

Developing a Culture of Industrial Environmental Compliance

Efforts to reduce industrial pollution in developing countries have focused on developing environmental institutions and legal frameworks, largely by establishing command-and-control regulations and market-based incentives. Overall, however, formal regulation alone has not proved very effective in reducing industrial pollution in these countries. Although there is no substitute for an environmental regulatory regime, there is a need to focus on incentives for action by industry. Several innovative approaches are now emerging as effective ways to improve environmental compliance. These include pollution inventories, information on enterprise performance, cleaner production, environmental management systems, negotiated agreements, and government-industry partnerships. International experience, although still limited, suggests that industrializing countries may have much to gain from these approaches in developing a culture that fosters improved industrial environmental compliance and overall environmental performance.

In recent years, industrializing countries have devoted much attention to developing and strengthening environmental institutions and regulatory frameworks to reduce industrial pollution. Many governments have established national environmental agencies and have adopted standards and regulations similar to those of industrial countries. Although much can be learned from the experience of countries with more mature environmental programs, simply importing systems developed elsewhere has often not been effective. Similarly, some countries have experimented with market-based instruments to encourage compliance, but this approach has not been applied to the extent anticipated.

Effective environmental regulations must first reflect their own context and be compatible with the administrative capabilities of regulatory agencies. Regulations meant for industrial countries are inherently unenforceable in developing countries, where institutional capabilities are weak. The success of environmental regulations also depends on a culture of compliance that is the result of a country's legal traditions, the maturity of its institutions, the available resources, and the capacity and support of citizens and the private sector. Compliance does not automatically happen when requirements are legislated

and issued; rather, it is achieved as a result of targeted efforts that encourage behavioral changes on the part of polluters.

Several mechanisms are now emerging as effective ways to improve environmental compliance in countries that lack the necessary institutional capabilities for formal regulation. Rather than being alternatives to environmental regulation, these approaches provide pathways for achieving environmental goals within a legal framework by developing a culture of compliance. Although experience with these approaches is still limited, industrializing countries may have much to gain by adopting them (see Table 1).

Pollution Inventories

Pollution inventories can accelerate environmental compliance by providing an information base for understanding pollution problems, identifying priority actions, making informed decisions, and identifying opportunities for waste minimization and cleaner production.

On the facility level, a pollution inventory is a comprehensive, accurate, and current accounting of specific pollutant discharges. On the government level, it is a database of reliable,

Table 1. Mechanisms for Developing a Culture of Industrial Environmental Compliance

<i>Mechanism</i>	<i>Requirements</i>	<i>Impact</i>
Pollution inventories	Industry and government monitoring and dissemination of data on ambient environment and pollution loads	Inventories provide stakeholders with an environmental information base for understanding pollution problems better and for making informed decisions.
Information on enterprise performance	Industry monitoring of pollution loads; communications strategy for disseminating information	Collection and dissemination of environmental information can result in (a) an informed constituency that can effectively demand improvement from firms with poor performance and (b) open discussions with communities that can reduce mistrust.
Cleaner production techniques	For government: regulation and real natural resource pricing For industry: commitment from management	Improvements in industrial processes and management reduce the volume of pollution generated, increase production efficiencies, and cut overall operating costs.
Environmental management systems	International trade and market pressures; commitment from management	Impacts of industry facilities are managed by a process of continuous environmental improvements that are regularly monitored, measured, and reported.
Supplier chain impacts	International trade and market pressures; concern of large firms with reputation and quality of products	Large firms work with smaller ones to provide advice and mentoring on developing environmental management systems and improving overall environmental performance.
Negotiated agreements and government-industry partnerships	Flexible government structures; political stability; trust between government and industry; persuasion and social pressures	Mechanism for consensus building among major stakeholders facilitates commitment to achieving clearly defined environmental goals.

regularly updated, aggregated, and publicly available information quantifying industrial releases of specific pollutants. The OECD has developed a common framework for a pollution inventory, the Pollutant Release and Transfer Register (PRTR).

In the Netherlands, an emissions inventory is used to track pollution reduction targets under national environmental goals to determine whether covenants between firms and regulators are being implemented. In the United Kingdom and Denmark, data reported in pollution inventories cover substances included in the permitting process. The baseline information about the pollution burden provided by the inventory is increasingly being used by firms in the United States and Europe to set internal environmental goals, often in connection with industry standards, including environmental management systems.

Similar approaches are now being adopted by industrializing countries. For example, Querétaro State, Mexico, is using a PRTR to identify priorities and develop a state-level environmental strategy that complies with existing federal regulations. The Czech Republic has developed a PRTR, and Colombia, India, and the Philippines are working on pilots. (See the chapter on Pollutant Release and Transfer Registers.)

Information on Enterprise Performance

The collection and dissemination of environmental information are essential to building an informed constituency that will support the changes necessary to achieve environmental improvement. Disclosure of actual performance information allows the relevant public to monitor progress (or lack of it) and develop informed positions; it also strengthens confidence in com-

pany statements about compliance and improvements. An informed public can achieve much through informal pressure, and progressive firms are finding that open discussions with their communities can reduce mistrust.

Under the Community Right-to-Know Act, the United States publishes an annual Toxic Releases Inventory (TRI) based on mandated reporting and disclosure of specific toxic chemical releases and transfers by industrial facilities. It is up to local governments or community groups to assess the performance of firms in their vicinity and to act on this information through public appeals, negotiations, or citizen suits. When TRI data were first released, the ensuing pressure led many firms to announce goals for reducing significant amounts of pollution, and many met these goals.

Although few developing countries have such far-reaching right-to-know legislation, in Indonesia and the Philippines, public pressure stemming from release of environmental information has led to similar improvements in industrial behavior. Under Indonesia's PROPER program and the Philippines' Ecowatch program, firms are graded on the basis of their environmental performance, ratings are made public, and facilities are held accountable. Similarly, in Korba, India, newspapers publish daily levels of ambient particulate and effluent discharges by two thermal power plants and an aluminum plant. A committee of citizens, constituted by the local administration, can inspect these plants at any time. As a result of such awareness raising, ambient particulate levels have dropped significantly, and discharges into the river no longer go unnoticed.

Cleaner Production

Cleaner production (CP) techniques offer improvements in industrial processes and management that can reduce the volume of pollution generated, increase production efficiencies, and reduce operating costs. Industry most often uses this approach in response to external pressures, including government regulation and the costs of natural resources and of pollution management (e.g., water charges and costs of treating wastes).

In China, the World Bank is collaborating with the UNEP to establish a CP Center that will provide local expertise to evaluate CP options for

companies. Studies carried out under the project identified several areas of major savings. Similar work, supported by donors and international organizations, has been done in Chile, India, the Philippines, Poland, and Tunisia. Unfortunately, in many cases, only a few of the recommendations have been put into practice. Such limited success emphasizes the importance of motivating, involving, and obtaining commitment from senior management. (See the chapter on Implementing Cleaner Production.)

Environmental Management Systems

Environmental management systems (EMSs) are logical complements to cleaner production techniques. They help firms establish a structured process of continuous environmental improvements that are monitored, measured, and reported. Management commitment to improving performance, as well as strong existing managerial and measurement capacities, are prerequisites for a successful EMS.

In a world of increasing free trade, much attention has been focused on internationally coordinated specifications for EMS under the ISO 14001 standard issued by the International Organization for Standardization (ISO). A key component of the ISO 14001 standard is that it identifies the elements of an EMS that can be independently audited and certified. However, obtaining certification can involve significant costs, and there are issues relating to the international acceptance of national certification. The use of ISO 14001 certification to replace statutory reporting is a topic of considerable interest.

While it is clear that EMS is not a substitute for a regulatory framework, there may be cases where the monitoring and reporting systems of a well-managed firm might substitute for some statutory inspections, audits, and reports. However, the extent to which a government can rely on the capabilities and commitment of a firm to self-monitor its environmental performance needs to be determined. While a number of practical issues have to be sorted out with ISO 14001, EMS can be used as a mechanism for achieving improvements in environmental performance and for supporting the trade prospects of good performers. (See the chapter on Environmental Management Systems and ISO 14000.)

The Supplier Chain Relationship

The power of the supply chain can be an effective mechanism for promoting improved environmental performance. Large firms serving international markets will most often be driven to improve their performance. Small firms that serve as local suppliers do not experience the same external pressures. Recently, however, multinationals are asking for better performance from their suppliers. Large firms (buyers) are often better able to negotiate lower prices from suppliers as a result of efficiencies and cost savings. In addition, most large firms are willing to work with their suppliers in a mentoring relationship to improve environmental performance in order to receive better-quality products and maintain their reputation in the international marketplace.

B&Q, the United Kingdom's largest hardware and garden center retailer, developed a system for grading each of its suppliers on its environmental performance. B&Q set realistic targets that did not alienate suppliers by being too tough and that led to improvements in a large number of companies. Most suppliers perceived the program as an opportunity to improve their own businesses. Production efficiencies enabled B&Q to negotiate better prices from its suppliers, resulting in actual cost savings. Similarly, the Swedish automobile manufacturer Volvo selects its suppliers in part on the basis of information obtained from pollution inventories and corporate environmental reporting. U.S. apparel manufacturers in Asia are serving as mentors to their suppliers and providing advice to foster improved environmental performance, better-quality products, and an enhanced reputation and image.

Negotiated Agreements and Government-Industry Partnerships

Building a consensus among a range of stakeholders is a prerequisite for achieving successful environmental compliance. Although not a substitute for a regulatory regime, negotiated agreements offer a way for government and industry to take concrete steps toward pollution management while the details of regulations are still evolving. Such agreements give industry and communities a voice in determining specific pol-

lution reduction targets and offer firms flexibility as to how to comply with targets.

In Japan, pollution control agreements between industry and local governments were the forerunner of national environmental policy. Now that national regulations have been established, pollution control agreements continue to be used as a means by which local governments can achieve higher goals. In the Netherlands, negotiated agreements are used to implement national environmental policy goals. Major economic sectors, represented by trade unions, design strategies to meet environmental goals set by government and industry. Commitments are implemented through legal covenants, and conventional laws and regulations are used to back up covenants if industry fails to meet its commitments.

Indonesia has used pollution control agreements to clean up severely polluted waterways by persuading a large number of firms to commit to cutting pollution loads by specific amounts in an agreed time frame. Riverside villages in Bangladesh have also successfully pursued negotiated agreements with upstream polluters that include requirements for monetary compensation and first-stage effluent treatment of industrial discharges. In Brazil, the state governments of Rio de Janeiro, Espíritu Santo, and Minas Gerais are using partnerships with industry under which the governments rely on self-enforcement by industry through environmental auditing programs to achieve pollution targets.

Determining What Will Work Where

The mechanisms discussed above are to a large extent interrelated. The fact that relationships exist among them underscores their common purpose—to develop a culture of compliance and a constituency for pollution management. We have noted how firms can use pollution inventories to pressure their suppliers to make changes. Pollution inventories are also useful tools for setting firms' internal environmental policies, identifying opportunities for cleaner production, and developing environmental management systems. At the same time, the public availability of environmental information is an important mechanism for developing a constituency for pollution management through negotiated agreements.

The challenge lies in determining which tool, or which combination of tools, can be most effective in a given situation.

The World Bank's Role

Currently, the World Bank and its clients are beginning to experiment with these approaches. Indonesia and the Philippines are receiving World Bank assistance in developing pollution inventories to rate and publicly disclose facilities' environmental performance. In Mexico, the World Bank is supporting efforts to develop ISO 14001 approaches and transfer them from large companies to their suppliers. These efforts use the supply chain to drive improved environmental performance as part of a joint effort with government regulators, who are examining how the new systems may lead to a streamlining of the licensing system. In Argentina, the Bank is sup-

porting efforts to negotiate agreements between industrial facilities and regulators. Innovative approaches to pollution management, including pollution inventories, dissemination of information on enterprise performance, cleaner production, and EMSs, are being introduced to achieve agreed environment objectives.

All these applications are concentrated in projects with primarily environmental objectives, but the mechanisms can also be useful in other projects that focus on industrial performance, including privatization, industrial reform, energy, and mining projects. For example, pollution inventories can provide baseline environmental information that is essential in evaluating the environmental liabilities of state-owned enterprises that are being privatized. Similarly, application of cleaner production techniques and EMSs can reveal cost-saving opportunities in industrial restructuring.