):* a group of individuals responsible for designing the evaluation approach and evaluating project results. The MET is composed of individuals with specific expertise in project evaluation, agencies responsible for providing environmental data, and implementing institutions, such as industries, with specific environmental requirements.

- *National Environmental Protection Funds:* A major source of capital financing for environmental protection investments in many Central and Eastern European countries. These funds are one of the basic financial instruments for implementing national environmental policies and are either directly managed or supervised by the Ministries of Environment in their respective countries.

- *Pollution Prevention:* involves minimizing the generation and release of all waste materials into environmental media (air, water, and soil). Pollution prevention activities focus on improved operations and maintenance, product reformulation to eliminate the need for toxic materials, substitution of less toxic alternatives, process redesign or modernization, and recycling and reuse of wastes.

- *Priorities for action:* a ranking of environmental issues that incorporates a wide range of criteria, such as their relative seriousness to human and ecological health, legal requirements, public preferences, and the municipality's legal ability to control. The Environmental Action Plan focuses on these priorities for action.

- *Project Financing Plan:* a plan that addresses all aspects of raising the necessary capital for constructing a large environmental facility or system, including technical aspects of the project, how much the project is expected to cost, and how the borrower expects to repay borrowed funds to the lender.

- *Public Information Meeting:* a meeting for the public designed to both educate community members on a particular issue and seek their opinions and suggestions.

- *Qualify of life (impacts):* these are specific threats to social and economic values, such as diminished recreational opportunities, losses to natural resource-based businesses (e.g. fisheries or eco-tourism companies), damages to crops and forest, and aesthetic losses of beautiful places.

- *Rapid Urban Environmental Assessment:* an environmental assessment tool that enables local experts to rapidly assess the state of the urban environment.

- *Revenue bond:* A source of capital for municipalities in some Central and Eastern European countries wherein the municipality sells its "bonds" to a financial institution, and the financial institution provides them with monies for their project. Revenue bonds are secured by revenues from fees charged to beneficiaries of the environmental service or facility, such as user fees for solid waste disposal.

- *Revenue sources:* funds raised on an annual basis to pay for capital and operating costs of environmental facilities.

- *Risk:* the probability of adverse effects on something of value.

- *Risk Assessment:* an environmental assessment tool that is used to measure the probability of an adverse impact (risk) on human health, ecosystems, and quality of life.

- *Sources:* human activities that result in the release or exposure of stressors to the environment.

- *Special Assessments:* a mechanism for assessing (or taxing) property owners within a certain geographic area who receive the benefits of an environmental improvement — usually in direct proportion to the benefit they receive.

- *Stakeholder Group (SG):* A diverse group of individuals responsible for steering the LEAP, composed of representatives from local government, businesses and industries, schools, academia, and nongovernmental organizations, among other institutions.

- *Statutory planning process:* a planning process required by law, e.g. the preparation of municipal budgets or multi-year land-use development plans.

- *Stressors:* chemical pollutants or physical impacts that adversely affect individual species (including humans) or complete ecosystems.

- *Sustainable community:* A community that uses its resources to meet current needs while ensuring that adequate resources are available for future generations. It seeks improved public health and a better quality of life for all its residents by limiting waste, preventing pollution, maximizing conservation and promoting efficiency, and developing local resources to revitalize the local economy.

- *Sustainable development:* a multi-faceted development approach that strives to strengthen local economies, while respecting the limits of the natural environment to function and sustain human activities over time.

- *SWOT Analysis (strengths, weaknesses, opportunities, and threats):* a tool for evaluating a community's or organization's capabilities. Strengths are unique capabilities that you can build upon while weaknesses are the areas you need to work around or where you need to strengthen your capacity. Opportunities are external forces that can help you achieve your goals, while threats are forces that can work against you whose influence you need to avoid or minimize.

- *Target:* a measurable commitment to be realized within a specified time frame and used in evaluating and measuring progress toward implementing the EAP.

- *Team building:* activities undertaken by a group of individuals to strengthen their ability to work together.

- *Technical Advisory Committee (TAC):* a committee formed by the Stakeholder Group to develop reliable information about environmental problems in the community. Primary responsibilities include identifying environmental issues, reviewing and collecting existing sources of data, determining how to best fill critical data gaps, and analyzing scientific data.

- *Turnkey facility:* A facility or plant that involves the private sector designing, constructing, and operating an environmental facility owned by the public sector.

- *User Fee:* a fee imposed on individuals and businesses that use a particular service or facility based upon how much they use it.

- *Working Committee:* A small group of individuals, usually appointed by the Stakeholder Group, who have particular interest or expertise in a specific issue or problem and can help implement distinct elements of the planning process. Working Committees can be involved in conducting research, preparing technical analyses, and implementing public outreach activities.

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Chapter 5: **Monitoring and Evaluating Results**

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2 Adapted from *The Local Agenda 21 Planning Guide,* 1996, pages 168-169. International Council for Local Environmental Initiatives, Toronto, Canada.
3 Adapted from *Strategic Planning and Financial Resource Development Workshop,* 1993. Progressive Strategies, Washington, DC, and Introduction to Organizational Management, 1993. Institute for Sustainable Communities.
4 IBID, *Evaluation Handbook.*
5 IBID.
6 IBID.

Appendix A: **Conducting a Public Outreach Campaign**

1 Portions of this chapter where adapted from materials developed by the Radon Division, U.S. Environmental Protection Agency, Washington, DC and by Gwendolyn Hallsmith, Community Action Director, Institutional Capacity Building, Institute for Sustainable Communities, Montpelier, Vermont, USA.
2 Adapted from *Holding Public Information Meetings,* September 1993. Compiled by Richard Czaplinski, consultant for workshop on River Basin Management, Institute for Sustainable Communities, Montpelier, Vermont.
3 Adopted from *Successful Community Building,* 1994. Developed by Jeff Bercuvitz, Community Innovations, Strafford, Vermont, USA.

Appendix B: **Skills for LEAP Development**

1 Adapted from materials prepared by consultant Jim Rodgers, 1992. Institute for Sustainable Communities, Montpelier, Vermont, USA.
2 Adapted and excerpted from *Building United Judgment: A Handbook for Consensus Decision-Making,* 1981. Michel Avery, et. al., Center for Conflict Resolution, Madison, WI.
3 Adapted from *You Can Work It Out,* 1990. Harvard Negotiation Project, Harvard Law School, Cambridge, MA, USA.
4 Adapted from *Basic Inspector Training Course: Fundamentals of Environmental Compliance Inspections,* February 1989. Office of Compliance and Planning Branch, U.S. Environmental Protection Agency (USEPA) and from Enforcement Negotiation Skills, 1993. Office of Enforcement, USEPA.
5 *Taking Your Meetings Out of the Doldrums,* 1988. Schindler-Rainman, E., Lippitt, R., & Cole, University Associates, San Diego, California, USA.
6 Adapted from materials prepared by the Office of International Cooperation and Development, 1989. U.S. Department of Agriculture, Washington, DC, USA.
7 Adopted from *Building United Judgement: A Handbook for Consensus Decision-Making,* IBID.

About the Author

Paul Markowitz has eighteen years experience in environmental policy development and implementation in state government, academia, and nonprofit institutions. For the past eight years, Mr. Markowitz has worked for the Institute for Sustainable Communities in Central and Eastern Europe developing and delivering environmental management trainings and managing Local Environmental Action Programs. His prior experience includes serving as director of Recycling for the State of Vermont, university instructor on energy policy and solid waste policy, and director of a non-profit environmental organization. He holds a master's degree in Resource Economics from the University of Vermont.