Beyond Deterrence: Compliance and Enforcement in the Context of Sustainable Development

by LeRoy C. Paddock

LeRoy C. Paddock is Associate Dean for Environmental Law Studies at The George Washington University Law School.

Summary

Regulation is the most direct and predictable mechanism for controlling environmental behavior. Strong compliance and enforcement programs that punish violators and deter violations by others are, of course, essential to any successful regulatory system. It is increasingly clear, though, that regulation cannot by itself produce the behavioral changes needed to achieve sustainable environmental outcomes. The nature of environmental challenges has undergone such a fundamental change that the existing regulatory-focused system of environmental governance will not be able by itself to ensure healthy air, clean water, a stable climate, safe drinking water, vital ecosystems, and continuing biodiversity. Rather, environmental sustainability will require that the regulatory system be supplemented and supported through better alignment of economic drivers with environmental goals and by changes in societal values. Enforcement officials must play a significant part in this effort by both better understanding what motivates environmental behavior and how these motivations can be leveraged through the compliance and enforcement process to produce environmental gains, as well as to prevent environmental losses.

Klaus Bosselmann and David Grinlinton observe in their book *Environmental Law for a Sustainable Society*[1]:

> The notion of "sustainability" is more than a catchy phrase for an improved environmental protection strategy. Many commentators have linked sustainability to fundamental concepts such as freedom, justice and equity. There is a widespread perception today that sustainability must inform future development of society in much the same way as freedom and equity informed its present development. Only a sustainable society, capable of working with nature, not against it, will have a chance of survival.[2]

Prof. John Dernbach in *Agenda for a Sustainable America* notes, "sustainable development requires action by governments at all levels but cannot be achieved by government alone. All segments of American society—individuals, nongovernmental organizations, businesses, the scientific and technological community, educational institutions, religious organizations and families—need to play an active and constructive role."[3] This will require continuing efforts to create stronger economic signals supporting more sustainable behavior and to build societal values supporting sustainable outcomes.

Forty years after the dawn of the modern age of environmental law, the nature of environmental challenges has undergone such a fundamental change that the system of environmental governance must be reimagined to ensure healthy air, clean water, a stable climate, safe drinking water, vital ecosystems, and continuing biodiversity. As Prof. J.B. Ruhl has observed, "the environment operates in a state of highly complicated, organized disorder. Indeed, scientists are beginning to understand that the disorder—the chaos that is inherent in the environment—is its means of sustainability."[4] Based on this more sophisticated understanding of the nature of complex environmental systems, Ruhl asks: "Is it an accident that sustainable development, adaptive management, and biodiversity were unheard of in

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1. Klaus Bosselmann & David Grinlinton, Environmental Law for A Sustainable Society (New Zealand Centre for Environmental Law 2002). The theologian Thomas Berry observed in his book *The Great Work: Our Way Into the Future* (Bell Tower 1999): "The Great Work now, as we move into a new millennium, is to carry out the transition from a period of human devastation of the Earth to a period when humans would be present on the planet in a mutually beneficial manner." *Id.* at 2.
2. Berry, *supra* note 1, at viii.
3. John Dernbach, Agenda for a Sustainable America 28 (ELI Press 2009).
4. J.B. Ruhl, *Thinking of Environmental Law as a Complex Adaptive System: How to Clean Up the Environment by Making a Mess of Environmental Law*, 34 Hous. L. Rev. 933, 935 (1997-1998).

the environmental policy debates of twenty [now thirty] years ago . . . ?"[5] He answers: "I think not. Rather, the evolution of environmental law has led us to this point precisely because these three concepts are related and because they are consistent with the vision of law as a complex adaptive system."[6]

In many ways, existing environmental regulatory and enforcement programs are designed to function in exactly the opposite way. Our environmental laws tend to focus on specific pollutants discharged from specific facilities. These facilities are regulated through facility-specific permits and subject to facility-specific inspections and enforcement actions. This situation does not describe a "complex, adaptive system"; instead, it reveals a system designed to deal with older, narrowly defined environmental problems of a limited range of pollutants emanating from large point sources. Today, we understand our environmental problems involve facilities large and small, and indeed, individual conduct. We also increasingly understand that environmental problems often occur at an ecosystem scale and that most existing laws are ill-suited to resolving ecosystem-scale problems. We know, too, that unregulated or only lightly regulated activities also contribute in important ways to ecosystem damage, whether it be estuarine degradation, habitat loss, or climate instability. Ruhl's analysis supports the idea that relying solely on traditional regulatory approaches will not get us where we need to go. While compliance and enforcement programs are a necessary part of any effort to achieve sustainable environmental outcomes, simply enforcing regulations in their current form is not sufficient to achieve these outcomes.[7]

Certainly, we want our compliance programs to help organizations meet regulatory requirements and our enforcement programs to deter as many violations as possible. But because compliance with existing environmental regulations is not sufficient to achieve the larger goal of sustainability, it is important for those working on compliance and enforcement programs to think about how they might leverage their work to influence "internal"[8] economic drivers of environmental behavior and help build societal values that help achieve results beyond compliance. Enforcement programs have, for some time, supported efforts that are designed to prevent pollution, encourage the development of better environmental management systems, and promote environmental auditing, all of which can have an impact on internal economics and on values. But enforcement officials typically have not assessed the extent to which their programs can and should strategically take into account internal economics and societal values as part of the larger effort of environmental agencies to achieve sustainable outcomes.

I. Deterrence Theory

The most prominent theory of general deterrence posits that those subject to regulation are "amoral calculators."[9] Under this theory, a regulated entity will comply only when the entity believes that violations are likely to be detected and a significant penalty imposed.[10] The amoral calculator or "profit-maximizer" model is consistent with the deterrence theory many regulators have historically relied upon in developing their enforcement programs. This view typically leads to the use of traditional enforcement techniques, such as government monitoring and inspections coupled with penalties.[11]

Empirical studies, however, indicate that classic deterrence theory does not reflect the real world. Neil Gunningham, Dorothy Thornton, and Robert A. Kagan found in a study of electroplating and chemical companies that neither specific nor general deterrence played a major role in shaping corporate environmental behavior.[12] Deterrence did play a role in "reminding" the companies of their environmental obligation, but the authors found that "[o]f far greater importance in motivating management was what we term 'implicit general deterrence.'"[13] They conclude, "[r]egulation works through a complex mixture of pressures, fear, and normative duty."[14]

5. *Id.* at 1,000.
6. *Id.*
7. Researchers since the early 1990s have examined the idea of "responsive regulation," which posits that "by working more creatively with the interplay between private and public regulation, government and citizens can design better policy solutions." Ian Ayres & John Braithwaite, Responsive Regulation: Transcending the Deregulation Debate 4 (Oxford Univ. Press 1992). One more-recent manifestation of this approach is "risk-based regulation." Julia Black and Robert Baldwin assert that "it is best to regulate in a way that is responsive to regulated firms' behavior, attitudes, and culture; institutional environments; interactions of controls; regulatory performance; and change." Julia Black & Robert Baldwin, *Really Responsive Risk-Based Regulation,* 32 Law & Pol'y 181, 211 (2010); *see also* Organisation for Economic Co-Operation and Development, Improving the Governance of Risk (2010).
8. This Article posits two types of economic drivers that can affect organizational environmental behavior. External economic drivers include taxes, fees, and subsidies imposed or provided by government. Internal economic drivers, in contrast, encompass a wide range of monetized and nonmonetized factors that may have an impact on the viability of an organization, such as reputation, supply chain requirements, employee and community relations, access to markets, product differentiation, and government relations.
9. Neil Gunningham et al., *Motivating Management: Corporate Compliance in Environmental Protection*, 27 Law & Pol'y 289 (2005) (citing Robert A. Kagan & John T. Sholz, *The Criminology of the Corporation and Regulatory Enforcement Styles*, *in* Enforcing Regulation (K.O. Hawkins and J.M. Thomas Kluwer eds., 1984).
10. *Id.* at 290.
11. Timothy Malloy, *Regulation, Compliance and the Firm*, *in* Making Law Work: Environmental Compliance and Sustainable Development 125, 126 (Durwood Zaelke et al. eds., 2005).
12. Gunningham et al., *supra* note 9, at 312.
13. *Id.*
14. *Id.*

A second view of compliance behavior is that of a "good faith complier."[15] Under this view, compliance "flows from the firm's drive to obey the law."[16] The good-faith compliance view is based on a view that legitimate laws should, as a matter of societal norms, be followed.[17] The normative view of compliance suggests strategies more reliant on education and cooperation.

Prof. Timothy Malloy suggests a third factor in compliance decisionmaking: "firm routine." He observes that noncompliance under this view may be related to a management failure to track and correct problems that may lead to violations.[18] Management problems can be addressed through training and the adoption of better management systems.

While useful in understanding how best to deal with violations, none of these theories by themselves are particularly helpful in thinking about how compliance and enforcement programs might best encourage behavior that goes beyond mere compliance.

II. Beyond Compliance Behavior

A study entitled *General Deterrence of Environmental Violations* by the Oregon Department of Environmental Quality found that

> behaviors that go beyond compliance are likely more motivated by a pro-environment philosophy, by employee and customer relations, and by financial advantages of the improvement [than by deterrence]. It is not reasonable to assume that companies would be compelled to do more than required simply because they heard that other companies failed to meet minimum requirements.[19]

A critical question for compliance and enforcement program managers, then, is whether their programs are restricted in scope to assuring that regulatory drivers function at their highest level or whether compliance and enforcement programs should also play a role in shaping the economic and values drivers that are critical to achieving more sustainable environmental outcomes.

These somewhat larger strategic goals for compliance and enforcement are more than theoretical. By better understanding and leveraging the growing number of internal economic drivers, such as reputation, supply-chain requirements, and consumer preferences that push companies to go beyond minimum regulatory standards to reduce their environmental footprint in ways not required by law, compliance and enforcement programs may be able to stimulate more sustainable environmental actions. Similarly, compliance and enforcement programs may be able to be designed in ways that help make sustainability a more widely accepted societal norm.

The Oregon study indicated that existing enforcement strategies have already made an impact on internal economic incentives and public values in addition to regulatory compliance. However, one of the key challenges in achieving beyond deterrence objectives is finding ways to transform what are often incidental impacts of existing compliance and enforcement strategies on internal economics and public values into an intentional policy that achieves wider societal objectives. The Oregon study observed:

> By integrating a variety of regulatory tools—each consciously chosen for its effectiveness in a particular application—an agency can create a system that *both pushes and pulls* regulated entities toward environmentally protective behavior. Such a holistic approach can work to decrease direct compliance costs (through information sharing, assistance and incentives), increase direct cost to noncompliance (through penalties and sanctions) and increase the probability that non-complying companies will experience further direct and indirect costs (through customer and community pressure) or additional government interventions (through inspections and monitoring).[20]

III. Internal Economic Drivers

An increasing number of companies are setting and achieving environmental standards that exceed those required by law or that involve environmental issues for which few or no environmental regulations exist. These actions are sometimes referred to under the umbrella of "corporate social responsibility" (CSR). The CSR concept carries an implication that corporate decisions to exceed environmental regulatory requirements are a matter of organizational values. While organizational values can have an impact on environmental behavior, especially as manifested through senior managers who are committed to environmental performance or even to the concept of sustainability, more often, the CSR behavior is based on underlying economic considerations that have changed significantly over the last decade.

These "internal" economic drivers include reputation, customer demand, investor pressure, supply-chain requirements, lower operational risk, liability mitigation, the ability to attract and retain employees, insurance cost and availability, community license to operate, lender concerns, government and public relations, enhanced ability to plan operations and anticipate or even shape future regulatory standards, access to markets, product differentiation, green procurement standards, industry codes of conduct, international environmental standards, such as International Organization for Standardization (ISO) 14000, and operational efficiency. These drivers can produce extremely important results, although the results are likely to be less

15. Malloy, *supra* note 11, at 127.
16. *Id.*
17. *Id.*
18. *Id.* at 130.
19. State of Oregon, Department of Environmental Quality, *General Deterrence of Environmental Violations: A Peek Into the Mind of the Regulated Public* 63, *available at* http://www.deq.state.or.us/programs/enforcement/DeterrenceReport.pdf.
20. *Id.* at 58 (emphasis added).

predictable than those achieved through regulatory programs. Given the limits of regulatory programs discussed above, environmental results that stem from internal economic factors are important to achieving more sustainable environmental outcomes. Marc Allen Eisner pointed out:

> Future gains in environmental quality may be impossible without a fundamental reconsideration of regulatory design. This reconsideration must take the form of incorporating advances in corporate self-regulation, associational regulation, and standards into the regulatory system and thinking creatively about how public policies can be used to reinforce incentives or compensate for their absence.[21]

Research suggests at least five reasons a company might voluntarily regulate its environmental practices to gain a competitive advantage:

1. Shrinking waste output and production inefficiencies can reduce environmental impacts and overall costs and increase competitiveness.
2. Environmentally responsible companies attract and retain a higher-quality workforce and increased worker satisfaction leads to increased productivity.
3. Environmentally responsible companies have a better reputation in the community, which can lead to more brand loyalty. These companies also have a decreased risk of being targeted by environmental activists, which can tarnish the brand reputation.
4. Environmental responsibility reduces the chance of being exposed to risks like new regulations, pressure from investors to change policies, and increasing business costs.
5. Environmentalism may provide access to or create a completely new market with the potential for significant revenue growth.[22]

In short, "being more responsible may help corporations outcompete rivals by staying ahead of tightening regulations, reducing usage of increasingly costly inputs, and attracting investment dollars from concerned consumers."[23]

Other researchers agree that a company can gain a serious advantage when they start taking the environment into consideration.[24] In their four years of research, Daniel Esty and Andrew Winston found that companies who are successfully and profitably implementing environmental initiatives understand the interface between environmentalism and business.[25] These companies started out implementing environmental management plans because they had to, but now see business opportunities in going beyond compliance.[26] They have "evolved to the point where environmental *management* is second nature and their focus is now on mining the gold in environmental *strategy*."[27] This is in stark contrast to companies that "have not evolved in their thinking since the 1970s . . . and are still grousing about legislation and complying with it grudgingly."[28]

Reputation is one of the key drivers of environmental performance. The BP oil spill and its earlier refinery explosion significantly eroded the firm's reputation,[29] even leading to a boycott of its retail outlets.[30] Corporate reputation is an important asset to many companies. Ervin L. Black and Thomas A. Carnes point out:

> It has been shown that favorable reputations have firm-specific financial benefits to corporations by reducing the mobility of industrial rivals (Caves and Porter, 1977; Wilson, 1985); by allowing firms to charge premium prices (Milgrim and Roberts, 1986); or by enhancing firm access to capital markets (Beatty and Ritter, 1986). . . .
>
> Corporate reputation therefore meets the customary accounting definition of an intangible asset, though it is not one that is specifically identifiable (in contrast to a patent or a trademark).[31]

Another factor in the evolution some companies have undergone is pressure from stakeholders. Although the decision to implement environmental initiatives is ultimately linked to the bottom line, the growing push from stakeholders has caused companies to consider building their reputation for corporate responsibility. Daniel Esty and Andrew Winston were surprised at how often executives said the reason for launching an environmental initiative was because it was the "right thing to do."[32] However, building a good reputation is not just the right thing to do, it is also a point of competitive advantage because "doing the right thing attracts the best people, enhances brand value, and builds trust with customers and other stakeholders."[33] Esty and Winston conclude: "The logic of corporate environmental stewardship need not stem from a personal belief that caring for the natural world is the right thing to do. If critical stakeholders believe the environment matters, then it's the right thing to do *for your business*."[34] Perhaps, the most important new set of stakeholders are

21. Marc Allen Eisner, Governing the Environment: The Transformation of Environmental Regulation 282 (Lynne Rienner Publishers 2007).
22. *Id.* at 574-75. General Electric Co. provides the best example of this last reason. It launched "Ecoimagination," which among other things includes putting new green products on the market that are expected to generate $20 billion in revenues by 2010.
23. *Id.*at 576.
24. Daniel C. Esty & Andrew S. Winston, Green to Gold: How Smart Companies Use Environmental Strategy to Innovate, Create Value, and Build Competitive Advantage (Yale Univ. Press 2006).
25. *Id.* at 21.
26. *Id.*
27. *Id.* at 19.
28. *Id.*
29. *See* Jad Mouawad & John Schwartz, *Cleanup Costs and Lawsuits Rattle BP's Investors*, N.Y. Times, June 1, 2010, http://www.nytimes.com/2010/06/02/us/02liability.html (last visited Apr. 10, 2012).
30. *See* Naureen S. Malik, BP Protests Threaten Independent Dealers, Wall St. J., June 16, 2010, http://online.wsj.com/article/SB10001424052748703280004575308973098327064.html (last visited Apr. 10, 2012).
31. Ervin L. Black et al., *The Market Valuation of Corporate Reputation*, 3 Corporate Reputation Rev. 31, 31 (2000).
32. *Id.* at 13-14.
33. *Id.* at 14.
34. *Id.*

banks and insurance companies because they may require environmental assessments for major loans and give lower lending rates to companies with carefully constructed environmental management plans.[35]

Community pressure is also an important force to be reckoned with. In their research on the pulp and paper industry, Gunningham, Kagan, and Thorton found firms were motivated to go beyond compliance because of pressures from the "social license."[36] Firms are so motivated because the social license can be enforced in very real ways. It can be enforced by an enhancement or destruction of the firm's reputation, by putting pressure on regulators to more vigilantly enforce existing regulations, by the filing of citizen suits, by lobbying for tighter regulations, and by market pressures, such as boycotts.[37] The authors found that pulp and paper mill firms were generally highly motivated to stay ahead of environmental regulations, so that they could remain in the public's good graces.[38]

The attitude of company managers can play an important role in determining whether a company will be motivated to go beyond compliance. In a study of 14 pulp and paper manufacturing mills in Australia, British Columbia, Canada, New Zealand, and the U.S. states of Georgia and Washington, the researchers were focused on trying to understand the reasons for the wide variations in environmental performance.[39] One of the interesting observations of their work is "that the influence of social pressures on environmental performance depends on an 'intervening variable'—*managerial attitudes*."[40] In fact, in their analysis, "environmental management style was a much more powerful predictor of mill-level environmental performance than regulatory regime or corporate size and earnings."[41]

The factors that motivate large firms to go beyond compliance may not, however, have the same impact on smaller businesses. David Williamson and Gary Lynch-Wood found that the social license does not inspire small firms to go beyond compliance because the main motivations of the social license, stakeholder pressure and reputation, do not affect them in the same way they affect large firms, and these factors therefore do not produce a response from them.[42] The authors identify five factors that influence a firm's environmental behavior: (1) the environmental impact of the firm's products and processes; (2) customer power; (3) customer interest; (4) corporate/brand visibility; and (5) community pressure.[43] They found that two or more factors must have a "high pull rating" before a firm would be motivated to go beyond compliance.[44] These factors often are not significant enough to drive the behavior of smaller firms. Thus, it is important for government, in looking at the factors that motivate corporate behavior, to be thoughtful about whether particular companies or particular industries are more or less likely to be motivated to perform beyond what the law requires. The research suggests that it may be more important to target enforcement toward companies that do not have a high public profile while using other tools, such as recognition, to encourage companies with a higher public profile to maintain or expand their beyond-compliance activities.

The research also indicates that supporting companies that have strong supply-chain requirements may help address potential problems among smaller, less publicly visible companies. In an empirical study of 74 firms in eight sectors, Prof. Michael Vandenbergh noted that over one-half of the firms imposed environmental requirements on their suppliers.[45] Large firms were more likely to impose requirements than smaller companies. His research led to the conclusion that "government policymakers can include promotion of private contracting among the available options when encountering environmental harm that are difficult to reach using the tools of public or public-private governance."[46]

In order to achieve optimum results with the limited resources available to them, government agencies must continue to develop their understanding of how these internal economic factors affect corporate environmental decisionmaking and take the factors into account in designing management systems and setting priorities.

IV. Values

Whether viewed in terms of individual responsibility, ethics, or stewardship, values must play a growing role in environmental governance. The Aspen Institute, in its work on resource stewardship, observed:

> Continued prosperity depends on our ability to protect natural heritage and learn to use it in ways that do not diminish it. Stewardship is at the core of this obligation. It calls upon everyone in society to assume responsibility for protecting the integrity of natural resources and ecosystems and, in so doing, safeguarding the interests of future generations. Without personal and collective commitment, without an ethic based on acceptance of personal responsibility, efforts to sustain natural resources protection and environmental quality cannot succeed.[47]

Similarly, President William J. Clinton's Council on Sustainable Development found, "[s]tewardship is an essential concept that helps define appropriate human interaction

35. *Id.* at 9, 11.
36. Neil Gunningham et al., *Social License and Environmental Protection: Why Businesses Go Beyond Compliance*, 29 L. & Soc. Inquiry 307, 339 (2004).
37. *Id.* at 319-20.
38. *Id.*
39. Robert A. Kagan et al., *Explaining Corporate Environmental Performance: How Does Regulation Matter?*, 37 L. & Soc'y Rev. 51, 53 (2003).
40. *Id.*
41. *Id.* at 73.
42. Gary Lynch-Wood & David Williamson, *The Social License as a Form of Regulation for Small and Medium Enterprises*, 34 J. L. & Soc'y 321, 339 (2007).
43. *Id.* at 331-32.
44. *Id.* at 332.
45. Michael Vandenbergh, *The New Wal-Mart Effect: The Role of Private Contracting in Global Governance*, 54 UCLA L. Rev. 913, 916-17 (2007).
46. *Id.* at 968.
47. The Aspen Institute, The Stewardship Path to Sustainable Natural Systems 3-4 (The Aspen Inst. 1999).

with the natural world."[48] And, in a recent report, the U.S. Environmental Protection Agency's (EPA's) National Advisory Committee for Environmental Policy and Technology (NACEPT) recommended that the Agency incorporate the concept of stewardship into its core mission, defining stewardship as

> individuals and institutions taking responsibility to protect and enhance the environment and human health. As an ethic, environmental stewardship is rooted in both individual values and organizational cultures. As a practice, environmental stewardship embodies the understanding that compliance with environmental regulations is fundamental, that voluntary efforts are important but not a replacement for compliance, and that individuals and organizations should systematically and continuously work to reduce or avoid the adverse environmental and health impacts of their activities.[49]

Based on this definition, the NACEPT report suggested,

> stewardship can make meaningful contributions to achieving significant environmental outcomes. EPA's work is, of course, driven primarily by regulatory mandates from Congress and is limited by resources. Strong regulatory and enforcement programs play a significant role in motivating stewardship actions. . . . However, the complex environmental challenges the country and the world face often stretch beyond the borders of the law and frequently outstrip the resources available to the Agency. Addressing big environmental problems requires the Agency to leverage other resources (such as private sources of funding, citizen action, and corporate actions like supply chain requirements) and sources of knowledge and experience. We believe that stewardship activities can make important contributions to leveraging these external resources.[50]

Values are one of the key drivers of environmental behavior. People tend to act in pro-environmental ways when a situation activates a feeling of moral obligation to do so—simply put, pro-environmental behaviors are more likely when people feel morally responsible to undertake them. People will engage in pro-environmental actions when situations activate personal norms.[51] Personal norms, which are feelings of an obligation to act in a particular way,[52] can be a potent influence on environmental behavior because people try to avoid the guilt of breaking personal norms. Personal norms are deeper than social norms, which are rules for expected behavior based on the behavior of others. A person acting on a personal norm will behave more consistently than a person acting out of extrinsically created social norms because the feeling of obligation and guilt exist whether or not other people disapprove.[53] When norms become very deeply internalized, they give rise to identity, which is a sense of oneself.

The Norm-Activation Theory of Altruism was developed by Shalom H. Schwartz.[54] Schwartz was interested in the question of why people help others when there is no benefit to them. The Norm-Activation Theory of Altruism posits that people help others when situations illicit their feeling of personal obligation—that is, when something activates a personal norm. Building on the Norm-Activation Theory of Altruism, the Values-Beliefs-Norms Theory posits that activation of a personal norm stems from one's values.[55] The Values-Beliefs-Norms concept suggests that values underlie and affect everything, from how a person interprets information, to what they are aware of, to what they think humans are responsible for, to what they do about it.[56] According to Values-Beliefs-Norms theory, values affect and shape one's beliefs, beliefs then affect and shape one's norms, and one's norms lead to behavior.[57] A person will choose environmentally preferred behavior when the choice triggers a feeling of moral obligation to do so. But what that feeling of obligation is will depend on the person's values, because the norm of moral obligation is shaped by values.[58] Paul C. Stern et al. have found that Values-Beliefs-Norms theory offers the best account for nonactivist support of the environmental movement.[59]

Robin Eckersley, Gunnar Grendstad and Dag Wollebaek, and Suzanne C. Gagnon Thompson and Michelle A. Barton describe values in terms of anthropocentrism (the belief that the environment needs protection because of its contribution to human welfare)[60] versus ecocentrism (the belief that the ecosystem has an intrinsic value and therefore should be protected). Stern et al. describe three value orientations: self-interest; altruism toward others; and altruism toward other species and the biosphere.[61] These have been referred to as egoistic values, altruistic values, and biospheric values. An individual with egoistic values cares about the environment when there is a direct

48. The President's Council on Sustainable Development, Sustainable America: A New Consensus for the Prosperity, Opportunity, and a Healthy New Environment for the Future 109 (1996).
49. U.S. EPA, National Advisory Council for Environmental Policy and Technology, Advice Letter to the Administrator on Promoting Environmental Stewardship 1-2 (2010), *available at* http://www.epa.gov/ocempage/nacept/reports/pdf/2010_06_24_nacept_stewardship_letter.pdf.
50. *Id.* at 2.
51. Susan M. Koger & Debra DuNann Winter, The Psychology of Environmental Problems 107 (3d ed. 2010).
52. Annika M. Nordlund & Jörgen Garvill, *Value Structures Behind Proenvironmental Behavior*, 34 Env't & Behavior 740-56 (2002).
53. Koger & Winter, *supra* note 51, at 102.
54. Shalom H. Schwartz, *Normative Explanations of Helping Behavior: A Critique, Proposal, and Empirical Test*, 9 J. Experimental Soc. Psychol. 349-64 (1973); Shalom H. Schwartz, *Normative Influences on Altruism*, *in* Advances in Experimental Social Psychology 221-79 (Leonard Berkowitz & Elaine Walster eds., 1977).
55. Koger & Winter, *supra* note 51, at 107; Thomas Dietz & Paul Stern, *Toward a Theory of Choice: Socially Embedded Preference Construction,* 24 J. Socio-Econ. 261, 273 (1995).
56. Koger & Winter, *supra* note 51, at 107; Thomas Dietz et al., *Environmental Values*, 30 Ann. Rev. Env't & Resources 335, 356 (2005).
57. Dietz et al., *supra* note 56.
58. Koger & Winter, *supra* note 51, at 107-10; Dietz & Stern, *supra* note 55, at 270.
59. Paul C. Stern et al., *A Value-Belief Norm Theory of Support for Social Movements: The Case of Environmentalism*, Human Ecology Rev. 81-98 (1999).
60. A person with an anthropocentric value orientation is less likely to act to protect the environment if a human-centered value interfered.
61. Paul C. Stern et al., *Value Orientations, Gender, and Environmental Concern,* 25 Env't & Behavior 322 (1993).

and personal impact on the individual. An individual with altruistic values cares about the environment because of its relevance to other human beings.[62] An individual with biospheric values cares about the environment and ecological systems themselves, beyond the impact on human survival and personal comforts.

Pro-environmental actions (like other kinds of actions) are taken because a trigger activates a moral obligation. The moral obligation, in turn, depends on one's value orientation, so that only a trigger within the value orientation will activate the moral norm to act.[63] A person with an egocentric value orientation may not be triggered by a message to save the planet, but the person's actions may be triggered by a message to save the lake that the person swims in every morning. With diffuse sources of pollution that often result from individual decisionmaking about how to manage farms or drive vehicles or undertake development that increases runoff and destroys habitat, values are central to solving these problems. Compliance and enforcement programs may be able to play an important role in building personal and social norms that support more sustainable environmental outcomes by carefully considering how compliance and enforcement programs can have an impact on educating individuals and organizations, reminding individuals and organizations of the importance of environmental issues, activating egocentric, altruistic, or biocentric values, and demonstrating that those who comply with or, more importantly, go beyond what the law requires are assured that they will not be undermined by noncompliance.

V. Building Beyond Deterrence Compliance and Enforcement Programs

The preceding discussion of the changing nature of environmental problems, the need to achieve environmental outcomes well beyond those mandated by law, the growing role of internal economic drivers in organizational environmental behavior, and the importance of values in making progress on environmental issues point to the need to rethink compliance and enforcement strategies. While these programs still must punish wrongdoing and deter others from violating the law, compliance and enforcement programs should consider, as a strategic matter, how these resources can impact internal economic drivers of environmental behavior and how the resources can influence societal values more generally. This section suggests several ways that compliance and enforcement program managers might be able to better leverage their assets to influence internal economic drivers and to help build public values that support more sustainable environmental outcomes.

A. *Employ a Full Range of Compliance and Enforcement Tools*

Compliance and enforcement programs can achieve results that extend beyond deterrence by reminding the public of the need to comply and the importance of environmental performance on internal economic drivers, such as reputation, by reflecting the fact that environmental issues are an important public value, and by reinforcing the need to act in conformity with those values. These reminding, reflecting, and reinforcing functions are best accomplished when there is regular interaction between the regulators and the regulated community that occurs in settings that range from educational on one end of the spectrum to criminal enforcement on the other. This approach is somewhat analogous to the concept of "community-based policing,"[64] a widely used, though sometimes controversial,[65] approach to crime reduction. Community-based policing is designed to prevent crime, not just deter crime. It reduces crime by using a problem-solving approach that tailors the prevention tools to the nature of the specific community problem.[66] Among the tools used in community policing are drug abuse education, enforcement of what might be seen as minor violations of health and safety regulations, community meetings, opening neighborhood offices, and conducting foot patrols, in contrast to reliance primarily on catching criminals after the fact and punishing the violation.[67] Community policing, among other things, is designed to strengthen community values that can help prevent crime.[68]

Compliance and enforcement programs vary significantly in the range of tools available to deal with noncompliance. Some programs are very narrowly confined, leaving little room to innovate or solve problems in ways that might help build and reinforce environmental values and achieve goals that are more prevention- than deterrence-oriented. The narrowest state programs may have only limited compliance assistance programs,[69] administrative order authority (which may be constrained by opportunities to challenge the order before it is issued), and civil judicial penalty authority. The narrow range of tools severely constrains the choices government agencies have

62. Stern has found that mobilization is more successful when the problem is framed in terms of avoiding harmful consequences to people and in ways that lead potential converts to see themselves as personally responsible.
63. Koger & Winter, *supra* note 51, at 109; Dietz & Stern, *supra* note 55, at 270.
64. Wesley G. Skogan, *The Promise of Community Policing*, *in* Police Innovation: Contrasting Perspectives 27, 28 (David Weisburd & Anthony A. Braga eds., 2006).
65. *See generally* Steven Mastrofski, *Community Policing: A Skeptical View*, *in* Police Innovation: Contrasting Perspectives 44 (David Weisburd & Anthony A. Braga eds., 2006).
66. Skogan, *supra* note 64, at 34.
67. *Id.* at 27.
68. *Id.* at 31.
69. Compliance assistance typically encompasses the provision of information about regulations, training on how to comply with the law, and, in some cases, access to agency personnel to ask questions about how to comply. Federal law, in some cases, mandates the creation of compliance assistance programs for small businesses. These programs can have value beyond deterrence by underscoring the importance of environmental regulation and providing information about environmental impacts of business activities that can help build societal values.

and the ability of compliance and enforcement programs to influence internal economics or values.

In contrast, the federal government and many states have a much broader compliance and enforcement toolkit that allows room for innovation. This broad range of tools facilitates a problem-solving approach to compliance. As Prof. Malcolm Sparrow notes in his book *The Regulatory Craft*, "[f]or regulators, continuing in a traditional, enforcement-centered mode—given the constraints of shrinking budgets, declining public tolerance for the use of regulatory authority, and clogged judicial systems—is now simply infeasible."[70] In the environmental context, this is all the more true when our environmental goals go well beyond simple compliance with existing regulations. Instead, Sparrow suggests the need for "the capacity to identify, prioritize, and fix significant risks, problems, and patterns of noncompliance. A problem solving strategy picks the most important tasks and then selects appropriate tools in each case, rather than deciding on the important tools and picking the tasks to fit."[71]

Compliance and enforcement programs that are designed to support sustainability goals should provide agencies with the freedom to develop problem-solving strategies, to use or create tools that can be adapted to address a wide range of problems, and to establish a more pervasive compliance and enforcement presence. This enforcement "presence" can influence values-based and economics-based behavioral drivers that can help avoid environmental harm, rather than simply deterring violations. Among the additional tools that can assist with this task are technical assistance programs, the use of field citations and administrative penalty orders, the authority for citizens to enforce violations, social marketing programs, and the availability of strong criminal sanctions.

1. Technical Assistance

Technical assistance programs, in contrast to compliance assistance programs, often provide businesses with consulting services that can help companies in understanding their environmental problems and implement changes in the processes or products that reduce the environmental impacts of their organizations. This type of assistance can have an impact on the internal economic drivers for companies (operating efficiency, reputation enhancement, employee morale, and insurance savings, among others), as well as on the values of company managers and employees. The Minnesota Technical Assistance Program[72] is an excellent example of how a high-functioning technical assistance program can be designed and funded. The Minnesota Technical Assistance Program, like many technical assistance programs, is university-based, and it engages engineering students and other students with a technical background to assist companies redesign processes or take other steps to reduce hazards. This allows businesses to much more rapidly understand the environmental problems that may flow from their operations and, importantly, provides the businesses with strategies to reduce the impacts in cost-effective ways. These changes may relate to compliance obligations, but can also address environmental issues that are not subject to regulation.

2. Field Citations

Field citations can also be an important part of the compliance arsenal.[73] Like graffiti on buildings or minor crimes in the community policing context, relatively minor environmental violations, such as improper management of refrigerants or littering (including disposal of tires, appliances, and other items), can degrade the public perception that environmental protection is an important value. These minor violations have traditionally been very difficult to enforce using traditional tools, such as misdemeanor criminal statutes, because of the time and expense associated with minor environmental criminal violations and the lack of interest by prosecutors and judges in adjudicating these violations when they are overloaded with traditional crimes.

It is in this context that Minnesota introduced the use of field citations in 1991. Research had indicated other means of enforcing relatively minor dumping violations, such as littering fines, were not effective. To make enforcement more efficient, the state legislature granted the Department of Natural Resources Conservation Officers (who are sworn law enforcement officers, carry firearms, and are used to confronting people in the field) with the authority to write what are essentially environmental tickets.[74] The legislation authorizing field citations includes a penalty schedule that ranges up to $2,000.[75] Field citation programs typically have an expedited appeals process.

The Clean Air Act (CAA) Amendments of 1990 also introduced a field citation program. Field citations help build values by reminding the public that environmental issues, even minor issues such as open dumping, are taken seriously and punished. Very few states have enacted field citation laws.[76]

70. Malcolm Sparrow, The Regulatory Craft: Controlling Risks, Solving Problems, and Managing Compliance 20 (The Brookings Inst. 2000).
71. *Id.* at 130.
72. *See generally* University of Minnesota, Minnesota Technical Assistant Program, http://www.mntap.umn.edu (last visited Apr. 10, 2012).
73. LeRoy Paddock, *Civil Field Citations*, Third International Conference on Environmental Enforcement (1993), *available at* http://www.inece.org/3rdvol1/pdf/paddock.pdf.
74. Minn. Stat. §116.073.
75. *Id.* §116.073, subd. 2. EPA has field citation authority under §113(d)(3) of the Clean Air Act (CAA) 42 U.S.C. §7401-7671q, ELR Stat. CAA §§101-618. This section authorizes EPA to implement a federal program through regulations that establish appropriate minor violations and informal hearing procedures. Field citations assessing penalties of up to $5,000 per day of violation may be issued by EPA officers or employees. *See* John B. Rasnic & Jane M. Engert, *United States' Clean Air Act Field Citations Program: New Enforcement Authority to Address Minor Violations*, Third International Conference on Environmental Enforcement (1993), *available at* http://www.inece.org/3rdvol1/pdf/rasnic.pdf.
76. *See* Environmental Council of the States, Inventory of States Authority to Issue Penalties (2010).

3. Administrative Penalty Orders

Administrative penalty authority can also be an important tool in creating a more pervasive enforcement presence in communities. All states in the United States have the authority to order a facility to correct violations of environmental laws, but just over one-half of the states[77] have the authority to administratively assess penalties. Administrative Penalty Orders allow an administrative agency to both order that a violation be corrected and to also assess a penalty for an environmental violation, rather than pursue the more time consuming and expensive process of judicial enforcement of penalties. While most environmental violations are resolved by settlement agreements before a case is referred for judicial enforcement, settlement negotiations can be complex and can take months to complete. This may result in a decision not to pursue certain types of smaller violations because of the time and cost that would be needed to close the case. For example, an examination of enforcement actions in Minnesota indicated that very few penalty actions that would likely result in penalties of under $10,000 were being pursued because the cost of pursuing the enforcement action could exceed the amount of the penalty.

Administrative penalty orders shortcut the litigation or settlement process. In states like Minnesota, administrative penalties are not negotiated. Although the penalty orders can be appealed through an administrative process, the time in which an appeal must be filed may be as short as 30 days. This process allows enforcement actions to be concluded more quickly, making it more practical for agencies to pursue violations for which a smaller penalty would be appropriate and making sure that the reputational impact of imposed penalties is more certain.

A review conducted by the Minnesota Legislative Auditor six years after the administrative penalty order process had been introduced in the state found:

> Administrative penalty orders provide an actual penalty as opposed to a notice of violation or letter of warning, which violators have often ignored. (. . . staff told us that administrative penalties are also effective with large companies, which can easily afford a penalty under $10,000 [the ceiling under the Minnesota law], but are concerned about their environmental record and corporate image.) On the other hand compared with stipulation agreements [enforcement settlements] which may take years to negotiate and ultimately require the violator's consent, administrative penalty orders are relatively easy to use.[78]

Administrative Penalty Orders resulted in compliance with the environmental requirement in about 90% of the cases within one month. Administrative Penalty Orders can help make visible the importance of environmental improvement and, as the Legislative Auditor noted, have an impact on internal economic drivers, such as reputation.

4. Citizen Suits

Enabling the public to more directly influence environmental behavior can occur through a number of channels. The most direct enforcement-related approach is through "citizen suits." Many of the environmental laws in the United States authorize citizens to file civil lawsuits against organizations that violate the law,[79] allowing nongovernmental environmental organizations to function as "private attorneys general" in enforcing environmental laws. Thousands of such suits have been filed since the early 1970s. States with delegated authority or the federal government can preempt citizen suits if one or the other government body begins an enforcement action within 60 days after the citizen suit notice of intent is filed.[80] In addition to federally authorized citizen suits, a few states have enacted general environmental citizen suit provisions, referred to in some states as "Environmental Rights Acts."[81] These statutes typically allow any person to file a law suit to prevent "pollution, impairment, or destruction" of the environment. Citizen suits can have an especially significant impact on reputation, since they are not infrequently accompanied by media coverage. As a result, "the authority for citizens" to sue to enforce environmental laws may encourage a number of organizations to take steps to avoid the possibility of a serious violation or to engage in environmental activities not required by law to provide a reputational "buffer."

5. Criminal Enforcement

Finally, versatile environmental enforcement programs should have the capacity to prosecute serious environmental violations, such as those that may endanger public health or those that underpin the self-reporting system as major crimes. Historically, in the United States, many environmental violations were treated as minor crimes. This form of criminal sanction proved ineffective because prosecutors and judges were not interested in minor criminal violations when their dockets were crowded with what they saw as more serious property or public safety crimes. Thus, instead of contributing to building social values supporting environmental protection, the ineffectiveness of this remedy may have in fact had the opposite impact.

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77. *Id.*
78. State of Minnesota, Office of the Legislative Auditor, Pollution Control Agency's Use of Administrative Penalty Orders 4 (1995), http://www.auditor.leg.state.mn.us/ped/1995/pca1.htm (last visited Apr. 10, 2012).
79. *See, e.g.*, 33 U.S.C. §1365 & 42 U.S.C. §7604.
80. *See, e.g.*, 42 U.S.C. §7604(b).
81. *See, e.g.*, Minn. Stat. §116B.03, which provides that:
> Any person residing within the state . . . may maintain a civil action in the district court for declaratory or equitable relief in the name of the state of Minnesota against any person, for the protection of the air, water, land, or other natural resources located within the state, whether publicly or privately owned, from pollution, impairment, or destruction. . . .

In contrast to the citizen suit provisions in the Clean Water Act (CWA), 33 U.S.C. §§1251-1387, ELR Stat. FWPCA §§101-607, or the CAA, 60-day notice is not required under the Minnesota Environmental Rights Act.

Many countries outside of the United States have also relied heavily on criminal law as the basis for environmental enforcement and found this approach problematic.[82] A 2006 review of environmental sanctions in the United Kingdom found:

> Criminal prosecutions remain the primary formal sanction available to most regulators. While this sanction is appropriate in many cases, the time, expense, moral condemnation and criminal record involved may not be appropriate for all breaches of regulatory obligations and is burdensome to both the regulator and business. While the most serious environmental violations merit criminal prosecution, it may not be an appropriate route in achieving a change in behavior and improving outcomes for a large number of businesses where the non-compliance is not truly criminal in its intentions.[83]

Most U.S. states and the U.S. government itself have turned to civil enforcement tools to address routine environmental violations, but have also enacted felony criminal penalties for the most serious environmental violations. The very act of making some environmental violations serious felonies subject to substantial imprisonment reinforces the idea that some environmental conduct lies well outside acceptable societal values. Criminal violations can also have a major impact on reputation, leading companies to adopt procedures and undertake environmental actions to protect their reputation. Criminal enforcement can also have other economic impacts on companies, including disqualification from government contracting.

B. Design Compliance Programs That Align With Markets

By integrating compliance systems into market mechanisms, compliance and enforcement officials can leverage economic drivers to achieve environmental results and help embed environmental values in organizations. Perhaps, the best example of this situation in the United States is the sulfur dioxide (SO_2) trading system. The 1990 CAA Amendments authorized a new tradable allowance program for SO_2 emitted from power plants. At the same time, the legislation required $S0_2$ emissions to be reduced by approximately 50%. The program accomplished the statutory goal with many of the reductions coming earlier than anticipated[84] and with very few enforcement actions.[85] The near 100% compliance was facilitated by the requirement that all regulated facilities must install continuous emissions monitors on their stacks and report the results of the monitoring in real time to EPA.[86] Equally important, the penalty for noncompliance was $2,000 per ton of excess emissions and the loss of an emission allowance during the following year.[87] Because an active market for allowances existed that priced allowances well under $2,000 per ton,[88] there were strong incentives to comply.

An important factor in the success of the acid rain compliance program was the fact that companies could make or save money by operating more efficiently or installing SO_2-reducing technologies. This opportunity to make or save money drove innovation,[89] allowed compliance decisions to be incorporated into the business planning process, and provided operators with a business opportunity in the resulting SO_2 market.[90] A 2001 study of the SO_2 trading program found "the cap-and-trade approach allows firms to apply their entrepreneurial skills to innovate or reduce the costs of compliance and retain part of the economic gains that result from these efforts."[91]

Designing regulatory programs, including the enforcement aspects of these programs, to align with established business processes can trigger a number of internal economic drivers that may make these programs more politically acceptable, reduce the burden on enforcement officials, and trigger more careful analysis of a company's environmental impacts.

C. Promote Learning and Self-Evaluation

Mechanisms that support compliance while also providing information about the environmental aspects of regulated entities' operations can help produce results that go beyond deterrence. Environmental auditing programs are perhaps the most important of these learning and evaluation tools. EPA and many states have, for over a decade, encouraged environmental auditing as part of their compliance programs. Typically, environmental auditing programs require a regulated entity to systematically review its operations using an environmental management system[92] or a similar mechanism to identify noncompliance. If an entity finds a violation, it must promptly report the violation to the state environmental agency or EPA, correct the violation, and take steps to prevent recurrence.[93] Under the EPA program, gravity-based penalties can be forgiven and no criminal referral will be made should the violation be identified under the policy.[94] This audit pro-

82. Richard McCrory, Regulatory Justice: Making Sanctions Effective (2006), *available at* http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/whatwedo/bre/reviewing-regulation/compliance-business-es/page44102.html.
83. *Id.* at 18.
84. Byron Swift, *How Environmental Laws Work, An Analysis of the Utility Sector's Response to Regulation of Nitrogen Oxides and Sulfur Dioxide Under the Clean Air Act,* 14 Tulane Envtl L.J. 309, 325 (2001).
85. *Id.* at 403.
86. *Id.* at 403.
87. 42 U.S.C. §7651J (A).
88. *See* Tim Haab, *Cap'n Trade: Sulfur Dioxide Prices*, Environmental Economics Blog, http://www.env-econ.net/2009/01/capn-trade-sulfur-dioxide-prices.html (last visited Apr. 10, 2012).
89. Swift, *supra* note 84, at 391-92.
90. *Id.* at 390-91.
91. *Id.* at 391.
92. *See* U.S. EPA, Environmental Management System/ISO 14001—Frequently Asked Questions, http://water.epa.gov/polwaste/wastewater/Environmental-Management-System-ISO-14001-Frequently-Asked-Questions.cfm (last visited Apr. 10, 2012).
93. *See* U.S. EPA, Incentives for Self-Policing: Discovery, Disclosure, Correction, and Prevention of Violations, 65 Fed. Reg. 19625-26 (Apr. 11, 2000).
94. *Id.* at 19624-25.

gram has been expanded to include penalty forgiveness in the case of audits conducted by new owners as part of a merger or acquisition.[95]

Operating under the audit policy allows participating companies a better opportunity to protect their reputations, maintain employee morale and community relations, reinforce relationships with government agencies, and perhaps reap other internal economic benefits, including cost savings. Audits can also have an impact on values by providing better information to managers about the nature of an organization's environmental impacts and how those impacts can be reduced. At least for some companies, environmental audits are used to assess environmental performance beyond simple compliance with environmental laws.[96]

Minnesota has used its auditing program to target smaller companies by developing easy-to-use "audit checklists."[97] While these checklists focus on compliance issues, they also serve an important reminder of the value the state places on environmental protection. They also reach companies that may not face the same pressures to address environmental issues that larger, more publicly visible companies may face.

A related mechanism for reaching small business is through what are known as "environmental results programs." These programs originated in Massachusetts as a way of dealing with the very large number of small facilities (such as dry cleaners, auto body shops, printers, and auto salvage yards) that are subject to environmental regulation. Environmental results programs typically require facilities to audit their operations to assure they are in compliance and to self-certify that fact. The certifications are reviewed for accuracy, and some inspections may occur to validate the certifications if there is reason to believe the certification may not be accurate. Today, 20 states have environmental results programs, many of which were adopted with the encouragement and support of EPA.[98] One study found, "[s]ectors where [an environmental results program] is applied generally show improved performance—sometimes substantial—after the first round of compliance assistance and self-certification has been completed."[99] Like environmental audits, environmental results programs can lead to greater awareness of the environmental impact of an organization's operations.

The Netherlands is using an approach referred to as "self-management supervision."[100] The approach changes the focus of inspections from examining specific equipment and monitors to review of the quality of a company-adopted "company self-management system." Similarly, British Columbia's Compliance Management "recognizes that achieving sustainability requires 'shared stewardship' as one key element in the Ministry of Environment's compliance strategy." Under the shared stewardship concept,

> protection of the environment, human health and safety is a responsibility shared by other agencies, levels of governments, business/industry, other organizations, stakeholders and the public. While the Ministry needs to ensure that parties comply with regulatory requirements, it also encourages and supports parties to go beyond these requirements to achieve environmental stewardship.[101]

Nonregulatory environmental management programs can also support both compliance and activities that go beyond compliance. EPA has long backed the use of environmental management systems, either based on the ISO 14001[102] system or on other systems, such as the American Chemistry Council's Responsible Care© program.[103]

D. Use Social Marketing to Reinforce Environmental Values

Community-based policing, as we have noted, relies in part on building community values as a means of preventing violations. Similarly, there may be a role for enforcement officials in supporting social marketing campaigns designed to raise the awareness of environmental issues, thereby preventing violations and providing information that may lead to environmental actions that exceed the minimum required by law.

Social marketing is a process that applies marketing principles and techniques to create, communicate, and

95. *See* U.S. EPA, Interim Approach to Applying the Audit Policy to New Owners, 73 Fed. Reg. 44991 (Apr. 11, 2000).

96. *See* Aseem Prakash, Greening the Firm: The Politics of Corporate Environmentalism 155 (Cambridge Univ. Press 2000).

97. *See* Minnesota Pollution Control Agency, Environmental Audit Program, http://www.pca.state.mn.us/index.php/regulations/permits-and-rules/guidance-and-assistance/environmental-audit-program.html?menuid=&redirect=1 (last visited Apr. 10, 2012).

98. *See* U.S. EPA, Environmental Results Program, http://www.epa.gov/erp/index.htm (last visited Apr. 10, 2012). EPA notes: "A typical ERP combines several interlocking policy tools in a cyclical process to address environmental problems in a sector." U.S. EPA, Basic Information, http://www.epa.gov/erp/basicinformation.htm (last visited Apr. 10, 2012).

99. *See* U.S. EPA, ERP Results, http://www.epa.gov/erp/results.htm (last visited Apr. 10, 2012).

100. European Union Network for Implementation and Enforcement of Environmental Law (IMPEL), Practical Application of Better Regulation Principles in Improving the Efficiency and Effectiveness of Environmental Protection Authorities 20 (2009).

101. British Columbia Ministry of the Environment, Compliance Management Framework 6 (2007).

102. *See* International Organization for Standardization, ISO 14000 Essentials, http://www.iso.org/iso/iso_14000_essentials (last visited Apr. 10, 2012).

103. EPA has said that it

> will continue to encourage organizations to design and implement environmental management systems that improve compliance, prevent pollution, and integrate other means of improving environmental performance. EPA is also leading research designed to evaluate the effectiveness of environmental management systems in various settings and integrating environmental management systems into more of its own programs. We are evaluating which EMS elements and applications are most effective and how these management systems might be used to strengthen environmental programs and policies. This includes the ongoing efforts to assess the potential financial benefits of environmental management systems adoption and to assess whether environmental management systems should play any role in the design of regulatory and permitting programs.

U.S. EPA, Environmental Management Systems (EMA), http://www.epa.gov/region4/ems/index.html (last visited Apr. 10, 2012).

deliver value in order to influence target audience behaviors that benefit society, as well as the target audience.[104] Social marketing adopts traditional marketing's customer-based orientation, in which intense market research is done to understand, address, and directly respond to a target audience. Social marketing uses the marketing mix known as the 4Ps: product; price; place; and promotion. Additionally, social marketing utilizes positioning, which is the act of designing the product in such a way that it lands on and occupies a distinctive place in the mind of the target market.[105]

Social marketing differs significantly from traditional marketing in its aim: rather than sell a good or service for financial profit, social marketing sells desired behaviors to benefit society. For example, to solve overarching environmental problems of nutrient contamination of estuaries, a social marketing campaign may focus on selling people the idea of reducing the use of, or the altering the timing of, the use of lawn fertilizers that may result in nutrient runoff. The competition, in the social marketing context, is not a competing brand, but rather the current behavior of the target audience.[106]

In social marketing, the product is the benefits of the behavior that is being promoted, structured in terms of the audience's preferences or values. The price is any cost the target audience will pay, either monetarily, or in terms of social cost, minus any incentives the behavior can offer. Place is where and when the target audience will perform the desired behavior. Promotion is how you will package the behavior in terms of the communication channels, as well as deciding on the messages themselves.[107]

Social Marketing can be used to influence pro-environmental behavior in two ways: by raising awareness about an environmental problem; and by framing and packaging choices regarding that problem in ways that activate values held by individuals, making action more likely. As such, social marketing can provide a shortcut to pro-environmental behavior. This can be demonstrated at both the individual and societal level.

On an individual level, social marketing can expose a person to an environmental problem of which the person might otherwise be unaware. Social marketing can also create a prepackaged, developed norm, and invite the individual to adopt that norm. Social marketing does this by creating a narrative around the choice of pro-environmental behavior that explains why the choice is relevant (and necessary) to the individual. To be effective, the explanatory narrative has to fit into the individual's value orientation. For example, if the goal of the social marketing campaign is to influence a person who holds egocentric values, a narrative about saving the planet is unlikely to work because the person simply does not care about saving the planet. However, a narrative that explains the importance of desired values, such as the ability to fish in clean water, speaks to egocentric value priorities.

Absent the proper values-framing, the message will fall on deaf ears. This has implications for social marketing on a worldwide level. Studies show that while altruistic values are most commonly observed around the world, U.S. and European samples show a priority of egoistic concerns.[108] This means that social marketers attempting to influence behavior in Asia may produce better results if they are framed in terms of how a choice affects the welfare of others, while in the United States and Europe, social marketers may be more effective by framing the choice in terms of how it benefits an individual.

At the societal level, social marketing can create a shortcut to a pro-environmental outcome, speeding the process of social change. Several theorists have outlined the process of social change.[109] Daniel Yankelovich et al. identify seven stages of public opinion, the first five of which are relevant here. The first occurs when the public first becomes aware of a problem, though it is still unaware of any specifics. The second stage is feeling of greater urgency about the problem. Both stages one and two represent the public's consciousness of an issue slowly rising. The third stage is discovering the choices. At this stage, the public usually focuses on choices that leaders offer without insisting on alternatives to consider, though these are often not the best choices. Fourth is wishful thinking. This stage occurs when the public's resistance to facing trade offs to solve the problems kicks in. The fifth stage, involving weighing the choices, overlaps with stage four, and is the hard-work stage, where the public struggles with change. Shifts of public opinion are time-consuming, taking years or even decades to progress through the stages to implement change.

Social marketing can help to speed the process to stage five. Environmental problems have their basis in objective reality, but that reality, and the raw data that describes it, has to be explained in the context of a social problem. For example, people generally need to understand *why* it is bad that the river has x amount of chemical y before they will take action. "Raw data must become 'intelligence' to become a basis for action."[110] This is one important role for social marketing: it can help interpret raw data by framing it in a story that is easier to understand. By doing so, social marketers can move the public from no awareness of the problem, through the dawning awareness stage, to the greater urgency stage.

Social marketing can also be beneficial by providing alternative choices in the "discovering choices" stage. Since the public's feeling of urgency encourages it to cling to a solution, a well-developed course of action created by social

104. Philip Kotler & Nancy Lee, Social Marketing: Influencing Behaviors for Good 7 (Sage 2008).
105. *Id.* at 181-98.
106. *Id.* at 13.
107. *Id.* at 205-68.
108. P. Wesley Schulz, *Environmental Attitudes and Behaviors Across Cultures*, Online Readings in Psychology and Culture (2002), *available at* http://www.wwu.edu/culture/Schultz.htm; P. Wesley Schultz & Lynnette Zelezny, *Reframing Environmental Messages to Be Congruent With American Values*, 10 Human Ecology Rev. 126, 130 (2003).
109. Alan R. Andreasen, Social Marketing in the 21st Century 42 (Sage Publications 2006).
110. *Id.* at 58.

marketing can be particularly effective at this stage. Finally, social marketing must continue its message through the fourth stage, reiterating that action must be taken and that there will be costs, but emphasizing the positive benefits of suggested pro-environmental action. In this way, social marketing can speed the public will to the fifth stage, weighing the choices. Social marketing can provide the public complete, packaged, and compelling pro-environmental behaviors that can rival more traditional choices.

This sequence has played out in the context of recycling over the last three decades. Social marketing played an important role in raising awareness of the problem of waste disposal. It helped people and businesses understand the choices that were available to reduce waste through recycling and the cost of these choices. And social marketing describes the system established to make recycling convenient for the public, helping to establish a core public value that favored recycling and speeding the adoption of recycling practices as an alternative to disposing of waste in landfills or incinerators.[111] Enforcement efforts were still needed to address violations, but the social norm supporting recycling reduced the demand on enforcement and produced behaviors that enforcement alone could not likely have driven.

The Chesapeake Bay Social Marketing Initiative is a good example of how social marketing can be used to influence individuals and society to solve environmental problems.[112] The Chesapeake Bay Program's (Program) overall goal was to protect the Chesapeake Bay. Drawing from traditional marketing, the Program focused its goal on achievable individual behavior: to stop overfertilization by encouraging people to switch from fertilizing in the spring to fertilizing in the fall and/or to use lawn care services that protected the Bay.[113]

The Program wanted to reach a new target audience of residents it had not successfully reached in the past, especially those for whom ecocentric values did not resonate. Market research revealed that lawn care behavior correlated to lifestyle choices, so the Program framed the lawn fertilization issue as a lifestyle issue, protecting the regional icon, the Blue Crab. The intended message was that residents should delay fertilization until the fall, not for environmental reasons, but so that residents could continue serving and eating the Blue Crab. The program developed funny and irreverent slogans to deliver its message, such as "Save the crabs, then eat 'em,'" and "Save the crab cakes." In addition to television advertisements, the slogans were printed on drink coasters that were distributed to local seafood restaurants. Residents who chose Bay-friendly lawn services received window stickers that read, "No appetizers were harmed in the making of this lawn." The results showed that the social marketing campaign was successful: people who had heard the campaign were less likely to use fertilizer in the spring, and more of them were willing to forego the use of fertilizer entirely.[114]

In this example, research into the target market (non-ecocentric people with lawns) revealed a lifestyle as a value priority. The Program then framed the product (delaying fertilizing until fall) as a lifestyle choice. The positioning of the product was humorous—it was for people who did not care about a dour "save the bay" message; it was for people who wanted to have a good time and enjoy a local tradition.

On the individual level, the campaign created a norm (fertilize in the fall, rather than spring) that would activate when a person thought about fertilization. The norm was accepted and adopted because the rationale to "Save the crab cakes" meshed well with the lifestyle value priority. On the societal level, the campaign helped to raise awareness of the pollution of the Bay, and to grow the feeling of urgency.[115] The Campaign explained the effects of the problem in terms that resonated with the population and offered a simple alternative (delay fertilization). An alternative approach, of course, would have been to enact a law prohibiting people from fertilizing their lawn except in the fall. However, directly enforcing a law banning the use of particular types of lawn fertilizers against individual homeowners would be quite difficult, given the large number of homeowners in hundreds of jurisdictions in the Bay region.

British Columbia has also incorporated social marketing as a key element of its water stewardship strategy. The strategy document notes:

> Technically sound, cost-effective programs can often fail if pertinent information doesn't reach the right audience. With few exceptions, a communication or social marketing strategy should be an integral part of any water use efficiency program.
>
> Many water use efficiency programs are voluntary measures. Therefore, they rely on market acceptance and individual actions. Information alone doesn't necessarily lead directly to action, but action cannot be taken without adequate information on what to do, how to do it and why it should be done. Even mandatory programs, such as watering restrictions, will not be successful if people are unaware of the program.
>
> Reporting results of water use efficiency measures is also very important. Regular reporting helps to maintain interest in water issues and increase public support. Keeping people appraised of successes, failures and subsequent improvements will also help build a supportive constituency for the next water use efficiency initiative.

111. *See* Ohio Department of Environmental Protection, Social Marketing for Recycling in Ohio (2005).

112. The Chesapeake Bay Social Marketing Initiative, The Chesapeake Bay Social Marking Initiative 2004-2005 Final Report (2005), *available at* http://cfpub.epa.gov/npstbx/files/Final_Chesapeake_Club_Report.pdf.

113. *Id.* at 1.

114. *Id.* at 5.

115. The campaign featured pictures of a plate with an empty bun and the slogan "Save the crabcakes," implying that if something was not done, the crabs would disappear or not be edible.

> Informing people requires an organized and concerted effort. One-time general announcements or broadcasts will often result in scattered and scanty information.[116]

While social marketing can be controversial—should government spend tax dollars to influence behavior and attempt to influence public values?—governments of all stripes have turned to social marketing to address perceived social problems, whether it be through Drug Abuse Resistance Training (DARE),[117] abstinence education, or preventing forest fires (Smokey the Bear). Just as with all of the other tools discussed herein, social marketing by itself cannot solve major environmental problems, but it may be able to play an important role in some circumstances; it is another potential problem-solving tool that should be in the enforcer's toolkit to help move beyond deterrence.

E. Encourage Collaborative Problem Solving

Collaborative approaches to designing environmental programs can, in some cases, produce environmental results that would be difficult to achieve absent support from a broad set of stakeholders. These approaches may address a problem for which regulation is unlikely, deal with a problem before it reaches the point where regulations come into effect, or create an atmosphere in which new statutory authority and new regulations can be enacted without intense opposition. In each of these cases, the potential burden on compliance and enforcement programs can be reduced and solutions can be found that rely on internal economic drivers or on values, rather than solely on regulatory drivers.

In Minnesota, collaborative efforts have produced a number of important pollution reduction initiatives.[118] Two of these initiatives are particularly instructive. The first program is Clean Air Minnesota (CAM),[119] which is a voluntary collaboration among the government, environmental organizations, and business. Interestingly, the idea for CAM originated with the Minnesota Chamber of Commerce and was realized through the leadership of the Chamber of Commerce and the Minnesota Center for Environmental Advocacy, which co-chaired the organization. It was launched to find ways to prevent the Twin Cities region from slipping into nonattainment for ozone and particulates. Under the CAA, if a region in a state fails to meet the health-based standards for pollutants, such as carbon monoxide, nitrogen oxides, fine particulate matter, or ozone, the state must impose new regulations to return the region to attainment. Nonattainment carries with it a significant enforcement burden for both the state and federal government. A study by the Chamber of Commerce revealed that should the Twin Cities region of Minnesota slip into ozone nonattainment, the cost to businesses would exceed $200 million per year. In an attempt to avoid this substantial economic cost, the Chamber of Commerce felt a better approach would be to work with other stakeholders to voluntarily reduce the precursors of ozone (nitrogen oxides and volatile organic compounds) in an attempt to avoid nonattainment. The Minnesota Center for Environmental Advocacy saw the possibility of accelerated air quality improvements with little risk since, if the region should fail to remain in attainment, the federal standards would be triggered. The program has achieved significant reductions in ozone precursors, at least contributing to maintaining attainment for several years.

CAM has added particulate emission reduction to its agenda. Of particular note, CAM launched a diesel reduction program to focus on the health risks associated with diesel particulate emissions. Project Green Fleet[120] has retrofitted hundreds of school buses and other vehicles throughout the state, even though no diesel emission retrofit requirements were likely to be enacted in the state.

Interestingly, the collaboration will continue through the new Minnesota Clean Air Dialogue,[121] even though new, more stringent federal ozone standards will almost certainly lead to nonattainment. The companies involved in CAM have found sufficient economic value in the relationships with government officials and nongovernmental organizations (NGOs) to continue working together to find cost-effective ways of dealing with the expected nonattainment problem.

The CAM collaboration certainly reduced the burden that would have fallen on enforcement officials had the region slipped into nonattainment under the old standard, and likely will result in reduced enforcement burdens if the collaboration produces more widely accepted methods for complying with new standards needed to deal with the nonattainment problem.

The second Minnesota collaborative program involved an area where national legislation required regulation, but which has proven very difficult to manage: state water quality standards. In addition to establishing national effluent standards that limit the amount of pollution that can be discharged from industrial facilities, the Clean Water Act (CWA)[122] mandates that states develop water quality standards to assure that the cumulative impact of individual discharge permits and other sources of pollution, such as agricultural runoff, do not degrade ("impair") a water body to the extent it no longer can serve its intended use (recreation, fishing, etc.).

116. British Columbia Ministry of the Environment, Water Conservation Strategy, Strategic Direction 9, http://www.env.gov.bc.ca/wsd/plan_protect_sustain/water_conservation/wtr_cons_strategy/direct.html (last visited Apr. 10, 2012).

117. *See* D.A.R.E. home page, http://www.dare.com (last visited Apr. 10, 2012).

118. For a detailed description of the Minnesota collaborative processes, see LeRoy Paddock, *Collaborative Problem Solving in Minnesota,* 25 Nat. Resources & Env't 17 (Fall 2010).

119. *See* Environmental Initiative, Clean Air Minnesota, http://environmental-initiative.org/projects/past-projects/clean-air-minnesota (last visited Apr. 10, 2012).

120. *See* Project Green Fleet home page, http://www.projectgreenfleet.org (last visited Apr. 9, 2012).

121. *See* Environmental Initiative, Minnesota's Clean Air Dialogue, http://environmental-initiative.org/projects/minnesotas-clean-air-dialogue (last visited Apr. 10, 2012).

122. 33 U.S.C. §§1251-1387, ELR Stat. FWPCA §§101-607.

Minnesota has a lot of impaired waters. Its 2008 list included over 2,500 water bodies, many of them impaired by mercury as well as nutrients, such as nitrogen and phosphorus. For several years, interest groups had fought over the need for additional regulation, with some groups advocating a rollback of existing standards because of the cost of compliance. Despite the controversy, lakes and rivers are important to Minnesotans in the "Land of Ten Thousand Lakes." Clean water is an important public value for Minnesotans, and it is important to the state's tourist industry.

Pressure by EPA and a Minnesota Court of Appeals[123] ruling limiting expansion of a wastewater treatment facility designed to serve a growing suburban community, because the expansion would further impair an already impaired water, led the state environmental agency, as well as agriculture and business trade associations, local governments, lake associations, and other interest groups, to join a dialogue focused on resolving the impaired waters problem. A facilitated stakeholder process aimed at collaborative problem solving was able to break the deadlock.

In 2006, the Minnesota Legislature enacted the Clean Water Legacy Act by wide bipartisan margins to deal with this problem. The Act is designed to "protect, restore, and preserve the quality of Minnesota's surface waters by providing authority, direction, and resources to achieve and maintain water quality standards for surface waters as required by section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313(d), and applicable federal regulations."[124] It does this through several innovative tools, including a goal of assessing waters in all of the major watersheds in the state within 10 years, providing funding for MPCA staff or third parties to develop Total Maximum Daily Loads for waters that are identified as impaired, using citizen monitoring, creating financial and other incentives to avoid impairment or to restore impaired waters, and creating a stakeholder-based Clean Water Advisory Council to advise agencies and to track progress. The state also created a Clean Water Legacy Account that is funded through a constitutional amendment that increased sales tax by 0.375% (raising the sales tax from 6.5% to 6.875%), one third of which, about $80 million per year, goes to the state Clean Water Fund, with the remainder going to conservation and arts projects.[125]

These collaborative problem-solving efforts built upon both internal economic-based and values-based behavioral drivers. The result, among others, is a more cooperative approach to compliance and significant pollution reduction without the need to call upon as many compliance and enforcement resources. This experience indicates that compliance and enforcement programs should, in the right circumstances, encourage and participate in collaborative problem-solving efforts.

F. Support Private-Sector Enforcement Through Supply Chain Management

Companies are increasingly imposing environmental requirements on their suppliers to protect the companies' reputations, to aid with their own compliance, and to meet customer expectations, among other reasons. One study of 74 firms in eight sectors found that over one-half impose environmental requirements on suppliers, representing more than 78% of all of the sales of the top firms in the sectors.[126] Clearly, supply chain requirements are playing an important role in environmental performance. These requirements act as both a private enforcement mechanism for supply chain requirements that are part of an environmental regulatory regime and as a means of driving beyond compliance behavior preferred by the company and its customers. Prof. Michael Vandenbergh has observed:

> In some cases this new form of private governance transfers pressures created by public entities, but in many cases it bypasses public entities altogether, transferring demands for social amenities directly from the citizens of one country to the firms operating in another. This private governance exists as a network of private standards and agreements that influence the behavior of firms on issues sovereign states are unwilling or unable to address. . . . At least in theory, the growth in environmental private contracting provides a means to ameliorate the environmental harms from international trade. Private environmental contracting is not a panacea, and it is only one element of private governance.[127]

He concluded,

> government policymakers can include promotion of private contracting among the available options when they encounter environmental harms that are difficult to reach with the tools of public and public-private governance. A policymaker not only has traditional regulatory and economic tools at her disposal, she also can seek to stimulate private environmental contracting in supply-chain, credit, corporate asset, insurance, and other markets.
>
> To do so, policymakers can reduce information costs to firms by collecting and disseminating information regarding the adoption and implementation of private standards, and by supporting research on the costs and benefits of private environmental contracting. Policymakers also can foster the development of supply-chain contracting by creating settings in which firm cooperation is unlikely to lead to anticompetitive behavior.[128]

123. *See* In re Cities of Annandale and Maple Lake NPDES/SDS Permit Issuance for Discharge of Treated Wastewater, 702 N.W.2d 768 (Minn. Ct. App. 2005), *reversed* 731 N.W.2d 502 (Minn. S. Ct. 2007).
124. Minn. Stat. §114D.10.
125. *See* Minnesota Board of Water and Soil Resources, Minnesota Clean Water Fund, http://www.bwsr.state.mn.us/cleanwaterfund/index.html (last visited Apr. 10, 2012).
126. Vandenbergh, *supra* note 45, at 916-17.
127. *Id.* at 970.
128. *Id.* at 968.

G. Recognize Superior Performance

For many companies, reputation is one of the most important drivers of environmental behavior. As a result, government agencies can leverage this fact by recognizing companies that go beyond what the law requires and by encouraging other companies to follow this lead. Governments have for some time experimented with ways to recognize superior environmental performance through voluntary programs, leadership initiatives, and rating systems. In the United States, this effort began in earnest in the early 1990s with a voluntary toxics reduction program known as "33/50," which challenged companies to reduce the use of 33 of the most toxic chemicals by 50% within a period of a few years.[129] This program was followed by a program known as the "Common Sense Initiative" through which EPA worked with various industrial sectors (for example, metal plating, electronics, and paper products) to find ways to improve environmental performance.[130] EPA then launched Project XL (excellence and leadership) to experiment with regulatory reform at 50 locations. All of these programs faded away by the end of the 1990s.[131] EPA began its most ambitious effort to recognize and support superior performance near the end of the 1990s with the "Performance Track Program."[132] EPA designed Performance Track to recognize facilities (and later companies) that exceeded environmental requirements in a variety of areas. Participants were expected to use an environmental management system to assess their environmental impacts, set "stretch goals" to reduce several of the impacts, and report regularly on the results they achieved. Performance Track companies were expected to have a good compliance record.

As the program neared its 10th anniversary, over 578 facilities from 240 organizations[133] were Performance Track members, but controversy was growing quickly about the compliance record of some of the participants and about the significance of the environmental improvements achieved under the program. Soon after President Barack Obama took office, EPA terminated the Performance Track Program citing concerns about compliance among some of the participating companies, the cost of running the program, and the extent of environmental gains achieved through the program. Although EPA continues to operate a number of other voluntary programs, none of those programs, except the Energy Star program, had the public profile of the Performance Track.

Despite the problems with Performance Track, recognizing companies that substantially exceed the minimum standards required by law can produce important environmental outcomes driven by reputation and other internal economic drivers and can help strengthen environmental values. The Rand Corporation study of the Performance Track Program and other voluntary environmental programs concluded that the voluntary programs "can complement regulatory approaches to accelerate environmental improvement."[134] The report also notes:

> In the case of Performance Track, its members reported changes that they felt do not occur under more-traditional regulatory approaches. For example, members reported that the application process taught them how to quantify the broad environmental impacts of their activities and set goals for continuous improvement. Performance Track's members also reported a range of changes in corporate culture, including increased consideration of environmental issues in formal decisionmaking processes, greater employee awareness and engagement on environmental issues, the introduction of environmental considerations in problem-solving efforts, and improved recruiting results, employee retention, and employee morale.[135]

While Performance Track certainly had its flaws, many of them could be corrected by including a broader range of stakeholders, including NGOs, in the process or developing and overseeing leadership programs; requiring that the environmental goal-setting process focus on the most significant environmental problems; focusing more on organizations rather than individual facilities; providing the public with better information about the environmental outcomes that are achieved through the program; assuring that compliance data is accurate and up-to-date; and setting out more clearly how violations by participating companies will be dealt with (for example, recognizing that while most companies will have some violations, companies that fail to promptly report and remedy a violation, that repeatedly violate the law, or that act negligently will be quickly removed from the program). Programs like Performance Track may still be an important way of encouraging environmental performance that goes well beyond compliance.

Governments using performance ratings could also contribute to changes in values because of the public disclosure of the performance information. This approach has not been used a great deal in the United States, but has played a larger role in Indonesia and in China. In the United States, EPA Region 1 in Boston issued letter grades (A-F) for the Charles River as a means of providing the public with an easily understandable measure of progress in river restoration.[136] The Chesapeake Bay Foundation issues a similar

129. *See* U.S. EPA, 33/50 Program: The Final Record (1999), *available at* http://www.epa.gov/opptintr/3350/3350-fnl.pdf.
130. *See* U.S. EPA, The Common Sense Initiative: Lessons Learned (1998), *available at* http://www.p2pays.org/ref/07/06574.pdf.
131. *See* U.S. EPA, Project XL: Directory of Project Experiments and Results (2000), *available at* http://www.epa.gov/projctxl/comp00vol2/vol2_web.pdf.
132. *See* U.S. EPA, National Environmental Performance Track, http://www.epa.gov/performancetrack/ (last visited Apr. 10, 2012).
133. Scott Hassell et al., An Assessment of the U.S. Environmental Protection Agency's National Environmental Performance Track Program 89 (2010), *available at* http://www.rand.org/content/dam/rand/pubs/technical_reports/2010/RAND_TR732.pdf.
134. *Id.* at xiii.
135. *Id.* at 88.
136. *See* Press Release, U.S. EPA, EPA Gives Charles River a B-Minus and Announces New Coalition of Private Institutions (Apr. 12, 1999), http://yosemite.epa.gov/opa/admpress.nsf/6d651d23f5a91b768525735900400c28/

report card each year on several aspects of the Chesapeake Bay Restoration Project.[137]

Performance ratings can also be used to leverage reputation and other internal economic drivers by ranking the performance of individual companies. Indonesia's Proper Prokasih system uses a color-coded system to rate environmental performance, with black indicating no environmental management efforts and the potential for serious harm, red indicating some effort, but not enough to comply with the law, yellow meaning full compliance with the law, green representing efforts that go beyond compliance with an emphasis on ISO 14001 compliance, and gold standing for factories or business activities that use the best available clean technology, promote zero discharge of pollutants, and conduct environmental impact management efforts with very satisfactory results.[138] China uses a similar rating system referred to as Green Watch, although the system uses somewhat different color codes with the highest rating being green, followed by blue, yellow, red, and black. A recent study of that system suggests that "Green Watch has significantly reduced pollution from rated firms, with particularly strong impacts on firms with poor ratings."[139] The study also found that the rating system had "significant impacts for firms with good (green and blue) ratings." The study noted that environmental performance by green-rated firms in four cities may be related to the fact that firms are given additional benefits including (1) preference in the selection of enterprises with the best economic and social performance records, and (2) preferential status by provincial regulators for enterprises that achieve a green rating for three consecutive years.

VI. Conclusion

Achieving more sustainable environmental outcomes will require a combination of regulatory, economic, and values-based drivers. Compliance and enforcement programs play a direct role in ensuring the integrity of regulatory systems. However, it is important for those managing compliance and enforcement programs to also think about how their work can influence the internal economic considerations of regulated entities and how it can help shape environmental values. Among the possible leverage points are creating a more-pervasive enforcement presence, designing compliance programs that better align with markets, promoting learning and self-evaluation, enabling the public to more directly influence environmental decisions by agencies, engaging in social marketing efforts, supporting collaborative problem solving, encouraging the use of private supply chain requirements, and recognizing superior performance. Compliance and enforcement program managers have found some of these techniques valuable in leveraging their assets to achieve better environmental results. They may find other tools rather foreign and somewhat complicated at first blush. Still, it is important to look at all of the approaches as part of a strategic effort to utilize enforcement and compliance resources to achieve environmental goals that go well beyond deterrence in order to make significant progress toward achieving more-sustainable environmental outcomes.

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137. *See* Integration and Application Network, Chesapeake Ecocheck, Chesapeake Bay—Report Card: 2009, http://www.eco-check.org/reportcard/chesapeake/2009/ (last visited Apr. 10, 2012).

138. David Wheeler & Shakeb Afsah, Going Public on Polluters in Indonesia: Bapedal's Proper Prokasih Program (1996), *available at* http://siteresources.worldbank.org/NIPRINT/Resources/GoingPubliconPolluters-inIndonesia.pdf.

139. Yanhong Jin et al., Environmental Performance Rating and Disclosure: An empirical Investigation of China's Green Watch Program §6 (2010), *available at* http://ideas.repec.org/p/wbk/wbrwps/5420.html.