

Principles of Environmental Compliance and Enforcement Handbook

International Network for
Environmental Compliance and Enforcement

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ABOUT THE INTERNATIONAL NETWORK FOR ENVIRONMENTAL COMPLIANCE AND ENFORCEMENT (INECE)

The International Network for Environmental Compliance and Enforcement (INECE) is a partnership of more than 3,000 government and non-government enforcement and compliance practitioners from more than 150 countries. INECE's goals are to raise awareness of compliance and enforcement; develop networks for enforcement cooperation; and strengthen capacity to implement and enforce environmental requirements.

INECE promotes the use of regulatory and non-regulatory approaches to increase compliance with and enforcement of environmental laws and regulations that promote the sustainable use of natural resources and the protection of ecosystem integrity at the global, regional, and national levels.

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The first edition of this handbook was developed in 1992 by the USEPA in consultation with the Netherlands' Ministry of Housing, Spatial Planning and Environment (VROM), the Polish Ministry of Environmental Protection, Natural Resources and Forestry, and the Katowice Ecology Department in Poland.

The principal author of that edition was Cheryl Wasserman of USEPA, with contributions from Jo Gerardu of VROM. This new edition relies heavily on their pioneering work.

UPDATES TO THIS HANDBOOK

This text can be periodically updated to include new enforcement developments and examples from INECE participants. Readers and users are encouraged to send their ideas, examples, and comments to the Secretariat of the International Network for Environmental Compliance and Enforcement at

2300 Wisconsin Avenue, NW, Suite 300B

Washington, D.C. 20007, USA

inece@inece.org

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1. INTRODUCTION

This handbook outlines some of the important considerations in designing, implementing and evaluating effective environmental enforcement and compliance programs. It serves as background reading for the training course on the Principles of Environmental Enforcement and Compliance. In 1992, the USEPA created this course in response to a request by Poland's Ministry of Environmental Protection, Natural Resources and Forestry. The Netherlands' Ministry of Housing, Spatial Planning and Environment contributed significantly to the development of this course. Since its first delivery in 1992, the Principles course has been given hundreds of times in countries throughout the world.

Successful implementation of environmental requirements requires significant effort and forethought. Changes in behavior are difficult to accomplish on both a societal and personal level. No one formula exists for achieving compliance. There is merely trial, evaluation, and adaptation to find the most effective compliance strategies for any given situation. Nevertheless, a reliable framework for designing compliance assurance programs has emerged based on the experiences of countries around the world. The information in this handbook derives from these experiences.

Chapter 2 provides a basic overview of the concepts behind successful enforcement and compliance programs. This overview briefly examines: (1) the specific types of compliance and enforcement programs; (2) how compliance and enforcement programs fit into the elements of an environmental management cycle; (3) the benefits that derive from an effective compliance and enforcement program; (4) the theories of compliance behavior and why it is important to understand these theories when developing a compliance strategy; and (5) some of the general difficulties and obstacles that may exist to the development of an effective program.

Chapter 3 describes twelve principles of effective environmental compliance and enforcement programs. These principles are divided into five sections: (1) a commitment to the environment; (2) vision, goals and strategies; (3) governance and the rule of law; (4) structure, responsibility and resources; and, (5) continuous evaluation and improvement. While the strength of any one principle may vary based on cultural, economic, political and social needs of a particular country or region, together they help form the foundation of a successful environmental compliance and enforcement programs.

Chapters 4 through 10 build on issues discussed in Chapter 2 and 3. Chapter 4 discusses three different overlapping management approaches -- voluntary, market-based and mandatory -- that make up the framework underlying most environmental programs. Chapter 5

looks at some of the issues to consider when designing effective requirements. Chapter 6 provides an overview of what makes up typical compliance assistance and compliance incentive programs. The importance of compliance monitoring is discussed in Chapter 7, while Chapter 8 examines the basic elements of enforcement programs and types of enforcement responses. Chapter 9 discusses how organizations build effective infrastructure and inter-organizational communication, and how to do so in the context of an environmental management program. Chapter 10 examines ways to develop, measure, use and interpret environmental compliance and enforcement indicators.

2. OVERVIEW OF COMPLIANCE AND ENFORCEMENT PROGRAMS

2.1 Introduction

Over the past forty years, environmental law has been central to government efforts to implement a wide range of environmental programs designed to protect air, water, natural resources, wildlife and public health. Countries throughout the world use environmental law to help address problems such as the discharge of pollutants into the environment, the protection of flora and fauna, the handling, storage and disposal of solid and hazardous wastes, the application of pesticides, preventing air contamination, and protecting the quality and availability of clean water.

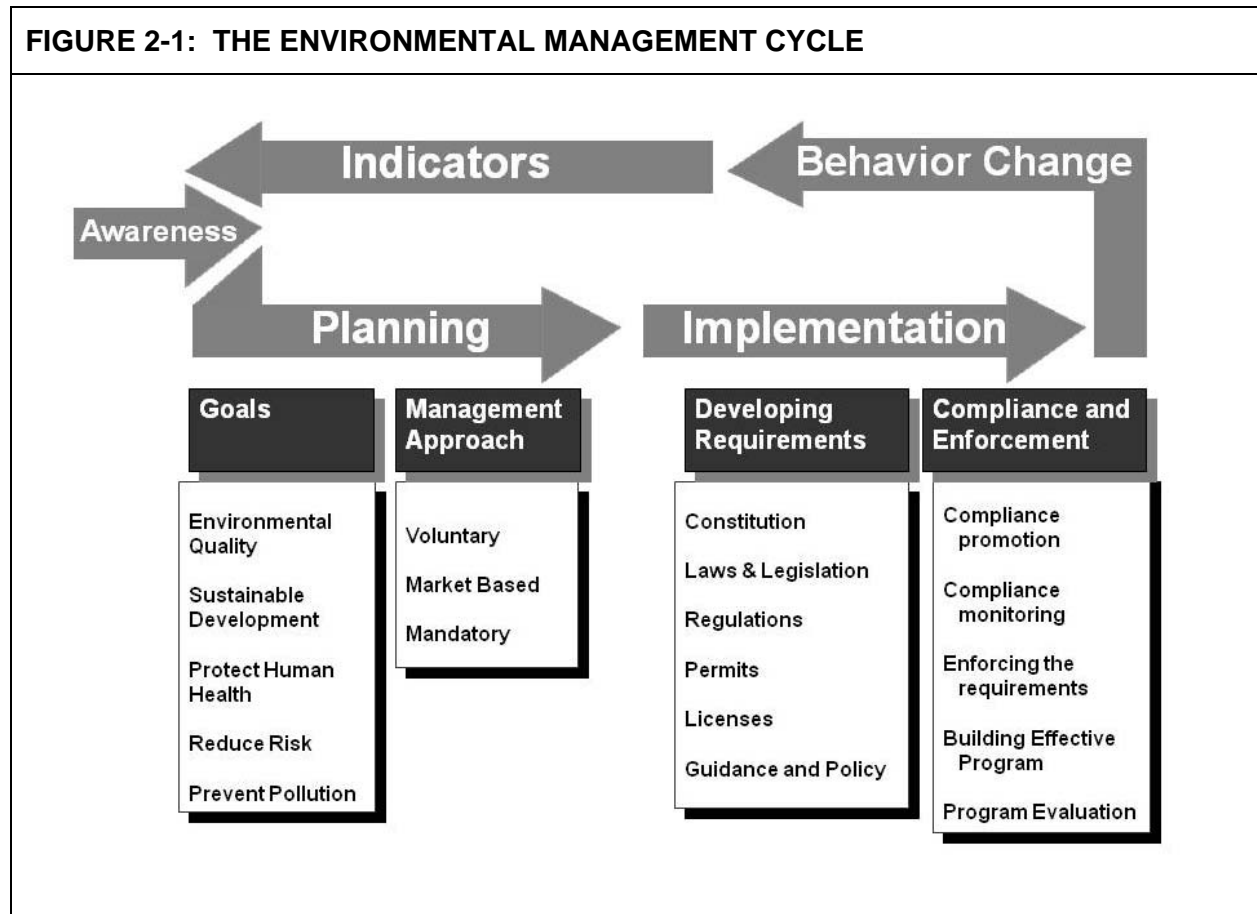
However, simply having environmental laws in place is not enough to address these problems. Governments must find ways to ensure that the regulated community meets the requirements put forth in the environmental laws and their implementing regulations. Successful strategies will both encourage and compel behavioral changes within the regulated community that are needed to achieve compliance.

This chapter provides a basic overview of the concepts behind successful enforcement and compliance programs. The first section looks at the context for compliance and enforcement as a part of the environmental management cycle. The second section examines the benefits of an effective compliance and enforcement program. The third section discusses types of compliance activities. The fourth section discusses theories of compliance behavior. The final section examines some of the general difficulties and obstacles that may exist to the development of an effective program.

2.2 Context for Enforcement

Environmental compliance and enforcement programs occur as part of a comprehensive environmental management cycle. This cycle typically involves community recognition of certain environmental problems and governmental acceptance of the need to address these problems. From there it often leads to government establishing specific environmental goals to address these problems and selecting a management approach or approaches to reach those goals. When developing mandatory requirements, government must consider the legal basis for these requirements and establish compliance and enforcement programs to ensure that the regulated community adheres to these requirements. Once implementation begins, evaluations and adjustments must be made to continually update and improve the programs.

Figure 2-1 presents the environmental management cycle. This process is explained in more detail below the figure.



2.2.1 Awareness and Strategic Planning

The environmental management cycle starts with awareness that there is an environmental problem and adequate support to address the problem. Once there is awareness and support for action, program proponents must begin strategic planning and goal setting. These goals may include reducing environmental risk, preventing pollution, or cleaning up past contamination.

2.2.2 Selecting a Management Approach

Once program goals are set, the focus moves to selecting the most suitable management approach or combination of approaches, in order to achieve program goals. For purposes of this book, these approaches are categorized as voluntary, market-based, and mandatory. These approaches are discussed in more detail in Chapter 4.

2.2.3 Developing Effective Requirements

The selected management approach may require specific laws or regulations. Laws and regulations, in turn, include “requirements” that clearly define specific practices and procedures to directly or indirectly reduce or prevent pollution. Effective requirements demand that specific things be done or outcomes reached. Chapter 5 discusses the creation of effective environmental requirements to implement the selected management approach.

2.2.4 Evaluation and Adjustment

Once implementation begins, another important phase needs to be initiated—evaluation of the impact of the program through the use of compliance and enforcement indicators. This part of the environmental management cycle is often overlooked or not given the attention that it warrants. Evaluation leads to greater awareness of how the program is addressing the targeted environmental problem, which in turn, through feedback, leads to better planning and implementation. The evaluation process, including the development of compliance and enforcement indicators, will be discussed in Chapter 10.

2.3 Benefits of Compliance and Enforcement

A compliance and enforcement program that is effective and part of a larger environmental management effort will bring a broad range of benefits to society. A well-designed environmental compliance and enforcement program will create both public and private value.

Compliance creates “public value” when it promotes the rule of law and good governance; ensures fairness and strengthens the credibility of environmental requirements; protects the goods and services provided to a society by a well-functioning ecosystem; and protects public health. Compliance creates “private value” when it increases investor confidence by reducing business risks; stimulates innovation and increased competitiveness; and creates new jobs and markets.¹ (See Box 2-1).

BOX 2-1: CREATING VALUE THROUGH COMPLIANCE

Compliance Creates “Public Value”

Promotes the Rule of Law and Good Governance: The rule of law is essential to good governance and sustainable development. When individuals or organizations ignore an environmental requirement, they are not just hurting the environment, but also damaging the rule of law in that jurisdiction. Corruption and legal uncertainty foster widespread non-compliance, environmental or otherwise, and vice-versa, eroding the norms and values that constitute healthy societies.

Ensures Fairness and Strengthens the Credibility of Requirements: A consistent and effective compliance and enforcement program helps ensure that actors affected by environmental requirements are treated fairly. Without an effective compliance assurance program, actors who violate environmental requirements may benefit compared to actors who choose to comply. Ultimately, actors will be more likely to comply if they perceive that the requirements are fair and do not place them at a competitive disadvantage.

Protects Goods and Services: Compliance assurance protects natural resources so they can continue to provide valuable goods and services to society, including renewable natural resources, climate stability, clean air, and fresh water. A recent study, for example, found that eco-system services amounted to roughly €22 billion or 25 percent of the Scottish GDP.

Protects Public Health: Compliance assurance helps protect public health. In Europe alone, air pollution is responsible for over 300,000 premature deaths each year. Pollution imposes a substantial social cost in terms of increased health care expenses and employee absenteeism. Strong compliance assurance helps improve public health, economic productivity, and the environment.

Compliance Creates “Private Value”

Increases Investor Confidence by Reducing Business Risks: Widespread non-compliance is often tied to corruption and legal uncertainty, which can have devastating impacts on economic development. Firms will be less willing to make investments and assume risks when their legal rights and responsibilities remain uncertain. An effective compliance assurance program promotes certainty through the rule of law, thereby helping foster an attractive investment climate.

Stimulates Innovation and Improves Competitiveness: Environmental requirements can often save businesses money by stimulating innovation, leading to improvements in product design and manufacturing processes. These innovations improve pollution prevention strategies and energy efficiency efforts and result in reductions in waste. Numerous studies indicate that countries with high environmental standards often have market-leading firms and better economic performance than those with lower standards.

Creates New Jobs and Markets: Compliance assurance creates jobs in new industries. The most visible beneficiary is the environmental goods and services sector, which includes, among other things, pollution abatement technology, waste management, organic products, eco-certified resources, and eco-tourism. These are among the fastest growing industries in the world.

2.4 Types of Compliance Activities

Governments have developed a number of regional and context appropriate policies and programs to encourage and compel the behavioral changes needed to achieve compliance. Although definitions and ways of categorizing these policies and programs vary from country to country, they generally involve four major categories of activities: compliance assistance, compliance incentives, compliance monitoring, and enforcement. Most often effective implementation will involve some combination of these four categories of activities.

Note: In this Handbook and in other contexts, the terms “compliance promotion” and “compliance assurance” are used to categorize specific compliance programs. Compliance promotion refers to both compliance assistance and compliance incentives programs. Compliance assurance refers to all compliance-related activities, including enforcement.

2.4.1 Compliance Assistance

Compliance assistance encourages observance of the law through outreach, education, and other promotional activities. Compliance assistance activities are designed to improve compliance by explaining how to comply with legal and regulatory requirements.

2.4.2 Compliance Incentives

Compliance incentives are a set of policies and programs that provide concrete benefits to those organizations that meet certain compliance objectives. Examples include programs that reward top-performers or that reduce or waive penalties for facilities that voluntarily discover, promptly disclose, correct non-compliance, and prevent future environmental violations. Information campaigns and market-based mechanisms can also include compliance incentives.

2.5 Compliance Monitoring

Compliance monitoring is one of the key components government agencies and others use to ensure that the regulated community obeys environmental laws and regulations through on-site visits by qualified inspectors, public reporting of violations, and by reviewing information submitted to it by the regulated industry as part of self-monitoring and reporting programs. Compliance monitoring is generally considered to include both self-monitoring by the regulated entity, and governmental inspections and investigations.

2.6 Enforcement

Enforcement refers to actions taken by the government against violators to compel compliance with the law. These provisions generally give a governmental entity authority to impose sanctions, in either the administrative, judicial, or criminal forum, and require the violator to come into compliance with the law. Some statutes contain provisions that require a violator to remedy environmental damage caused by the violations or that allow the government to clean up the damage and recover the cost from the violator.

2.7 Theories of Compliance Behavior

The theories underlying these programs reflect two different government approaches to achieving compliance, often referred to colloquially in English as the carrot and the stick, which together both encourage and compel behavioral change. The carrot (compliance promotion activities) and the stick (the threat of an enforcement action against non-compliers) are based on the rationalist and normative models of behavior.

The rationalist theory posits that regulated actors follow the logic of consequence. Put simply, everyone acts to maximize their own self-interest. If it is “cheaper” to violate an environmental requirement, then regulated actors will do so. Therefore, rationalists argue that policies must “deter” this behavior by raising the “costs” of non-compliance.² Accordingly, they advocate deterrence-based enforcement. Generally, for a policy to have a deterrent effect, the individual or organization must believe that:

- There is a high probability of being caught.
- The response to violations will be swift, certain, and fair.
- The punishment will be severe enough to outweigh the benefits of non-compliance.³

Deterrence may be enhanced either by expanding monitoring activities, improving enforcement capacity to investigate and prosecute violations, raising penalties, or increasing awareness of enforcement.

Normative theory posits that regulated actors follow the logic of appropriateness and often act in good faith. Compliance occurs (or does not occur) largely because of the regulated actor’s “capacity” (e.g. knowledge of the rules, and financial and technological ability to comply) and “commitment” (e.g. perception that the rule is fair).⁴ Accordingly, these theories call for more compliance promotion in the form of assistance, incentives, and other activities.

The rationalist and normative models represent opposite ends of the spectrum and each provides useful insights into the types of behavior that lead to compliance. Regulated communities everywhere generally can be divided into three general categories: (1) those who

will not comply at all unless they are forced to; (2) those who are “impressionable,” and might comply if presented with incentives, knowledge, or capacity to do so; and (3) those who will cooperate in all circumstances. Which one of these categories predominates will vary from country-to-country and can help inform individual country decisions about what mix of compliance promotion and enforcement activities to stress in efforts to promote the rule of law and the protection of public health and the environment.

2.8 Challenges in Developing an Effective Program

Unlike twenty or thirty years ago, most countries now have at least some environmental programs in place. Efforts to build effective compliance assurance programs therefore are not starting from scratch. Today the question usually is how to build upon and improve existing efforts.

How should such efforts at improvement begin? How can new responsibilities and efforts be handled with limited program resources? What elements of a compliance assurance program should be stressed? What legal, policy and technical drivers or barriers are moving or slowing these efforts? How should programs evolve over time, as policy makers evaluate the success of previous strategies, and as technological and economic developments suggest new solutions? These are many of the challenging questions that politicians, legislators, regulators and interested members of the public may ask as a government attempts to improve its environmental compliance and enforcement programs.

In many countries, compliance and enforcement programs face significant barriers. The OECD’s publication, *Guiding Principles for Reform of Environmental Enforcement Authorities in Transition Economies of Eastern Europe, Caucasus and Central Asia*,⁵ outlines some of the regional challenges faced by environmental enforcement authorities, problems that are common in many parts of the world. The report states:

“The transition period [from communism] generated new, and accentuated old problems of environmental enforcement systems. These include, for instance, a greater diversity in the regulated community and lobbying by powerful groups or individuals for special privileges. A number of studies have shown that enforcement has not received sufficient attention from decision-makers, and low environmental performance and violations of environmental laws has been widespread. Important factors that nourished non-compliance were the slow pace of governance and economic reforms, the complicated legal framework and poor economic situation, societies failure to believe in fair regulation and the erosion of

the rule of law. Limited powers, scarce financial and human resources of enforcement agencies are also major causes of low effectiveness in ensuring compliance.⁶

There are no standard ways to address these complex and difficult issues. In some countries, efforts to improve compliance assurance programs must be closely tied to efforts to improve the rule of law and governance, in others it may require placing greater emphases on education and awareness, while in others it may be a question of finding new resources or using existing resources more efficiently, and in still others, a heavier emphasis on legal sanctions that compel behavioural changes and punish violators may be needed to demonstrate increased importance of the law. In many countries it will be a combination of all of these, and more.

Although each country and jurisdiction faces a unique set of political, economic, social and culture issues, certain general principles have emerged as to what constitutes an effective compliance and enforcement program. Understanding these principles will allow governments and civil society to better evaluate and adapt their environmental compliance and enforcement programs to meet the challenges of the 21st Century.

3. PRINCIPLES OF EFFECTIVE COMPLIANCE AND ENFORCEMENT

3.1 Introduction

This chapter describes principles of effective environmental compliance and enforcement programs. These principles build upon the issues discussed in Chapter Two and provide the underlying context for the Environmental Management Cycle discussed in section 2.2.

Each country faces a unique set of challenges and capacities to implement its environmental laws. However, there are fundamental elements in all countries that form the basis of effective environmental compliance and enforcement programs and of legal systems. These common principles, based on the collective knowledge and experience of the International Network for Environmental Compliance and Enforcement (INECE) and reflective of international good practice, may be used to improve national environmental compliance and enforcement programs.

These principles are divided into five sections: (1) environmental results and shared responsibility; (2) goals and strategies; (3) good governance, rule of law and compliance; (4) structure and resources; and, (5) continuous evaluation and improvement.

3.2 Environmental Results and Shared Responsibility

3.2.1 Firm Commitment to the Environment

Environmental compliance and enforcement requires strong and consistent institutional and societal commitments to resolve specific public health and environmental challenges through effective implementation of environmental laws.

3.2.2 Comprehensive Framework for Environmental Management

Effective compliance and enforcement systems need to operate as part of an overall framework of the environmental regulatory cycle: recognition of certain environmental problems, selection of the management approach, development of the legal basis, implementation of mechanisms to assure compliance, assessment of results, and program evaluation.

3.2.3 Collective Effort

Strengthening environmental compliance and enforcement requires collective efforts among institutions and individuals. *Government officials* must exercise public authority according to the standards of good governance, including providing sufficient resources and

independence to compliance and enforcement programs. *Legislators* must create clearly written legislation that is sufficiently stringent to meet its environmental goals. The *judiciary* is responsible for upholding the rule of law and ensuring that laws are interpreted and applied fairly, efficiently, and effectively. The *regulated community* is responsible for complying with the letter and spirit of the law. *Non-governmental organizations* play a leading role in public education and assisting enforcement agencies. The *media* is responsible for raising awareness by presenting objective information and analysis. The international community -- including *donors, international organizations, and networks* – is responsible for strengthening domestic efforts through capacity development and the promoting of conditions enabling more effective compliance and enforcement.

3.3 Goals and Strategies

3.3.1 Meaningful Targets

Effective environmental compliance and enforcement programs have a clearly stated guiding vision and realistic and measurable goals that are consistent with the organization's mission. The goals should be supported by targets that describe the results a program is expected to achieve in a given time period.

Environmental compliance and enforcement programs should utilize a balance of strategies to assure compliance: education and assistance; compliance incentives; monitoring and inspections; and fair and differentiated non-compliance responses. The balance of strategies should consider the social, cultural, economic, and political norms of the society, in addition to the society's broad environmental goals.

3.3.2 Communication and Outreach

Competent authorities should communicate these strategies to the regulated community, civil society, and other government agencies in a comprehensive, comprehensible, and transparent manner. Governments should create conditions for public participation and information exchange that will build capacity for improved environmental compliance.

3.4 Good Governance, Rule of Law, and Compliance

3.4.1 Good Governance

Effective environmental compliance and enforcement depend on good governance, which is characterized by institutions that are open, participatory, accountable, predictable, and transparent. Good governance requires consistent, visible, and transparent efforts against

corruption through supporting a culture of integrity, including a no tolerance policy for corrupt practices.

3.4.2 The Rule of Law

The rule of law forms the basis for effective environmental compliance and enforcement. Broadly speaking, 'rule of law' refers to the presence of legal requirements that are transparent and fairly applied. The rule of law depends upon an independent judiciary that interprets and applies the law in an impartial and transparent manner.

3.4.3 Non-Compliance Response

Effective environmental compliance and enforcement programs deter illegal conduct by creating negative consequences for violators of the law. Deterrence is strengthened by timely, predictable, and appropriate enforcement actions that cause potential violators to determine that the risk of detection and punishment outweighs the potential benefits of non-compliance. This is achieved through the implementation of penalties – including non-monetary penalties such as jail time – that exceed the economic benefit of non-compliance - making non-compliance ultimately costlier than compliance.

3.5 Structure and Resources

3.5.1 Policies and Procedures

Transparent and unambiguous policies and procedures that are based on the law should be adopted in order to define the roles of competent authorities, their structural units, and personnel; clarify jurisdictions of national and sub-national authorities; ensure coordination and sound decision-making, particularly where this process is likely to be flexible or discretionary; and ensure steady information flows.

3.5.2 Adequate Resources and Training

Competent authorities should have access to the physical, technical, and financial resources that are adequate to their mandate and scope of work. Management should ensure high levels of professionalism through proper remuneration, motivation, and professional development opportunities for program staff.

3.6 Continuous Evaluation and Improvement

3.6.1 Environmental Compliance and Enforcement Indicators

Program managers should identify, develop, and use performance measurement indicators to improve decision making and resource prioritization, evaluate program efficiency, and communicate how effectively the program responds to priority environmental problems. Creating a useful system of indicators may require a legal mandate for performance measurement, long-term commitment from senior management, and dedicated staff time for data collection and dissemination.

3.6.2 Program Evaluation

Competent authorities should review and evaluate compliance and enforcement programs both internally and externally on a periodic basis. Such reviews allow an organization to bring about overall improvements in their program and to redefine priorities to reflect successes, areas of underachievement, and shifts in goals. Outcomes of inspections and enforcement should be assessed to see whether the legal provisions and permit conditions were enforceable and practicable and whether other barriers to successful program implementation exist.

These principles, and the concepts and issues set forth in Chapter 2, provide a basis for the chapters that follow. These chapters will discuss management approaches to improving environmental performance and address issues to consider when designing effective requirements. They will also discuss compliance promotion activities, compliance monitoring programs, and enforcement programs. Finally, they will explore program infrastructure, inter-organizational communication, and methods of measuring performance through compliance indicators.

4. SELECTING A MANAGEMENT APPROACH

4.1 Introduction

Three different overlapping management approaches -- voluntary, market-based, and mandatory -- make up the framework underlying most environmental programs. Mandatory and many market-based approaches require effective environmental compliance and enforcement programs to ensure that the underlying rules are understood and followed by the regulated community. Voluntary approaches provide important tools to educate, inform, and motivate polluters about the need to reduce their environmental impacts despite the lack of legal requirements.

All three approaches can be designed to target activities posing the greatest risk to human health and the environment, reduce pollution, and create incentives for individuals, businesses, and governments to find new, more cost effective solutions to environmental problems. What makes mandatory approaches different is that they usually work to establish a base-line of what is required from individuals, companies, and governments in terms of environmental performance.

This chapter begins by examining the three different management approaches. It then examines the general function of laws, regulations, permits, and guidance. It ends by providing an overview of the types of environmental requirements that are codified in laws and regulations and that have served as the foundation of many of the environmental improvements made over the past several decades.

4.2 Approaches to Environmental Management

Most environmental programs today contain a mixture of voluntary, mandatory, and market-based approaches.

4.2.1 Voluntary Approaches

Voluntary approaches encourage or assist the regulated community to take action to ensure its behavior is compliant, but do not require it to take these actions. Voluntary approaches include public education, technical assistance, and the promotion of environmental leadership by industry and non-governmental organizations. Voluntary approaches can be established by governmental or non-governmental organizations. Examples of programs that use voluntary approaches include:

- Most environmental management system programs such as the International Standards Organization's (ISO) 1400 certification.⁷

- The Chemical Industry's Responsible Care® Program.⁸
- The U.S. Department of Energy's Climate Challenge Program.⁹
- Industrial research into process changes that prevent pollution.

4.2.2 Market-Based Approaches

Market-based approaches use the market to achieve desired behavioral changes. These approaches can occur without regulation or build upon mandatory approaches. Introducing market forces into a mandatory approach can encourage greater pollution prevention and more economic solutions to problems. Market-based approaches include:

- Fee systems that tax emissions, effluents, and other releases into the environment.
- Emissions trading programs that allow companies to trade permitted emission rights with other companies.
- Offset approaches that allow a facility to propose various approaches to meeting an environmental goal, for example, by allowing a facility to emit greater quantities of a substance from one of its operations if the facility offsets this increase by reducing emissions at another one of its operations.
- Auctions whereby the government auctions limited rights to produce or release pollutants.
- Environmental labeling/public disclosure, whereby manufacturers are required to label products in a way that informs consumers about certain environmental benefits or public health or environmental risks, allowing the consumer to make informed choices.

4.2.3 Mandatory Approaches

Mandatory approaches require that regulated entities conform to specific requirements. The government then promotes and enforces compliance with these requirements. These approaches include:

- Banning activities or products outright.
- Permitting or licensing certain activities.
- Creating an obligation to monitor and report certain activities.
- Requiring an entity to clean up or repair environmental damage.

4.3 Finding the Right Mix

A number of factors can be considered in determining the right mix of voluntary, mandatory, and market-based approaches to a particular environmental problem in a particular jurisdiction. These factors include:

- Whether overall program goals are to require certain behavior.
- An understanding of what drives environmental performance of different sectors of the economy.
- An understanding of what drives non-compliant behavior of entities on both a sectoral basis and jurisdictional basis.
- The political, legislative, economic, and cultural realities of the society in question.

4.3.1 Overall Program Goals

The overall program goals will affect the types of approaches taken. If the overall program goal is to require certain behavior, then a mandatory approach may be the best approach. If the overall program goal is to encourage certain behavior, then some combination of approaches may be required. Most effective programs will have a mix of mandatory and voluntary approaches.

Each approach has different strengths and weaknesses that may vary from jurisdiction to jurisdiction. Well-designed and properly implemented mandatory requirements will provide greater certainty than voluntary approaches when accompanied by effective enforcement and compliance programs. Voluntary programs can effectively educate and motivate participants, but generally will not affect the overall economic drivers behind a company's environmental performance goals. Market approaches will allow organizations greater flexibility to adapt to changing science and technological capabilities, but they do not generally mandate fixed pollution targets. This can make it difficult to ensure that specific environmental goals will be met.

4.3.2 Understanding What Drives Performance

A number of factors -- or drivers -- can help change an organization's environmental performance. The drivers often cited for improving environmental performance include:

- Enhanced efficiency and lower costs through reduced resource use, waste and emissions.
- The desire to create a positive public image and improved relationship with customers.

- Business requirements, such as those created within a supply chain, by business contracts, or through industrial associations.
- The desire for regulatory compliance, which can have additional benefits such as the increased likelihood of fewer inspections and less scrutiny.
- The desire to improve the relationship with government agencies, which can lead to faster approval of projects.

Understanding how these drivers will influence different sectors of the economy and types of organizations will help government agencies tailor policies and target resources, particularly as they relate to voluntary and market-based programs.

4.3.3 Understanding What Drives Non-compliance

Similarly, a number of factors can drive non-compliance. The reasons listed in Box 4-1 are those used by the Netherlands Ministry of Housing, Spatial Planning and the Environment as a way of classifying reasons for non-compliance. Many of these factors, plus others, will be applicable in many jurisdictions throughout the world. Understanding these factors will help program planners predict the likelihood of success of new mandatory programs and decide where to target enforcement and compliance resources.

BOX 4-1: ELEVEN REASONS FOR NON-COMPLIANCE

Reasons for non-compliance may include:

Aspects of spontaneous compliance

1. Knowledge of the regulations.
2. Cost/benefit ratio.
3. Degree of acceptance.
4. Loyalty and obedience of the target group.
5. Informal monitoring.

Aspects of monitoring

6. Informal report probability.
7. Monitoring probability.
8. Detection probability.
9. Selectivity of the inspector.

Aspects of sanctions

10. Probability of sanctions.
11. Severity of sanctions.
12. Political, legislative, economic, and cultural realities.

Each country will consider what management approach to take based on its political, legislative, economic and cultural situation. Existing laws, regulations, and policies, as well as cultural and societal norms, and those businesses, industries, and organizations with political and economic influence will all greatly affect the environmental management approaches of a particular country.

Compliance officials can influence overall program direction by understanding society's overall environmental goals, the factors driving environmental performance, and the factors affecting non-compliance. With this understanding, they can operate more effectively within the political, legislative, economic, and cultural norms of their jurisdiction.

4.4 Making the Mandatory Approach Enforceable

Ultimately, the laws underlying mandatory approaches to environmental management must be enforceable. Laws and regulations may ban certain activities or products outright, require permits or licenses for other activities, impose information collection and reporting requirements, define and prohibit violations and provide environmental penalties and remedies for violations. (See Box 4-2).

Market-based approaches also depend on enforceable laws to define the property being traded and to provide incentives to use in the market. The system of labeling to enhance consumer choice, for example, may require enforcement to avoid inaccurate or misleading labeling.

An emissions trading system has elements of both mandatory and market-based management approaches. The first step in a typical trading system is that an environmental authority decides upon an acceptable level of overall emissions. The authority then issues permits consistent with the mandatory targets whereby each firm is allowed to release a certain amount of pollution. Firms are then free to emit that amount or sell all or part of their emissions permit to another firm who may have exceeded their target, providing market incentives for firms to pollute less than their permits allow.

The remaining portion of this handbook focuses on environmental management approaches that are based on enforceable laws, regulations, and other requirements. This is not to say that voluntary or market-based systems are not effective in achieving environmental protection; they should be considered as an integral part of an overall approach. However, there is less societal oversight, control and enforcement involved. This handbook focuses on the design and implementation of compliance and enforcement programs, which are, by

definition, not part of an approach designed to motivate voluntary changes in behavior, but instead attempt to compel compliance with legal mandates.

BOX 4-2: TYPES OF REQUIREMENTS

Constitution

Some nations' constitutions guarantee their citizens a clean and healthy environment, giving those governments and others the responsibility to protect that right.

Laws

Laws provide the vision, scope, and authority for environmental protection and restoration. In some countries, laws also encompass the types of general requirements that other countries describe in regulations.

Regulations

Regulations establish the details of a law, e.g., criteria for issuing permits and licenses, how and when to test for harmful substances, how the government will conduct itself in an enforcement action, etc. Regulations are most often developed by the implementing agency that is charged with compliance and enforcement under the law.

Permits and Licenses

The terms permits and licenses are usually used interchangeably. Permits typically control activities related to construction or operation of facilities that generate pollutants. Permit requirements are often based on specific criteria established in laws or regulations.

General permits specify exactly what a class of facilities (e.g., gasoline stations) is required to do. General permits and licenses are used when it is impractical or unnecessary to issue a specific permit for each similar, small facility. *Facility-specific permits* specify exactly what a particular facility is required to do. Facility-specific permits often take into account the particular conditions at the specific facility.

Licenses are similar to permits. Licenses are authorizations to manufacture, test, sell, or distribute a product, such as a pesticide, that may pose an environmental or public health risk if improperly used. Licenses may be general or facility-specific.

Both licenses and permits are usually issued by the implementing agency.

Guidance and Policies

Guidance and policies are tools for government regulators to interpret regulatory requirements and/or provide a formal statement regarding a particular issue or problem. These can be directed toward the regulated community or toward the government, prescribing its actions in particular situations. They are frequently used to help ensure fairness and consistency in the application of laws and regulations. In most countries, guidance and policy are not considered legally binding.

The next chapter discusses important considerations when developing environmental laws, including issues of legal authority, institutional framework, and the need for effective and enforceable requirements.

5. DESIGNING EFFECTIVE REQUIREMENTS

5.1 Introduction

Effective requirements are critical to the success of any compliance and enforcement program. Without adequate legal authorities, enforcement programs will generally be ineffective. Unclear, imprecise, ambiguous, inconsistent, or contradictory requirements may be difficult or impossible to enforce. Requirements that rely on expensive, unreliable, or unavailable technologies will make compliance difficult or impossible.

This chapter outlines some steps that can be taken to design effective requirements. These include explanations about some of the basic legal issues in drafting requirements, balancing the stringency and feasibility of requirements, designing effective general and specific requirements, and developing strategies for involving stakeholders in the drafting process.

5.2 Basic Legal Issues

5.2.1 Sufficient Legal Authority

An environmental law will be effective only if it provides sufficient legal authority to ensure compliance.¹⁰ The credibility of a program will erode if non-compliant actors can successfully challenge the government's authority to take certain actions or if the government does not have the tools to ensure compliance.¹¹

Some of the powers necessary to ensure program effectiveness are the abilities to:

- Issue regulations, permits, licenses, and guidance to implement the law.
- Monitor regulated actors and gain access to their records and equipment to determine if they are in compliance.
- Require the regulated community to monitor its own compliance, keep records of its compliance activities and status, report this information periodically to the enforcement program, and make the information available to the public.
- Take legal action against non-compliant actors, including: (1) imposing a range of monetary penalties and other sanctions on actors that violate the law; or (2) imposing criminal sanctions on actors who violate the law (*e.g.*, an individual or corporation that deliberately falsifies data).
- Correct situations that pose an imminent and substantial threat to public health or the environment.

5.2.2 Clear Standards

Clear, enforceable standards are needed for requirements to be effective. An environmental standard is a guideline, usually in the form of a law or regulation, that regulates the effect of human activity upon the environment. Standards may specify a desired state (the level of nitrogen in the air cannot exceed 0.053 parts per million), limit alterations (e.g. no more than 10% of natural forest may be damaged), or they may require the use of certain technologies or practices. (See Box 5-1).

BOX 5-1: TYPES OF STANDARDS

Ambient Standards

Ambient standards, or media-quality standards, are goals for the quality of the ambient environment (e.g. air, water). Ambient standards are usually written in units of concentration. In the US, ambient standards are used as environmental quality goals and to plan the level of emissions from individual sources that can be accommodated while still meeting the area-wide goals. Ambient standards may also be as triggers, e.g., when the standard is exceeded, monitoring or enforcement efforts are increased. Enforcement of ambient standards usually requires relating an ambient measurement to emissions or activities at a specific facility.

Performance Standards (Emissions and Effluents)

These standards are widely used for regulations, permits, and monitoring requirements. Performance standards limit the amount or rate of particular chemicals or discharges that a facility can release into the environment in a given period of time. Performance standards provide flexibility because they allow sources to choose which technologies they will use to meet the standards. Some requirements introduce additional flexibility by allowing a source with multiple emissions to vary its emissions from each stack as long as the total sum of the emissions does not exceed the permitted total. Compliance with emission standards is measured by sampling and monitoring.

Technology Standards

These standards require the regulated community to use a particular type of technology to control and/or monitor emissions. Technology standards are particularly appropriate when the equipment is known to perform well under the range of conditions generally experienced by sources in the community. It is relatively easy for inspectors to determine whether sources are in compliance with technology standards: the approved equipment must be in place and operating properly. It may be difficult, however, to ensure that the equipment is operating properly over a long period of time. Technology standards can inhibit technological innovation and pollution prevention if they are not continually readjusted.

Practice Standards

These standards prohibit certain work activities that have significant environmental impacts or require certain mitigating activities. For example, a standard might prohibit carrying hazardous liquids in uncovered buckets. Like technology standards, it is easy for program officials to inspect for compliance and take action against non-compliant sources, but difficult to ensure ongoing compliance.

Information Requirements

These legal provisions require a source of potential pollution (e.g., a pesticide manufacturer or facilities involved in generating, transporting, storing, treating, and disposing of hazardous waste) to develop and submit information to the government. Sources generating pollution may be required to monitor, report, and maintain records of levels of pollution generated and whether or not they exceed performance standards. Information requirements are often used when the potential pollution source is a product such as a new chemical or pesticide, rather than a waste. Manufacturers may be required to test and report on potential harmful effects of new products on the environment.

Product or Use Bans

A ban may prohibit a product outright (e.g., no manufacture, sale, or transport of a product), or a ban may prohibit particular uses or applications of a product.

5.2.3 Clear Roles and Responsibilities

Environmental laws should also create an institutional framework that specifies the roles and responsibilities of the various levels of government and agencies. Laws and regulations need to be clear about the process and procedures by which the government can take an enforcement action.

5.2.4 Fair and Equitable Rules

Government credibility is critical to establishing an effective compliance and enforcement program. Rules must protect those who have allegedly violated environmental laws from unfair government actions. The rights and responsibilities of those involved in an enforcement process must be clearly written and accessible to them.

A government's willingness and ability to impose sanctions related to bribery and the falsification of environmental data are also very important.

In addition, government inspection schemes must be rational and related to the laws' underlying environmental and public health purposes.

5.2.5 Coordinated with Existing Laws

When laws are developed and proposed, legislators, government agencies, and interest groups should work to understand how those laws will affect other environmental laws and laws in other related sectors. Other sectors with laws that overlap pollution control and natural resource protection may include:

- Health—food safety, occupational health and safety, drinking water, consumer products, pesticide use, etc.

- Land use planning - transportation, development, siting, etc.
- Industry and commerce.
- Agriculture.

Rational coordination of laws can be especially important in countries with many agencies sharing responsibility for environmental protection. Brazil, in a situation common to many countries, faces the challenge of coordinating over 69 environmental laws and 53 international environmental-related treaties across the national, state, and municipal levels.¹²

5.3 Balancing Stringency and Feasibility

Those designing environmental requirements should consider whether particular requirements are technologically, economically, and administratively feasible. If the government would like to ban a particular product or activity, then it will need to determine whether alternatives are desirable, and if so, whether they are feasible.

Social, economic, and political factors, as well as regional, national, and international trends may affect how a particular country determines how stringent to make a particular law or regulation.

Stringent requirements can lead to better and potentially quicker environmental protection and restoration. In some cases, however, overly stringent requirements imposed too early in the life of a program can cause the regulated community to disregard those requirements. Goals and targets that consistently overreach are likely to be modified, encouraging industry to wait for the goals to be revised before complying. Overly ambitious requirements, accompanied by a history of retreat, will undermine compliance with both the requirements at issue and the overall environmental management program.

A phased approach may address some of these issues. The first phase involves less stringent requirements that do not pose too great a burden for the regulated community. At a minimum, this phase should eliminate some of the competitive advantage for polluters. Sometime later, during a second phase, the program implements more stringent requirements. Additional phases may be implemented later in an effort to continue to tighten standards.

5.4 Effective General Requirements

General requirements are those that apply to a class or group of entities or people and/or a class of activities.

5.4.1 Basic Design Principles

General requirements are most frequently implemented in the form of (1) laws, (2) regulations, or (3) general permits or licenses that apply to a specific class of facilities (e.g. dry cleaners). General requirements may apply directly to a group of facilities or may serve as the basis for developing facility-specific requirements. Requirements should:

- Be clear and understandable.
- Precisely define the sources or activities that are subject to requirements.
- Precisely define the requirements and any exceptions or variances (such as when regulated entities may petition the government for an exemption from a general requirement).¹³
- Clearly address how compliance is to be determined by specifying test methods and procedures.
- Clearly state deadlines for compliance.
- Identify what types of compliance assistance will be offered to the regulated community (e.g., training, technical assistance, etc.).
- Describe how compliance will be monitored.
- Establish enforcement responses for non-compliance.
- Be flexible enough to be constructively adapted through individual permits, licenses, or variances to different regulatory circumstances.
- Be written clearly enough to be the basis of criminal prosecution (which is the most serious enforcement action).
- Be based on technology (e.g., control or monitoring equipment) and methodologies that are or soon will be available, reliable, and affordable.

Box 5-2 provides examples of basic questions that can be asked when legal requirements are being drafted into regulations, general permits, or licenses that will be effective.

BOX 5-2: CHECKLIST FOR DEVELOPING EFFECTIVE GENERAL REQUIREMENTS

Definitions

- Does the regulation, general permit, or general license clearly define the regulated community, the regulated activities, and the regulated substances?
- Are any exceptions to defined terms narrow enough to avoid having the exceptions undermine the defined terms?
- Are the definitions and exceptions precise enough so that compliance assurance personnel can identify instances of non-compliance?

- Are defined terms used consistently throughout the text of the regulation, general permit, or general license?
- Is the legal authority underlying the regulation, general permit, or general license clearly articulated?
- Are exceptions to the regulation, general permit, or general license defined precisely enough to make it clear which groups are exempted? If sources under a certain size are exempted, does the regulation identify how the size of a particular source is to be determined?
- Are requirements or other end results measurable? Are the units of compliance clear?
- Are more enforceable requirements available, *i.e.*, requirements that are easier to measure and less resource-intensive?
- Are exceptions clearly described? Is the calculation for exceptions clearly specified? If the regulation, general permit, or general license grants exceptions based on malfunctions or changes in local conditions, does it specify what emission levels may be excused, when, and who makes this determination?
- If changed circumstances may raise or change a requirement, does the regulation, general permit, or general license clearly specify these circumstances? Are the changes that must be made clearly defined?
- If the requirement is an emission limit or concentration value, does it explicitly state the time frame associated with the limit (*e.g.*, instantaneous, two-hour average, daily)?

Monitoring

- Does the regulation clearly state exactly what the regulated community is required to monitor? Do these requirements support the compliance goals of the environmental law? For example, if the compliance goal is to demonstrate that facilities are in compliance each day, does the regulation, general permit, or general license require daily self-monitoring and recordkeeping [and reporting]?
- What test methods are needed to determine whether a facility is in compliance? Are the methods clearly described? Are any allowable averaging times clearly specified?
- Does the regulation, general permit, or general license make falsifying self-monitoring data a separate and enforceable violation?
- Does the regulation, general permit, or general license authorize inspection procedures that will enable inspectors to gather data needed to determine compliance?
- Do the procedures cover entering a regulated facility, inspecting documents, and collecting samples?
- Will inspectors be readily able to determine which facilities are not in compliance?
- Will the requirements for inspection and self-monitoring help reduce enforcement costs and increase the effectiveness of inspections?

Self-monitoring

- Does the regulation, general permit, or general license provide a clear schedule for self-monitoring?
- Does the regulation, general permit, or general license state the methods to be used for self-monitoring?
- Does the regulation, general permit, or general license clearly state what data the regulated community is required to record and report?
- Will these data show whether or not a facility is in compliance? Will these data provide sufficient evidence to document a violation?

- Does the regulation, general permit, or general license provide a clear schedule and format for recordkeeping and reporting?
- Are the reporting requirements frequent enough to allow timely response to a violation?
- Is the regulated community required to retain information long enough for enforcement purposes?
- Does the regulation, general permit, or general license make failure to maintain or report records a separate and enforceable violation?
- Is the regulated community required to make records available to inspectors upon request?
- Are any exceptions to the recordkeeping and reporting requirements clearly defined/stated?
- Will the requirements for reports, records, and inspection/monitoring techniques help reduce enforcement costs and increase the effectiveness of inspections?

Demonstrating Compliance

- Does the regulation, general permit, or general license clearly describe what constitutes compliance and how compliance is determined? Is compliance determined by field inspections and desk reviews of reports submitted by the regulated community, or is the regulation, general permit, or general license self-enforcing?
- Does the regulation, general permit, or general license clearly state who (*i.e.*, the government or the facility) is responsible for proving compliance or non-compliance? Can the environmental management program independently determine compliance? Can the program require the facility to perform certain tests and determine compliance?
- Does the regulation, general permit, or general license define time limits by which a member of the regulated community must reach compliance? Do the time periods have specified beginning and end points? If compliance is defined by occurrence of an event, rather than by a date, is the event discrete enough for an inspector to determine whether the facility is in compliance?
- Is the evidentiary burden required to prove a violation clearly described? Can third party data be used as evidence?
- Does the regulation, general permit, or general license describe the extent to which an inspector can use professional judgment in determining whether a facility is in compliance?
- If different government levels are involved in enforcement programs, does the regulation, general permit, or general license clearly describe the responsibilities of each level of government?

5.4.2 Size of the Regulated Community

If possible, regulators should determine the size of the regulated community prior to implementing environmental laws; otherwise governments may find that their environmental requirements are unmanageable.

For example, a province in the Netherlands passed a law requiring companies to apply for an exemption if they wanted to use a processing installation to dispose of their wastes. After the law was passed, the government discovered that 100,000 companies would need an

exemption. Inspections alone would have required hiring an additional 200 to 300 inspectors. The provincial government decided to revise the regulation. Exemptions are no longer required. Companies must keep a record of their waste deliveries and periodically report information on the most hazardous wastes. Compliance assurance efforts now focus on the waste processors (about 1,000) rather than the waste producers.

BOX 5-3: THE IMPORTANCE SMALL AND MEDIUM SIZE BUSINESSES¹⁴

The economic and environmental significance of small and medium size businesses (SMEs) is significant. For example, in Canada, Mexico and the United States over 98 percent of the businesses are Small and Medium Size Enterprises (SMEs). Although most SMEs serve local markets, they increasingly operate as part of a global market place, purchasing products produced abroad, supplying multinational companies and selling directly to overseas buyers.

SMEs face widely differing environmental issues based on the economic sector, employee base and jurisdiction in which they operate. A study prepared by the Organisation for Economic Cooperation and Development (OECD) found that in the United States, SMEs are significant contributors to pollution in three branches of manufacturing: chemicals, primary metals, and building materials (e.g., stone, clay, glass). The largest impacts from SMEs were on biological oxygen demand in water and suspended particles in air, followed by release of toxic chemicals.

Because of their size, governments should consider these factors when developing initiatives for SMEs: (1) The power of the supply chain, business contracts, and industrial associations can be significant for many SME sectors; (2) A tailored outreach can be helpful. Official efforts narrowly tailored to the business sector, size, and location of the SME will be far more successful than generic outreach efforts; (3) The right partners are essential. When governments involve business associations that have SMEs as members, the likelihood of success is greater; (4) Regulatory compliance pressure can motivate the search for the least expensive solutions that are lawful.

5.4.3 Size of Regulated Entities

Regulators should also consider the size of the regulated entity and adjust outreach and enforcement strategies accordingly. Smaller entities are a major source of pollution and often may not have in-house expertise or the resources to comply with complicated requirements. Governments may need to provide greater compliance promotion activities and work with local governments and trade associations to help understand the capabilities of these types of businesses and the extent of environmental problems at their facilities. (See Box 5-3).

5.4.4 Providing for Individual Circumstances

Requirements that are very specific may leave little room for open interpretation. While such requirements may be easier to enforce, they might not allow the flexibility that will

encourage compliance. Environmental management programs often use facility-specific permits or licenses to provide the flexibility that individual circumstances often warrant.

5.5 Facility-Specific Requirements

Facility-specific requirements are most frequently implemented in the form of permits or licenses. They are often based on specific criteria established in laws, regulations, or guidance, but are customized to the specific conditions at the particular facility receiving the permit or license. These documents may cover only certain requirements (e.g., those concerning a single environmental media) or may include comprehensive documents covering all requirements that the facility must meet.

5.6 Ensuring Effectiveness

Permits and licenses are intended to be practical documents that require or prohibit specific activities. To be enforceable, permits and licenses must generally be clear, precise, and unambiguous. Regulatory agencies can take several practical steps to help ensure that permits and licenses have these qualities:

- Train permit and license writers in the permit and license-writing processes.
- Use standard forms to ensure that each permit and license contains all essential information.
- Where appropriate, use “model” permits or licenses. A model permit/license contains requirements that are generally applicable to a specific type of facility. The model is then slightly modified by the permit or license writer to tailor a permit for a specific facility.
- Provide clear instructions to the permit or license writer on how to prepare the permit or license.

Box 5-4 provides a checklist that permit and license writers can use to ensure the enforceability of permits and licenses. Writers of facility-specific requirements will need to consider whether the permit conditions might conflict with those in any of the facility’s existing permits or licenses. Conflicts and contradictions between different environmental permits and licenses can invite non-compliance. Multimedia permits or licenses that encompass all relevant environmental requirements in a single document can overcome this potential problem. Multimedia documents may also enable permit and license writers to prioritize requirements based on human-health or environmental risk, the facility’s resources for compliance, and feasibility.

BOX 5-4: CHECKLIST FOR DEVELOPING ENFORCEABLE FACILITY SPECIFIC REQUIREMENTS

General

- Is the length of time that the permit will be valid clearly stated? Is a date specified to indicate when the permit must be reissued and when an application for a new permit should be filed?
- Does the permit contain a provision stating that the permit must be modified if ownership of the facility changes, or if the facility makes changes to its regulated processes?
- Do the permit conditions conflict with conditions in any other of the facility's permits?
- Is there a provision specifying that the permit can automatically be revoked if it is discovered that the applicant deliberately submitted false, misleading, or incomplete information during the application process?
- Does the permit state whether the owner or operator will be liable for non-compliance?

Requirements

- Are the requirements measurable? Are the units of compliance clear?
- Does the permit specify that a modification will be required if the requirements or criteria change?
- If the requirement is an emission limit, does the permit explicitly state the time frame associated with the limit (e.g., instantaneous, 3-hour average, daily) and the location of where the measurement shall take place?

Monitoring

- Does the permit clearly state exactly what the facility is required to monitor? Do these requirements support the compliance goals of the environmental regulation?
- What test methods are needed to determine whether the facility is in compliance? Are the methods clearly described and available to the permittee? Are any allowable averaging times clearly specified?
- Does the permit make the act of falsifying self-monitoring data a separate and enforceable violation?
- Does the permit provide a clear schedule for self-monitoring?
- Does the permit authorize inspection procedures that will enable inspectors to gather data needed to determine compliance? Do these procedures cover entering a regulated facility, inspecting documents and collecting samples?
- Will inspectors be readily able to determine which facilities are not in compliance?
- Will the requirements for inspection and self-monitoring help reduce enforcement costs and increase the effectiveness of inspections?

Self-Monitoring

- Does the permit clearly state what data the facility is required to record and report?
- Will these data show whether or not a facility is in compliance? Will these data provide sufficient evidence to document a violation?
- Is the facility required to report non-compliance with permit requirements? If so, does the permit specify a deadline for reporting non-compliance, and the person to whom

non-compliance should be reported?

- Does the permit provide a clear schedule and format for record-keeping and reporting?
- Does the permit specify to whom the information should be reported?
- Are the reporting requirements frequent enough to allow timely response to a violation? Is the facility required to retain information long enough for enforcement purposes?
- Does the permit make failure to maintain or report records a separate and enforceable violation?
- Is the facility required to make records available upon request?
- Are any exceptions to the record-keeping and reporting requirements clearly spelled out?
- Will the requirements for reports, records, and inspection/monitoring techniques help reduce enforcement costs and increase the effectiveness of inspections?

Demonstrating Compliance

- Does the permit clearly describe what constitutes compliance and how compliance is determined?
- Does the permit clearly state who is responsible for proving compliance or non-compliance (as established by applicable law)?
- Does the permit define time limits by which the facility must reach compliance? Do the time periods have specified beginning and end points? If compliance is defined by occurrence of an event, rather than by a date, is the event discrete enough for an inspector to determine whether the facility is in compliance?

5.7 The Permitting and Licensing Processes

The process for writing permits and licenses varies from one country to another, but usually includes the following steps:

- The facility provides information about its operations and emissions to the government agency.
- A permit or license writer reviews the information and requests additional information if necessary.
- The permit or license writer must inform interested parties (e.g., the local community) that a permit or license is being prepared.
- The permit or license writer must provide an opportunity for any concerned party to comment on whether a facility should receive a permit or license and what the requirements should be.
- If necessary, a negotiation process is used to resolve any disputes among the permit or license writer, facility, workers, local community, and other potentially affected parties.

- After sufficient information gathering, discussion, and negotiation, the permit or license writer decides whether to issue the permit or the license.
- There may be a sanction if the permit or license writer discovers that the applicant submits false, incomplete, or misleading information.

The permitting and licensing processes provide opportunities to ensure that facilities clearly understand what the requirements are and the importance, both from an environmental and legal perspective, of meeting them.

5.8 Involving Stakeholders

The process of drafting effective environmental requirements can be informed by input from various stakeholders, including environmental management program personnel, the regulated community, citizens and non-governmental organizations, other environmental programs, and government authorities. This process should be governed by administrative procedures that are transparent and based on the rule of law.

5.8.1 Compliance Assurance Officials

Special institutional channels and procedures should allow compliance assurance staff, including inspectors and prosecutors, to provide meaningful input in the drafting of general requirements. Enforcement and compliance officials often have unique and real world experience with different regulatory programs and can see the strengths and weaknesses for the enforceability of regulatory proposals.

One option is to create committees that include both policymakers and enforcement officials. These committees can include representatives of all government levels (national, regional, provincial, and local) that may be involved in the process of assuring compliance with the requirements. Committee members can be responsible for ensuring that the appropriate individuals within the environmental management program are involved in drafting and reviewing the requirements.

Comments on the proposed requirements should follow administrative procedures that allow for written comments and that establish a record of the decision-making process.

Lessons learned about what makes existing requirements effective or ineffective in a particular region or country might be recorded, studied, and communicated to those involved in developing new requirements. For example, selected requirements could be reviewed one year after coming into force in order to analyze their effectiveness and make any necessary

adjustments and to establish an expedited process that can be used to correct specific types of deficiencies by making limited revisions to general requirements.

5.8.2 The Regulated Community and Civil Society

Involving the regulated community and civil society in developing requirements helps build support, reduces resistance and conflict, and eases implementation. It can also make requirements more practical, and therefore more enforceable, and it publicizes the requirements at an early phase, thus “setting the stage” for compliance. Below are three basic ways to involve the regulated community and civil society in the process of drafting environmental requirements: informal consultations, formal comment, and field testing. (See Box 5-5).

BOX 5-5: INVOLVING THE REGULATED COMMUNITY AND CIVIL SOCIETY

Informal Consultations

Policymakers can consult with key representatives of the regulated community and civil society informally before developing general requirements. These consultations can be helpful in sorting out future problems early and eliminating resistance.

Formal Comment

U.S. legal systems require the federal government to publish draft regulations and solicit comments from the regulated community and the public. Widely distributed, low-cost government periodicals provide advance notice that new regulations are being developed and announce when they will be available. Any organization or individual can easily obtain and review the proposed regulations when they are issued. Written comments from the public are usually accepted for a limited period of time (30 to 90 days in the United States) after the proposed regulation has been issued. The environmental agency prepares and publishes detailed responses to the comments. Many of the comments directly concern the difficulty or unanticipated effects of compliance. These comments provide regulators with an opportunity to rethink their approach. The formal responses to comments reassure commenting parties that their comments were considered.¹⁵

Field Testing

In field testing, specific members of the regulated community volunteer to test general requirements to determine whether the requirements are clear and understandable, and to assess/evaluate the ease and cost of compliance. Policymakers can then make changes to the general requirements before they are finally implemented. Though field testing can lengthen the total time it takes to develop a general requirement, it can expose weaknesses that might otherwise render it unenforceable. Where field testing is used, policymakers will need to determine who will fund it—the enforcement program, the test facility itself, a trade association representing the regulated community, or a combination of these.

Involving the non-regulated community (e.g., the general public and non-governmental organizations) can also be very helpful. Such involvement is an opportunity to solicit creative ideas from knowledgeable groups. Civil society has an interest in clear and effective environmental requirements. Laws, regulations, and permits that provide specific substantive requirements make it easier for members of civil society to participate in citizen based compliance promotion, monitoring, and enforcement. In addition, the involvement of civil society helps shield the program from isolation and builds broad-based popular support for the requirements and their implementation.

In China, for example, the State Environmental Protection Administration recently passed a regulation to allow greater public participation in Environmental Impact Assessments. These Assessments will be more widely distributed to the public, and citizens will be able to participate in the process through opinion surveys, consultations, seminars, debates, and hearings.¹⁶

5.9 Coordinating with Other Programs

It is important to coordinate the environmental requirements of different laws and regulations and to understand how they may interact when implemented. For instance, regulations requiring electronics firms to stop chemical solvents in tanks from leaking into the groundwater could be obeyed by releasing solvents into the air, creating an air quality problem. Other examples include flue-gas scrubbing to reduce harmful air emissions that could lead to discharges of contaminated water and treatment of contaminated wastewater that produces yet another waste product requiring responsible processing.

Several rulemaking practices can be used to avoid unintended effects. First, environmental laws can require policymakers drafting general requirements to specifically consider whether such effects are possible. Second, individuals who are knowledgeable about the different environmental areas can review the requirements. Third, studies of the regulated community can examine whether compliance with one law would result in shifting of pollution from one medium to another. If cross-media effects are discovered, the requirements can be modified to prevent or minimize these effects. Finally, requirements can be defined for all media at once.

6. COMPLIANCE PROMOTION

6.1 Introduction

In many countries, traditional environmental regulatory programs are being carried out in conjunction with non-regulatory voluntary programs designed to promote changes in behavior. Voluntary programs are different from compliance promotion activities, as voluntary programs have no mandatory component while compliance promotion activities encourage and help the regulated community to comply with environmental laws and requirements through assistance and incentive activities.

This chapter provides an overview of some of these compliance assistance and compliance incentives activities. It begins by examining educational, technical, and financial assistance programs that make up compliance assistance efforts. It then examines compliance incentives efforts, such as auditing policies, recognition programs, efforts to provide the public with information, and market-based mechanisms.

6.2 Compliance Assistance

Compliance assistance encourages observance of the law through outreach, education, and other promotional activities. Compliance assistance activities are designed to improve compliance by explaining how to comply with legal and regulatory requirements. Compliance assistance activities can cover both statute specific and sector related activities. Outreach programs and technical assistance tools tend to be most successful when they are developed at regional levels and are tailored to the needs of specific businesses.

Compliance assistance programs can help regulated firms reduce the costs of compliance and develop environmental management capacity within the regulated community. The success of these initiatives will depend largely on how they are developed, packaged, and delivered. Compliance assistance programs can include education and technical assistance and in some cases financial assistance.

6.2.1 Education and Technical Assistance

Education and technical assistance lay the groundwork for compliance. These efforts can help businesses and individuals fully understand their legal responsibilities, and how they can meet those responsibilities. Education and technical assistance are particularly important in the early stages of a new program or when legal and regulatory requirements change. Education and technical assistance programs can help the regulated community understand:

- Who is subject to requirements?

- What are the requirements?
- Why are these requirements important?
- What changes (including technical and managerial changes) can be made to comply with the requirements?
- How can these changes be made (e.g. equipment, operations, human resources)?
- What are the consequences of non-compliance (both in terms of costs and benefits)?

Education and technical assistance outreach can be made through publications (such as brochures and guidance manuals); websites; “hot lines” or dedicated telephone numbers; conferences and other meetings; or as part of media announcements.

Technical assistance can be provided by trained government personnel who visit individual members of the regulated community to assist them in making changes, and as part of special assistance programs, set up for example at universities or non-governmental institutions, that provide a central resource for information and advice on how to comply with legal and regulatory requirements.

Professional associations are important government partners for compliance assistance activities. These associations usually have established communication networks and access to industry experts. They can provide forums for the regulated community and enforcement program personnel to exchange information and ideas.

BOX 6-1: IMPROVING WASTE COLLECTION IN THE NETHERLANDS

Commercial establishments in the Netherlands are required to dispose of their hazardous wastes through permitted processors. However, getting the waste to the processor was a problem for small businesses. The processors were often unwilling to pick up small amounts of waste, and transporting small quantities of waste long distances to a processor placed a disproportionate economic burden on small businesses. Therefore, small companies were often out of compliance with the hazardous waste rules. The Dutch government helped to solve this problem by establishing a collection depot in nearly every town in the Netherlands. Both private citizens and small companies may now discard their waste at these depots at regular times. This government-facilitated cooperative arrangement was instrumental in helping solve the compliance problem.

Many countries are increasingly focusing compliance assistance efforts on specific sectors or types of businesses. By using this approach, governments can tailor their outreach efforts to the specific needs of an industry instead of focusing their efforts on the requirements of individual statutes. Many countries are increasingly using the internet to deliver sector focused compliance assistance material to the user and are cooperating with other countries in

sharing this information.

An example of this new approach is the collaboration that is occurring between the USEPA, the Asian Environmental Compliance and Enforcement Network (AECEN), and the environmental agencies of the Philippines and Thailand. Over the past decade, USEPA has established highly successful, stakeholder-driven, web-based compliance assistance centers geared primarily toward small and medium size business.¹⁷ It is now working closely with the Philippines, Thailand, and ASEAN to share U.S. experiences and provide feedback on proposed strategies and models as these countries develop their own stakeholder driven, web-based centers.¹⁸

6.2.2 Financial assistance

Even with education and technical assistance, cost may be a significant barrier to compliance. In some instances, the government may want to provide direct assistance to the regulated community in order to help them deal with the initial cost of compliance.

In the late 1990s, for example, selected firms in Sri Lanka's distillery, textile, and metal finishing sectors were shown ways to reduce waste generation quantities through simple process and raw material changes, as well as good housekeeping practices. Demonstration waste minimization projects such as these help industries to meet the required environmental standards while at the same time reducing end-of-pipe treatment costs.

Some international organizations and national development aid agencies provide funds to developing countries that could not otherwise afford to comply with environmental requirements. The Compliance Assistance Programme of the Multilateral Fund of the Montreal Protocol, for example, has a successful capacity building program that places teams in regional offices to deliver technical assistance on Protocol requirements directly to developing countries.¹⁹

6.3 Compliance Incentives

Compliance incentives consist of a set of policies and programs that eliminate, reduce or waive penalties under certain conditions for business, industry, and government facilities that voluntarily discover, promptly disclose and correct non-compliance, and prevent future environmental violations. Many audit and special recognition programs are examples of compliance incentive programs. These programs provide concrete benefits for companies, agencies, and individuals that actively monitor their facilities and report problems to appropriate authorities. Other compliance incentive programs provide the public with specific environmental

performance information on companies in order to motivate them to improve their environmental performance.

6.3.1 Auditing Policies

Some compliance incentives eliminate, reduce or waive penalties under certain conditions for business, industry, and government facilities that voluntarily discover, promptly disclose and correct non-compliance, and prevent future environmental violations. Under USEPA's Audit policy, called *Incentives for Self-Policing, Discovery, Disclosure, Corrective and Prevention of Violations*, regulated entities may, at the discretion of the Agency, avoid criminal prosecution, and have penalties reduced or eliminated. But they must discover violations through self-auditing or under environmental management systems, self-disclose (prior to the Agency having initiated its own investigation), correct the violations promptly, and take measures to prevent recurrence.²⁰

Mexico also has a similar program, called the Environmental Auditing Program (EAP). It is based on a voluntary agreement between Mexico's Attorney General for Environmental Protection (Profepa) and a participating organization. Under the EAP, a plan of action is devised to recommend preventive and corrective measures related to air, water, soil, solid and hazardous waste, noise, industrial safety and hygiene, energy, natural resources, environmental risk, environmental management and other issues with potential adverse impacts to the environment.

Participating organizations are evaluated by independent auditors. Participants agree to correct violations by a certain date, and Profepa agrees not to penalize companies until that date has passed. Organizations receive Profepa's certification of Clean Industry for Environmental Compliance after an audit has been completed, an action plan has been implemented, and all the preventive and corrective measures have been taken. Organizations that go further and achieve stronger environmental performance under pollution prevention and eco-efficiency schemes are granted the recognition of Environmental Excellence. Organizations can use Profepa's performance seals to promote their public image.²¹

6.3.2 Recognition Programs

Environmental regulators frequently use incentives in the context of recognition programs. Both Mexico and the United States, for example, have recognition programs, which provide incentives to join these programs and maintain high levels of environmental performance. Mexico's Environmental Excellence Seal (see above, Auditing Policies) is granted to organizations that have engaged in self-designed initiatives directed toward preventing

pollution, seeking community outreach, developing suppliers, solving local environmental problems, and participating in pollution cleanup programs, among other measures. To obtain the seal, organizations must present documented and operational proof of environmental compliance.

USEPA National Environmental Performance Track recognizes top performers among public or private facilities. To be recognized under performance track, facilities must have, among other things:

- A history of sustained regulatory compliance.
- Past environmental achievement and a commitment to continuous environmental improvement.
- A community outreach procedure in place.

Facilities accepted into the program receive special benefits such as low priority for federal inspections; special regulatory and administrative incentives, such as flexibility in developing certain air permits; and more flexible requirements for large generators of hazardous waste.

Surveys of regulated communities find that the potential opportunity to forgo or postpone regulation is the most important benefit of voluntary approaches.²² Therefore, environmental management programs using these voluntary approaches must balance the need to demonstrate a commitment to improvements while simultaneously maintaining a credible threat of mandatory regulation and enforcement.

6.3.3 Public Information

A number of jurisdictions have overcome these problems by developing a public rating system. Rating systems simplify the flow of information to the public by summarizing a regulated firm's performance into a grade. The grading scale can be simple (in compliance/not in compliance) or complicated. Box 6-2 provides an example of public grading in Indonesia. Note that the rating system has two grades above simple compliance, providing inducements to go beyond the environmental requirements.

Support of local media is critical to public information campaigns. To ensure accurate press reports and foster a working relationship with the media, the environmental management program should invite reporters to a detailed presentation of the information campaign, including an explanation of how the information was collected and analyzed. The information should also be in a format that is easily communicated by the broadcast and print media.

Ideally, an information strategy should be flexible enough to accommodate regulated firms with different characteristics. It should be simple and easily understandable by the public. Finally, it should offer the regulated firm a chance to improve its performance before the information becomes public. Many firms will take this opportunity to come into compliance rather than risk damage to their reputations or more severe fines. (See Box 6-3 for an example from China).

BOX 6-2: INDONESIA'S ENVIRONMENTAL REPORT CARD "PROPER PROKASIH"²³		
Compliance Status	Color Rating	Performance Criteria
Not in Compliance	Black	Polluter makes no effort to control pollution and causes serious environmental damage.
	Red	Polluter makes effort to control pollution but not sufficiently to achieve compliance.
In Compliance	Blue	Polluter applies effort sufficient only to meet the standard.
	Green	Pollution level is significantly lower than the discharge standards. Polluter also ensures proper disposal of sludge, good housekeeping, accurate pollution records and good maintenance of the wastewater treatment system.
	Gold	All the requirements of Green, plus similar levels of pollution control for air and hazardous waste. Polluter reaches high international standards by making extensive use of clean technology, waste minimization pollution prevention, recycling, etc.

The effectiveness of public involvement in information strategies will vary with the nature of the sectors and firms regulated. It will be a challenge to bring market pressure on firms that provide products or services in sectors with limited competition or where a brand name is not dependent on public good-will. Closely held and government-owned enterprises also have a degree of insulation from external pressure. But all of these firms can be reached with carefully planned strategies.

BOX 6-3: INFORMATION CAMPAIGNS IN CHINA²⁴

Faced with difficulty ensuring companies' compliance with pollution regulations, China began a program, informally called "GreenWatch," for disclosing industry pollutant discharges to the public. Pilot efforts, such as those in Hohhot Municipality and Zhenjiang City, demonstrated that public disclosure of environmental performance could impact a company's public image. The results were that "enterprises that improved their performance immediately requested new monitoring reports so that their public ratings could be improved as well. Enterprises with poor ratings shifted from passive resistance to active solicitation of inspections, as a means of improving their performance ratings. At the same time, enterprises with good ratings felt continued pressure to maintain their environmental performance to avoid complaints from the public about backsliding." In November 2006, the Chinese government decided to extend GreenWatch to every city in the country by 2010.

6.4 Market-Based Mechanisms

Market-based approaches, such as taxes, charges, and emissions or permit trading programs (See Box 6-4) can promote compliance with the law by incorporating externalities into the cost of doing business. Externalities are "hidden" costs to human health and the environment associated with an activity, such as manufacturing steel. Because manufacturing steel creates air pollution, an externality of this activity may be an increase in asthma rates among children. Market-based approaches can help minimize these externalities by stimulating consumers and producers to change their behavior to more eco-efficient use of natural resources by increasing costs, reducing consumption, stimulating technological innovation, and encouraging greater disclosure of actual/total/combined costs to community.

Market-based approaches are not usually considered compliance promotion activities unless they involve promoting compliance with underlying regulatory requirements. Instead they often either complement regulatory requirements or make them unnecessary. For example, the Netherlands, Portugal, the United Kingdom, Spain, and Finland have introduced car registration taxes which encourage car buyers to opt for the cleanest car models. These taxes can complement existing domestic laws that require minimum fuel efficiency standards by making more inefficient but legal cars more expensive.²⁵ (See Box 6-4 for other examples).

BOX 6-4: EXAMPLES OF TAXES AND FEES

In 1995, the Netherlands enacted a tax on the landfilling of waste. The purpose of this tax is to address environmental issues of waste and to better distribute tax burdens across different groups by introducing a new tax base. The tax is calculated based on the weight of the waste. As of 2004, those dumping waste had to pay € 84.78 per ton for waste less than 1,100 kg/m³ and for certain waste streams like dangerous waste and shredder waste and € 13.98 per ton for waste more than 1,100 kg/m³. Studies have shown that the tax has contributed to a shift from dumping to prevention, recycling, and incineration of waste.

Colombia has demonstrated how discharge fees can create incentives for regulatory authorities to improve permitting, monitoring, and enforcement. In 1997, to reduce water pollution, Colombia began charging polluters a fee per unit of pollution emitted. The fees were determined based on whether overall pollution reduction targets were being met. By allowing Colombia's regional environmental authorities to keep the fees, but requiring reporting of fees to a centralized authority, this system creates incentives for improved monitoring and enforcement.

7. MONITORING COMPLIANCE

7.1 Introduction

Monitoring compliance is essential to the success of an environmental management program. The collection and analysis of compliance information improves decision making through the following:

- Evaluating program progress by establishing compliance status.
- Detecting and correcting violations.
- Supporting information strategies to promote compliance.
- Providing evidence to support enforcement actions and deter non-compliance.

There are four primary sources of compliance information discussed in this chapter:

- Inspections.
- Monitoring environmental conditions near a facility.
- Self-monitoring, recordkeeping, and self-reporting by the regulated community.
- Citizen monitoring.

These are described in detail below. Box 7-1 summarizes the advantages and disadvantages of these four information sources. Additional information may come from reports of other national, regional, provincial, or local agencies that have related jurisdiction over the facility; requests for modifications to permits or licenses; and environmental audit reports provided by the facility. However, as information on compliance status is gathered, an enforcement program needs a system (computerized if possible) to store, access, and analyze the information as needed.

BOX 7-1: COMPARING SOURCES OF COMPLIANCE INFORMATION		
INFORMATION SOURCE	ADVANTAGES	DISADVANTAGES
Inspections	Provide the most relevant and reliable information.	Can be very resource-intensive.
Monitoring Environmental Conditions Near a Facility	Useful for detecting possible violations without entering the facility. Useful for determining whether permit or license requirements are providing adequate environmental protection.	Can be difficult to demonstrate a connection between the pollution detected and a specific source. Difficult or impossible to obtain precise information. Resource-intensive in areas of multiple sources.
Self-Monitoring, Self-Recordkeeping, and Self-Reporting by the Regulated Community	Provide extensive information on compliance. Shift economic burden of monitoring to the regulated community. May increase level of management attention devoted to compliance within a facility.	Rely on integrity and capability of source to provide accurate data. Place economic burden on the regulated community and increase paperwork.
Citizen Monitoring	Can detect violations that are not detected by inspections, industry self-monitoring, and reporting.	Sporadically conducted. Cannot control amount, frequency, or quality of information received. Only a few violations are noticed by citizens. May require resources to respond to erroneous or irrelevant complaints.

7.2 Inspections

Inspections are the backbone of most enforcement programs.²⁶ Inspections are conducted by government inspectors or in some cases by independent parties hired by and reporting back to the responsible agency. The inspector’s role is not to interpret the law and

make the final institutional or agency determination of compliance, but rather to gather facts about a facility, collect and analyze documentation, and record observations. The inspector then organizes those observations and supporting documentation into a report for review against standards set forth in law.

Inspectors plan inspections, gather data in and around a particular facility, record and report on their observations, and sometimes make independent judgments about whether the facility is in compliance. Inspection activities may include, but are not limited to: observing and documenting observations; sampling, measuring, and photographing; coring, drilling, and excavating; reviewing and copying records; and seizing equipment, products, materials, or records. Inspections can be very resource-intensive and therefore require careful targeting and planning. By standardizing inspection procedures, enforcement officials can help ensure that all facilities are treated equally and that all the appropriate information is gathered. By specifying deadlines for inspection reports, program managers can help ensure that reports can be made available to enforcement personnel without delay if there is a possibility of non-compliance.²⁷

BOX 7-2: BENEFITS OF INSPECTIONS IN VIETNAM²⁸

In 1997, Vietnam for the first time implemented a large-scale, nation-wide inspection for compliance with environmental requirements. This process entailed close coordination between branches of the national government (*e.g.*, environment, energy, defense), between central and local levels of government, and with the mass media. The investigations helped to increase the role and influence of the environmental inspectors in society and helped introduce the Law on Environmental Protection to the public.

7.3 Audits versus Inspections

Audits are similar to inspections, but whereas inspections are generally conducted by the government or its agents, audits are conducted for or by a facility for its own purpose and benefit.²⁹ Audits may be conducted by internal staff or external, independent consultants. These audits may be part of a larger management system, and may be done as a way to get certification (such as ISO certification) or to show suppliers, clients, or investors that the company is complying with its environmental responsibilities. During an inspection, if violations are found, the government follows standard procedures to ensure that the evidence collected will be upheld in court. In contrast, when an audit uncovers violations, evidence generally is not collected, as there is not an enforcement response to the violations. The facility may choose to correct the violation on its own, or may elect to report the violation to the regulatory agency.

Some countries have programs designed to motivate facilities to come forward and admit to their violations by offering reduced penalties or shields from prosecution. Audits and environmental management systems are discussed in more detail in Chapter Six.

BOX 7-3: INSPECTION POWERS IN GAMBIA³⁰

The 1994 Hazardous Chemicals and Pesticides Control and Management Act gives inspectors broad powers to investigate potential violations of laws governing pesticides and other hazardous chemicals. The Act provides that an “inspector may, in the performance of his duties...at all reasonable times without [a] warrant enter on any land, premises or vehicle where a chemical or pesticide is or may be reasonably suspected to be manufactured, stored, sold, distributed or used to determine whether the provisions of this Act are being complied with.” Moreover, the inspector may “take samples of any articles and substances to which this Act relates and, as may be prescribed, submit such samples for test and analysis.”

7.4 Types of Inspections

Inspections may be “routine” (there is no reason to suspect that the facility is out of compliance) or “for cause” (a particular facility is targeted because there is reason to believe it is out of compliance).³¹ Inspectors may notify the facility prior to inspection or arrive unannounced.

There are many levels of inspection. (See Box 7-4). At the most basic level, an inspector can simply walk through a plant. A more complex and time consuming inspection might require an inspector, or multiple inspectors, to spend time in the facility to observe operations, interview plant personnel, and take samples for analysis.

Inspection goals include:

- Identifying specific environmental problems.
- Making the source aware of any problems.
- Gathering information to determine a facility’s compliance status.
- Collecting evidence for enforcement.
- Ensuring the quality of self-reported data.
- Demonstrating the government’s commitment to compliance by creating a credible presence.
- Checking whether facilities that have been ordered to comply have done so.

Inspections may focus on one or more of the following questions:

- Does the facility have an up-to-date permit or license?

- Has all required pollution monitoring or control equipment been installed?
- Is the equipment being operated correctly?
- Are records of self-reported data properly prepared and maintained?
- Is the facility properly conducting required sampling and analysis?
- Do the facility's management plans and practices support the required compliance activities?
- Are there any signs of willful violation of regulations or falsification of data? Signs could include conflicting data, conflicting stories from different employees at the same facility, monitoring data for which there is no supporting record or documentation, claims that employees are ignorant of the regulations when company files show knowledge of these requirements, and complaints from employees or citizens in the local community.

BOX 7-4: THREE LEVELS OF INSPECTIONS

Level 1: Walk-Through Inspection

This type of inspection is limited to a quick survey of the facility. Inspectors need only to walk through the facility to verify the existence of certain features, such as control equipment or a records repository, or to observe work practices and housekeeping. These inspections establish an enforcement presence, and can also serve as a screening process to identify facilities that should be targeted for more intensive inspection.

Level 2: Compliance Evaluation Inspection

This level involves a thorough inspection of the facility but does not include sampling. It may include visual observations like those in Level 1; review and evaluation of records; interviews with facility personnel; review and critique of self-monitoring methods, instruments, and data; examination of process and control devices; and collection of evidence of non-compliance.

Level 3: Sampling Inspection

This includes the visual and record reviews of the other inspection levels, as well as pre-planned collection and analysis of physical samples. These inspections are the most resource-intensive.

7.5 Steps in the Inspection Process

Most environmental management programs use a standardized set of steps for their inspection process or minor variations thereof. Inspections usually begin with an opening conference to explain the inspection process to the facility.³² Some inspections end with a closing conference, in which the inspector may make facility managers aware of any violations,

prescribe corrective actions, and explain the consequences of continuing non-compliance.³³ Some countries' enforcement programs do not allow closing conferences because they want to avoid the risk that information given by the inspector to the facility may somehow compromise future legal action. Other countries' legal systems require inspectors to leave written summaries of observed violations, putting inspected companies on notice. Box 7-5 contains an example of the phases of the inspection process. The following sections take a closer look at several of the phases.

BOX 7-5: PHASES OF THE INSPECTION PROCESS³⁴

1. Targeting Inspections

Inspection sites are selected using four criteria: 1) random selection of sites from all of the identifiable members of a regulated community, frequently referred to as a "neutral inspection scheme;" 2) a selection that emphasizes a specific sector of the identifiable regulated community, usually based on enforcement history, potential threat, or other clearly researched criteria; 3) a selection based on information received from the public or other external sources such as a tip or complaint; and 4) emergency responses. An agency must explain how it weighed each of these criteria in a compliance monitoring report made available to the public to show it that the selections were made in a fair and transparent manner.

2. Preparation of an Inspection Plan

This phase entails tasks such as reviewing all available information, contacting everyone who may have relevant information, getting administrative clearances, and making necessary arrangements if samples need to be taken.

3. Entry into Facility

Most public agencies seek to obtain consensual entry first. If the entry is denied, they try to explain again why the entry is necessary. If denied again, authorization to enter may be granted by a legal authority.

4. Opening Conference

The purpose of an opening conference is to let the facility know what the agency plans to do and why, and also to learn more about the facility operation, plant layout, management structure, plant processes, plant safety, and other information relevant for the investigation.

5. Collecting Evidence in the Field

Evidence is anything that provides verifiable information that can be used to establish, certify, prove, substantiate, or support an assertion. It can include physical samples, photographs, and copies of facility documents. The two most common methods of collecting evidence in the field are facility walk-throughs and process-based investigations.³⁵ Interviews are also one of the inspector's most useful tools for gathering information.

6. Collecting Evidence from Records and Reports

A record is any means of memorializing an event, person, place, or thing. Inspectors have the authority to review relevant firm records to determine compliance. The following are some common records that may be of relevance for inspectors: annual reports; production records; shipping reports; manifests; inventory records; sales reports; process records; permits; quality control records; waste management records; documentation of environmental management systems; employee training records; self-monitoring records; discharge monitoring reports; licenses; articles of incorporation; property records; logs; maintenance records; spill reports; safety records; and accident reports.

7. Closing Conference

The closing conference provides an opportunity to confirm inspectors' observations and review preliminary findings with facility personnel. This may also be the opportunity to explain observed violations to the company.

8. Report Writing

The objective for generating the report is to organize and coordinate all documentation and potential evidence in a comprehensive, understandable, and usable manner.

9. Referral for Follow-up/Enforcement

Examples of follow-up actions include: issuing a letter to the company; informing other inspecting bodies of the findings and observations; planning a follow-up inspection; writing notices; and possibly initiating a criminal or civil action to induce compliance.

10. Appearance as a Witness

The inspector may be called as a witness if civil or criminal enforcement actions are taken.

7.5.1 Step 1: Targeting Inspections

More frequent inspections generally promote improved compliance. However, most enforcement programs generally do not have enough resources to adequately inspect all regulated facilities.

A two-tiered monitoring approach has proven effective in reducing environmental management costs while maintaining an adequate level of deterrence. Under this approach, "high risk" targets—those firms considered likely to be in non-compliance—receive more frequent, thorough, and expensive inspections than "low risk" targets. In selecting sources for more intensive inspections, enforcement programs can consider several factors:

- A source's potential to harm the environment.
- The complexity of the inspection needed to evaluate compliance.
- The compliance history of the source.
- The compliance history of similar sources.

- The availability of self-reported data.

Another strategy for conserving program resources is to start with a less expensive inspection. If the source is in violation, enforcement action should be taken to require the source to correct the violation and conduct more extensive self-monitoring. If the monitoring data indicates a continued violation or if there is any other reason to suspect a violation, another more intensive inspection should then be conducted. This shifts some of the burden of data gathering to the source and postpones resource-intensive inspections until concerns raised in lower-level inspections and monitoring warrant greater expense. Some environmental management programs offer to limit enforcement actions, and subsequent penalties, in exchange for immediate correction of violations discovered during inspections.

Other considerations in targeting inspections include:

- The need to include a random component in any inspection program. This will help reveal the true scope and nature of different risks by examining problems unlikely to be revealed by targeted activities. Random inspection activities can include the location, timing, or scope of the inspection.
- The need to address multi-media issues. Most inspection programs have traditionally addressed a single environmental medium, such as air, land, or water. Many government agencies have started stressing multi-media inspections, sometimes by combining inspections from different agencies.

7.5.2 Step 2: Preparation of an Inspection Plan

Developing an inspection plan before going on site helps ensure the quality and value of the inspection. An inspection plan provides an organized step-by-step approach to conducting the inspection. Some flexibility, however, is important to allow the inspector to adapt to unanticipated situations at the facility. The inspection plan must clearly establish duties for each member of the inspection team. This promotes efficiency, as well as avoiding any confusion. Box 7-6 lists some common elements of an inspection plan.

7.5.3 Step 3: Collecting Evidence

The inspector is responsible for gathering information to determine whether a facility is in compliance and for collecting and documenting evidence of any violation. This evidence is used to support the development of enforcement cases, as well as to help the inspector prepare for and give testimony when required. Therefore, inspectors are required to follow appropriate procedures for preservation of evidence. If standard procedures are not followed, then there is

a risk that the evidence may be rejected in a court of law and that the time and expense invested in building a case will have been wasted. Standard checklists are often developed for different types of inspections to ensure that the inspections properly cover all of the necessary aspects and are fair and objective. Sometimes inspectors are responsible for determining whether a violation has occurred, while other times, program staff or legal staff make this determination. Involvement of legal staff is essential in interpreting requirements, to determine whether there has been a violation. Because of the potential risk to subsequent enforcement cases, most inspectors in U.S. enforcement programs do not make decisions about whether a violation has occurred.

BOX 7-6: ELEMENTS OF AN INSPECTION PLAN

Objectives

- What is the purpose of the inspection?
- What is to be accomplished?

Tasks

- What information will be reviewed (e.g., permits, licenses, regulations, previous inspection reports, and information on the history of compliance)?
- What coordination with laboratories, other environmental programs, lawyers, or government agencies is required?

Procedures

- Which specific facility processes will be inspected?
- Have inspectors established a right of entry to the facility?
- Will the inspection require special procedures?
- Has a quality assurance/quality control plan been developed and understood?
- What equipment will be required?
- What are the responsibilities of each member of the team?

Resources

- What personnel will be required?
- Has a safety plan been developed and understood?

Schedule

- What will be the time requirements for and order of inspection activities?
- What will be the priorities? What *must* be done, and what is *optional* to complete?

7.5.4 Step 4: Written Inspection Report

The inspector must record notes on every aspect of the inspection and gather additional evidence, such as physical samples, photographs, and copies of facility documents. As soon as possible following the inspection, the inspector must prepare an inspection report which references any additional evidence collected (photographs, documents, etc.). The final report will serve as the basis for any testimony by the inspector and will likely be used as evidence if enforcement actions are taken.

Prior to finalizing the report, any samples collected must be sent to a laboratory for analysis, in accordance with the protocol outlined by the agency to ensure reliable evaluation of samples. It is also important to establish and preserve the chain of custody. The evidence should remain under the care of an appropriate authority in order to reduce the possibility of the evidence being corrupted. The subject of the inspection, however, may be given the right to have the samples examined by their own experts, provided that rules and procedures are in place to protect the evidence from tampering.

Analytical data should be interpreted and presented in the final inspection report. Elements of an inspection report may include:

- The specific reason for the inspection.
- Participants in the inspection.
- Statement that all required procedures for conducting the inspection were obeyed.
- A chronological list of all actions taken during the inspection.
- An inventory of the evidence obtained during the inspection.
- Observations made during the inspections.
- The results of sample analyses related to the inspection.

7.6 Building an Effective Inspection Program

7.6.1 Recognizing the Important Role of Inspectors

Inspectors have great influence on the success of an environmental management program. They are responsible for identifying facilities that are out of compliance, and for gathering evidence for enforcement actions. They are often the only environmental officials that a facility manager will ever meet in person and may serve as the key witnesses in enforcement cases.

It is generally desirable for environmental management programs that the inspectors carrying out formal inspections be different from those who perform the compliance promotion

and assistance programs. A program should not assign inspectors to monitor the same facilities where they have provided special technical assistance. This will help minimize the risk (and appearance) of preferential treatment by agency staff members who have spent considerable time and energy consulting with a firm. In some instances, however, resource constraints and the need for particular expertise make this difficult. For example, there may be a limited number of energy plant inspectors with the requisite technical expertise so an agency may not have enough manpower to change inspectors every visit. In cases such as these, the agency should set a goal of changing the inspector responsible for that facility as often as practicable – perhaps every few years.

7.6.2 Training

Inspectors require training in a broad range of skills: legal, technical, administrative, and communication. (See Box 7-7). They need to be technically competent in the subject matter of the inspections they perform and skilled in obtaining crucial facts and collecting and preserving evidence of non-compliance. They also need to be skilled in managing projects, working as part of a team, and communicating effectively. Communications range from entry conversations to complex cross-examination in cases of serious violations. It is useful if inspectors are trained in negotiation techniques and conflict resolution, because some inspections may become adversarial. In such cases, inspectors must be able to prevent a hostile situation from escalating. The training and integrity of inspectors are critical to effective enforcement programs.

7.6.3 Support Resources

The kinds of equipment required to support an inspection vary depending on the type and purpose of inspection. Equipment needed may include:

- **Safety equipment** to protect the inspector from any hazards that may be encountered during the inspection.
- **Documentation equipment** to record information and evidence, including cameras, film, pocket calculators, tape measures, and logbook.
- **Sampling equipment** to take samples of soil, water, or air.
- **Equipment to transport samples** to avoid contamination.
- **Analytical equipment** to examine the environmental samples taken at the facility.

BOX 7-7: ELEMENTS OF INSPECTOR TRAINING

Basics of Compliance and Enforcement

- Introduction to Environmental Compliance
- Summary of Environmental Requirements
- Components of an Enforcement Program
- Organizational Structure for Compliance and Enforcement
- Role of the Inspector/Field Investigator

Legal Aspects of Inspections and Enforcement

- Enforcement Litigation
- Entry and Information-gathering Tools
- Evidence

Pre-inspection Activities

- Pre-inspection Planning and Preparation
- Administrative Considerations for Inspectors

On-site Activities

- Gaining Entry and Opening Conference
- Ensuring Inspector Health and Safety
- Records Review
- Physical Sampling
- Interviews
- Observations and Illustrations
- Closing Conference/Travel Security Measures

Post-inspection Activities

- Reports and Files
- Laboratory Analysis
- Enforcement Proceedings

Communications

- Serving as an Expert Witness at Enforcement Proceedings
- Press and Public Relations
- Communications Skills

7.6.4 Program Design

Policymakers have many issues to consider when designing an inspection program. For example:

- **Selecting Facilities for Inspection.** How are facilities chosen for inspection? What proportion of inspections should be “routine,” and what proportion should be “for

cause”? How can routine inspections be distributed fairly and neutrally across the regulated community?

- **Announced Versus Unannounced Inspections.** When should inspections be announced versus unannounced? If inspections are announced, the facility’s managers can make sure that the information requested and any essential plant personnel will be available when the inspector arrives. Thus, announced inspections can be more efficient and comprehensive. Unannounced inspections, however, are more likely to discover the plant’s true operating conditions. They are particularly useful when there is reason to believe the source is in violation and is misrepresenting its self-reported data or is likely to destroy evidence if the inspection is announced. On the other hand, if inspectors need to collect particularly detailed information, it may be necessary to announce the visit so that the relevant experts are available.
- **Frequency of Inspection.** How often should a particular facility be inspected? Policymakers will need to balance the cost of inspections with the expected compliance benefit, while also considering the results of earlier inspections. Sources that are more likely to fall out of compliance may require more frequent inspections.
- **Who Should Inspect?** Which level of government will provide the most effective inspection force: national, regional, provincial, or local? Would it be more effective for the government to contract with an independent group to perform inspections? Numerous variables need to be considered when making these determinations, including cost, resources, experience, and political considerations.
- **Objectivity of the Inspector.** Care is needed to ensure that inspectors do not become so familiar with and sympathetic to certain facilities and facility managers that their objectivity is compromised. Some enforcement programs periodically rotate inspectors to avoid this possibility.
- **Legal Authority.** What legal authority do inspectors have to enter facilities? What form of identification is used to prove the inspector’s authenticity? What procedures will be taken if the facility refuses to allow the inspection? Must the inspector have consent before entering? Does the inspector need a warrant?
- **Role of the Inspector.** Should the inspector determine whether a violation has occurred or simply gather information? Without a clear role and authority, the inspection may fail to meet the needs of enforcement.

- **Comprehensiveness of the Inspection.** What data should inspectors gather? Should inspections focus on data needed under a particular regulation, permit, or license, or should inspectors try to gather data relevant to several environmental regulations, permits, or licenses? The advantage of focused inspections is that it is easier to train inspectors for these inspections. The disadvantage is that more focused inspections may fail to detect non-compliance in areas not specifically covered by those inspections.
- **Inspection of Related Activities.** To what extent should inspectors gather data on related company activities that may have an effect on environmental quality, such as preparedness for chemical emergencies, pollution prevention activities, and waste minimization programs? Which environmental media, including land, air, and water, should inspectors examine?
- **Data Quality.** How can the quality of data be ensured? Ways to help ensure data quality include initial reporting procedures, processes for review and confirmation of the data, and schedules and procedures for auditing the program's reporting and recordkeeping system. Guidance also should be developed to ensure the quality of the laboratory analysis supporting the inspection.
- **Consistency of Sampling and Analytical Procedures.** Use of consistent methods and procedures for sampling and analysis is important to ensure data quality, fairness of enforcement, and the value of the results for legal proceedings. Both inspectors and analytical laboratories require guidance on appropriate procedures.
- **Documenting the Violation.** How should the information gathered by the inspector be documented? The information's value to the program may depend on factors such as its clarity, completeness, and utility as evidence in a court of law.
- **Closing Conference.** Should the inspection include a closing conference? A closing conference provides an opportunity for the inspector to make company managers aware of any violations and what the consequences of continuing non-compliance would be. In some cases, the inspector may suggest ways to correct the violation. A closing conference helps educate the regulated community. However, information conveyed by the inspector could undermine subsequent legal actions taken against the facility. For example, facility managers could claim the information conveyed by the inspector contributed to non-compliance if the information was in any way misleading or not sufficiently comprehensive. Program lawyers may prefer

that inspectors draw no initial conclusions and convey no information about compliance to the facility.

- **Inspector Training.** How can inspectors be adequately trained to gather accurate information and (if relevant) provide technical assistance? What training is needed to ensure the health and safety of inspectors? Are the inspectors conscientious of ethical conduct and quality assurance?

7.7 Self-monitoring, Self-recordkeeping, and Self-reporting

7.7.1 What are self-monitoring, self-recordkeeping, and self-reporting?

Self-monitoring, self-recordkeeping, and self-reporting are three ways in which sources can be required to track their own compliance and record the results for government review. It differs from the auditing and environmental management systems in that the latter are broader, often voluntary, measures that government encourages the regulated community to adopt in order to improve that community's compliance and environmental performance. Self-monitoring, self-recordkeeping, and self-reporting, in contrast, represent specific requirements placed on the regulated community to collect and maintain identifiable information.

In self-monitoring, sources measure an emission, discharge, or performance parameter that provides information on the nature of the pollutant discharges or the operation of control technologies. For example, sources may monitor groundwater quality or may periodically sample and analyze effluent for the presence and concentration of particular pollutants. Sources may also be asked to monitor operating parameters on pollution control equipment (such as line voltage and electrical current used) that indicate how well the equipment itself is operating. Operating parameters are generally inexpensive to monitor and provide reliable data that can sometimes give a more accurate picture of emissions than occasional sampling and analysis of the emissions themselves. This type of monitoring has proved to be a cost-effective way for enforcement programs and sources to assure themselves that controls are operating correctly.

Self-recordkeeping means that sources are responsible for maintaining their own records of certain regulated activities (e.g., shipments of hazardous waste).

Self-reporting requires that sources provide the enforcement program with self-monitoring or self-recordkeeping data periodically or upon request.

7.7.2 Why choose self-monitoring, self-recordkeeping, and self-reporting?

Self-monitoring, self-recordkeeping, and self-reporting, when taken together, offer a number of advantages over traditional inspections. They provide much more extensive information on compliance than can be obtained with periodic inspections. They also shift some of the economic burden of monitoring to the regulated community. In addition, they provide a mechanism for educating the community about the compliance requirements. Finally, they increase the level of management attention devoted to compliance and may inspire management to improve production efficiency and prevent pollution.

Self-monitoring requires that reliable and affordable monitoring equipment be available to the regulated community. Self-monitoring relies on the integrity and ability of the source to provide accurate data. Reports will be misleading if the source either deliberately falsifies information or lacks the technical capability to provide accurate data. Therefore, programs using these approaches will need to establish some way to help ensure accuracy, *e.g.*, by requiring self-monitoring only in facilities with the appropriate technical capability or by developing quality control standards for monitoring and recordkeeping.

Self-monitoring, self-recordkeeping, and self-reporting are often required by environmental regulations. Firms have an incentive to under-report, but regulators can counteract this incentive through more stringent enforcement of the disclosure requirement. Enforcement officials can make these disclosure requirements facility-specific requirements via permits. Information from self-monitoring, self-recordkeeping, and self-reporting is used primarily to target inspections. It is also sometimes used as a basis for enforcement actions. When used in enforcement actions, it is usually supplemented by inspections to corroborate the accuracy of the data.

7.7.3 Designing effective self-monitoring, self-recordkeeping, and self-reporting

To use self-monitoring, self-recordkeeping, or self-reporting as part of an enforcement program, program officials need to provide guidance to the regulated community on: the standard procedures, methods, and instruments that should be used to obtain the data; how frequently data should be collected; and how the data should be recorded and reported. Some issues to consider in developing these requirements are:

- **Cost.** What will the cost and paperwork burden be to industry and government?
What will the benefits be? Are the benefits worth the cost?

- **Technology Requirements.** Is technology available for monitoring? How much does it cost? How accurate and reliable is it? How easy is it to learn how to operate the equipment to get accurate results?
- **Data Use.** How exactly will enforcement officials use the data? What information will the data provide about violations or compliance success? What is the minimum amount of data that will be useful?
- **Extent of Requirements.** Should the source be required to report all data or just data that indicate a potential violation? Proponents of the “all data” requirement argue that management pays more attention to routine reporting and that enforcement officials can better control the quality of data. Proponents of exceptional reporting³⁶ argue that this approach is much less expensive, and that the “all data” approach may discourage sources from voluntarily conducting additional monitoring that they feel may be valuable.
- **Public Disclosure.** Should the self-reported data be made available to the public? Most U.S. environmental laws require that self-reported data be made available to the public. This publicity deters violations and failure to report, especially when the law gives citizens the right to sue sources.
- **Self-certification.** Should senior industry officials be required to certify that the facility is in compliance? Increasingly, U.S. laws are introducing this requirement and making senior officials personally and criminally liable for false reporting. This is an effective way to elicit the attention and cooperation of senior management in achieving compliance. Such requirements are meaningful only if they are backed by clear guidance and procedures for self-certification. Self-certification may also include a requirement to report violations and efforts to correct them.

Different compliance monitoring program objectives require different capabilities in a self-monitoring system. As a result, the structure of a self-monitoring program is affected by the program’s objectives. For example, a self-monitoring program that is used to identify cases warranting enforcement action must identify violations of applicable standards in sufficient detail and be based upon sufficiently reliable data in order to support initiation of an enforcement action. In contrast, a program that uses source self-monitoring primarily to increase awareness in the regulated community with regard to its environmental compliance status (and perhaps, secondarily to deter environmental violations) may be broad in scope but require less active data management by the regulatory agency.

With fixed interval reporting,³⁷ infrequent reporting may make it difficult for the regulatory agency to make accurate assessments of an entity's environmental performance, as the reports will not provide a cohesive, continuous picture of a facility over time. On the other hand, reporting too frequently may result in unnecessary burdens on both the regulatory agency and regulated entities and may also result in information being collected and submitted that has little added value. The regulatory agency must ensure that the reporting intervals are appropriate to meet its goals. Interval reporting may also be dependent on an entity's compliance history or size. Entities with good compliance records may not be required to report as often as those with poor compliance records. Likewise, smaller entities (both in size and discharge amounts) may have less of a reporting burden.

BOX 7-8: SELF-MONITORING IN CANADA³⁸

Canada requires self-monitoring for pulp and paper manufacturers and metal mining operations. Frequency of monitoring can range from continuously to monthly. Pulp and paper mills are required to monitor Biochemical Oxygen Demand three times a week, Total Suspended Solids daily, acute lethality weekly (using *Daphnia magna*) and monthly (using rainbow trout), and pH, flow, and electrical conductivity continuously.

If a facility fails the monthly acute lethality test using rainbow trout, the test frequency is increased to weekly. In addition, pulp and paper facilities are required to self-monitor the chemicals 2,3,7,8-TCDD and 2,3,7,8-TCDF during each month in which the chlorine bleach plant was operating. If no measurable concentrations are detected for three months, the frequency is dropped to quarterly. The regulated facility may have a qualified laboratory onsite to collect and analyze the samples, or it may hire outside contractors to collect or analyze the samples.

7.8 Citizen Monitoring

7.8.1 Citizen Monitoring Generally

Citizen monitoring can help government agencies identify violations and is particularly important when resources for government monitoring are scarce or insufficient. Citizens can contribute to enforcement efforts by tracking industrial environmental performance through independently compiled emissions data or compliance reports produced by regulated entities.

In some countries, governmental institutions make use of citizen monitoring that may already be taking place, independent of any authorizing legal provisions. Formal cooperative partnerships are also sometimes established between citizens and the government for monitoring. For example, in the United States, a number of citizen organizations teach citizens to walk streams, identifying locations of pollutant emissions and observing the effects of those

emissions on water quality or indicator species. The Izaak Walton League of America is one such organization that trains citizens to monitor the environment. Their findings are reported to federal and state agencies through a national clearinghouse. State agencies also help to fund the League's training and reporting programs.³⁹

Another formal vehicle for public participation in monitoring is the establishment of coordination agreements between the government and citizen organizations. In the Philippines, multi-party monitoring has enabled local community residents, NGOs, and industrial project proponents to join representatives from the Department of Environment and Natural Resources to undertake post-environmental impact analysis compliance monitoring. The Department institutionalized multi-party team monitoring by creating, in each regional office, a Regional Community Advisory and Monitoring Committee whose membership includes NGOs and the private sector. The law requires that committees be involved in all phases of the environmental impact analysis, including compliance monitoring.⁴⁰

An increasingly useful monitoring mechanism for citizen enforcement of industrial environmental standards is the use of pollutant release and transfer registers. These registers enable citizens to monitor industrial environmental performance by providing detailed facility-specific data on types, locations, and amounts of hazardous substances released on-site and transferred off-site. In several countries, including Canada and the United States, certain corporations are required by law to compile and submit this data to the federal government, which then makes the information publicly accessible. Equipped with detailed information on facility-specific emissions, citizens can track compliance, work directly with corporations to encourage compliance, and help governments identify violations.

The specific type of information reported in pollutant release and transfer registers and the range of facilities covered vary from country to country. Key elements that define the scope of such registers include: the types of facilities required to report; the thresholds for staff size and chemical use above which a facility must report; and the types of pollutants covered and how their use is quantified.

7.8.2 Citizen Involvement in Inspections

Some countries allow citizens to participate in compliance inspections conducted by government officials. Usually, the citizen must have been involved in the complaint process prior to the inspection. For example, water quality legislation in Argentina allows private parties who have filed a complaint about a facility to participate in any inspection of the facility during the investigation.⁴¹ In some countries, government agencies are allowed to contract with citizen

groups or other associations to enlist their assistance in inspection efforts. (See Box 7-9 for examples).

BOX 7-9: EXAMPLES OF CITIZEN INVOLVEMENT IN INSPECTIONS⁴²

In some countries, government agencies are allowed to contract with citizen groups or other associations to enlist their assistance in inspection efforts. For example, under Estonia's Nature Protection Act, citizens can be deputized as "public inspectors" to monitor compliance with laws, regulations, and permits concerning hunting, fishing, and forestry.⁴³ They are permitted to write protocols about violations of nature protection rules, but they cannot take payment.

Some countries allow citizens to demand inspections under limited circumstances. For example, in the Czech Republic, under the Building Act, parties to the land planning decision and investment permitting process have the right to demand the inspection of facilities before and after completion.⁴⁴

7.8.3 Public Complaint Processes

Public complaint processes facilitate citizen participation in administrative enforcement efforts in many countries. Typically, these processes establish a mechanism for citizens to submit complaints to the government concerning activities that are causing environmental harm or ecological imbalance. The government is then required to address complaints and respond in a timely manner. Public complaints can be very useful in drawing government attention to enforcement problems that may otherwise go unrecognized or escape proper response.

Some countries have an independent complaint committee or designated staff member (ombudsman) at the national or local level established to handle citizen complaints. These institutions are usually funded by, but otherwise independent of, the government and are competent to deal with complaints on the basis of statutory rules. Oftentimes, the laws creating the ombudsman position regulate what kinds of complaints may be reviewed.

Poland, for example, created a position called the Commissioner for Civil Rights Protection. The Commissioner's role is to receive and manage complaints about infringements of citizens' rights and freedoms determined by the Constitution and other provisions of law. The position is not specific to environmental law, but environmental issues fall under the Commissioner's jurisdiction and historically have been the foci of some of its activities. The Commissioner does not have authority to rule on administrative matters, but can recommend or appeal decisions, suggest legislative initiatives or procedural amendments, and pursue solutions to specific violations to promote compliance with the law.⁴⁵

Citizens may also be able to use informal complaint mechanisms or petitions to draw government attention to enforcement issues. In Mexico, for example, the Federal Ecology Law, and parallel state laws, enables any person to file a complaint with the Federal Environmental Protection Agency regarding acts or omissions causing ecological imbalance or injury to the environment.⁴⁶ The Agency then is required to investigate the problem and issue publicly available, non-binding recommendations. These recommendations may have evidentiary value for future litigation. If the Agency finds violations, it may take immediate administrative action.⁴⁷ Throughout Mexico, this process is the principal vehicle for public participation in administrative enforcement matters, and it seems to be an important mechanism for focusing government attention on enforcement problems. To receive complaints, two states have established toll-free telephone “hotlines,” and another staff has set up a green mailbox.

7.9 Area Monitoring

Additional information on compliance status can be gained by area monitoring, i.e., monitoring environmental conditions near a facility. Area monitoring includes ambient monitoring, remote sensing, and over flights.

7.9.1 Ambient Monitoring

Ambient monitoring includes any monitoring to detect pollutant levels in the ambient air, ground, or surface waters near a facility. The main problem with ambient monitoring is that it can be difficult to demonstrate that the pollutants measured came from a particular facility. Ambient monitoring is most useful when a source is the only significant polluter in the area or when its emissions have a characteristic composition that serves to “fingerprint” them. In these cases, ambient measurements clearly suggest potential violations at a facility and can be used to target inspections. Otherwise, ambient data rarely can be used alone to prove a violation because of the difficulty of proving a connection to the source.

7.9.2 Remote Sensing via Satellite and Aircraft

Satellites and aircraft can be used as remote tools to monitor compliance with environmental requirements and help target inspection activities. Satellites can provide detailed information on indicators of non-compliance, such as chemical spills, impervious surface area, forest cover, oil discharges, smoke plumes, illegal development or logging, and mining operations. Commercial satellite imagery is available in sub-meter resolution.

Similarly, aircraft over flights can be used for compliance monitoring and promotion. Over flights can be used to make detailed, time-sensitive observations of potential areas of

illegal activity. For example, aircraft-mounted cameras can monitor the location and condition of dikes and fences at a regulated facility, observe loading and unloading of hazardous materials, and even record physical evidence such as license plate numbers. Over flights may also be used to detect facilities subject to environmental requirements, detect facilities that may not have registered for a program or filed required notifications, and determine the relative locations of wastewater discharges, air emissions, hazardous waste management facilities, water supply intakes, populated areas, etc. Box 7-10 offers an example of over flights in the Netherlands.

BOX 7-10: OVER FLIGHTS IN THE NETHERLANDS

Over flights have been used very successfully in the Netherlands. Airplanes and helicopters are used in a pollution context to detect illegal discharges and dumps and in a biodiversity context to detect illegal timber removal or illegal land clearing. The responsible parties are notified about the detected violations and requested to act where necessary. The program became more successful when helicopters began to work simultaneously with ground vehicles. Sighted violations were reported to ground personnel who immediately proceeded to the scene and dealt with the situation. Periodic aerial photographs of wreck yards and dumpsites provide a good record of these operations and chronicle the change enacted by these enforcement activities. Where appropriate, these photographs can be used in later investigations.

8. ENFORCEMENT

8.1 Introduction

Enforcement is the backbone to any compliance program. Strategies involving education and assistance, monitoring and inspections, and incentives are only effective if backed by a credible threat of enforcement sanctions.

Effective enforcement programs deter illegal conduct by creating negative consequences for those who violate the law. A single enforcement action can have a cascading effect on potential wrongdoers, encouraging them to change their behavior to comply with the law. For deterrence to be effective there must be: 1) a high likelihood that the violation will be detected; 2) swift and predictable responses to violations; 3) responses that include appropriate sanctions; and 4) a perception among violators that all of these elements are present.

This section discusses the enforcement process, designing an enforcement response policy, types of enforcement responses, choosing between enforcement responses, negotiations and settlements of disputes, and citizen enforcement.

8.2 The Enforcement Process

8.2.1 Protecting Basic Rights

Every nation has its own unique legal system, laws, and culture. However, most democratic institutions have processes to balance the rights of individuals with the government's need to act, often quickly, on behalf of the public. Processes that may be used to ensure fairness of enforcement responses include:

- **Notice.** Some enforcement programs require that a notice of violation be issued before any formal enforcement action is pursued. The violator may be offered an opportunity to: 1) contest the finding of violation; or 2) correct the violation within a specified time frame to avoid further government action.
- **Appeals.** There are often several points in the enforcement process when a violator can appeal the finding that there is a violation, the remedial action required by the enforcement program, or the severity of the proposed sanction.
- **Dispute Resolution.** Most enforcement responses are bound to create disputes between program officials and facility representatives. In such cases, programs often use special procedures designed to resolve disputes.

In general, the more an enforcement action would restrict individual rights, the more protection the enforcement process provides, and the longer the process may take before final action is initiated.

8.2.2 Supporting the Enforcement Case

In typical enforcement actions, targeted parties will challenge findings, and officials will have to defend them in administrative proceedings or court. Therefore, enforcement officials should always be prepared to:

- Prove that a violation has occurred.
- Establish that the procedures and policies were fairly and equitably followed and that the violator is not being unduly “picked on.”
- Demonstrate the underlying environmental or public health need for the requirement being violated. This need is often met when the requirement is developed. However, it may be necessary to reiterate the importance of compliance with the requirement to justify and support an enforcement case. This is particularly true when a case is in a jurisdiction where the rule of law is well developed and it is being argued in front of an independent decision-maker who is not familiar with the requirement or its environmental or public health basis.
- Demonstrate that a remedy for the violation is available (*e.g.*, pollution control equipment, stopping a particular activity). Even though this is not usually the responsibility of the government, this information can be important to negotiations.
- Justify the proposed penalty.

8.2.3 Public Comment

In some types of cases and countries, such as in the United States, the public has a right to comment on enforcement agreements, orders, and decrees before they are final. All final agreements, orders, and decrees become publicly available. Public involvement is one way to ensure that violators are treated fairly and consistently. Indeed, it is the violators themselves who are most likely to review other previous enforcement actions that have been taken and attempt to use them during negotiations as precedents if they are favorable or distinguish them if they are not.

8.3 Designing an Enforcement Response Policy

Enforcement response policies describe how various enforcement authorities will be used to respond to the many different types of violations and violation situations. Such policies are important to ensure fairness. Fairness is particularly important when assessing monetary and criminal penalties. Fairness, and the perception of fairness, is critical to the credibility of an enforcement program. Key issues to consider when drafting an enforcement response policy are discussed below.

8.3.1 Criteria for Non-compliance

Whether a facility is in compliance is not always obvious. Specific guidelines and criteria are needed to distinguish compliance from non-compliance. These standards help ensure that all members of the regulated community are treated consistently and that enforcement is perceived as fair.

8.3.2 Authorities

To provide effective enforcement, the environmental management program needs the authority to act. In most countries, the range and type of response mechanisms available ultimately depend on the number and type of authorities provided to the enforcement program by environmental laws and related laws defining the enforcement processes. These authorities provide the legal basis for enforcement that is essential to the power and credibility of an enforcement program. Box 8-1 summarizes a range of authorities that may be useful for an enforcement program.

BOX 8-1: TYPES OF ENFORCEMENT AUTHORITIES ⁴⁸

Authorities Related to Remedial Actions

- Enter a facility.
- Take samples.
- Take documents.
- Question personnel.
- Impose a schedule for compliance.
- Permanently shut down certain parts of operations or practices.
- Temporarily shut down certain parts of operations or practices.
- Permanently shut down an entire facility.
- Temporarily shut down an entire facility.
- Deny a permit.
- Revoke a permit.

- Require a facility to clean up part of the environment.
- Emergency powers to enter and correct immediate dangers to the local population or environment.
- Seek compensation for damage caused by the violation.

Other Authorities

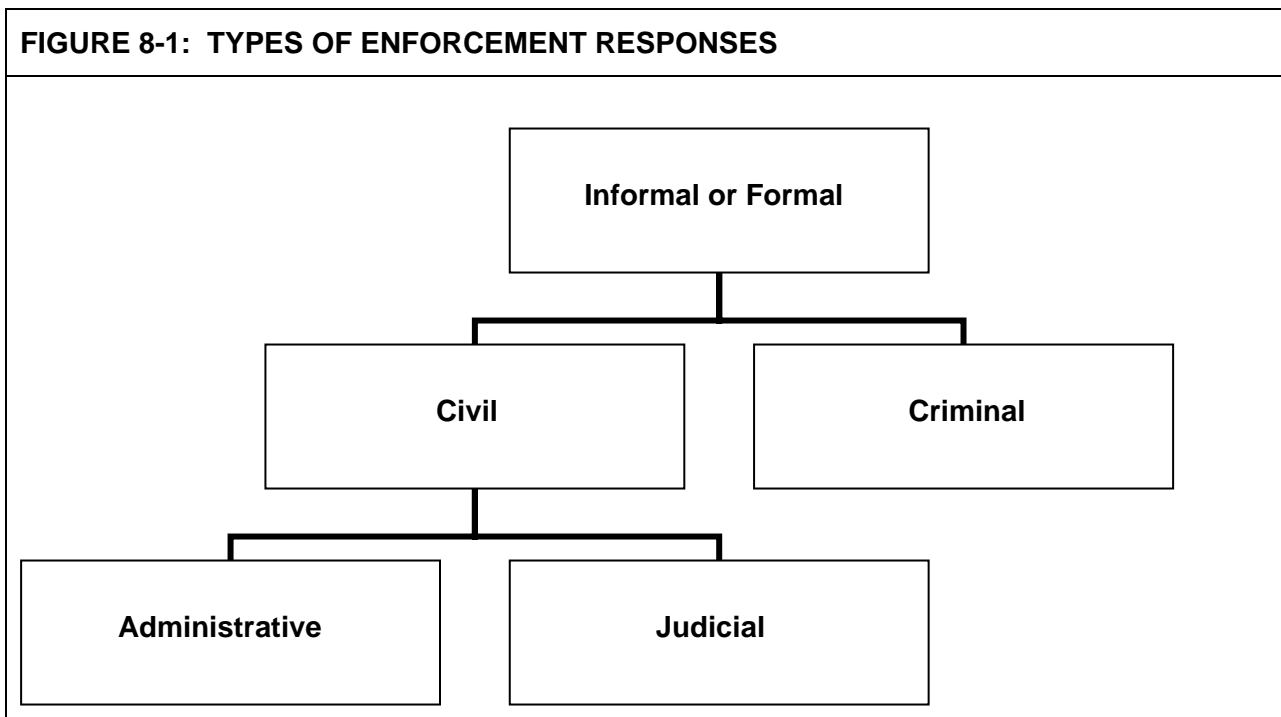
- Require specific testing and reporting.
- Impose specific labeling requirements.
- Require monitoring and reporting.
- Request information on industrial processes.
- Require specialized training (e.g., in emergency response to spills) for facility employees.
- Require a facility to undergo an environmental audit.

Authorities Related to Sanctions

- Impose a monetary penalty with specified amounts per day per violation.
- Seek imprisonment.
- Seek punitive damages or fines within specified limits.
- Seize property.
- Seek reimbursement for government clean-up expenses.
- Bar a facility or company from government loans, guarantees, or contracts.
- Require service or community work to benefit the environment.
- Place limitations on financial assistance.

8.4 Types of Enforcement Responses

Enforcement responses generally fall into the following categories (Figure 8-1):



8.4.1 Informal Mechanisms

Informal responses include phone calls, site visits, warning letters, and notices of violations. (See Box 8-2). Informal responses advise the facility manager what violation was found, what should be done to correct it, and when. The goal of informal action is to bring the violator into compliance. Many environment ministries prefer using informal, cooperative methods to gain compliance. Informal responses themselves do not penalize and cannot be enforced, but often lead to more severe response if they are ignored.⁴⁹

BOX 8-2: TYPES OF INFORMAL RESPONSES

Telephone Call

This is the easiest way to notify or remind a source that a violation has occurred and must be corrected. The caller may also request that the violator follow up with a letter that describes what action was taken to correct the violation.

Inspection

An inspector can make facility managers aware of a problem and provide assistance in correcting the problem. At the same time, an inspector can gather data about the problem. This better prepares the program for taking further action, if necessary, and displays the program's seriousness about following up if compliance is not achieved.

Warning Letters

Warning letters let facility managers know that they are violating the law and must correct the situation or face adverse legal action and other consequences. A warning letter may describe the potential sanctions for continued non-compliance, require a response from the violator detailing the corrective action taken, and suggest that the violator meet with compliance officials to discuss a plan for compliance. Other responses are considered if the violator fails to take advantage of this opportunity within a reasonable time.

Notice of Violation

Notices are more formal than warning letters. They notify a source that a violation has been detected and often give a deadline for taking corrective action. Notices of violation also warn about legal action and consequences that will follow if the violator does not take action by the deadline.

8.4.2 Formal Mechanisms

Formal enforcement mechanisms are backed by the force of law and are accompanied by procedural requirements to protect the rights of the individual. Formal mechanisms may be either civil or criminal as described below. Many countries have both civil and criminal remedies, while some have only criminal and administrative options. As indicated in Figure 8-1,

civil actions may be either administrative (*i.e.*, directly imposed by the enforcement program) or judicial (*i.e.*, imposed by a court or other judicial authority). Law must provide authority enabling the enforcement program to use formal enforcement mechanisms.

8.4.3 Civil Administrative Enforcement

There are two major types of civil administrative enforcement actions: orders and field citations.

Civil administrative orders are legal, independently enforceable orders issued directly by enforcement program officials. The order defines the violation, provides evidence of the violation, and requires the recipient to take corrective action within a specified time period. If the recipient violates the order, program managers usually can take further legal action using additional orders (or a court system) to force compliance with the order directly. What distinguishes administrative response from judicial response, defined below, is that the legal action is handled by an administrative system within the organization responsible for implementing the enforcement program. The administrative processes may be similar to those provided by the court system.

In the United States, administrative enforcement has two advantages. First, it does not require coordination with a separate prosecutorial agency. The other is that the administrative organization's own administrative law judges are specialized and usually more familiar with environmental requirements than judges in the general court system may be. Therefore, administrative actions usually are resolved more quickly and require less time and expense than judicial actions. This benefit may not exist, however, in countries where administrative law judges preside over cases from various administrative agencies, not just environmental agencies.

In the United States, as in most countries, administrative orders are not self-enforcing. If there is not compliance with the order, further enforcement action must be pursued through the judicial system.

Field citations are administrative orders issued by inspectors on-site in the regulated facility or "field." Typically, they require the violator to correct a clear-cut violation and pay a small monetary fine. Field citations are much like motor-vehicle traffic tickets. Depending on the procedural steps defined by the program, the violator can appeal the citation, pay it, or do nothing and risk more formal enforcement action. Recipients of field citations are often given opportunities to be heard and present evidence, but they usually do not have access to the full procedural protections provided by other enforcement actions.

Field citations can be a relatively efficient means to address certain violations that are clear and do not pose a major threat to the environment. To issue field citations, inspectors need training to identify the particular violations for which citations can be written.

8.4.4 Civil Judicial Enforcement

Civil judicial enforcement actions are formal lawsuits before the courts. Some nations with civil environmental enforcement authority rely exclusively on civil judicial actions to enforce environmental laws. Other nations have adopted both administrative and judicial mechanisms to carry out civil enforcement actions. Where available, administrative enforcement generally is preferred as a first response (with some exceptions), because judicial lawsuits are far more expensive, require more staff time (and often more sophistication), and may take several years to complete.

However, judicial enforcement has several advantages. It is often perceived as having greater significance than administrative enforcement and therefore more power to deter potential violations and set legal precedents. Also, the courts are often uniquely empowered to require immediate action to reduce more severe threats to public health or the environment. In particular, courts can usually grant preliminary injunctions, which order the suspension of activities that could cause irreversible harm pending trial. Thus, judicial enforcement can be essential in emergency situations. The courts also play an important role in enforcing administrative orders that have been violated and in making final decisions regarding orders that have been appealed. Therefore, when both administrative and judicial enforcement mechanisms are available, civil judicial responses are generally reserved for more serious or recalcitrant violators, cases where precedents are needed, or situations where prompt action is important to shut down an operation or to stop an activity.

8.4.5 Criminal Enforcement

Criminal judicial response is generally considered appropriate when a person or facility has knowingly violated the law, or has otherwise committed a violation for which society has chosen to impose the most serious legal sanctions available. Criminal sanctions may include imprisonment of culpable individuals in addition to monetary penalties. Criminal environmental sentences now may include supplementary requirements such as community service, environmental audits, restitution or remediation so that a criminal case may achieve environmental benefits in addition to punishing the wrongdoer.

Criminal cases require intensive investigation and case development. They require proof that a violation has occurred and may require proof that an individual or business (through

its employees) was knowingly responsible for the violation. Compare this to a civil or administrative case where a sanction can be imposed if the government simply proves the existence of a violation without regard to level of care or intention of the violator. Criminal cases typically provide more powerful information-gathering authority than the civil case. Therefore, specially trained criminal investigators may be necessary to develop criminal cases.

While a criminal response can be the most difficult and expensive type of enforcement, it can create the most significant deterrence and normative impact, since it personally affects the lives of those who are prosecuted, and carries with it a significant social stigma. Criminal sanctions can also help educate or shape preferences of potential violators in the regulated community. (See Box 8-3). The criminalization of environmental violations raises the norm of environmental protection to a higher level. When the public sees people going to jail for non-compliance, it adds credibility to the norm and thereby promotes compliance.

The ability to apply criminal enforcement to environmental cases depends on a country's legal system and on whether appropriate authority is provided in environmental or other laws. Non-environmental laws can often support environmental compliance. For example, in many jurisdictions there are generic statutes that make it a crime to report false information to the government or to defraud the public. In addition, an actor may be guilty of homicide if its environmental non-compliance caused fatalities.

Where a corporation is guilty of violating criminal law, the company can be placed on probation or strict judicial supervision. The loss of corporate autonomy serves as a powerful deterrent to other potential violators. Criminal convictions often also carry different consequences from those carried by civil judgments. A criminal conviction may result in the corporation being barred from being awarded government contracts, grants, or loans, or open the corporation to shareholder derivative suits or charges of securities fraud. In some cases, a criminal conviction may be admissible against the defendant in subsequent civil cases (whereas admission of a civil judgment may be barred by a rule of evidence). Under tax and bankruptcy laws, criminal fines may have treatments different from civil monetary penalties.

BOX 8-3: BRAZIL'S ENVIRONMENTAL CRIMES LAW⁵⁰

The Brazilian Environmental Crimes Law was passed in March of 1998 and is considered to be one of the most modern and comprehensive legal texts focusing on environmental crime. Some of the specific articles that give this law force are highlighted and explained below.

Broad Culpability

Article 2 is important because it establishes culpability, not only for the person who actually breaks a law, but notably also for any person in a position of authority who knew about the illegal activity and failed to stop it or inform the appropriate authorities.

Assignment of Penalties

Article 6 outlines three general criteria that should be considered in the assignment of penalties for an environmental law violation. They are:

- The seriousness of the act and the intent of the person who committed the act and additionally the seriousness of the repercussions of the act on the environment and human health.
- Whether the person who committed the act has a history of environmental law violations.
- The financial situation of the person who violated the environmental law.

Aggravating and Mitigating Circumstances

“Aggravating circumstances” are factors that can make a penalty more severe. The law requires that these factors be considered when assessing the seriousness of a crime:

- Frequency of the environmental crimes.
- Whether the offender was motivated by monetary gains, coercing another to commit the crime, or serious endangerment of public health.

“Mitigating circumstances” are factors that can make a penalty less severe. The law requires that these factors be considered when assessing the seriousness of a crime:

- Low educational level of the offender.
- The offender's remorse, exhibited by spontaneous reparation of the environmental damage or limitation of the harm caused.

Crimes Against Fauna

Section I of the law contains a detailed list of actions that are considered to be crimes against fauna, or animal life. A person who commits one of these acts has automatically violated the law and is subject to the prescribed penalty, imprisonment for six months to one year and a fine.

The law also includes the aggravating and mitigating circumstances that should be considered when determining the penalties. For example, the penalty is increased by half, if the crime is committed:

- Against rare species or species considered endangered, even if only at the site of violation.

- In the period in which hunting is prohibited.
- During the night.
- By abusing the license.
- Within a protected area.
- Using method or instruments capable of provoking mass destruction.

Crime Against Flora

Section II of the law contains a detailed list of actions that are considered to be crimes against flora, or plant life. A person who commits one of these acts has automatically violated the law and is subject to the prescribed penalty, which varies according to the crime. The law also includes the aggravating and mitigating circumstances that should be considered when determining the penalties. Thus, for the examples given here, the penalty is to be increased by one-sixth to one-third if:

A result of the act is the decrease of natural waters, soil erosion, or modification of climatic regime.

The crime is committed: during the period of seed dispersion; during the period of vegetation formation; against rare or endangered species, even if only endangered at the site of the crime; during times of flooding or drought; during the night, on Sundays, or holidays.

Pollution and Other Environmental Crimes

Section III of the law contains a detailed list of actions that are considered pollution and other environmental crimes. A person who commits one of these acts has automatically violated the law and is subject to the prescribed penalty. The law also includes the aggravating and mitigating circumstances that should be considered when determining the penalties.

Crimes Against Environmental Administration

The section on crimes against environmental administration generally includes violations committed by civil servants that harm the environment in some way. For example, making false statements or issuing environmental permits illegally. The penalties for each of these types of violations are prescribed in the law, as well as the aggravating and mitigating circumstances.

8.5 Choosing Between Enforcement Responses

Selecting an appropriate enforcement response raises several difficult issues, discussed below, which often need to be addressed in an enforcement response policy. These issues sometimes may be addressed in the wording of the authority provided by the environmental laws.

8.5.1 When Should Civil or Criminal Responses Be Used?

In many jurisdictions, administrative, civil, and criminal charges can be brought for violations of environmental laws. Serious violations are usually met with criminal charges. Many authorities believe that criminal charges should be imposed the second time a company is found to be out of compliance. Administrative sanctions include shutting down all or part of a company's operations and fining the company for each day it remains out of compliance.

Criminal sanctions include prison sentences, fines, forfeiture of property, and publicizing the court's verdict.

This issue is relevant only to countries that have or are considering implementing both civil and criminal authorities. In some jurisdictions, criminal enforcement actions are generally reserved for actions that deserve punishment, rather than correction (*e.g.*, where the violation is intentional). Criminal actions are also used to ensure the integrity of the regulatory scheme, (*e.g.*, to prevent facilities from operating without a permit or license). Factors that many jurisdictions consider when deciding whether to initiate a criminal enforcement action include actions that involve:

- Falsifying documents.
- Operating without a permit.
- Tampering with monitoring or control equipment.
- Repeated violations.
- Intentional violations (*e.g.*, decisions to violate based on greed).

In addition to these considerations, environmental management programs must weigh the following when choosing the type of enforcement:

- **Cost.** Civil proceedings are generally less taxing on program resources (*e.g.*, time, money, and personnel). Administrative proceedings tend to be the least costly of the three.
- **Resistance.** Criminal cases evoke stronger resistance from the targeted actor than civil litigation, and administrative action receives less resistance.
- **Control.** Regional program personnel typically have more control over administrative proceedings. Civil cases usually involve more "headquarters" personnel. Criminal cases are often litigated by a separate entity (*e.g.*, the Department of Justice in the United States). Administrative actions also avoid use of external judges and juries. (See Box 8-4).

8.5.2 When Should a Sanction Be Imposed?

For certain types of enforcement responses, it may be sufficient to negotiate a compliance schedule where the violator agrees to return to compliance and clean up a pollution situation by a certain date. But for other types of enforcement responses, sanctions may be needed in addition to other remedies. When deterrence is important to a program's compliance strategy, maximum impact will be achieved if each enforcement action is used to send a deterrence message to the regulated community. Sanctions help send this message.

Sanctions range from issuance of formal administrative orders, formal notices of non-compliance, and administrative consent orders, to fines, property seizures, facility closures, and imprisonment. However, sanctions may not be appropriate for violations that are not preventable, or that are too minor to focus government resources on imposition of a sanction. These considerations need to be balanced in deciding when to impose a sanction.

BOX 8-4: GUIDELINES FOR PROSECUTING ENVIRONMENTAL CASES IN THE UNITED STATES⁵¹

In 2007, the U.S. Environmental Protection Agency (EPA) released guidance to help determine which criminal enforcement actions to pursue under its “high impact policy.” This policy is intended to focus EPA enforcement actions on those cases with the greatest potential to protect human health and the environment. The policy is a response to criticism that the EPA has pursued fewer case referrals for civil and criminal violations of environmental laws in recent years. In selecting environmental violations against which to bring enforcement actions, the guidance considers whether a violation carries significant harm or risk of harm, what cases are likely to promote deterrence, and what cases would promote agency and national enforcement priorities.

8.5.3 Should a First Enforcement Response Include a Sanction?

There are two basic approaches to this issue. One approach does not seek a sanction for a first violation but imposes a stiff sanction if non-compliance continues. This approach is based on the belief that every facility should be given at least one opportunity to correct its problems before it receives a sanction. This first approach is most successful when violations are easy to detect, and when the enforcement program has an excellent track record of detecting violations, diligently following up on violators to verify compliance, and imposing stiff sanctions for continued non-compliance.

The second approach is to impose sanctions for first violations. This is based on a belief that lack of a penalty may encourage facilities to postpone compliance activities until the violation has been detected. This approach is essential for violations that are difficult to detect. Without the threat of a sanction, a facility might be willing to play the odds that it will not be detected, with the thought that it will only fix the problem if detection occurs.

8.5.4 What Type of Sanction Should Be Used?

Depending on the authorities provided in environmental laws (see Box 8-1), enforcement officials often have a choice among several types of sanctions. As mentioned above, sanctions

range from issuance of formal administrative orders, formal notices of non-compliance, and administrative consent orders to fines, property seizures, facility closures, and imprisonment. The enforcement policy will need to provide guidance on when these various types of sanctions are appropriate.

8.5.4.1 Monetary Penalties

Monetary penalties are the most common sanction used in enforcement responses. Environmental management programs may choose from numerous kinds of monetary penalties including fines specified per day per violation; punitive damages, including treble damages for violation for the failure to comply with a government order; reimbursement for government clean-up expenses; and even disqualification of the violating firms from government loans, guarantees, contracts, or financial assistance.

An enforcement policy needs to provide guidance on how to calculate an appropriate penalty for various types of violations. There are two significant constraints on the amount of a fine. First, while theory and empirical evidence suggest that high fines are effective deterrents, the political will to apply them is sometimes lacking. Second, if the fine is too large (*i.e.*, the target cannot afford to pay) then it will be perceived as unfair and will undermine both its normative and deterrent effect. Therefore, an appropriate fine is one that balances the economic factors listed in Box 8-5.

8.5.4.2 Denial or Revocation of Permits or Licenses

Program officials can deny an application for a permit or license or revoke an existing permit or license. This would require a facility either to cease (at least part of) its operation or operate in clear and direct violation of the law.

8.5.4.3 Shutdown of Operations

Program officials may be able to shut down operations. The threat of a shutdown can be an effective deterrent by directly and immediately affecting a company's profits.

8.5.4.4 Forced Shifts to New Technologies and Processes

Firms found in violation can be forced to re-evaluate their technologies and processes. This option has the advantage of addressing the environmental impact at issue, while improving the firm's environmental management to address future impacts. Such "innovation offsets" cannot only improve product quality and value but also may lower the total cost by allowing

companies to use a range of inputs more efficiently. Ultimately, this enhanced resource productivity can make companies—and countries—more competitive.⁵²

BOX 8-5: FACTORS THAT MAY BE USED TO CALCULATE A MONETARY PENALTY

Gravity of the Actual or Potential Harm to the Environment and Human Health.

Gravity-based penalties are graduated to reflect the seriousness of the violation. This sends a deterrence signal to the regulated community: the more serious the violation, the greater the penalty will be. Gravity may be calculated based on factors such as:

- Volume of release.
- Toxicity of release.
- History of non-compliance.
- Environmental and public health risk or impact.
- Importance to maintaining the integrity of the enforcement program.

Economic Benefit

Penalties can remove the economic advantage of non-compliance by recovering the economic benefit a violator may have gained by not complying. This type of penalty is important to maintaining fairness by ensuring that compliant facilities are not economically disadvantaged relative to non-compliant ones. These penalties remove the economic benefits of non-compliance, which include both avoided costs and profits from postponed expenditures. Avoided costs include operation and maintenance expenses that cannot be spent later, while benefits from postponed costs capture the time value of money or the interest earned when infrastructure or equipment is not installed when required. Penalties must be calculated to cancel out both benefits.

Ability to Pay

Enforcement officials must often consider a violator's ability to pay when calculating a monetary penalty. Penalties that are large compared to the facility's resources could force a facility to shut down, which can harm the overall community. Facilities that are given a severe monetary penalty may also threaten to move to another area where environmental regulation and enforcement are more lax. In such cases, enforcement officials may want to consider the deterrence benefits of severe penalties against the cost and hardship that the resulting unemployment would cause in the local community. Public pressure may have substantial impact on the monetary penalty level when jobs are threatened. Asking for substantial penalties also raises a risk that violators may choose to contest the penalty in court rather than pay it. A series of payments can be arranged in situations where a violator may have difficulty paying the full penalty at one time.

Other Factors

Other factors may include:

- Degree of cooperation by facility personnel with environmental officials.
- Whether the violation was self-reported by the facility.
- Degree of remorse by the responsible parties.
- The strength of the case—a weak case is less likely to withstand appeals on the part of the violator. In such cases, enforcement officials may lower the penalty to avoid making it worthwhile for the violator to try to appeal the penalty.

8.5.4.5 Prison Sentences

Criminal sanctions for managers or employees of violating facilities can be an extremely effective deterrent. Criminal sanctions can be imposed only where allowed by the legal system. For example, criminal sanctions can be sought if someone knowingly violates an environmental requirement or fraudulently reports data. Under U.S. Sentencing Guidelines, sentences for environmental crimes committed by corporations can be reduced if the corporation can demonstrate a comprehensive and committed corporate compliance program. This set of conditions in the United States seems to be improving corporate concern for compliance.

Criminal sanctions may be a difficult tool to utilize due to the extreme stigma associated with prison and/or the amount of resources often necessary to operate environmental crimes programs capable of routinely winning criminal convictions. In societies that place great emphasis on economic development, corporate or industry management officials may command large amounts of esteem and stature. This can make regulators hesitant to request enforcement measures as harsh as jail terms, and difficult for judges to impose criminal sanctions. It could also pressure regulators to discriminate when applying such measures. Both such results would tend to undermine respect for the regulation and would therefore impede compliance.⁵³

8.5.4.6 Denial of Government Funding

When violators are denied government funding, they are placed on a list of firms from which government agencies will not purchase goods or services and to which the government will not provide loans or guarantees. The lists are shared among all government agencies, and the firm's name is not removed until the firm returns to compliance. This is a valuable tactic when an industry depends on government purchases, loans, or grants but obviously not applicable to all firms.

8.5.4.7 Negative Publicity

As part of a sanction, violators may be required to publicize information about the violation. For example, a company may be required to pay for a full-page advertisement in local or national newspapers to proclaim its guilt. Company executives may be ordered to speak in public about their wrongdoing. In countries with strong public concern for environmental quality and a free market economy, negative publicity can have substantial economic implications for a facility. Negative publicity can also cause a corporation to lose prestige. Research indicates that potential loss of prestige can be a powerful deterrent factor.

8.5.5 Compensation for Environmental Damages

Environmental damage compensation can take two basic forms, monetary payments or restoration actions. Both require measurement of the environmental harm that was caused, sometimes a difficult task as intrinsic environmental benefits may be hard to put into economic terms. In addition to determining the amount of lost resources a monetary damage assessment also requires an estimate of the cost of restoring the resource and economic estimates of the value of the resources lost.

Damages are not the same as penalties. Both damages and penalties may be sought for the same action or event, for example, the release of a hazardous substance. Penalties are punitive and are paid to the government for violating the law. Damages are not punitive; they are compensation paid, or actions taken, to restore the environment and people injured by the event. The government acts in the public interest in seeking restoration damages in the same way that a company would seek damages for harm done to their property.

8.5.6 Penalty Calculation

Penalties must be administered with great care and balance. Too light a penalty will not compel the regulated community to comply. If the penalty is too severe, the regulated community will perceive the regulation as unfair, and may expend resources fighting the regulation rather than complying with it.

It is important to keep in mind the difference between theoretical legal principles and practical application of these principles. Generally speaking, a low level of monitoring success (which is the result for monitoring systems) requires high penalties for deterrence. However, many courts will not deem high penalty levels proportionate to the offenses, and therefore it is unlikely that high penalties will be upheld or imposed by a court. Regardless, it is valuable for regulators to think through the different factors for calculating an appropriate monetary penalty. (See sample worksheet in Box 8-6; Box 8-7 provides a case example of a fixed monetary penalty).

8.5.7 Escalation of Sanctions

When an initial inspection reveals a facility to be in non-compliance, and a later inspection finds continuing violation, additional deterrence may be required. For this reason, it may be desirable to have a sliding scale of sanctions, which escalates with each new violation. At the top of the scale may be criminal penalties, both for the companies and for individual managers.

BOX 8-6: SAMPLE WORKSHEET TO CALCULATE A MONETARY PENALTY⁵⁴

Facility Name: XYZ, Inc.

Money the Facility Saved by Not Complying with Regulations

Costs avoided \$10,000
 Costs postponed \$ 5,000
 Total **(a)** \$15,000

Seriousness of the Violation

PAYMENT CALCULATION MATRIX

Potential for Harm (vertical)

Extent of Deviation from Requirement(s) (horizontal)

	High	Medium	Low
High	\$5000 to \$4000	\$3999 to \$3000	\$2999 to \$2200
Medium	\$2199 to \$1600	\$1599 to \$1000	\$999 to \$600
Low	\$599 to \$300	\$299 to \$100	\$99 to \$20

Penalty required based on potential for harm and extent of deviation from requirement (use the above matrix and personal judgment to determine the appropriate amount):

(b) \$3,000

Adjustment for the Duration of the Violation

Number of days of non-compliance

(c) 50

Total = [(b) x (20%)] x (c)

(d) \$30,000

SUBTOTAL

Subtotal = (a) + (d)

(e) \$45,000

Penalty Adjustment Factors⁵⁵

1. Degree of cooperation (+/-)

(f) +5%

2. History of compliance (+/-)

(g) -5%

3. Supplemental environmental projects⁵⁶ (+/-)

(h) -10%

4. Ability to pay (-)

(i) -5%

Total = [(f) + (g) + (h) + (i)] x (e)

(j) -\$6,750

TOTAL PENALTY

Total penalty = (e) + (j)

\$38,250

8.6 Negotiations and Settlements of Disputes

8.6.1 The Role of Negotiation

Enforcement actions create a stimulus and context for discussion and resolution. Negotiation is an integral part of enforcement. It is often used within the context of legal enforcement proceedings, and it enables both the facility and the concerned party or parties to consider the accuracy of facts, circumstances of the case, and variety of alternative responses. Negotiation provides an opportunity to obtain additional information and correct misinterpretations before pursuing legal action. It also provides an opportunity to reach a solution that satisfies all parties. Compliance can be enhanced when a signal is sent to the regulated community that, while pursuing an enforcement response, the government is willing to be responsive to the concerns and difficulties faced by the regulated community in achieving compliance and to work cooperatively to develop a satisfactory solution.

BOX 8-7: ASSESSING AND VALUING DAMAGE UNDER THE COASTAL ZONE MANAGEMENT ACT OF BARBADOS⁵⁷

The Coastal Zone Management Act, Law No. 1998-39, stipulates that any person damaging coral is guilty of an offense and is liable on summary conviction to a fine of \$300.00 BBD (approximately \$148.50 US) for every square meter of coral reef damaged, imprisonment for five years, or both. There is a standard procedure to determine the extent of damage to the coral reef area; the extent is usually spatial (length by width), but in some cases the depth of damage is also considered. This is mainly focused on anchor damage from dragging or chain sweeps. Fines are set forth in the Act. This method of valuing coral reef damage informs all processes of assessing compensation (including out-of-court settlements).

The Act also provides that any person who breaks off a piece of coral from a reef is guilty of an offense and is liable on summary conviction to a fine of \$5,000.00 BBD (approximately \$2,475 US), imprisonment for two years, or both. This fine is applied to persons caught “picking” corals for sale. As a practical matter, these cases can be difficult, as it is necessary to capture the individual with the corals in their boat while in the process of harvesting.

Negotiation is generally most effective when supported by a continuing threat of civil enforcement. If the threat abates, some facilities might attempt to use negotiation as a means of delaying compliance. Program officials can keep the threat real by maintaining a strict schedule for negotiation and a parallel preparation for legal action.

The negotiation process will vary from one culture and program to another. Some negotiations may be face-to-face between enforcement officials and the violator. Others may involve a variety of concerned parties (e.g., representatives of the local community, workers, and non-governmental organizations). In some negotiations, particularly where an impasse is reached, an experienced third party may be used to change the dynamics, provide new perspectives, and propose possible solutions that had not previously been considered. Box 8-8 describes some typical dispute resolution procedures.

The result of negotiations is a *settlement*—a documented official resolution to the situation, referred to as an “administrative consent order” or a “judicial consent decree” in the United States. The settlement is a legally binding agreement between the violator and the enforcement program (administrative) or a negotiated agreement that must be submitted to a court for consideration and final approval (judicial).

Two types of enforcement response usually are not negotiated. One is a request by enforcement officials for information from the violator. This usually is not controversial and therefore does not require negotiation. The other is the exercise by the enforcement program of emergency powers to protect public health and the environment. In an emergency, there is no time to negotiate.

BOX 8-8: TYPICAL DISPUTE RESOLUTION PROCEDURES

Face-to-face negotiations between program officials and the violator

These occur either:

- *Before formal enforcement response is pursued.* At this point in the process, the negotiation usually focuses on whether there has been a violation. If agreement is reached, there also may be a discussion of the required response and schedule for response.
- *After formal administrative or civil judicial enforcement action is initiated but before it is final.* These negotiations are carried out during settlement negotiations. The resulting agreement, or an administrative order, is placed before a final decision-maker, such as a judge, for approval.

Presentations before a decision-maker

In dispute resolution, often a judge or hearing examiner makes a decision about a fact or legal point after hearing both sides of the issue.

Use of third parties

Third parties (e.g., mediators, arbitrators, and facilitators) may be called for by program officials or by agreement of the parties to break an impasse. An experienced third party can change the dynamics, provide new perspectives, and propose possible solutions. Specialized third parties are particularly useful for resolving highly complex technical issues that a lawyer or judge may be unlikely to understand fully.

8.6.2 Creative Settlements: Leveraging Enforcement for Broader Results

Settlements can include any provisions that the enforcement program is authorized to impose on a violator. Depending on their legal authority, environmental officials may have some latitude to develop creative approaches for solving environmental problems through settlements. Creative settlements can also be used to leverage a single case to gain either greater environmental benefit or greater deterrence than would have occurred with a conventional settlement. Examples of creative settlements are described below.

Creative settlements often are linked to some limited reduction in monetary penalty or to an agreement to extend compliance schedules. Creative settlements also may be sought for violators with limited ability to pay or who demonstrate a strong level of cooperation with the government/enforcement program. In order to be effective, creative settlements should at the very least seek to capture the economic benefits of non-compliance.

8.6.2.1 Pollution Prevention

Pollution prevention settlements involve an agreement by the facility to convert to practices or processes that reduce or eliminate the generation of pollutants and wastes at the source. Pollution is abated when the volume or the toxicity of pollutants is reduced. In manufacturing, for example, pollution prevention includes activities such as substituting chemicals, reformulating products, modifying processes, improving house-keeping, and recycling on site.

Pollution prevention projects may correct the violation directly or may reduce pollution unrelated to the original violation. Pollution prevention settlements help to ensure that violations will not recur, and they reduce the total risk that a facility's operation poses to public health and the environment.

8.6.2.2 Pollution Reductions Beyond the Level Required for Compliance

Settlements can be negotiated in which the violator agrees to reduce pollution beyond the level required for compliance with the requirements.⁵⁸ For example, a violator may agree to install more effective control technologies that reduce the overall discharge of pollutants.

8.6.2.3 Environmental Auditing

Environmental auditing is a periodic, systematic, documented, and objective review of a regulated facility's compliance status, management systems, and overall environmental risk. Many nations, as well as the International Chamber of Commerce, have encouraged the use of

auditing as an essential tool for regulated facilities to ensure compliance and effectively manage their environmental risks.

Environmental audits are sometimes required as part of settlements in two situations. First, they have been used where a source shows a clear pattern of violations that suggests a management problem. In such cases, a settlement may include an agreement that the source pays for an environmental audit to identify and correct the internal management problems that led to the repeated violations. Second, if a violation is likely to be repeated at other facilities owned by the same company, a settlement may include an agreement that: 1) the company or a third-party auditor will audit for that violation at the other facilities owned by the company; and 2) any violation will be reported and corrected.

8.6.2.4 Environmental Restoration

As a result of an environmental restoration settlement, a facility not only repairs the damage done to the environment because of the violation, but also agrees to provide further enhancement of the local environment. If the environmental damage caused cannot be restored, the settlement may require the facility to restore a comparable environment in another location.

8.6.2.5 Publicity

In public awareness settlements, the violator agrees to undertake some activity to increase the awareness in the regulated community of the need for compliance and ways to achieve it. For example, the violator could sponsor a series of seminars to provide information to a specific industry group on how to correct violations common to that industry. The violator could also sponsor public announcements on television and radio to discourage violations or describe how new technologies can be used to correct violations. Violators who sponsor public awareness projects must also agree to clearly state to the public that the project was undertaken as part of the settlement of an enforcement action brought by the government.

8.6.2.6 Training

Training settlements can be used to correct internal compliance problems within a company or organization. Violators that are industry leaders may be required to design and conduct compliance training for others within the same industry group.

8.6.2.7 *Alternatives for Sources Unable to Pay Penalties*

Some violators cannot afford to pay the monetary penalty normally imposed for the particular type of violation. If the authorities decide they should continue to operate, they may agree to alternatives that do not present an undue financial burden that would force the company to close. In such cases, they may reduce the penalty, allow for payment over time, or look for alternatives to monetary payment such as donation of their time and effort for voluntary improvements to environmental quality.

8.7 Citizen Enforcement

8.7.1 Citizen Suits

Some jurisdictions give private parties the right to bring enforcement actions before agencies or the courts. There are numerous benefits to providing opportunities for citizen enforcement. First, local citizens, directly affected by the behavior in question, are oftentimes better situated to detect and evaluate the impact of that behavior on the environment and their community. (See Box 8-9). Second, citizen enforcement saves the environmental management program money. Finally, private enforcement offers political cover to the environmental management program when the violator is a wealthy and powerful influence in the jurisdiction.

BOX 8-9: COMMUNITY ENFORCEMENT ALONG THE PHILIPPINE COAST⁵⁹

The Philippines, which consists of more than 7,000 islands, is characterized by great marine biodiversity. However, coastal resources are being severely degraded, in large part due to over-fishing and destructive fishing practices. One important aspect of efficient fisheries management is the enforcement of fishery regulations. Against this background, the “Bantay Dagat” is one strategy for protecting marine resources and environments. The Bantay Dagat is a unique participatory approach designed for coastal law enforcement, which has existed in the Philippines since the 1970s. “Bantay Dagat” literally means “safeguarding the sea.” A Bantay Dagat consists of a group of fishing community members who are usually trained and deputized as fish wardens and who cooperate with government law enforcement agencies in the local enforcement of fishery laws. It is a well-recognized participatory approach at local levels, and is generally comprised of volunteers. Successful Bantay Dagat groups contribute to a decreased use of illegal fishing methods, such as the use of dynamite or poisonous substances in fishing, and aim at raising the level of community awareness with regard to environmental protection and fisheries management. This, in turn, contributes to increased daily fish catches and greater municipal revenues from fisheries.

Typically, it is the government's role to enforce environmental laws in court. However, in many countries, citizens are given the right to assume or share this function through citizen suit provisions in the law. Citizen enforcement suits generally take one of two forms. Members of the public or environmental associations can bring an action against industrial facilities directly for violating applicable laws or rights.

Alternatively, members of the public can bring an action against the government for failure to perform nondiscretionary enforcement duties, with the aim of obtaining a court order requiring the appropriate agency to enforce the law. In either case, citizen enforcement suits are designed to protect the public interest by allowing citizens to help ensure that environmental laws and rights are properly upheld. To achieve this purpose, different countries have established mechanisms for authorizing citizen enforcement suits. (See Box 8-10).

BOX 8-10: CITIZEN ENFORCEMENT LAWSUITS IN EASTERN EUROPE⁶⁰

Citizen groups have successfully brought lawsuits to promote environmental enforcement in several Eastern European countries. In Ukraine, the citizen group Environment People Law filed a lawsuit to stop the construction of a chemical fertilizer terminal. Construction had already begun, with local government permission, before the environmental impact assessment had been reviewed by national government authorities, as required under Ukrainian law. The local branch of the Ministry of Environmental Protection and Nuclear Safety ordered an expert examination, or *expertiza*, of the proponents' environmental impact assessment, based on which it rejected the project. More than 10,000 local citizens had also signed a petition opposing the project. The proponents appealed to the national-level Ministry office in Kyiv, which conducted its own *expertiza* and approved the project.

Environment People Law then brought a lawsuit against the national office in the High Arbitration Court. After initial procedural difficulties were overcome, the Court found that the proponents' environmental impact assessment was published two months after the *expertiza*, in violation of the public's rights to be informed and to participate in the *expertiza* process.

The Court ordered the Ministry to require the project proponents to cease work on the project. This was a landmark victory because it was the first time that the Court had stopped a project for failure to comply with an environmental impact assessment requirement.

For instance, some countries grant citizens access to courts for the express purpose of environmental enforcement and institute specific provisions in their environmental statutes authorizing citizen suits for violations of those laws. In the United States, all major federal environmental statutes grant citizens the right to bring suit against "any person" for violation of that statute, with "person" defined broadly to include individuals, corporations, associations, and governments.

In some countries, the right to enforce environmental laws in court is derived from general provisions of the civil code. In Hungary, the civil code allows individuals to sue others for interfering with or endangering the use of land or property by others. While this provision is not specific to environmental law, citizens can use it to address environmental violations.⁶¹

Some countries allow citizens to go to court to enforce environmental laws in the public interest.⁶² For example, in India, citizens are granted broad access to bring public interest law suits to defend their human and social rights. Litigants need not prove a violation of law, as in countries where access to courts is established in environmental statutes, but they must demonstrate a violation of natural rights. Because these suits are filed in the public interest, citizens must base their claims on damages to society—not solely to themselves. Many countries, particularly those in Latin America, authorize citizens or citizen organizations to bring popular actions to enforce environmental laws. In Colombia, citizen groups can bring suit against any public or private entity causing threat of harm.

Similarly, the Brazil constitution allows any citizen to file a popular action (*acao populare*) to nullify a public administrative act that is injurious to the public property or to state property of environmental, cultural, or historical heritage. Except in cases of proven bad faith, the complainant is exempt from judicial costs.⁶³ To undertake this litigation, the constitution also provides for public prosecutors (*the Ministério Público*), who are charged with undertaking public civil actions required to protect the environment and social heritage.⁶⁴

If the law does allow citizen enforcement, it needs to take precautions to minimize the overlap with official enforcement actions. It is advisable to require citizen groups to file a notice of intent to sue, giving the environmental management program the opportunity to bring an action first superseding the citizen complaint. This is to avoid a situation where the same actor risks having an enforcement action brought against them by both the government and a private party, which would be perceived as unfair and thereby undermine the legitimacy of the entire environmental management program.

8.7.2 Negotiations and Settlement of Citizen Suits

It is common in the United States for environmental cases, including citizen enforcement suits, to be settled outside the courtroom through negotiations. To ensure enforceability, settlements are often crafted as court-negotiated consent decrees, with interim deadlines for specific actions and penalties for failure to comply. In many cases, there is a role for citizens in this process. In addition to citizen suit settlements, citizens who are parties to, or have an

interest in, a government enforcement suit often may participate in negotiating the terms of the consent decrees.

In several citizen suit agreements under the U.S. Clean Water Act, the alleged violators have avoided civil penalties by instead paying a sum of money to an environmentally beneficial project. The U.S. government looks upon settlements involving third-party payments with some suspicion and carefully examines consent decrees containing payments to environmental organizations. However, courts have upheld consent decrees containing such payments. For example, in 1995, the National Environmental Law Center negotiated a consent decree in the course of a citizen enforcement suit involving the discharge of pollutants by an oil company into the San Francisco Bay. In addition to obtaining the rights to future monitoring data, the Center negotiated for the oil company's \$2.2 million (US) in punitive damages to be distributed among more than twenty local education, restoration, and research projects in the Bay's watershed.⁶⁵

Another mechanism in the United States for achieving citizen-industry partnerships during the settlement of an enforcement case is the use of Good Neighbor Agreements. Under Good Neighbor Agreements, companies enter into negotiated contracts with workers, local community members and associations to establish a framework for public assessment of industrial environmental conditions. Common elements of these agreements include provisions for public disclosure of relevant company information and stakeholder audits, wherein citizens engage in direct, on-site evaluations of facilities to identify changes that may be needed to ensure environmental compliance, safety, and sustainability. Good Neighbor Agreements can also provide a forum for addressing community recommendations for improvements in environmental protocol.

Each Good Neighbor Agreement is unique, because the parties, conditions, and issues vary significantly among cases. However, the Rhone-Poulenc Community Audit Agreement in Texas serves as a good example for illustrating the fundamental elements of a typical agreement.⁶⁶ The agreement arose in the 1990s after an accident at the Rhone-Poulenc plant released poisonous sulfur dioxide gas into the community. The agreement provided for a safety and environmental audit to be financed by Rhone-Poulenc and integrated into the company's hazardous waste facility permit. Under the agreement, the auditor was to be approved and accompanied by a committee comprised of community group members and facility workers. Citizens were also given permission to conduct additional inspections by appointment. The scope of the audit included regulatory compliance, safety training, accident prevention, emergency response, waste analysis and information systems, monitoring programs, and waste minimization practices. The agreement also provided for public disclosure of company

documents including: a hazard assessment and risk analysis; lists of accidents, upsets, and corrective actions; and waste minimization and reduction plans. In the agreement, Rhone-Poulenc consented to “negotiate in good faith” any recommendations resulting from the audit.⁶⁷

9. BUILDING EFFECTIVE PROGRAM INFRASTRUCTURE

9.1 Introduction

The previous chapters introduced the basics of compliance assurance, including planning, developing environmental requirements, promoting compliance, monitoring, and enforcing requirements. As with any other organization or program, the effectiveness of the environmental management program will also depend on its managers, employees, institutional design, and ability to communicate with other institutions. This chapter discusses how organizations generally build effective infrastructure and inter-organizational communication and how they do so in the context of an environmental management program. A well-designed program infrastructure will allow regulators to use their limited resources in a way that maximizes compliance. In particular, this chapter will address:

- Designing compliance assurance institutions.
- Dividing responsibilities among levels of government.
- The role of civil society in compliance assurance.
- Facilitating national and international networking.

9.2 Designing Compliance Assurance Institutions

9.2.1 How to Define an Institution: Structure versus Working Methods

An effective environmental management program must have an institutional structure that furthers the compliance goals of the program. A strong institution uses limited resources more efficiently, and also instills greater public confidence in the integrity of the program. In order to do this, the basic functional structures of the program and its working methods must be clearly defined and incorporated into the strategic plan.

9.2.1.1 Functional Structures

This very popular organizational structure is constructed based on the division of labor according to several criteria, with the idea that specialization brings greater efficiency and higher output per person. This may produce a more focused approach, and improvements and innovation within a program may occur because members with similar interests are interacting. Lower turnover of personnel is a common characteristic of this structure, where management and staff development can be centered around standard types of functional skills. Since communication across department lines can be distorted by lack of expertise in other

departments' fields, and even by territoriality, managers need to coordinate department activities carefully to reach the common goals.

9.2.1.2 Product Divisional Structures

In industry, this structure means that each department is in charge of certain products. In environmental agencies, "products" could be characterized in terms of the issues treated, the industry sector policed, or the media, such as air or water, controlled.

This type of structure has the advantage of focusing on results, with greater orientation towards public service and satisfaction, easily identifiable accountability for results achieved, and more personnel in a position to develop management skills. But product structures can be more expensive than functional structures, because at the lowest level there can be substantial redundancy of skills among personnel. Conversion from product divisional to functional structure can bring impressive savings in administrative costs.

9.2.1.3 Geographical Divisional Structures

Regional or local offices are the basic units of geographical divisional structures. Environmental management programs may wish to allow their regional offices to work as autonomous units, with independent decision-making guided by policy formed at the head office. The head office provides services and support, but has little involvement in the daily management of the regional offices. This structure brings the benefit of proximity to environmental problems, their causes, and the segment of the general public most directly benefiting from agency work. But like a product divisional structure, it entails higher administrative costs. Also, a narrower geographic perspective can foster distortion of the larger picture, encouraging focus on local problems at the expense of global policy.

9.2.1.4 Matrix Structures

Matrix structures are based on projects, with teams working to achieve project goals. Often a worker has dual subordination to the department manager and the project manager. The matrix structure promotes sharing of information and coordination of efforts, increasing cost-efficiency and flexibility of the organization. However, the dual subordination can cause conflicts over personnel and budgets, and the team orientation means time devoted to meetings. Both of these features can lead to employee stress, especially at the lower levels.

9.2.1.5 *Horizontal Structures and Downsizing*

This type of structure arose from dissatisfaction with the layers of middle management resulting from organizational growth. Called “downsizing” because of the reduction in number of employees, it is accompanied by two major interrelated changes:

- Elimination of one or more hierarchies, usually at the level of middle management.
- Delegation of decision-making to a lower level.

The goal of this structure is to reduce costs by cutting bureaucracy; however, if decisions are shifted to a higher level rather than a lower level, the top-level management will probably become overloaded.

Among different programs and organizations, even those serving similar mandates, there are many different variations on the above listed structures. Factors that may influence the choice of a given structure include:

- Scope of activity.
- Complexity of the regulatory framework.
- Size of the organization and increasing specialization.
- External political, economic, and social factors.
- Whether the strategy is preventative, curative, or both.

Questions to be answered when determining if a given structure is appropriate include:

- Which structure will lead to the greatest compliance and the most effective enforcement?
- Is the structure compatible with policy objectives, legal mandates, and the strategy of the environmental management program?
- Are there too few or too many hierarchical levels?
- Does the structure promote coordination among its parts?
- Does the structure allow for appropriate centralization or decentralization of authority?
- Does the structure permit the appropriate grouping of activities?

9.2.2 Mission Statement and Scope of Enforcement

A mission statement needs to communicate to the stakeholders and the public the essence of the organization or environmental management program. It should be no more than a few sentences. It should include a “purpose statement” of the program's goals, a “business

statement” outlining a plan to reach those goals, and a “values statement” of the basic beliefs underlying the program.

A vision statement also helps to define the scope of the program’s mandate. It provides an image of success, describing the purpose of the group’s work, in terms of the expected contribution to society.

If the mandate of the program is general, e.g., “Improve environmental conditions,” the institution needs to articulate more specific goals in the strategic plan that will help it fulfill this overall mandate. With such a mandate, there are innumerable ways to define success. If the mandate is more specific, e.g., “Reduce water pollution by reducing tons of pollutants released into the ecosystem,” there are fewer ways to define success, and the strategic plan will be more easily focused.

9.2.3 Institutional Identity and Degree of Independence

At the institutional level, some agencies have more independence from the legislative or executive bodies than do others. The environmental management program’s mission may be clearly and narrowly defined by statute, in which case the institution will have little autonomy. But in other cases, the program may be free to produce its own regulations within very general statutory bounds, or the head of the program might be appointed by the executive, but might not be removable by the executive. Then the degree of autonomy of the program will be much greater. When designing the program’s infrastructure, it is important to consider the degree of autonomy that the program is expected to have.

9.2.4 Internal Communication and Decision-Making Policies

Well-designed internal communication can help employees to understand organization objectives and adapt behavior and workplace processes to achieve these objectives. Employees want to understand why and how decisions are made, and they learn management strategies by observing their immediate superiors. Information should be presented to employees in such a way that it is easily absorbed. The employees should be told why the information is important and how to use it.

Often there are barriers to internal communication, stemming from managerial behavior or from the organization’s culture or structure. These barriers cause losses of efficiency and effectiveness, increased costs, and decreased morale. Barriers include:

- Job insecurity.
- Poor communication between management and staff.

- Isolation of employees from one another.
- Lack of cooperation or Team Spirit.
- Slow or cumbersome processes.
- Lengthy and unnecessary meetings.
- Transparency.

Transparency is important to maintaining public confidence in an environmental management program's activities. Increasing transparency entails helping the regulated community and others to understand what is expected of them and what they should expect from the program. It also means making clear why an inspector intends to, or already has, taken enforcement action.

Transparency on the part of inspectors is particularly important during enforcement actions in the following situations:

- Where remedial action is required. Not only must the action be clearly explained in writing, but also, if requested, a written explanation of why the action is necessary and when it must be carried out should be provided. A distinction should be made between best practice advice and legal requirements.
- Where opportunity is provided to discuss what is required to comply with the law before formal enforcement action is taken (unless urgent action is required, for example, to protect the environment or prevent evidence being destroyed).
- Where urgent action is required. A written explanation of the reasons should be provided as soon as practicable after the event.
- Where rights of appeal apply. A written explanation of any rights of appeal against formal enforcement action must be given at the time the action is taken.

9.2.5 Institutional Stability and Continuity

The development of multi-year and annual strategic plans serves to promote institutional stability and continuity. In some countries, an environmental management program's policies may be closely tied to the philosophy of the current government. If the government changes frequently, it is wise to have a safeguard against a rapid reversal of regulatory policy. For example, a notice and comment period might be required before the program or agency can change rules. In this way, the regulated community is informed and may participate in rule-changing. This is important because regulations that change too quickly may fail to elicit compliance, and that failure in turn promotes a loss of confidence in the regulations, which causes another decrease in compliance, and so on. The resulting cycle leads to a devaluation

of regulatory instruments, government, and the rule of law. Regulations certainly can change without creating such a vicious circle, but it is important to ensure that the regulated community can keep pace with the changes.

9.3 Dividing Responsibilities Among Levels of Government

9.3.1 Clarifying Levels of Sub-national Authority

A basic issue in developing environmental management programs is the extent of centralization of responsibility for compliance assurance at the national level. Decentralization is the process of placing more enforcement responsibility at the local level. There are advantages and disadvantages to both centralization and decentralization. A national presence in enforcement helps ensure that minimum standards are met, that the program is consistent and fair, and that national resources are available when necessary. Involvement of provincial and local governments in enforcement is useful because these levels are closest to the actual environmental problems and are sometimes better able to efficiently identify and correct them. This is particularly true where the local problems are minor compared to problems at the national level.

Most environmental enforcement programs around the world are decentralized to take advantage of local knowledge of facilities and the more specialized resources available at the local level. Despite this bias towards decentralization, some programs are centralized where there is a clear need for national involvement, *e.g.*, to handle transboundary pollution; where local desire to create favorable conditions for industry may lead to lax enforcement; or where unique or very specialized expertise is concentrated at the national level. For example, enforcement of U.S. regulations pertaining to the manufacture of cars and fuel additives is centralized, as are enforcement programs concerning the production of toxic chemicals and pesticides.

Sometimes the national program and provincial, or local, programs have concurrent roles. Sub-national programs may have the primary role for implementing the enforcement program, but the national government retains authority to intervene if certain criteria are not met. In other cases, the national government may not delegate any responsibility to the sub-national level.

BOX 9-1: CAPACITY BUILDING FOR DISTRICT BY-LAW FORMULATION AND ENFORCEMENT IN UGANDA⁶⁸

Uganda implements a policy of decentralization that entails a transfer of rights, responsibilities, and authorities to local governments. Under the National Environmental Act, the National Environmental Management Authority assists District Councils and lower local councils to formulate and enforce environmental by-laws as part of the Environmental Action Planning Process. This process seeks to identify environmental issues in need of regulation or existing environmental by-laws that need reinforcement. The by-law formulation and enforcement process incorporates a significant element of public participation, based on the premise that public awareness and endorsement is the key to successful implementation.

The National Environmental Management Authority has been building the capacity of district and community leaders to formulate and enforce environmental by-laws. This training seeks to:

- Introduce environmental regulation as a tool for environmental management at the community level.
- Enhance the capacity of the local leaders to formulate environmental by-laws especially regarding decentralized environmental functions and services.
- Raise awareness of the local leaders and communities and generate a common understanding of the procedures to be followed in environmental by-law formulation and enforcement.

The targeted audience includes local leaders, district and sub-county councilors, district technical staff, sub-county chiefs, resident state attorneys, and local police. These various officials and staff play distinct, key roles in formulating and enforcing environmental by-laws, including:

- Identifying environmental problems that need regulation.
- Drafting by-laws.
- Passing and enacting by-laws.
- Monitoring compliance with by-laws and enforcing them as necessary.

9.3.2 Qualification Procedures

Where authorized by environmental law to do so, the national agency may establish criteria for an acceptable sub-national environmental program. These criteria generally cover three areas: legal authority, resources, and personnel. A sub-national program meets these criteria for its program to be approved and start running. If an appropriate sub-national program has not been approved by the time enforcement is slated to begin, then the national level agency can administer its own program.

9.3.3 National Support to Sub-national Units

The national agency may provide provincial and local governments with funding for staff and equipment through an annual grant process. When the national agency sets program

priorities annually in consultation with the sub-national units, agreements reached can specify national, regional, and local priorities.

9.3.4 National Oversight of Sub-national Programs

It is challenging to implement this type of partnership between different levels of the government and to use resources most effectively. Duplication of efforts is a particular hazard. The national government may interpret its role differently from year to year. The United States addressed these challenges in 1995, when the Environmental Protection Agency and state leaders created a National Environmental Performance Partnership System. State participation in this system, which is voluntary, allows for the implementation of joint state-national programs by means of annual agreements.⁶⁹

To ensure the effectiveness of such programs, the national agency might conduct oversight of sub-national programs. To pass oversight inspection, most sub-national environmental programs must:

- Clearly identify the regulated community and establish priorities for enforcement.
- Have clear, enforceable requirements.
- Monitor compliance accurately and reliably.
- Maintain high or graduated rates of compliance.
- Respond to violations in a timely and appropriate way.
- Use penalties and other sanctions appropriately to create deterrence.
- Maintain accurate records and provide accurate reports.
- Have sound overall program management.

Direct national level enforcement may become necessary when at least one of these conditions apply:

- The sub-national level requests national involvement.
- The sub-national level action is not timely or appropriate.
- A case at the sub-national level would set a national legal or program precedent.
- A national agency or court order has been violated.

The national agency may also consider additional factors, such as whether:

- The case is nationally significant.
- The violation significantly threatens public health or environmental quality.
- The violator is gaining significant economic benefit.

- The case involves more than one sub-national entity.
- The case involves a repeat violator.

If the national agency does become involved, it should do so with maximum respect for the efforts at the sub-national level. Adequate notice and consultation should occur before national action. In some cases, the national and sub-national level agencies may take joint action.

9.3.5 Dispute Resolution

When national and sub-national jurisdictions overlap, it is necessary to set up a dispute resolution method to settle conflicting views on how a situation should be handled. In some cases, there may simply be deference to the national agency. But in other instances, this may not make the most sense. There should be a clear procedure for examining the various aspects of the dispute and making a decision within the terms of the law. The procedure may be internal agency review, or review by an external body, such as a special tribunal, mediator, arbitrator, or court.

9.4 Role of Civil Society in Compliance Assurance

9.4.1 Non-governmental Organizations and Public Interest Groups

Citizens can help to shape and implement environmental compliance and enforcement. They may influence environmental legislation and enforcement programs through lobbying efforts. Usually such efforts are coordinated by public interest groups, which may collect and publicize data on environmental quality and compliance levels.

These groups may also track monitoring data collected by the enforcement agencies that is made publicly available. They can serve as environmental watchdogs, spotting local violations that might otherwise escape notice. In some situations, these groups may file citizen suits against the environmental agency (if it failed to do its job), or against individual violators. Box 9-2 provides an example of participatory management in the Philippines.

9.4.2 Industry Associations

Industry or trade associations track and publicize developments that may affect their members. Therefore, they can be important dissemination channels for communicating requirements, methods of compliance, and compliance activities. These associations also usually try to influence environmental legislation and programs.

9.4.3 Trade Unions and Workers' Councils in the Regulated Community

Workers are generally members of the local community and would therefore benefit from localized improved environmental quality. But enforcement actions that result in substantial process changes or shutdown of an operation may cause unemployment. Consequently, workers often have strong opinions about some types of enforcement actions. The participation of workers' councils is important to the success of local compliance and enforcement actions. These organizations may become involved in the development of requirements and policies for compliance assurance. When worker groups are vested in the environmental improvements, individual workers may be more likely to report violations by their facilities.

BOX 9-2: PARTICIPATORY MANAGEMENT AND MONITORING OF PROTECTED AREAS IN THE PHILIPPINES⁷⁰

In the Philippines, protected areas are established and managed through the National Integrated Protected Areas System. Participatory management for each established protected area is central to effective implementation of the System.

Management of each protected area is supervised by a Protected Area Management Board. The Board is composed of representatives of the various local stakeholders such as the Department of Environment and Natural Resources (DENR) Regional Executive Director, the Provincial Development Officer, representatives from the Municipal Government, tribal communities, concerned NGOs, and other agencies in the area. The Board members are formally appointed by the DENR Secretary and serve for a term of five years, without compensation. If a protected area has a large Board membership, the Board creates an Executive Committee that is chaired by the Regional Technical Director or Provincial Officer of the Department and composed of at least two representatives from the local government, concerned NGOs, and indigenous communities.

Involvement of local stakeholders in protected area management through the Board has improved public support for the protected areas and the management decisions. Indeed, the public has participated at the early stages of establishing many protected areas and developing the management plans. This, in turn, has increased the compliance of local stakeholders with the Integrated Protected Areas System.

9.4.4 Insurance Companies

In many countries, citizens can sue firms for personal injury or property damages caused by environmental damage. Therefore, the insurance companies that end up paying firms' lawsuit costs have an incentive to educate their clients about environmental requirements, and to assist them in maintaining compliance. These companies are a potential ally, and enlisting

their support for an enforcement program could make that program both more efficient and more effective.

9.5 Facilitating International and National Networking

Networks are formed across different boundaries and for different purposes. They range from domestic to international and from informal to more institutionalized organizations. They are located within existing organizations, are created by agreements, or arise spontaneously through regular contact. They can also involve somewhat surprising participants.

For instance, judges are starting to network more, whether by means of information-sharing and mutual citation, or actively by means of forming organizations and cooperating on transnational litigation. At the UN Conference on Sustainable Development in Johannesburg in 2002, for instance, UNEP, INECE, and others organized a Global Judges Symposium. This symposium brought together judges from around the world to review their role and the rule of law in the context of sustainable development.

Networks can be more flexible and thus potentially more effective, than the large formal institutions of international governance when it comes to certain functions. By working directly peer-to-peer, trans-governmental networks can quickly distill and disseminate information, enhance enforcement cooperation, harmonize laws and regulations, and address common problems from a shared perspective shaped by experience and expertise. See Box 9-3 for examples of enforcement-related networks.

BOX 9-3: EXAMPLES OF NETWORKS

Interpol – the international police network, facilitates information exchange and provides assistance to local police efforts. Interpol has also created an environmental crime network, called Ecomessage, to facilitate information-sharing and enhanced coordination of enforcement efforts.⁷¹

European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) – an informal network of the environmental authorities of the EU Member States, acceding and candidate countries of the EU, and Norway. IMPEL's objective is to create the necessary impetus in the European Community to ensure more effective application of environmental legislation, by exchanging information and experiences; providing a framework for policymakers, environmental inspectors, and enforcement officers to exchange ideas; and encouraging the development of enforcement structures and best practices.⁷²

Environmental Compliance and Enforcement Network for Accession (ECENA) – established by high level officials from the environmental ministries of South Eastern Europe in 2005, as an informal network of environmental authorities from pre-candidate, candidate, and acceding countries. ECENA's mission is “to protect the environment in its member countries through effective transposition, implementation and enforcement of EU environmental legislation by increasing the effectiveness of inspectorate bodies and promoting compliance with environmental requirements.”⁷³

Network for Environmental Compliance and Enforcement in the Maghreb (NECEMA) – established in 2006 as an informal network of environmental authorities in the Maghreb region of North Africa. NECEMA's mission is to promote good governance in the region through an exchange of innovative policies and practices.⁷⁴

Capacity building is a critical function of enforcement networks. The Green Customs network, intended to build the capacity of customs officials, has been created and is supported by Interpol, the World Customs Organization, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Basel Convention, and UNEP. The U.S. Environmental Protection Agency offers courses to train regulators and environmental officials in other countries because building regulatory capacity in nations with weak or poorly developed legal systems allows cooperative enforcement efforts to occur. Their efforts stem from the recognition that a global regulatory system based on trans-governmental networks is only as strong as its weakest link.

Box 9-4 contains an example of successful international networking and Box 9-5 describes an example of successful national networking.

BOX 9-4: ROLE OF INECE IN ENFORCING COOPERATION ON THE TRANSPORT OF WASTE⁷⁵

In 2000, 29 containers of chemicals arrived in the harbor of Rotterdam, Netherlands from the United States. In the Netherlands, the company receiving the containers denied being the buyer. The company then claimed that the containers were in transit to Nigeria, but communications between the Dutch Government and Nigeria showed that the receiving company in Nigeria had only a post office box and had no agreement with the Nigerian government to import these chemicals.

Some of the containers in Rotterdam harbor started leaking, and a search by the Dutch Government revealed that more than 3,000 different chemicals were in these contaminated containers. According to information received from the U.S. Environmental Protection Agency (USEPA), the company had received an order from the local environmental authorities to remove “improperly stored wastes” from its warehouse. In 2001, the Netherlands government requested in writing that the company return the leaking waste materials voluntarily to the

United States. The company continued to refuse, so the Netherlands government began to incinerate the dangerous chemicals. The owner and the company were brought to court, and found jointly and severally liable to the Dutch government, USEPA, and the Europe Container Terminals BV, where the waste was stored in Rotterdam. The owner of the company was also found criminally liable.

While official requests were sent to the U.S. government, it was the communications through INECE network channels with USEPA that contributed to solving the case expeditiously.

Similarly, IMPEL has undertaken an enforcement cooperation project to crack down on transnational shipments of waste in the European Union. INECE has worked with IMPEL on this project, creating training exercises to accompany the first edition of the Principles of Environmental Enforcement, in order to build the capacities of enforcement officials attempting to address the challenges posed by illegal waste in ports.

BOX 9-5: GAMBIA'S NETWORK OF ENFORCEMENT PERSONNEL⁷⁶

The Gambia's National Environment Agency established a network of enforcement personnel in all five geographic Divisions of The Gambia to deal with chemicals and hazardous waste. This network seeks to respond to the limited personnel resources within the Inspectorate of the Agency. The network comprises personnel from the Departments of Agriculture, Livestock, Health, and Customs. A Ministerial Decree and Gazette sanctioned the appointment of the personnel. As members of the network, the enforcement personnel act as inspectors for monitoring chemicals. Agency inspectors cover the greater Banjul Area. The members of the network are all charged with the same responsibilities; different members do not cover different chemicals. The Agency, through the Agricultural Divisional Coordinators, is responsible for the coordination of the network.

10. MEASURING AND MANAGING PERFORMANCE THROUGH COMPLIANCE AND ENFORCEMENT INDICATORS

10.1 Introduction

Environmental compliance and enforcement programs should be evaluated at regular intervals to ensure that the program activities are resulting in the reduction of illegal activity and in progress towards the agency's environmental protection goals. Evaluations can result in greater awareness of the nature of the environmental problem and the best ways to respond to it, which in turn can lead to revised planning and more effective implementation.

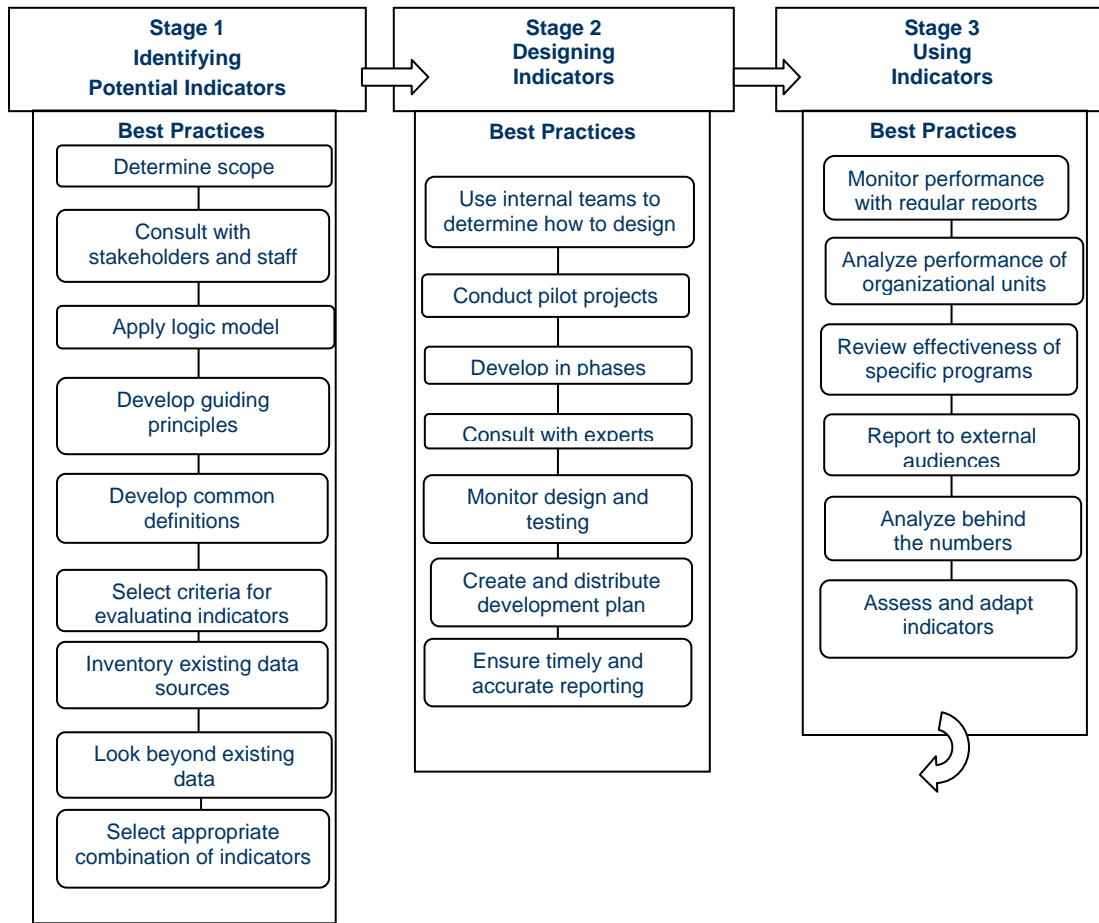
Performance indicators make known information about operations of and results achieved. This data can help managers of environmental compliance and enforcement programs and directors of environmental protection agencies answer questions such as:

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

This chapter provides an overview of how agencies can identify, design, and use indicators. The chapter is based on the *Performance Measurement Guidance for Environmental Compliance and Enforcement Practitioners (2nd edition, 2008)*, developed by INECE's Expert Working Group on Environmental Compliance and Enforcement Indicators.⁷⁷

The indicators methodology presented below is organized into three stages or steps: (1) identifying potential indicators and selecting an appropriate combination; (2) developing indicators through designing and testing; and (3) using the indicators to improve program performance and enhance accountability to stakeholders. (See Table 10-1). The best practices and accompanying guidance related to each stage are based on the experiences of national environmental enforcement and compliance programs from around the world, but may need to be adapted or used selectively depending on the specific situation of the program under development.

TABLE 10-1: THREE-STAGE MODEL FOR IDENTIFYING, DESIGNING, AND USING INDICATORS



10.2 Stage 1. Identifying Indicators

10.2.1 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)?

10.2.2 Engage Stakeholders

Since the target audience for environmental compliance and enforcement 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. Stakeholders can include government policymakers, regulators, sub-national authorities, international organizations, industry, environmental groups, and the general public.

10.2.3 Apply a 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.

To use a logic model is to observe linked stages and consequences of the program: inputs, outputs, intermediate outcomes, and final outcomes or results. For purposes of identifying meaningful compliance and enforcement indicators, the logic model can elucidate what outputs and outcomes need to be measured. If insufficient inputs or resources are available to yield the desired outcomes at the scope intended, then the scope may be reduced or outcomes modified to match available resources. Table 10-2 below presents a generic logic model example.

TABLE 10-2: LOGIC MODEL FOR ENVIRONMENTAL COMPLIANCE AND ENFORCEMENT INDICATORS

Inputs <i>Resources of the regulating body</i>	Outputs <i>Activities of the regulating body</i>	Intermediate Outcome <i>Behavior change in the regulated community</i>	Final Outcome <i>Environmental Impact</i>
<ul style="list-style-type: none"> • Number of staff (e.g., inspectors). • Budget for salaries, contracts, and computers. • Number of vehicles for inspection. • Training courses. 	<ul style="list-style-type: none"> • Number of inspections conducted. • Number of notices of violations issued. • Fines assessed and collected. • Number of training programs conducted. • Number of persons trained. 	<ul style="list-style-type: none"> • Change in pounds of pollution discharged. • Change in understanding of how to comply. • Change in environmental management practices. • Change in compliance rate in targeted sector. 	<ul style="list-style-type: none"> • Improved ambient water quality. • Reduced contaminant burden in wildlife. • Reduction levels of respiratory disease in a defined area.

10.2.4 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 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, USEPA drew from stakeholder input, consultation with experts and practitioners, and a literature review.

TABLE 10-3: WORKSHEET FOR IDENTIFYING AND SELECTING ENVIRONMENTAL COMPLIANCE AND ENFORCEMENT INDICATORS

A. Indicator Summary

Name	Type	Category/Sub-category	Currently Measured?	Data Availability
<i>Name of indicator</i>	<i>e.g., input, output</i>	<i>Use if appropriate to illustrate how indicator fits into specific project's hierarchy</i>	<i>Yes / No</i>	<i>Rank on scale of 1-3, where 1 is adequate, and 3 is inadequate</i>

B. Indicator Description

Briefly present an objective description of what the indicator is and how the data should be collected.

C. Reason for Selection

Discuss what the indicator might show and the basis for this assumption.

D. Limitations

Explain any limitations to measuring this indicator.

E. Data Sources

List necessary information and note whether data is currently available.

F. References

List any references that may be useful when measuring this indicator, including examples from other countries, research documents, etc.

G. Selection Criteria *

Relevant	Transparent	Credible	Functional	Feasible	Comprehensive

** scale of 1-3, where 1 is adequate, and 3 is inadequate*

10.2.5 Select Criteria for Evaluating Potential Indicators

After external stakeholders, 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 useful for identifying such criteria. The following are some suggested selection criteria for a project to consider:

- **Relevancy:** Is the indicator relevant to goals, objectives, and priorities of the agency and to the needs of external stakeholders?
- **Transparency:** Does the indicator promote understanding and enlighten users about program performance?
- **Credibility:** Is the indicator based on data that are complete and accurate?
- **Functionality:** Does the indicator encourage programs and personnel to engage in effective and constructive behavior and activities?
- **Feasibility:** Does the value of the indicator to the program outweigh the cost of implementing and maintaining the measure?
- **Comprehensiveness:** Does the indicator address all the important operational aspects of program performance?

Proposed indicators should be ranked in terms of the feasibility criteria, using the worksheet provided in Table 10-3 or other appropriate methodology. These rankings should be used, along with comments from key stakeholders, program design guidelines, and other information, to select indicators to carry over into the next stage of the project.

10.2.6 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. Of particular importance is the distinction between output and outcome (Box 10-1).

10.2.7 Inventory Existing Data Sources

Assessment of existing data available to support indicators is a key step for identifying environmental compliance and enforcement indicators. Are data being collected that can be the basis for useful indicators? Are the data current, or are they 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 are being collected about enforcement actions issued by regional or district offices and by the national program, then 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.

BOX 10-1: DEFINITIONS OF KEY TERMS

Input indicators include time, staff, funding, materials, equipment and the like that contribute to an activity. While of limited usefulness by themselves, input indicators reflect 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.

Output indicators are activities, events, services, and products that reach a regulated firm. 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.

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

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.

10.2.8 Look Beyond Existing Data

One potential pitfall in the identification of indicators is to consider feasible only those indicators that can be supported by data that are 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.

10.2.9 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.

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 it is often difficult to demonstrate the link between the government activity and improvements in air or water quality that can be influenced by many factors beyond the scope of government activity. Furthermore, measuring changes in end outcomes can be very expensive, and the final results may take years to appear. For all these reasons, intermediate outcomes should receive appropriate consideration in any effort to develop indicators.

10.3 Stage 2: Developing Indicators

10.3.1 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 available data, develop information collection and reporting processes as needed, and establish a schedule for testing and implementing the indicators. Since they are comprised of the organizations' own internal staff, these work groups are often able to readily identify and overcome barriers to effective implementation. Another benefit of involving internal staff is that it increases their sense of ownership of the new indicators.

10.3.2 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.

10.3.3 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.

10.3.4 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.

10.3.5 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 anticipated program performance. Monitoring these tools can also help determine whether certain indicators need to be dropped from or added to the implementation effort.

10.3.6 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.

10.3.7 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.

10.4 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 solutions.
- 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.

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.

10.4.1 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. Reports can be organized to present data for a program as a whole or to break out data for various program components. In addition to data about performance indicators for the current year, in order to provide a benchmark the reports should also provide data about performance in the previously completed fiscal/calendar year.

10.4.2 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 with performances 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.

10.4.3 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 can 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 their work to improve 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.

10.4.4 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 – for example, pounds of pollution reduced through enforcement actions, improved practices at facilities from compliance assistance, or improved rates of compliance in an industry sector – an account of performance is provided that is meaningful to multiple audiences.

10.5 Common Lessons

As work on programmatic indicators evolves, common lessons that have emerged include:

- 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.
- Performance indicators are most effective when they reflect management priorities and are linked to a limited number of program goals and objectives.
- Increased use of outcome indicators presents many challenges, because agencies or programs may influence – but not necessarily control – outcomes.
- Problem-specific, tailor-made performance indicators are effective for evaluating performance in solving specific environmental and non-compliance problems.
- 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.
- When using indicators to improve performance, program managers and staff should understand that data from indicators have their limitations. Such data 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.

11. REFERENCES

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⁷⁰ UNEP MANUAL ON COMPLIANCE, *supra* note 30.

⁷¹ For more information, see Interpol, “Ecomessage: Briefing Document,” *available at* http://www.interpol.int/Public/EnvironmentalCrime/Pollution/Eco_message.pdf .

⁷² European Network for the Implementation and Enforcement of Environmental Law, About IMPEL, *available at* <http://ec.europa.eu/environment/impel/introduction.htm> .

⁷³ Environmental Compliance and Enforcement Network for Accession (ECENA) website, “Introduction,” *available at* <http://www.rec.org/REC/Programs/rerep/ecena/Introduction.html> .

⁷⁴ Network for Environmental Compliance and Enforcement in the Maghreb (NECEMA) website, *available at* <http://www.inece.org/mena/necema/index.html> .

⁷⁵ Gerardu, Jo J.A. & Zaelke, Durwood, *The Importance of International Environmental Enforcement Networks – INECE as an example*, ELNI REVIEW, No. 2, 2005, at 3-7.

⁷⁶ UNEP MANUAL ON COMPLIANCE, *supra* note 30.

⁷⁷ INECE Secretariat, Performance Measurement Guidance for Compliance and Enforcement Practitioners, Second Edition, April 2008, *available at* <http://www.inece.org/indicators/guidance.pdf>.

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