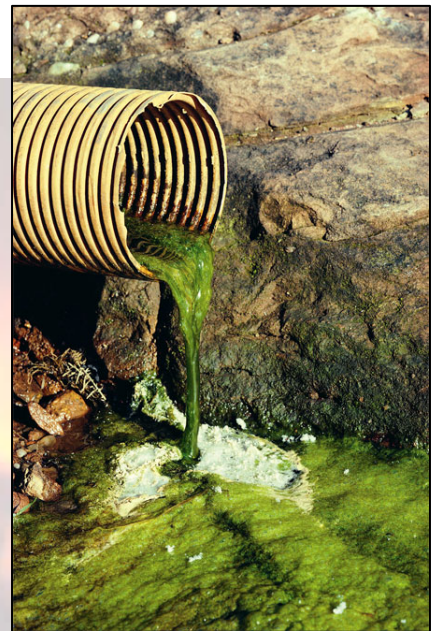




PERFORMANCE MEASUREMENT GUIDANCE FOR COMPLIANCE AND ENFORCEMENT PRACTITIONERS

SECOND EDITION

April 2008 Draft



Expert Working Group
on Enforcement and
Compliance Indicators

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FOREWORD

This guidance document is a product of the indicators project conducted by the International Network for Environmental Compliance and Enforcement (INECE). INECE is a partnership among government and non-government compliance and enforcement practitioners from more than 120 countries, bringing together developed, transition and developing economies. Founded in 1989, INECE is the only global network dedicated to raising awareness of compliance and enforcement; developing networks for enforcement cooperation; and strengthening capacity to implement and enforce environmental requirements.

Participants at the Sixth Conference of the International Network for Environmental Compliance and Enforcement (San José, Costa Rica, April 15-19, 2002) called on INECE to assist in developing environmental compliance and enforcement (ECE) indicators to better measure and manage compliance and enforcement programs. INECE was to develop uniform minimum criteria, in co-operation with its regional networks, and pilot test INECE ECE indicators. INECE, through its Expert Working Group on ECE Indicators, has since guided these activities with a view toward improving performance, public policy decisions, and environmental governance at the national, regional, and global levels, ultimately contributing to environmental improvements.

The first edition of the *Performance Measurement Guidance for Compliance and Enforcement Practitioners* was released in April 2005. Since its publication, the Guidance has been distributed to over 500 leading environmental practitioners in countries located in Asia, Africa, Central America, South America, and Central Europe. In preparing the first edition of the Guidance, INECE hosted “e-dialogues” to discuss specific aspects of performance measurement and to identify information gaps. Representatives from more than 20 countries contributed to these online discussions.

To help new audiences understand the concepts presented in the Guidance, INECE developed a two-day course on identifying, designing and using performance indicators for compliance and enforcement programs. The course was presented in 2006 and 2007 to practitioners in the Philippines, Thailand, Viet Nam; to practitioners from across Central Europe; and to practitioners in Central America.

The second edition of the Guidance incorporates suggestions and changes offered by practitioners engaged in the management of ECE programs. It adds information on: the purposes of performance measurement and the relationship of performance indicators to program goals and objectives (in Section I); the use of indicators to support benchmarking and organizational report cards (in Section V and Appendices D and E); examples of qualitative indicators for ECE programs (in Appendix F); and examples of performance indicators from the United States Environmental Protection Agency (U.S. EPA) (in Appendix G).

INECE expresses its sincerest gratitude to those who participated in the development of this guidance document. INECE offers special thanks and appreciation to the U.S. EPA for its support in the development of this guidance document, and in particular to Michael Stahl,

Director of U.S. EPA's Office of Compliance and principal author of this document, for his leadership and vision, and to Robbi Farrell and Lauren Spath of U.S. EPA for their assistance.

I. INTRODUCTION

A. Purpose and Context

The purpose of this document is to provide guidance to environmental compliance and enforcement (ECE) practitioners for identifying, implementing and using ECE indicators. The guidance provided in this document is drawn from the experiences of countries at various stages of developing and using ECE indicators. The document was written to be useful to countries considering whether to develop indicators, those in the early or mid-term stages of an indicators effort, and those already using indicators to report to the public and make program management decisions.

With the aid of performance indicators discussed in this guidance document, managers of ECE programs and directors of environmental protection agencies can answer questions such as:

- What activities (e.g., inspections, enforcement actions, etc.) are being produced by the ECE program?
- What results or outcomes are being produced by the activities of the ECE program?
- Which elements of the ECE program are performing effectively?
- Are there any elements of the ECE program which raise performance issues that need to be corrected?

Although this document was written for the purpose of assisting those involved in ECE programs, it can serve broader purposes as well. The best practices for identifying, implementing, and using performance indicators (described in Sections II, III, and IV of the document) and the benefits and barriers of performance measurement (described in Section V) apply to more than ECE programs. Staff and managers of environmental protection programs generally should also find the best practices relevant and useful, as would many personnel in a wide range of government programs.

B. What Are ECE Indicators?

The word “indicator” is rooted in the Latin verb *indicare*, which means to indicate, make known, or point out. Most common definitions of “indicator” describe it as a person, thing, or device that measures, records, or declares something. Indicators can be thought of as pieces of information that provide evidence on matters of broader concern.

In this document, ECE indicators are concentrated on the performance of environmental enforcement and compliance programs. These indicators declare or make known information about operations of and results achieved by ECE programs, for the primary purpose of improving the effectiveness of such programs.

There is a significant body of knowledge and experience concerning broader environmental indicators – measurable pieces of information that inform us about the status of an area’s

environmental health. Policy makers have used these indicators for years to communicate information about the state of the environment to the public.

The OECD member countries have agreed to use a framework for discussing environmental indicators known as the pressure-state-response model (see Figure 1). Under this model, indicators fall into three categories: indicators of environmental pressures (e.g., trends in air emissions), indicators of environmental conditions (e.g., trends in ambient air quality), and indicators of societal response (e.g. air regulations). Indicators of societal responses show the extent to which society responds to environmental concerns. They refer to individual and collective actions and reactions, intended to mitigate or prevent environmental harm, remedy damage already inflicted, and preserve natural resources.

Environmental compliance and enforcement (ECE) indicators are an example of societal response indicators. As with indicators of environmental expenditures, taxes and subsidies, price

For examples of ECE Indicators, see Table 5

structures, market shares of environmentally friendly goods and services, and pollution abatement rates, they reflect societal responses to the environmental conditions identified.

Performance indicators for ECE programs, or for any government program, describe a level of activity or commitment made by government, and a set of results which contribute to an important social goal such as reducing or preventing environmental pollution.

C. Definitions of Key Terms

Before an in-depth discussion of ECE indicators can occur, clear definitions of some key terms are essential.

Compliance -- The OECD defines compliance as the behavior response to regulatory requirements. Similarly, Environment Canada defines compliance as a state of conformity with the law. Hence, compliance indicators include those measurable pieces of information that inform about regulatees' behavior response to regulatory requirements such that they conform to laws and regulations.

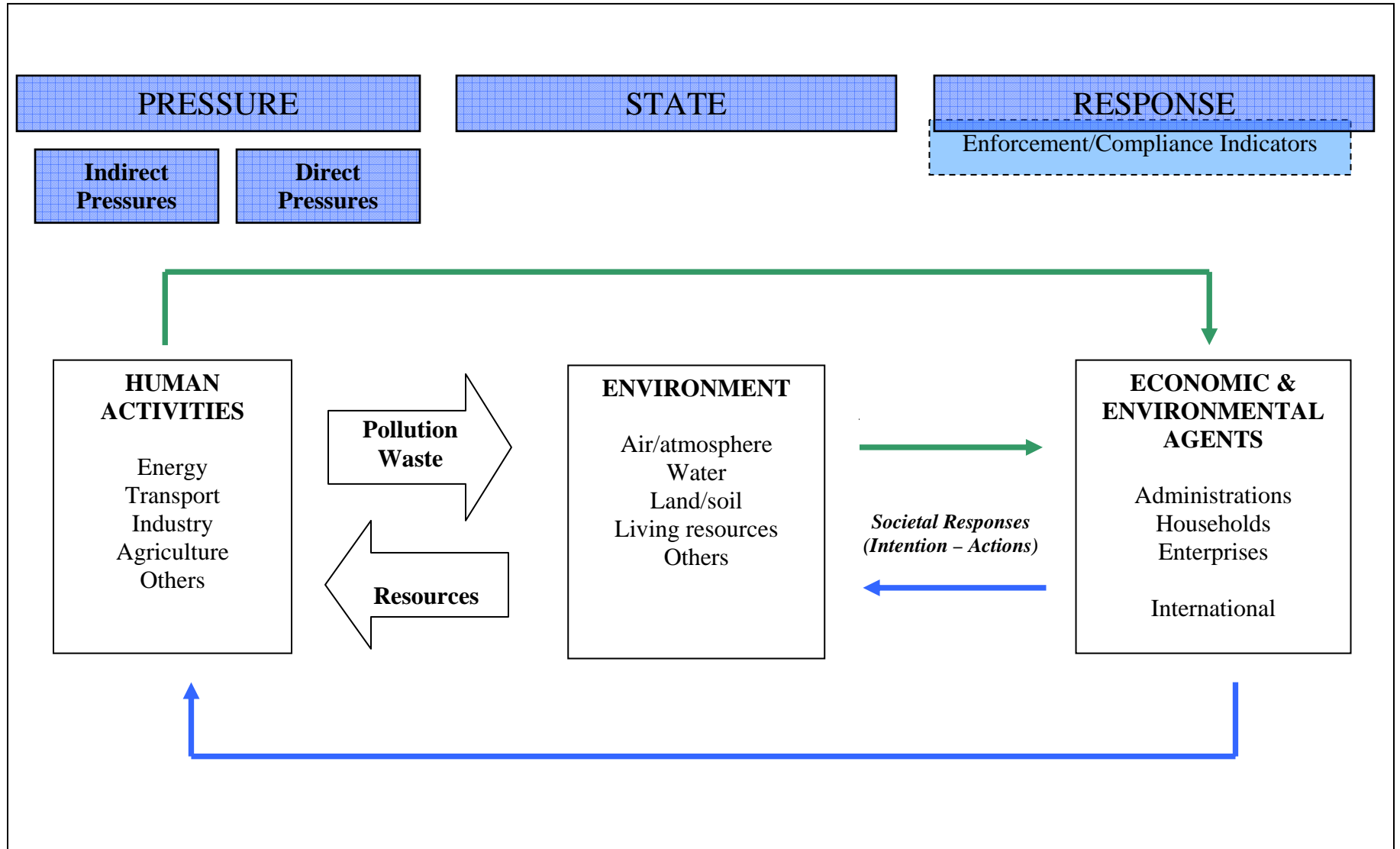
Compliance assurance -- This is defined as the application of all available tools to achieve compliance and includes compliance promotion, compliance monitoring and enforcement.

Compliance monitoring is the collection and analysis of information on compliance status (through pre-inspection and inspection reviews, ambient and emission monitoring, when needed, and other kinds of data gathering).

Compliance promotion is any activity that facilitates or encourages voluntary compliance with environmental requirements.

Enforcement can be defined as the set of actions that governments or others take to correct or halt behavior that fails to conform with environmental requirements.

Figure 1. OECD Pressure-State-Response Model



Inputs -- Inputs include time, staff, funding, materials, equipment and the like that contribute to an activity. While of limited usefulness in and of themselves, they speak to the government's commitment and are important components for determining efficiency and return on investment. When considered together with outcomes, inputs can be used to determine the level of effort required to achieve an outcome. Managers can use this information to analyze efficiency in their programs.

Outputs -- Outputs are activities, events, services and products that reach a regulatee. Examples include the number of inspections performed, the number of compliance assistance workshops provided, and the number of enforcement cases issued. These indicators demonstrate a level of effort toward an outcome, but they do not indicate the degree to which the outcome is achieved.

A discussion about the limitations of output indicators and the need for outcome measures can be found Section II.I.

Outcomes -- Outcome indicators measure the results of an agency's outputs, and are generally divided into two categories: intermediate and final outcomes.

Further discussion about the benefits of intermediate outcomes can be found Section II.I.

Intermediate outcome indicators measure progress toward a final outcome, such as a change in behavior or other results that contribute to the end outcome. An example of an intermediate outcome of an inspection would be a change in facility management practices.

Final outcome indicators measure the ultimate result the program is designed to achieve, such as an improvement in ambient air quality or a reduction in the number of people living in areas in which pollutant standards were exceeded. When final outcome indicators are designed with the program's goals and objectives in mind, they should enable managers and others to determine whether the program's activities, or outputs, are achieving those goals.

D. Target Audiences for this Guidance Document

This document provides definitions, best practices, and examples useful for anyone involved in developing or using ECE indicators. The document should be helpful to various audiences, including:

Staff and managers of ECE programs

Indicators can be used by staff and managers of ECE programs to support an appropriate assessment framework for improving program performance. In particular, managers are considered a primary audience for the guidance since they can use ECE indicators to monitor operations, adjust strategies, allocate or redirect appropriate resources (both human and financial) to increase program impact, and enhance accountability to stakeholders and the public.

Senior policymakers in environmental agencies

Policymakers can use indicators to lead and direct their ECE programs toward performance-based management. Agency leaders can use the guidance to focus ECE programs on a more analytic and effective form of management.

Legislators and budget officers

Indicators are essential for legislators and budget officers to understand how they can get a full account of the effectiveness and efficiency of ECE programs. By requiring such programs to use performance indicators, legislators and budget officers can make better informed decisions about resource allocation.

Public interest and environmental advocates

Public interest and environmental advocacy groups can use indicators to ensure ECE programs are accountable to the public and are carrying out their mission. Representatives of non-governmental organizations (NGOs) can be a force in driving ECE programs to develop and use performance indicators.

Staff of International Organizations

International organizations can use ECE indicators as an additional performance tool when designing, monitoring, and evaluating environmental projects and programs they support.

E. Why Are ECE Indicators Important?

Program managers are among the primary users of ECE indicators. Until recently, managers commonly measured program performance in terms of activity counts, or outputs, such as the number of inspections conducted and the number of enforcement cases initiated. Though outputs alone give some sense of enforcement presence and are relatively easy to measure, they do not enable analyses of the extent to which a program is achieving its goals. By identifying, designing and using more meaningful ECE indicators, managers and others can evaluate and communicate to others how well these programs respond to priority environmental problems. More specifically, program managers can use ECE indicators for three major purposes:

Monitoring program operations

ECE indicators can help to ensure that personnel and resources are used appropriately to accomplish the agency's goals. This type of analysis could compare inputs and outputs; for example, how many activities of various kinds are conducted within a given period of time with a given amount of resources. Examples include the number of inspections conducted annually and the number of enforcement warnings and charges issued per year.

Enhancing accountability

ECE indicators can enhance the accountability of environmental compliance and enforcement programs that report results to central budget authorities, legislative bodies, environmental constituency groups, and the general public. Since there are multiple audiences, it is often necessary to use multiple indicators to provide a full account of program performance. Input-related indicators identify the allocation of financial and human resources. Output-related indicators show the extent of activities carried out. Outcome-related indicators show the results achieved or the effects of the activities.

When taken together, inputs, outputs and outcomes relate a given amount of resource allocation to a number of enforcement cases settled and the corresponding reduction in pollution (e.g. kilograms of pollution reduced). These indicators can also be valuable as an internal tool to motivate program staff and managers and to recognize and celebrate accomplishments.

Assessing program performance

ECE indicators help program managers learn what is working and what is not working and determine what needs to be done differently to achieve desired outcomes. For many, this is the primary purpose and most important reason to invest in development and use of performance indicators. For example, managers can compare outputs (number of inspections) with outcomes (compliance rates) to examine whether more inspections lead to greater compliance. Similarly, comparing the number of inspections by sector with corresponding changes in compliance rates can help management identify sectors in which inspections have the greatest impact. Managers can look for patterns and relationships between activities and results, and make improvements where necessary. Cost-effectiveness of programs can also be examined by combining data about funds and personnel resources expended to produce certain activities or results. When used in this way, ECE indicators are an invaluable management tool.



F. Purposes of Performance Measurement

One of the principal benefits of measuring performance of ECE programs is that many useful purposes can be served by a well-designed set of performance indicators. Robert Behn of the Kennedy School of Government at Harvard University has identified eight distinct purposes for measuring performance. Those purposes, along with the questions they address, are summarized in Table 1.

Table 1. “Why Measure Performance? Different Purposes Require Different Measures”¹

Robert Behn, Harvard University

Purpose	Question	Primary Use
Evaluate	How well is my public agency performing?	Compare data with desired results to judge performance
Control	How can I ensure that my subordinates are doing the right thing?	Establish desired behavioral or input standard from which to gauge individual or collective deviance
Budget	On what programs, people, or projects should my agency spend the public's money?	Define good, acceptable and poor levels of efficiency
Motivate	How can I motivate line staff, middle managers, nonprofit and for-profit collaborators, stakeholders, and citizens to do the things necessary to improve performance?	Set reasonable and significant targets
Promote	How can I convince political superiors, legislators, stakeholders, journalists, and citizens that my agency is doing a good job?	Understand what the public cares about
Celebrate	What accomplishments are worthy of the important organizational ritual of celebrating success?	Discern the kinds of achievements that employees and collaborators think are worth celebrating
Learn	Why is what working or not working?	Be able to detect unexpected (and significant) developments and anticipate a wide variety of common organizational, human, and societal behaviors
Improve	What exactly should who do differently to improve performance?	Understand or be able to predict how management actions affect the inside-the-black-box behavior of the people who contribute to desired outputs and outcomes

¹ Behn, Robert D., “Why Measure Performance? Different Purposes Require Different Measures,” in *Public Administration Review*, Vol. 63, No. 5, pp. 586-606 (2003).

G. Role of Performance Indicators in Management Structure

In most organizations, including ECE programs, there is a set of aspirations, plans, and activities which help guide the organization to the achievement of results. These aspirations and plans take the form of mission statements, goals, objectives, and performance measures.

A strategic plan for an organization usually contains some form of mission statement, goals, objectives, and measures. These pieces are linked in a kind of hierarchy that defines what the organization intends to accomplish. Thus, mission statements describe the ultimate purpose of an organization, goals identify the major elements of the mission, objectives set forth the expected results of the goals, and measures assess the progress or success in achieving objectives. Figure 2 provides definitions of these concepts and illustrates how they connect to form a management structure for an organization.

H. Three-Stage Model

The guidance is organized around an integrated process comprised of three stages or steps: identifying potential indicators and selecting an appropriate combination; developing indicators through designing and testing; and using the indicators to improve program performance and enhance accountability to stakeholders. For each of these stages, best practices are presented. This three-stage model is summarized in Figure 3.

Although this document is built upon indicators currently in use in specific countries, it does not advocate on behalf of individual indicators or a uniform set or system of indicators. Instead, it provides practical advice about steps and practices that can be adapted for use by countries, agencies or programs so they can design indicators that meet their own needs and recognize their own constraints.

The best practices are presented in Section II on identifying indicators, Section III on developing indicators and in Section IV on using indicators. Benefits and barriers associated with development and use of indicators are discussed in Section V. Appendices to the document provide practical information about stakeholder consultation, types of data useful for periodic reports, and sources of additional ideas about performance indicators.

Figure 2. Typical Management Structure for Organization

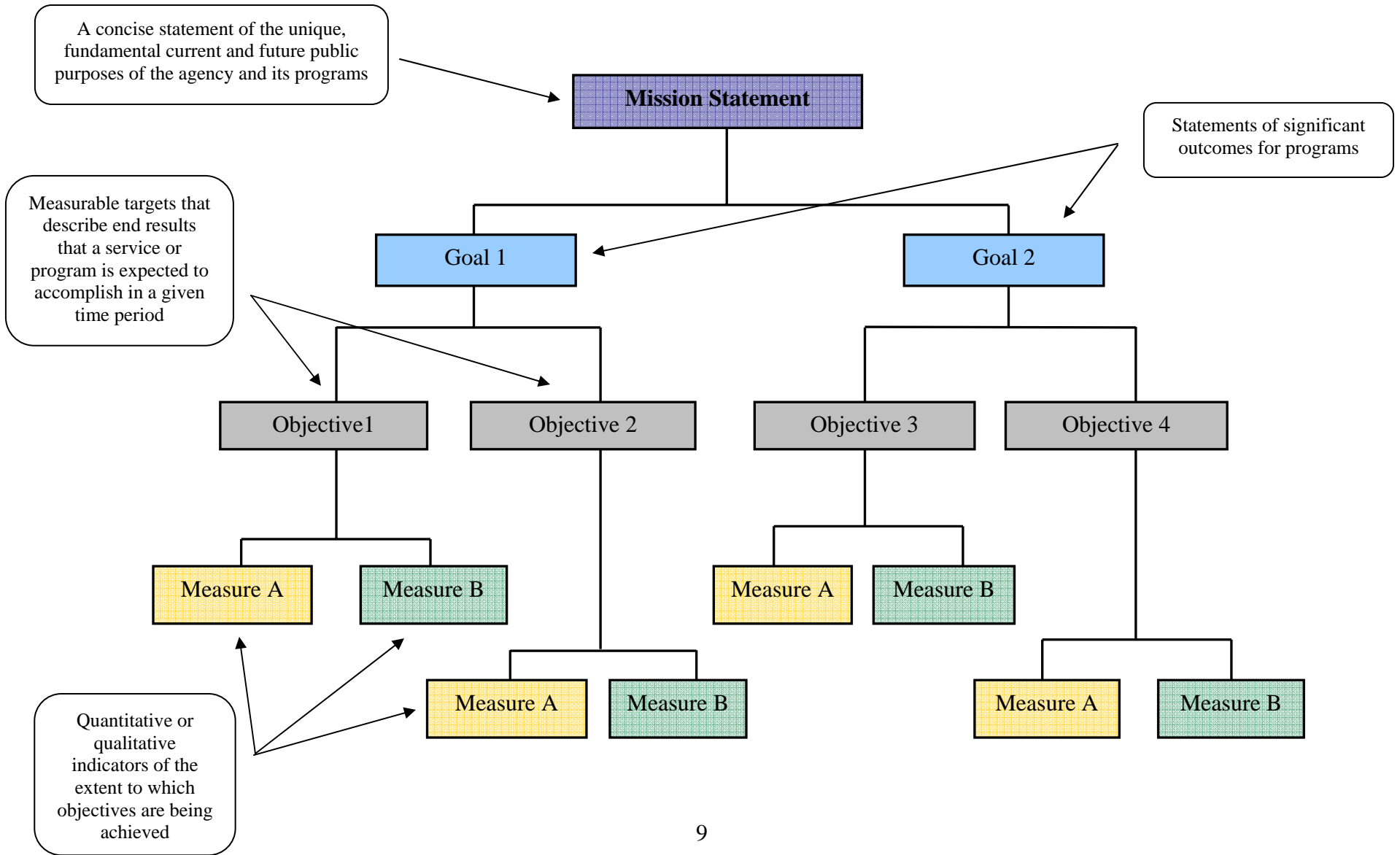
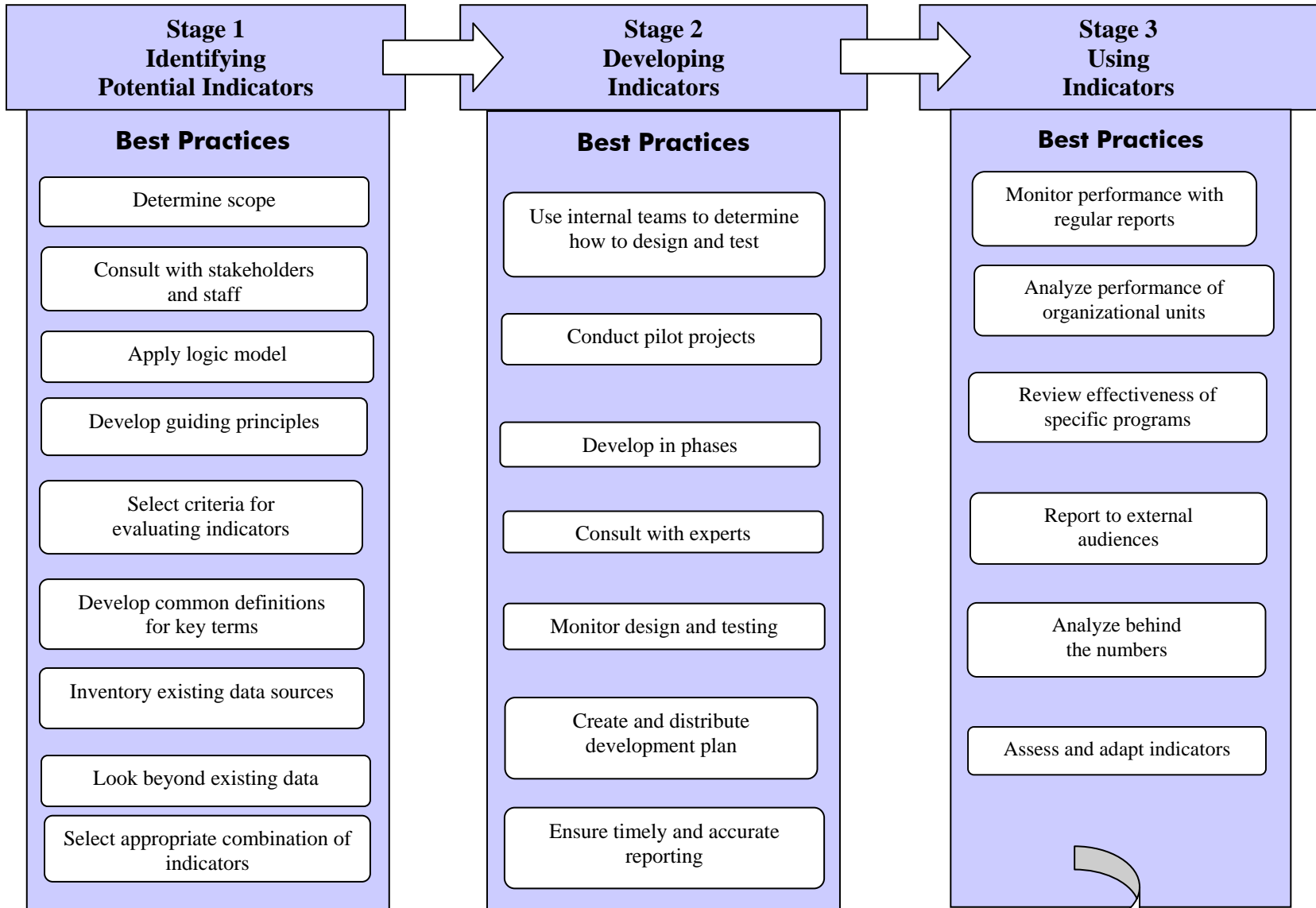


Figure 3. Three-Stage Model for Identifying, Developing, and Using Indicators



II. STAGE 1: IDENTIFYING POTENTIAL INDICATORS

The practices described below for identifying indicators are based on the experience of national environmental enforcement and compliance programs from around the world. While all of these practices are highly recommended, they are best viewed as a menu from which national programs can choose practices appropriate for their specific situation. The practices should not necessarily be used as a step-by-step process.

A. Determine the Scope of the Indicators

A fundamental issue that needs to be resolved at the beginning of any effort to develop indicators is the scope of the effort. Two questions need to be answered to determine the scope:

1. Will the indicators be comprehensive (that is, will they cover all the legal and regulatory frameworks and programs for which the agency is responsible) or focused (covering only a specific law or requirement, industry sector, geographic area or non-compliance pattern)?
2. Will the indicators be national (that is, covering the national compliance and enforcement program) or sub-national (covering a program at the regional/district, state or local/municipal level)?

Comprehensive National Indicators

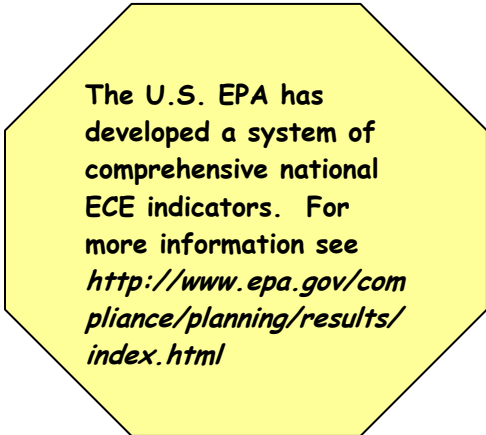
To assess the overall effectiveness and improve management of the national environmental agency's program to ensure compliance with environmental requirements in all federal statutes and regulations, indicators will need to be comprehensive and national.

Developing a set of comprehensive national indicators is very complex, since it involves many persons, multiple agencies, collection of data from many sources, and may require implementation of a national data system.

Comprehensive Sub-National Indicators

To assess the overall effectiveness and improve management of the compliance and enforcement program of a regional or district office of the national environmental agency, a state or provincial agency, or a local or municipal agency, indicators will need to be comprehensive and sub-national.

This type of effort has the advantage of being a more manageable size than a comprehensive national effort. Developing a comprehensive set of indicators at a regional, state or local level



The U.S. EPA has developed a system of comprehensive national ECE indicators. For more information see <http://www.epa.gov/compliance/planning/results/index.html>

can often provide a means of testing a system of indicators that can later be applied to the national program.

Focused National Indicators

This type of effort is necessary when a national environmental agency wants to assess the effectiveness and improve management of a focused national initiative to address a specific noncompliance pattern or environmental risk.

Environment Canada's Enforcement Branch has developed a set of focused national ECE indicators. For more information, see <http://www.ec.gc.ca>

Focused national indicators might be developed for an inspection and enforcement initiative to improve compliance among the petroleum refining industry, a targeted enforcement initiative to improve compliance with all air pollution requirements, or a strategy that integrates incentive and enforcement to reduce emissions of a specific pollutant into water bodies.

This type of effort is also a more manageable size than the comprehensive national effort because it focuses on a specific component or piece of the national program. For a focused national effort it is often advisable to develop indicators that are short-term and specifically tailored for the initiative being measured, rather than develop permanent long-term indicators that would be necessary for a comprehensive national set of indicators.

Focused Sub-National Indicators

To assess the effectiveness and improve management of a focused initiative to address a specific non-compliance pattern or environmental risk at the regional, provincial/state, or local/municipal agency, use focused sub-national indicators.

This type of indicator might be developed for a regional or state effort to use inspections and enforcement to control deforestation, or a municipal initiative to combine assistance followed by enforcement actions to limit illegal dumping of waste on the land.

Focused sub-national indicators are generally short-term and specifically tailored for the initiative. Developing and using such indicators can provide a very useful learning experience for developing comprehensive national indicators at a later time.

B. Engage Stakeholders

Because the target audience for ECE indicators is diverse and comprises a multitude of perspectives, consultation with all stakeholder groups is key to success in identifying, designing, and implementing indicators. Early engagement with the users – both internal to the organization as well as external groups – will provide invaluable information to help define the scope of measures and priority information needs. Stakeholder input helps to ensure that measures will be accepted as legitimate indicators of program performance, and will have the

best chance of meeting the needs of all interested parties. Stakeholder participation may also help identify all expected uses for the measures, and highlight the need to collect new or different data than that already available.

Through thorough and systematic consultation with the full range of stakeholders, much can be learned about which indicators are most meaningful, how various audiences will use indicators, and how indicators can contribute to effective program management. The table below summarizes the many ways in which ECE indicators can be used by various stakeholders.

Table 2. Stakeholders and Uses for ECE Indicators

Stakeholder	How Indicators Can Be Used
Government policymakers, legislators, oversight agencies	Assess progress in achieving goals, targets, standards Assess effectiveness of existing policies and instruments Identify priorities for future policy, legislation Assess program efficiency Assess costs and benefits of regulatory framework Inform budget process
Regulators	Assess effectiveness of regulations in achieving goals Identify future priorities for regulation and enforcement
Subnational/territorial authorities	Assess compliance rates by industry sector Identify implications of outcomes for planning decisions
International organizations	Assess progress in achieving international goals, targets, standards Compare progress on international goals across countries Assess program efficiencies
Industry	Compare compliance rates across sectors Assess own compliance within a sector
Environmental groups	Assess effectiveness of ECE programs Assess compliance rates in a locality Undertake citizen-based enforcement actions
General public	Understand risks to health and well-being in their locality Assure transparency and effectiveness of government

It should also be noted that efforts to identify, develop, and use ECE indicators sometimes originate from initiatives by NGOs, academia, or private sector associations. Such groups can be the starting point or catalyst for the development of ECE indicators, strongly advocating that government agencies adopt performance indicators, and working with agencies to ensure progress.

C. Apply Logic Model

A logic model can be a useful tool for identifying performance indicators. Logic models graphically depict the relationships between resources invested, activities undertaken and the results of those activities. It should clearly demonstrate a results chain from activities to outcomes, and serve as a “road map” of how the program will achieve its goals.

The key to using a logic model is to follow logically linked stages of the program: inputs, outputs, reach, intermediate outcomes, and final outcomes. For purposes of identifying meaningful ECE indicators, the logic model can elucidate what outputs and outcomes need to be measured. If insufficient resources are available to yield the desired outcomes at the scope intended, the scope may be reduced or outcomes modified to match available resources.

Table 3. Sample Logic Model for ECE Programs

Inputs <i>resources</i>	Outputs <i>activities</i>	Intermediate Outcome <i>behavior change</i>	Final Outcome <i>environmental impact</i>
Personnel	Assistance provided	Greater understanding of how to comply	Reduced pollution emissions
Funds for salaries, contracts, information technology, etc.	Inspections conducted	Improved environmental management practices	Improved ambient water quality
	Enforcement actions taken	Increased compliance	Reduced contaminant burden in wildlife species
	Fines assessed and collected		

D. Develop Guiding Principles

Discussions with external stakeholders and program managers and staff will often yield ideas that are broader than suggestions about specific indicators. The

Examples of guiding principles can be found at Appendix A

discussions will also capture general principles that can be used to guide the identification of indicators. These principles are valuable feedback from important audiences, and should be taken into account in the development and use of indicators. In developing its own principles, EPA drew from stakeholder input, consultation with

experts and practitioners, and a literature review.

E. Select Criteria for Evaluating Potential Indicators

After external stakeholders and program managers and staff have identified potential indicators, those indicators will need to be evaluated to determine whether they should be implemented. A

set of criteria should be used for this evaluation. The discussions with stakeholders can be very useful for identifying such criteria. Table 4 provides examples of selection criteria used to select indicators.

Table 4. Examples of ECE Indicators Selection Criteria

Criterion	Description
Relevant	Connected to goals, objectives, and priorities of the agency and to the needs of external stakeholders
Transparent	Promotes understanding and enlightens users about program performance
Credible	Based on data that is complete and accurate
Functional	Encourages programs and personnel to engage in effective and constructive behavior and activities
Feasible	The cost of implementing and maintaining a measure does not outweigh its value to the program
Comprehensive	Addresses the important operational aspects of program performance

In applying these criteria to potential indicators it will often be necessary to compare the relevance and importance of the information produced by a potential indicator against the feasibility or cost of implementing that indicator. For example, industry representatives suggested that U.S. EPA should count the instances when companies or facilities voluntarily implement environmental management systems, and that this could be an indicator of industry commitment to environmental compliance. Though EPA felt this information could be valuable, the discussions about implementation of the indicator quickly identified that there would be difficult and costly reporting and data quality problems. The indicator was then dropped from further consideration. This tension between the value of an indicator versus its cost of implementation may come up often in evaluation of potential indicators.

F. Develop Common Definitions for Key Terms

The importance of having a clear set of definitions at the beginning of any effort to develop indicators cannot be overstated. Defining key terms that will be used in discussions with stakeholders provides a framework for organizing ideas, and allows agency managers and external stakeholders to see how potential indicators might be used to improve management of the program.

Definitions of key terms can be found in section I.A. These definitions can be used or modified by ECE programs as they identify, design, and implement indicators.

Of particular importance is the distinction between output and outcome. As ideas for potential indicators are suggested by stakeholders, clear definitions can be used to categorize indicators

and determine whether the set of indicators suggested provides an appropriate mix of outcomes and outputs.

G. Inventory Existing Data Sources

A key step for identifying environmental compliance and enforcement indicators is to assess the existing data available to support indicators. Is data being collected that can be the basis for useful indicators? Is the data current, or the result of a study or survey that is out-of-date or no longer conducted? Is there an existing data system that collects timely and accurate data? Can it be enhanced to accommodate new indicators? For example, if data is being collected about enforcement actions issued by regional or district offices and by the national program, such data should provide basic output indicators that can be valuable in monitoring operations. Collection of enforcement action data might also be expanded to begin gathering information about results from enforcement actions (that is, pollutant reductions), thereby providing intermediate outcome indicators.



H. Look Beyond Existing Data

One potential pitfall in the identification of indicators is to consider as feasible only those indicators which can be supported by data that is currently available. Many important potential indicators will not be identified or given due consideration if the search for indicators is constrained by using only existing data. If performance indicators have not been used in the past, existing data will likely be limited to activities or outputs. Measuring outcomes, however, will likely require setting up a process for collecting new data.

I. Select an Appropriate Combination of Indicators

In selecting indicators it is critical to strike an appropriate balance between outputs and outcomes. A mix of output and outcome indicators will be necessary to serve the purposes of external stakeholders and program managers and staff. Further, using output and outcome indicators can allow patterns to be identified regarding what types of outputs produce the most effective outcomes. As greater understanding of these patterns is gained, program strategies can be adjusted accordingly.

Although output indicators provide basic information to program managers and provide a sense of “enforcement presence” to regulated industries and the public, output indicators have several limitations. First, they do not measure the environmental results achieved by program activities. Though they may provide insight about the number of enforcement cases taken over a period time, they do not tell program personnel or the public whether these cases reduced pollution emissions, improved facility environmental management practices, or returned the facility to full compliance. Second, output indicators reveal very little about the state of compliance. They do not tell us what percentage of the regulated universe is in



compliance or what the level of compliance is in key segments of that universe. Third, output indicators say little about progress toward achieving environmental goals or addressing particular environmental problems. Knowing the number of inspections or enforcement actions does not indicate whether the agency’s mission is being achieved, or whether a strategy to address a particular environmental problem has been successful.

In identifying and implementing environmental compliance and enforcement indicators, it should be recognized that intermediate outcomes can be a source of very valuable indicators. In fact, intermediate outcomes should be emphasized when developing and implementing indicators. The advantage of intermediate outcomes is that they are often directly caused by the activities and outputs of the program – there is no ambiguity about the causal link between the enforcement actions and the resulting pollutant reduction, for example. Unfortunately, many efforts to develop indicators falter when they focus only on outputs and end outcomes. This is because there is often at best only a very weak link between the government activity and an improvement in an environmental condition. Also, measuring changes in end outcomes can be very expensive, the end outcomes may take years to appear, and improvements in end outcomes such as air or water quality can be influenced by many factors beyond the scope of government activity. For all these reasons, intermediate outcomes should receive appropriate consideration in any effort to develop indicators.

At the end of its process for identifying potential indicators, the U.S. EPA selected a set of indicators for implementation. Those indicators are listed in Table 5.

Table 5. Examples of Output and Outcome Indicators for ECE Programs

Indicator Type	Indicator
Outputs	Number of inspections and investigations conducted
	Number of civil and criminal enforcement actions
	Number of facilities/entities reached through compliance assistance efforts
	Number of training courses and other capacity building efforts provided to ECE programs at sub-national levels
Outcomes	Amount of pollutants reduced through enforcement actions
	Amount of soil removed, gallons of groundwater treated via enforcement actions
	Monetary value of pollution control projects required by enforcement actions
	Number of entities seeking compliance assistance from ECE program
	Actions taken as a result of assistance from ECE program
	Rate of recidivism among significant violators and average time to return to compliance
	Statistically valid compliance rates for key regulated populations

III. STAGE 2: DEVELOPING INDICATORS

The development of indicators through designing and testing is a critical step that may be overlooked in the rush to begin using indicators sooner rather than later. This is the time to define accurate and reliable performance indicators in detail, pilot test them and correct mistakes before reporting indicator data to the public or using it to assess and improve performance. As mentioned in the previous section on identifying indicators, the practices described below are best viewed as a menu from which to choose rather than a step-by-step process.

A. Use Internal Teams to Determine How to Design and Test

One approach for completing the design is to develop teams within the organization to define the selected indicators in precise detail, review relevant data already available, develop information collection and reporting processes as needed, and establish a schedule for testing and implementing the indicators. These work groups can be very useful in identifying and overcoming barriers to effective implementation. They will have the added benefit of involving staff and increasing their sense of ownership of the new indicators.

B. Conduct Pilot Projects

The use of pilot projects to develop environmental compliance and enforcement indicators is highly recommended. Pilot projects provide a period of time for indicators to be developed and tested before being implemented fully. During this period, data can be analyzed, indicators can be refined or adjusted, and mistakes can be corrected. Pilot projects can be designed to test indicators on a small scale (for example, a focused sub-national project as described above), and can then be expanded and applied on a larger scale (for example, a comprehensive national project). Pilot projects are most helpful when there is a concerted effort to identify the lessons learned from the project at its conclusion.

C. Develop in Phases

For environmental compliance and enforcement programs developing multiple new indicators, it is advisable to implement in phases over a reasonable period of time. Although this may mean that the full set of indicators is not available in the immediate future, the time spent developing them produces more accurate information and spreads the burden over a more manageable period of time.

D. Consult with Experts

When sufficient internal expertise does not exist, agencies should not hesitate to bring in outside experts to fill in knowledge gaps when developing performance indicators. This can be particularly helpful when developing complex measures, such as statistically valid compliance rates. Experts in sampling, statistical analysis, and performance-based management of public

programs can provide useful assistance. They can help determine whether potential indicators meet the criteria set forth in Section II.E. above.

E. Monitor the Design and Testing

Developing a new indicator or set of indicators requires ongoing management attention to ensure that the appropriate data is collected, that it is collected in an efficient manner, and that the indicators provide the understanding of program performance anticipated. Monitoring these tools can also help determine whether certain indicators need to be dropped from or added to the implementation effort.

F. Create and Disseminate a Development Plan

It is important that a plan is developed that describes the tasks to be completed to implement new indicators, and provides a schedule of deadlines for completion of the tasks. The plan should also clearly spell out the uses for the new indicators. The plan should be disseminated to program managers and staff, and to external stakeholders as appropriate.

G. Ensure Timely and Accurate Reporting

Reporting of data, especially data to support new indicators, by internal or external parties will need to be reinforced through multiple communication mechanisms on an ongoing basis. Steps will also need to be taken to ensure the quality of the data (e.g., random data audits, sampling and verification of specific data fields) through a continuous program of quality control. One of the most effective ways of ensuring timely and accurate reporting is for senior managers to demonstrate that they are using indicators to make decisions about program strategy and resource allocation.

IV. STAGE 3: USING INDICATORS

Performance indicators can serve many purposes. Public management literature suggests a wide variety of uses for performance indicators by public sector programs and organizations. Among the most common uses are:

- Support strategic and other long-term planning efforts
- Improve program effectiveness
- Identify performance problems and needed corrections
- Provide data for in-depth program evaluations
- Communicate with public and enhance accountability
- Help make operational and resource allocation requests
- Formulate and justify budget requests
- Motivate personnel to make program improvements

Performance indicators that can be used for all, most, or even some of these purposes can be of great benefit to a program or agency.

For environmental compliance and enforcement programs, there are at least four ways to use performance indicators. These practices are highly recommended, but are best viewed as a menu from which to choose, rather than a step-by-step process.

A. Monitor Performance with Regular Reports

A monthly or quarterly report on performance indicators can be provided to program managers and staff. These reports can provide a current account of performance in producing key outputs and outcomes. Such reports can be organized to break out data for a program as a whole, or for various program components. In addition to data about performance indicators for the current year, the reports should also provide data about performance in the previously completed fiscal/calendar year to provide a benchmark.

Appendix B provides examples of the types of data that can be included in a monthly or quarterly report

B. Analyze Performance of Organizational Units

Data from indicators can be organized to provide a current report of performance by a particular organizational unit, such as a regional or provincial office of a national agency. These reports could contain data about performance in the current fiscal/calendar year, three-year trends on key outputs and outcomes, and comparisons to performance of other regional offices. Such reports can lead to identification of specific program management and performance issues that might need to be addressed by managers of the organizational unit.

C. Review Effectiveness of Specific Programs

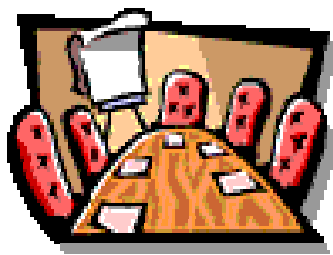
Data from indicators can be used to review the effectiveness of particular programs (e.g., compliance with clean water laws or requirements). Studies of the effectiveness of specific programs could be organized around six performance-based questions that provide a framework for analysis. The six questions are:

1. Is the program contributing to the goal of protecting human health and the environment through its actions and strategies?
2. Is the program changing the behavior of the regulated community in ways that lead to improved environmental performance?
3. Is the program achieving appropriate levels of compliance in key populations?
4. Are we achieving the appropriate levels of enforcement activity in the regulated community?
5. Is the program providing appropriate assistance to our state, provincial, and local partners to support them in contributing to improving environmental performance?
6. Are resources being used efficiently to achieve optimal results?

Under each question, the relevant performance indicators are arrayed to address the question as thoroughly as possible. The framework allows data about results and the activities that produced them to be analyzed. These data can be examined for patterns and more can be learned about the combinations, types, and amounts of activities that produce the most desirable results.

D. Report to External Audiences

Many environmental agencies provide reports to the public in response to laws or policies requiring such reports. For environmental compliance and enforcement programs, performance indicators can provide valuable information to the public, legislative overseers, regulated industries, and environmental organizations. Such programs can be well-served by providing an annual report to external audiences. Reports that emphasize results and outcomes achieved through activities and outputs of the program can enhance support for the compliance and enforcement mission. By describing accomplishments in terms that emphasize results – pounds of pollution reduced through enforcement actions, improved practices at facilities from compliance assistance, improved rates of compliance in an industry sector – an account of performance is provided that is meaningful to multiple audiences.



E. Analyze Behind the Numbers

When using indicators to improve performance, program managers and staff should understand that data from indicators have their limitations. A number that provides the amount of an output or outcome produced does not tell program personnel all they need to know about that output or outcome. Such numbers need a context (e.g., a time period, a benchmark or standard for comparison, etc.) to realize their full value as a management tool. In many instances, data from

indicators provide a kind of warning light that signals a need for deeper analysis or further investigation to understand the forces and influences that shape program performance.

F. Assess and Adapt Indicators

After indicators have been implemented and are being used, ECE program managers and staff should be prepared to solicit, compile, and act on feedback about ECE indicators. This can be done immediately after implementation and on a continuous basis, or as a structured review after a suitable period (perhaps 1-3 years) of actually using the indicators. The assessment of indicators should involve stakeholders who can comment on the indicators as a device for explaining program activities and results to the public; policy-makers who may influence the level of budgetary resources for the agency; and program managers and staff who have actually used the indicators as a management tool for directing and improving the performance of the ECE program.

V. BENEFITS AND BARRIERS TO IDENTIFYING, IMPLEMENTING AND USING INDICATORS

Environmental compliance and enforcement programs that undertake an effort to identify, implement, and use performance indicators will reap many benefits and confront many barriers during that effort. The benefits can be very rewarding and the obstacles very daunting. To help programs and agencies anticipate both the benefits and the barriers, some of the most important are described below.

A. Benefits of ECE Indicators

When programs or agencies are able to establish a set or a system of performance indicators for their compliance and enforcement efforts, the indicators often provide a steering mechanism for program managers and staff, a window through which the public can view results and ensure program accountability, and a demonstration to regulated facilities and companies that compliance is expected and taken seriously.

For practitioners in environmental compliance and enforcement programs, the benefits of performance indicators include the following.

Improved Control of Program Operations

Even a very basic set of output indicators will increase understanding about what is being accomplished, and when combined with data about inputs, judgments can be made about whether resources are being used efficiently. At a minimum, basic output indicators can help determine whether program staff are performing fundamental program activities.

Improved Ability to Set Goals and Adjust Strategies

By using indicators as a management tool, goals can be set regarding the amount of activities or results that should be produced over a period of time. Indicators can also be used to identify needed adjustments in the mix of activities or results the program is producing.

Improved Decision-Making for Resource Allocation

Output and outcome indicators can be analyzed to determine whether resources need to be increased, shifted, or altered in some way to meet goals and achieve desired results. Indicators provide an understanding of the relationship between outputs and outcomes, thereby enhancing the ability of program managers to increase resource investment in preferred outcomes.

Improved Ability to Identify and Correct Performance Issues

Indicators that can be organized by type of output or outcome, by organizational unit, and by program area increase program managers' ability to identify performance problems and investigate them further to design solutions.

Improved Ability to Motivate Employees

There is much truth to the oft-repeated statement that "What gets measured gets done." Performance indicators send a clear signal to program personnel about what needs to be accomplished. Setting a goal to achieve a certain amount of a specific output tends to organize and focus some portion of resources on achieving the goal.

Improved Ability to Communicate with the Public

Performance indicators help external audiences understand and support program activities. Output indicators can convey to the public that funds are producing some amount of inspections, enforcement actions, or other activities. Outcome indicators can convey that these activities are resulting in important outcomes such as reduced pollution, increased compliance, and improved environmental management at facilities.

B. Other Beneficial Uses of Performance Indicators

There are many ways in which performance indicators can aid various forms of program analysis and evaluation. Conducting benchmarking exercises, establishing organizational report cards, auditing program effectiveness and assessing institutional capacity of ECE programs all rely on performance measures to identify and address operational issues and improve program impact.

Benchmarking involves comparing an organization's practices and results with another organization that is performing at high level considered to be "best-in-class." A more detailed discussion of how benchmarking works can be found in Appendix C of this document.

Organizational report cards are most often used to assess organizations with similar missions by comparing their performance in achieving key results. Data about performance is often provided to external audiences and is used to produce ratings or rankings for the organizations compared. They are most commonly used to compare educational institutions or rate healthcare facilities, usually on objective criteria (such as graduation rates, mortality statistics) and they can be a very useful feedback mechanism for both consumers and service providers. A more detailed discussion of organizational report cards can be found in Appendix D of this document. An example of an audit of environmental programs that produced a report card about specific aspects of organizational performance can be found at Appendix E.



Qualitative indicators can be very useful to ECE programs, especially in developing countries needing to assess progress in increasing institutional capacity. These indicators are used to identify whether certain characteristics are present or absent in an ECE program. A set of qualitative indicators for institutional capacity might include whether environmental statutes contain necessary legal authority, whether an environmental agency has the organizational units and personnel to enforce the statutes, and whether a system of prosecutors and judges trained for environmental issues is in place. A more detailed set of examples can be found in Appendix F of this document.

C. Barriers to Development and Use of ECE Indicators

There are many obstacles that impede the identification, implementation and use of performance indicators by environmental compliance and enforcement programs. Some of these obstacles are broad, institutional issues that affect adversely the overall operation of the whole environmental agency, not just its compliance and enforcement program. Other obstacles are more narrow but still troublesome, and they pertain to the difficulties surrounding performance measurement in general.

For developing and transitioning countries, there are at least four barriers that impede the development and use of indicators.

Compliance Culture in Formative Stages

In many countries, the obligation to comply with environmental (and other) requirements is not yet ingrained deeply. In some countries, the rule of law is not yet embraced fully by citizens, businesses, and institutions of government.

Environmental Laws Not Fully Developed or Implemented

Environmental laws may be relatively new, they may have undergone significant changes, there may not be much experience with the implementation of these laws or sections of the laws, and there may be impediments to implementation of specific sections of the laws.

Environmental Agencies Not Mature

The operation of environmental agencies may not be very sophisticated, they may possess limited capabilities and they may have severe resource shortages, and may even be struggling for viability.

Systematic Data Collection Lacking

Some countries lack data systems or may be only beginning to develop them. In the absence of organized efforts to report and collect data, even basic output indicators are difficult to establish.

These challenges are inter-related. For example, developing a compliance culture may be impeded in countries where environmental laws are not fully functional, and the lack of data reporting and collection systems may slow the effectiveness of environmental agencies. Finally, the fundamental tension between economic development and environmental protection is often exacerbated in developing and transitioning countries. The emphasis on economic improvement or expansion can often cause environmental protection to be a low priority for government attention.

Other barriers to development and use of ECE indicators are common to developed countries, though they can also be obstacles to developing and transitioning countries as well.

Duration of Implementation

Identifying and implementing a useful set or system of performance indicators takes time. Most of the agencies making progress in developing and using performance indicators have taken three or more years to establish them. An effort of this duration requires persistence, a long-term commitment, and continuity among the responsible personnel.

Lack of Interpretive Skills

Even if programs are able to establish indicators, interpreting their meaning -- “understanding what’s behind the measures” -- requires a sophisticated understanding of program operations and a skill for diagnosing problems. Often these skills are in short supply, particularly in initial attempts to use indicators to identify performance issues.

Misuse by External Audiences

When indicators data are shared with the public, there is an increased likelihood that such data will be inadvertently or knowingly misused by advocacy groups. This prospect often discourages program managers from initiating an effort to establish indicators. Or, if there is an instance of misuse, program managers reduce their support or even discontinue the effort to develop and use indicators.

Inherent Limitations of Indicators

As mentioned previously (see section on “Analyze Behind the Numbers”), ECE indicators provide information that signals a need for deeper analysis. They raise questions about program performance but, by themselves, do not answer those questions. For this reason, ECE program managers and staff may view performance indicators as a tool that does not provide benefits that outweigh the burden of establishing them.

APPENDICES

- Appendix A: Guiding Principles for Efforts to Develop and Use Indicators
- Appendix B: Examples of Data for Monthly/Quarterly Reports
- Appendix C: Guidelines for Successful Benchmarking
- Appendix D: Organizational Report Cards
- Appendix E: Environmental Program Audit – Philippine Example
- Appendix F: Qualitative Indicators for Institutional Capacity
- Appendix G: Examples of ECE Performance Indicators from U.S. EPA
- Appendix H: Additional Resources

Appendix A. Guiding Principles for Efforts to Develop and Use Indicators

A combination of indicators – outputs and outcomes, quantitative and qualitative, statistical and narrative, aggregated and disaggregated, national and local -- is necessary to measure performance, inform management, and serve the full range of audiences and purposes.

No single number, fact, or category of measure (e.g., output or outcome) can convey all the information necessary to comprehensively measure performance. For example, the mission of U.S. EPA's enforcement and compliance assurance program is complex. Its responsibilities are multiple, and the tools used to achieve them are multi-faceted. Therefore, a variety of performance measures is needed to ensure accountability, improve management, and increase program effectiveness.

Performance indicators are most effective when they reflect management priorities and are linked to a limited number of program goals and objectives.

Successful performance measures demonstrate the degree to which organizations or programs are achieving their goals and desired results. The number of measures should be limited to key performance elements essential for producing data that aids program evaluation and decision-making. Performance measures should reflect those operational aspects (e.g., quality, fairness, timeliness, cost, etc.) considered to be management priorities.

Increased use of outcome indicators presents many challenges, because agencies or programs may influence – but not necessarily control – outcomes.

Outcomes cannot generally be attributed or causally linked solely to the activities of an agency or program since most outcomes are influenced by many factors external to the agency. For example, compliance rates might be influenced by economic conditions that are conducive to investment in environmental management by companies or facilities. Agencies need to be careful not to take too much credit for successful achievement of outcomes; nor should they probably take too much blame when outcomes are not achieved.

Problem-specific, tailor-made performance indicators are effective for evaluating performance in solving specific environmental and non-compliance problems.

When agencies or programs identify and target high-risk, high-priority environmental or noncompliance problems, their performance in mitigating or solving such problems can best be evaluated using tailor-made indicators that specifically relate to each problem.

Performance measures should be used principally to improve effectiveness and manage more strategically, rather than simply to report accomplishments to the public in a more interesting way.

If developed and used correctly, performance indicators should permit more sophisticated analysis of results and activities that produced them, allow comparisons of the relative effectiveness of specific tools and strategies, and lead to informed resource allocation that is more likely to achieve the desired results. A well designed and wisely utilized set of performance indicators can put strategy and vision, goals and objectives at the center of management attention.

Appendix B. Examples of Data for Monthly/Quarterly Reports

- Number of inspections conducted

Data organized by:

Regional/provincial office

Statute or program area

- Number of enforcement actions issued

Data organized by:

Type of action (e.g., civil, criminal)

Regional/provincial office

Statute or program area

- Monetary value of fines/penalties assessed

Data organized by:

Type of action (e.g., civil, criminal)

Regional/provincial office

Statute or program area

- Monetary value of investments in pollution control/beneficial projects¹

Data organized by:

Type of action (e.g., civil, criminal)

Regional/provincial office

Statute or program area

- Enforcement actions resulting in improved facility practices

Data organized by:

Type of practice

Regional/provincial office

Statute or program area

- Enforcement actions resulting in pollution reduction

Data organized by:

Type of pollutant

Regional/provincial office

Statute or program area

¹ Some countries have authority to require violating companies to invest in pollution control or beneficial projects as a condition of setting or concluding an enforcement action.

➤ Regulated entities reached through compliance assistance

Data organized by:

Industry sector

Type of assistance

Regional/provincial office

Statute or program area

➤ Increased awareness, improved practices, pollution reduction through compliance assistance

Data organized by:

Type of result

Type of assistance

Regional/provincial office

Statute or program area

Appendix C. Guidelines for Successful Benchmarking

Most simply put, benchmarking is a process that includes learning, sharing information, and adopting best practices into individual organizations, improving those organizations by encouraging them to learn from others and to become open to new methods, ideas, and tools to improve their effectiveness. This process is typically carried out internally by experienced personnel who are knowledgeable about the process under review. A benchmark is a standard of performance, and benchmarking considers not only cost and performance, but the full impact of an organization.

A comparison tool, benchmarking enables organizations to identify their own weaknesses and problem areas and then seek out those considered “Best-in-Class” and learn from their best practices by understanding, comparing, and adapting. This process helps organizations discover not only the level at which they are functioning, but also where they stand in relation to others.

Different types of benchmarking include *internal*, which studies the practices and performance within the organization itself; *external*, which determines the performance of (usually world-class) others; *quantitative*, a type of benchmarking which allows organizations to measure progress toward goals and to set improvement objectives in relation to specific performance measures or metrics; and *process*, which focuses on improving specific critical processes and operations and examines how top performing companies, usually those who perform similar work or deliver similar services, accomplish these specific processes or procedures.

Additionally, benchmarking can be strategic or performance. *Strategic* benchmarking is used when organizations seek to improve performance by examining the long-term strategies and approaches that have been used by other, successful high-performing organizations. *Performance*, or result-oriented, benchmarking is used when organizations consider their positions in relation to performance characteristics of key products and services. In this case, benchmarking partners are selected from the same sector.

Many organizations adapt definitions of benchmarking in order to suit their own strategies and objectives. Generally speaking, however, the benchmarking process includes the following:

- Regularly comparing aspects of performance (functions or processes) with best practitioners;
- Identifying gaps in performance;
- Seeking fresh approaches to bring improvements in performance;
- Following through with implementing improvements;
- Following up by monitoring progress and reviewing the benefits;

The Regional and Environmental Center for Central and Eastern Europe¹ suggests taking the following steps to begin benchmarking. First, the process to be benchmarked should be considered and selected; the chosen focus should be specific and it should have significant potential for improvement and be important to the organization. Second, a benchmarking team should be chosen; this team should consist of the most relevant people for the selected focus and one person who will be able to take the final outcomes and recommendations to the managers who influence their implementation. This step should not happen before a thorough analysis of their processes and/or performance is undertaken and the process is understood in terms of participants, inputs, outputs, steps, etc. A next step is to search appropriate benchmarking partners. Before beginning to search for a suitable partner, an organization should first develop a list of criteria for the partner. The selected partner should be objectively better at performing the chosen focus to be benchmarked. Next, data should be collected and analyzed, and sixth, the data should be processed and a comparison should be made between the benchmarking partner and the original organization. The gaps identified should then be analyzed by the benchmarking team. Finally, the findings of the analysis should be given to the organization's management. Management should adapt and incorporate relevant recommendations, ensure proper execution, set improvement targets, and monitor implementation.

As a result of these actions, benchmarking helps organizations and staff:

- Learn from those who have already achieved excellence
- Acquire greater confidence in developing and implementing new approaches
- Increase collaboration and understanding of the interactions within and between organizations
- Share knowledge and insight between organizations about overcoming common problems
- Improve quality and productivity
- Improve how they measure performance by setting appropriate performance measures and developing realistic targets for improvement
- Monitor progress in making improvements against Best-in-Class organizations
- Bring about continuous improvements in policy making and service delivery
- Understand the “big picture” better and gain a broader perspective of the interplay of factors that facilitate the implementation of a best practice
- Introduce new ways of working and innovative solutions
- Achieve greater involvement and motivation of staff in change programs
- Increase willingness to share solutions to common problems and build consensus about what is needed to accommodate changes
- Encourage organizational and individual learning and a culture of continuous improvement and a willingness to learn from others
- Introduce collaborate approaches that result in better outcomes
- Raise awareness of the strengths and weaknesses of performance

¹ The Regional Environmental Center for Central and Eastern Europe. *Guidelines on Progress Monitoring and Benchmarking*. Szentendre, Hungary, 2007.

When implemented correctly, benchmarking can help organizations make better informed decisions, see beyond barriers, embrace change, think “outside the box,” and provide a framework and methodology for implementing and managing change.

Appendix D. Organizational Report Cards

Due to both increasing demands from consumers and customers and a growing emphasis on quality customer service, tools like organizational report cards are being used by agencies and companies as a device for improving performance. Overall, the three principle audiences for report cards are consumers, policy-makers, and service providers. Though it is rare for these groups and others to agree on the precise purposes, audience, and scope of report cards, one thing that these groups can agree upon is that report cards are a useful tool. It is important for organizations to keep these audiences in mind while developing and using report cards.

In their book, *Organizational Report Cards*¹, Gormley, Jr. and Weimer define report cards as “a regular effort by an organization to collect data on two or more other organizations, transform the data into information relevant to assessing performance, and transmit the information to some audience external to the organizations themselves.” Most organizational report cards transform data into ratings or rankings of the organizations compared. They are used to examine a subject or organization in comparison to time, subject matter, and other organizations. Much like school report cards, organizational report cards provide assessors with a framework for performance evaluation.

Organizational report cards can be used by any organization, but are particularly useful to those that provide a service to a client. They are commonly used in education, in the health care industry, and in various other sectors and industries. Report cards are beneficial both to external audiences, who are able to hold organizations accountable through report cards, and to the organization, which receives feedback from the client or user. In each case, the performance of the organization is assessed, either internally or externally.

In the public sector, organizational report cards are most relevant to those services in which there are clear rationales for public accountability, such as the use of public resources. Gormley, Jr. and Weimer write that report cards, “...are policy instruments for reducing information asymmetry—and thereby increasing accountability—in the provision of services.” A “good” report card should be valid, comprehensive, understandable, relevant, reasonable, and functional. Each of these criteria is necessary to ensure that the report card’s content, audience use, and organizational responses to report cards are best put to use. Additionally, the input variables used in organizational report cards should mirror the organization’s case-specific characteristics, resource constraints, and discretionary use of resources.

Like organizational benchmarking, report cards compare one organization to multiple others. A major difference between these tools, however, is that when comparing organizations for reporting purposes, the outside organizations need not be “best in class,” as is the case when benchmarking.

¹ Gormley, Jr., W.T. and Weimer, D.L. 1999. *Organizational Report Cards*. Cambridge: Harvard University Press.

When compared to other policy tools, organizational report cards stand out in several ways. They promote accountability both from the top-down and from the bottom-up and may be used by policymakers, judges, consumers, advocacy groups, or, perhaps most importantly, individual citizens. Report cards also promote quality within an organization by enhancing regulation, self-regulation, and subsidization, and they are a very versatile tool.

Appendix E. Environmental Program Audit – Philippine Example

USING AN ENVIRONMENTAL COMPLIANCE AUDIT TO ENSURE ACCOUNTABILITY

November 9, 2007

(This appendix is an excerpted version of a paper by Anthony Oposa, a lawyer and citizen activist in the Philippines)

An environmental compliance audit seeks to ensure that:

- Environmental concerns are brought to the attention of the local and national political leaders;
- They are addressed with sufficient seriousness and determination;
- Public officers tasked to implement, comply and enforce the Law are held accountable for their inability or unwillingness to comply with the relevant environmental laws

Methodology

- The approach to do this is very simple: It is in the form of a report card with three columns. The first column is the key legal provision. The second is the quantitative or qualitative level of compliance column. The third will be for other notes or remarks.
- Thus, below is an example of environmental compliance audit report card for a simple law on solid waste management (Republic Act 9003)

Solid Waste Management Environmental Compliance Audit Sample Form

Key Legal Provisions	Level of Compliance	Other Remarks
Mandatory Segregation of Wastes (Sec. 21)		
Materials Recovery Facilities (MRF) (Sec. 32)		
No-segregation/no-collection rule		
Dumpsite/landfill		

Explanation/comments:

First Column

Waste Segregation.

The first column contains key provisions of the law which, if compiled, will result in the substantial compliance of the entire law. For example, if all the villages (barangays) comply

with the mandatory segregation of wastes, the wastes can be reduced by almost 80-90%. Thus, if there are 20 villages in the town and only one practices segregation of wastes, the level of compliance (second column) of the town is 1/20.

Materials Recovery Facility (MRF)

The same is true for the existence of MRFs. Under the law, villages or cluster of villages are mandated to establish an MRF for the collection and storage of segregated/recyclable facilities. If there is only one village that has an MRF or uses it, then the level of compliance grade is 1/20.

No-Segregation/No-Collection Rule

The law also provides that un-segregated waste must not be collected. TO enforce this, there is a criminal penalty of up to six months of imprisonment for the collectors of the garbage and (presumably, under the principle of command responsibility) for the local officials (mayor) concerned. A quick look at the garbage trucks and the dumpsites will determine whether this rule is being implemented. If not, then the grade (level of compliance, second column) of the local government being audited is ZERO.

Dumpsites

Under the law, all open dumpsites must be converted into controlled dumpsites by February 2004 and into sanitary landfills by February 2006. If this has not been implemented, then the grade of the local government (and its officials) is another ZERO.

Second Column

The second column is the level of compliance. Generally, this can be expressed quantitatively, such as in the form of percentage. This has been discussed above.

Third Column

This column/cell is for the other comments/notes that the auditor may wish to make. For example, on the negative side, the auditor can express the criminal penalty for violation. On the positive, he can document the efforts being done by the local government to address the issue.

The form below is an example of a semi-filled up report card after an environmental compliance audit.

**Solid Waste Management
Environmental Compliance Audit Sample Form**

Key Legal Provisions	Level of Compliance	Other Remarks
Mandatory Segregation of Wastes (Sec. 21)	1/20 (one in 20 villages in the town practices segregation)	Despite an order by the Mayor to implement mandatory segregation, village officials are not complying. Grounds for legal action for gross negligence in the performance of public duty.
Materials Recovery Facilities (MRF) (Sec. 32)	2/20 (only two villages have a clustered MRF)	Villages No. 3 to 20 dump their wastes into the rivers. Recyclables are being thrown away indiscriminately. These are potential income sources for impoverished/unemployed members of the community.
No-segregation/no-collection rule	Zero (0%) Mayor/Garbage collectors have not implemented this	Mayor, Municipal Engineer and head of public office can be held liable for criminal prosecution and penalized with suspension of public office and imprisonment of up to 6 months.
Dumpsite/landfill	Zero (0%) Disposal facility still an open dumpsite	Despite lapse of deadline, local government has maintained a very unsanitary dumpsite, with squatters living in the dumpsite. However, the local government is beginning to fence the area and is in the process of relocating the squatters.

The elegance of this method lies in its simplicity. The second column can be filled up by ordinary member of the community, in fact, even by high school students. This compliance audit can be done for fisheries and marine conservation laws. In fact, it can be done for all environmental laws. Below is an example of an environmental compliance audit form for marine conservation and costal resource management duly filled after the conduct of the audit.

**Environmental Compliance Audit Sample Form
Marine Conservation and Costal Resources Management in
The Municipality of ABC**

Key Legal Provisions	Level of Compliance	Other Remarks
Identification of Municipal Waters	100% done. Ordinance no. 123 (2004) delineates an area of some 30,000 hectares as its municipal waters. (Attached is a map of the municipal waters and the ordinance.)	There are disputed areas between the towns of A and B. It will be suggested that they turn this into a marine park under joint management (a local 'parks-for-peace' initiative).

Key Legal Provisions	Level of Compliance	Other Remarks
Registration of Fishers	It is estimated that there are 1000 fishers of whom only 200 are registered. 200/1000 (20%)	Need to campaign for registration of fishers and identification of the fishing nets/gear used.
Registration of Fishing Boats	Local officials are unaware that there is a law requiring them to register all fishing boats below 3 tons (0%)	In villages A, b and C, there are a great number of boats that are identical in shape, color and size, all without names and serial numbers. This is intentional to ensure anonymity. Villages A, B and C are the known hotspots of illegal fishing in the area. Mayor is advised of need to register the boats and put clear number/markers.
Incidence of Illegal Fishing	Anecdotal evidence by persons interviewed reveals that blast fishing and commercial fishing intrusions run rampant in the locality.	Local government has no capability to protect its municipal waters. No budgetary appropriation has been made for fish wardens' training.
Marine Protected Area	10 hectares of a minimum needed of 4500 hectares. Law mandates that at least 15% of the municipal waters must be declared marine sanctuaries (in the case of the town of ABC only ten hectares have been declared as such when it should be at least 4,500 hectares.)	The local government officials are unaware of the law. Upon inspection of marine survey, sites A, B, C, D, E and F (map attached) are damaged coral reefs suitable for marine sanctuaries. These have great potential for scuba diving/eco-tourism sites.
Budget	Practically none	Development funds should be set aside for the establishment and operation of a <i>Bantay Dagat</i> Patrol (Sea Guardian).

The above "report card" will have the following functions:

1. Raise the level of awareness of local officials about their environmental duties and responsibilities as mandated by law.
2. Elevate the priority accorded to basic environmental concerns.
3. Be a mirror for local officials to measure their own performance.
4. Serve as an accountability sheet and, subtly, as a warning that continued failure may give rise to legal liabilities.
5. Serve as a benchmark/baseline with which to measure the future performance of the local officials concerned.
6. Promote better compliance without resorting to the enforcement mode.
7. Spark serious action for compliance with basic environmental laws.

Pilot Testing: The Philippine Islands

- The Philippine Islands is one of the megadiversity countries in the world. It has been found to be so rich in the terrestrial lives it has been described as the Galapagos Islands *multiplied ten-fold*.

- Its seas are even richer. The Philippines is one of the countries that make up the Sulu-Sulawesi Marine Triangle (also known as the Indo-Malay Philippine Archipelago). This group of islands has been described by a UNFAO study as the "center of marine biodiversity on earth," with the Philippines being the "center of the center." Sadly, however, abundance breeds waste. From about 3 million hectares of coral reefs some 50 years ago, today only about 10,000 hectares remain in intact condition. The rest are in varying stages of degradation and destruction as a result of over-fishing, blast fishing, cyanide fishing, and other destructive fishing methods.
- Consequently, fish catch has also reduced by as much as 95% in some areas.

The Visayan Sea

- The heart of the Philippine seas is the Visayan Marine Triangle with the Visayan Sea at its apex. It is so rich in marine life that a mere two hectares of its coral reefs contain more coral species than the entire Caribbean Sea put together.
- It also mirrors the abused heaped upon the seas by Filipinos. The underwater coral reefs are so devastated, in some areas they already look like roads flattened and paved with concrete.
- Bantayan Island, an archipelago of some 20 islands and islets, is a case in point. While blessed with being one of the very few areas totally and completely surrounded by coral reefs, it is now 99.9% damaged.
- This is the cumulative result of decades of neglect by local and national officials mandated by law to protect its seas.

The Project

- The Visayan Sea Squadron, a group of volunteer citizens made up of lawyers, academicians, incumbent and former public officials, and ordinary citizens have banded together to conserve, protect and restore the Visayan Sea.
- The project is made up of two components: the Bio-Physical Survey and the Environmental Compliance Audit. To soften the perception of its impact, however, it will be formally referred to as an Environmental Compliance Exercise, or ECE.
- It will assess two basic laws: The Solid Waste Management Law (Republic Act 9003) and the Fisheries Code (Republic Act 8550).
 - a. Solid Waste Management Law
 - Solid waste management is a barometer for good citizenship and good governance. Discipline is a basic measure of good citizenship. If a people cannot exercise basic discipline in the handling of its waste, there is not much it can achieve as a people.
 - Similarly, if a government and its government officials cannot manage such a simple thing as its own garbage, what is it capable of managing?
 - b. Fisheries Code
 - Especially the sustainable development and marine conservation aspects of the law such as the registration of fishers and boats (as a tool to determine maximum sustainable yield), reports of illegal fishing incidents, areas set aside for marine sanctuaries, budget appropriated for marine conservation, etc.

The Bio-Physical

- A team of divers will conduct bio-physical surveys of the marine resources of the area, and determine its condition. (This is popularly known as "reef check.") The findings will be reported to the local government officials concerned and a recommendation will be made on the appropriateness of the area as a marine sanctuary.
- The team will also gather volunteer local deep sea divers (aka "hooka divers") and train them on basic reef check methods. This will enable them to do future reef checks on their own. (Classic example of "not doling out fish and instead teaching them how to fish; in this case, however, teaching them how to monitor the reef and fish populations in their areas.)
- Related studies will also be conducted as to habitats and cleaning stations of sharks, marine mammals (dolphins and whales) for future development by the local government unit as eco-tourism sites.
- The findings will become the baseline data for annual comparison (this is a five-year project/commitment).

Environmental Compliance Exercise (ECE)

- A Compliance Survey Team will be organized consisting of an environmental lawyer, marine conservationist, solid waste management specialist, one from the Environmental Ombudsman, and a representative from the concerned local government.
- They will perform the basic survey/audit of the local government using the key provisions of the laws described above. The bio-physical survey will feed into their survey exercise.
- It will also look into their local ordinances and see their compliance status.

The result of these two exercises (bio-physical and the ECE) will be documented into an *aide memoire* to be submitted to the Mayor. At the first instance, this document will be strictly confidential in order to gain the confidence of the local officials concerned and to avoid partisan politics from rearing its ugly head. (The duly filled environmental compliance audit form, indicating serious gaps between the law and the implementation and compliance level is an actionable document. Political opponents who get hold of this may simply refer it to the office of the Environmental Ombudsman and this can be the basis for criminal charges for gross negligence in the performance of public duty under Sec. 3(e) of the Graft and Corrupt Practices Act.)

The *aide memoire* will be the subject of a round table discussion by the concerned local officials and the survey team. The Team of Experts can then make their technical and legal recommendations to the concerned local government officers on how to improve their compliance with the relevant environmental laws [that are the] subject of the audit.

After 6 to 8 months, another round of visits to the 26 towns and cities will again be conducted to determine progress. It will also be used to determine the best improved performance. This will then be the basis to select the best local government unit in solid waste management and in marine conservation, for national and international recognition.

This process will continue for the next five years. If successful in the first two to three years, the Environmental Compliance Audit can be expanded to cover greater portions of the Visayan Marine Triangle. The process can also be replicated in other towns and cities of the world to promote environmental compliance and enforcement and official accountability for environmental duties and responsibilities.

Appendix F. Qualitative Indicators of Capacity and Performance For Environmental Compliance And Enforcement Programs

In developing and transitioning countries in which environmental protection agencies and ministries are relatively new, the ability to establish and use quantitative performance indicators for ECE programs may be limited. Implementing an ECE program is crucially important to an effective national environmental protection system, so it is very useful to have a set of indicators that at least monitors progress in building the institutional capacity of the ECE program.

These qualitative indicators can be used to identify whether certain characteristics are present or absent in an ECE program. Below is a partial list of examples of qualitative indicators, organized into various operational aspects of ECE programs.

Environmental statute(s) contains legal authority necessary to:

- a. conduct inspections, investigations, and other forms of compliance monitoring
- b. apply fines or other sanctions to non-complying entities
- c. establish roles and responsibilities among ministries/agencies.

Environmental regulations or requirements provide:

- a. standards that define compliance in clear terms
- b. timely and reasonable deadlines for compliance

Compliance promotion element of ECE program

- a. provides information to regulated entities about how to comply with regulations
- b. tailors information to make it relevant for specific industry sectors

Compliance monitoring element of ECE program

- a. provides initial and periodic training for inspectors
- b. targets inspections/investigations based on risk and compliance history
- c. detects behavior and produces information which often leads to enforcement action

Attorneys developing or prosecuting enforcement actions

- a. receive adequate training about environmental laws
- b. issue charges/enforcement actions in most instances when presented with suspected violations

Judges hearing environmental cases

- a. receive adequate training about environmental laws
- b. carry out their responsibilities in a timely and conscientious manner

The public is enlisted to help improve compliance through

- a. mechanism for reporting suspected violations of environmental requirements
- b. distribution of information about the performance of regulated entities and the ECE program

The environmental ministry/agency of which the ECE program is a part

- a. provides organizational structures, policies, and processes that contribute to and support compliance
- b. includes reporting systems that provide adequate information on agency performance in meeting environmental objectives.

Indicators of this nature can be developed into a kind of checklist that fits the particular situation of the environmental protection system or ECE program of an individual nation. This checklist provides program staff and managers as well as external stakeholders and interested parties a way to assess progress in establishing necessary elements of the ECE program.

Appendix G. Examples of ECE Performance Indicators from U.S. EPA

The following tables are examples of intermediate and end outcome indicators used by the U.S. EPA to report and analyze results achieved by its national compliance and enforcement program.

The first two tables show the amount of pollution reduced and dollars invested in pollution control resulting from concluded enforcement actions from FY03-07.

The next two tables show pollution reductions and investments resulting from cases directed at priority air and water pollution problems.

The table on environmental and human health benefits uses a peer-reviewed model to estimate reductions in illnesses (and their associated costs) resulting from enforcement cases targeted at specific pollutants.

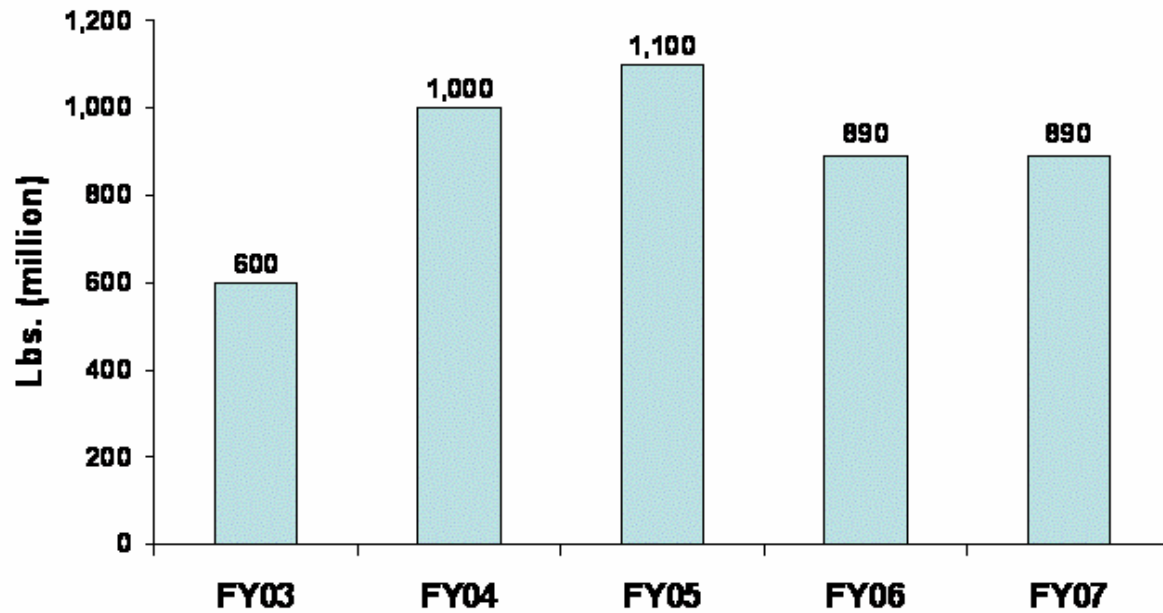
The table on compliance assistance shows outcomes achieved through assistance activities over the period of FY05-07.



FY2007 Enforcement & Compliance Annual Results

Results from Concluded EPA Enforcement Actions

Estimated Pollutant Reduction Commitments



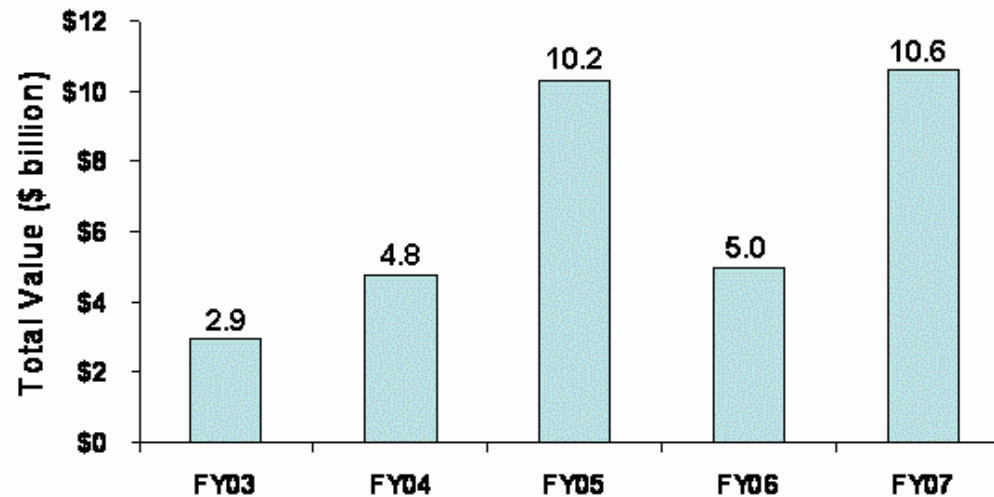
FY2007 Data Source: Integrated Compliance Information System (ICIS), October 13, 2007;
data source for previous fiscal years: annual ICIS data



FY2007 Enforcement & Compliance Annual Results

Results from Concluded EPA Enforcement Actions

Estimated Investments in Pollution Control and Cleanup plus
Environmentally Beneficial Projects (\$ billion)



Note: In some previous years, investments in pollution control and cleanup were referred to as "value of injunctive relief." This year it has been combined with Environmentally Beneficial Projects and reported as one number consistent with the way we report it to Congress.

FY2007 Data Source: Integrated Compliance Information System (ICIS), October 13, 2007;
data source for previous fiscal years: annual ICIS data



FY2007 Enforcement & Compliance Annual Results Priority Water Pollution Problems

	Pollutants to be Reduced <i>millions of pounds</i>		Investments in Pollution Control <i>millions of dollars</i>	
	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2006</u>	<u>FY 2007</u>
<p>CSO/SSO</p> <p>During wet weather events, overflows from inadequate combined sewers and sanitary sewers discharge pollutants such as untreated sewage and industrial wastewater into rivers, lakes and oceans.</p>	26 M	45 M	\$930 M	\$3,523 M
<p>CAFO</p> <p>During wet weather events, nutrients, bacteria, pesticides and antibiotics from concentrated animal feedlots are transported to local waterways.</p>	12 M	15 M	\$10 M	\$30 M
<p>Stormwater</p> <p>Stormwater runoff from large urban areas transports contaminants directly over land and into waterways.</p>	195 M	118 M	\$150 M	\$8 M
TOTAL	233 M	178 M	\$1,090 M	\$3,561 M



FY2007 Enforcement & Compliance Annual Results Priority Air Pollution Problems

	Pollutants to be Reduced <i>millions of pounds</i>		Investments in Pollution Control <i>millions of dollars</i>	
	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2006</u>	<u>FY 2007</u>
<p>NSR/PSD</p> <p>Industrial facilities that do not obtain permits according to new source review/prevention of significant deterioration Clean Air Act requirements illegally emit pollutants such as SO₂, NO_x and PM.</p>	135 M	426 M	\$310 M	\$2,443 M
<p>Air Toxics</p> <p>Toxic air pollutants are known or suspected to cause cancer or other serious health effects or adverse environmental impacts.</p>	0.4 M	0.8 M	\$1 M	\$10 M
TOTAL	135.4 M	426.8 M	\$311 M	\$2,453 M



FY2007 Enforcement & Compliance Annual Results Air Enforcement Cases Yield Environmental and Human Health Benefits

Pollutant Reductions

- EPA's 12 largest enforcement actions for stationary source Clean Air Act violations obtained commitments by companies to reduce their emissions of sulfur oxides (SO_x), nitrogen oxides (NO_x) and particulate matter (PM).
- When all required pollution controls are completed, emissions will be reduced by approximately 507 million pounds per year.



Health Benefits

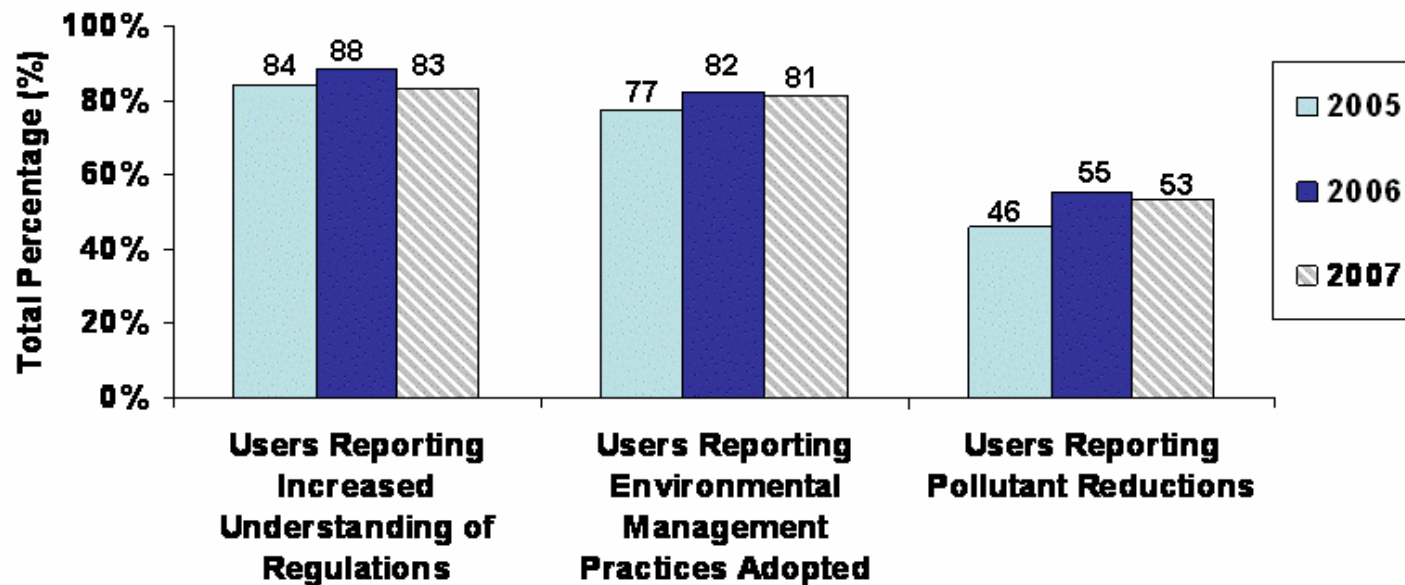
The human health benefits from these reductions in SO_x, NO_x, and PM are estimated at \$3.8 billion per year upon full implementation. Upon full implementation, annual health benefits will include:

- approximately 500 fewer premature deaths in people with heart or lung disease;
- over 1,000 fewer hospital and emergency room visits for such diseases as asthma and heart failure;
- about 1,500 fewer cases of chronic bronchitis and acute bronchitis;
- about 1,000 fewer nonfatal heart attacks;
- over 8,000 fewer cases of upper aggravated asthma;
- over 15,000 fewer cases of upper and lower respiratory symptoms; and
- over 50,000 fewer days when people would miss work or school.

Data Source: Integrated Compliance Information System (ICIS), October 13, 2007;
Office of Air and Radiation's BenMAP Model



FY2007 Enforcement & Compliance Annual Results Outcomes from EPA's 15 Web-Based Compliance Assistance Centers



FY2007 Data Source: On-line surveys completed during FY2007

Disclaimer: These measures are not calculated from a representative sample of the regulated entity universe. The percentages are based, in part, on the number of regulated entities that answered affirmatively to these questions on voluntary surveys. The percentages do not account for the number of respondents who chose either not to answer these questions or the survey.

Appendix H. Additional Resources

The following articles and publications contain useful information about identifying, implementing, and using performance indicators for government programs, and specifically for environmental compliance and enforcement programs. These articles can be very helpful to practitioners and stakeholders at any stage of development and use of ECE indicators.

Behn, Robert D., "Why Measure Performance? Different Purposes Require Different Measures," in *Public Administration Review*, Vol. 63, No. 5, pp. 586-606 (2003).

Hatry, Harry P., *Performance Measurement: Getting Results*. Urban Institute Press, Washington, D.C. (1999).

International Network for Environmental Compliance and Enforcement E-dialogues on "Implementing and Using ECE Indicators" and "Good Practices for Identifying Environmental Compliance and Enforcement Indicators." <http://www.inece.org/forumsindicators.html>

International Network for Environmental Compliance and Enforcement and Organisation for Economic Co-operation and Development, *Measuring What Matters*, Proceedings from the INECE-OECD Workshop on Environmental Compliance and Enforcement Indicators, 3-4 November, 2003, OECD Headquarters, Paris, France.

Sparrow, Malcolm K., *The Regulatory Craft: Controlling Risks, Solving Problems and Managing Compliance*. Brookings Institute Press, Washington, D.C., 2000.

Stahl, Michael M., "Using Performance Indicators to Lead Environmental Compliance and Enforcement Programs," in *Making Law Work*, (eds. Durwood Zaelke, Donald Kaniaru, and Eva Kružíková). Cameron May Ltd., International Law Publishers, London, England.

Stahl, Michael M., "Performance Indicators for Environmental Compliance and Enforcement Programs: The U.S. EPA Experience," in *Measuring What Matters*, Proceedings from the INECE-OECD Workshop on Environmental Compliance and Enforcement Indicators, 3-4 November, 2003, OECD Headquarters, Paris, France.

Wholey, Joseph. "Performance-Based Management," in *Public Productivity and Management Review*, Vol. 22, No. 3, March 1999.