BOOK REVIEW

LEVERAGING THE PRIVATE SECTOR: MANAGEMENT-BASED STRATEGIES FOR IMPROVING ENVIRONMENTAL PERFORMANCE. Cary Coglianese & Jennifer Nash, Eds. Resources for the Future 2006. 269 pp.

Reviewed by Jerry Speir*

Since at least the early 1990s, we have seen an international, largely business-led search for an alternative to government regulation in the environmental arena. Critics have faulted its "rigidity, uneven enforcement, and other imperfections . . . in a global economy."[1] For much of the period, the ISO 14001 standard for environmental management systems (EMSs)[2] dominated the discussion, but, tellingly, that standard is hardly mentioned in this collection. For various reasons, ISO 14001 has proven to have its own imperfections, at least as a regulatory substitute, and it has certainly not been the panacea that many seem to have expected.

But *Leveraging the Private Sector* reflects the broad interest that remains in the notion of affecting environmental outcomes by affecting management within organizations rather than by regulating what comes out of smokestacks and discharge pipes. Quite an industry of academic research has grown up around that notion. The contributors to this

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1. LEVERAGING THE PRIVATE SECTOR: MANAGEMENT-BASED STRATEGIES FOR IMPROVING ENVIRONMENTAL PERFORMANCE 111 (Cary Coglianese & Jennifer Nash eds., 2006) [hereinafter LEVERAGING THE PRIVATE SECTOR].

2. ISO 14001 is an international standard for environmental management systems. It defines a process for an organization to assess its environmental impacts (or "aspects" in the language of the standard), sets targets and objectives for addressing those impacts, and audits the organization's performance against those targets and objectives. The system is grounded in commitments to regulatory compliance and "continual improvement." A useful introduction to ISO 14001 and public policy can be found in this report: PAC. INST. FOR STUDS. IN DEV., ENV'T, & SEC., MANAGING A BETTER ENVIRONMENT: OPPORTUNITIES AND OBSTACLES FOR ISO 14001 IN PUBLIC POLICY AND COMMERCE (2000) (executive summary available at http://www.pacinst.org/topics/globalization_and_environment/public_policy/isoes.pdf).

volume are among the stars of that universe—hailing from Harvard, Berkeley, UNC, Duke, Penn, Dartmouth, Maryland, and Connecticut.

Despite the turning away from ISO 14001, many of the authors appear to cling to hopes that a broader set of management-based initiatives may yet prove to be the dominant paradigm. As a result, the book has an almost somber tone as—at nearly every turn—economics and traditional regulation are shown to be what really matter in improving environmental performance, at least in the big air and water pollution indicators by which we typically measure such improvements.

But there is good news here: management-based systems and strategies *work*—on things that regulation *does not*—and management really does affect environmental outcomes. Though these writers never articulate the point, in the long term, concentrating on those areas where management-based strategies work is likely to be a much more productive activity than continuing to search for an "alternative" to regulation.

The good news begins, curiously, with Robert Kagan's research epitomizing the problem. He looked at fourteen pulp plants worldwide and found that "over time, the largest gains in environmental performance in the industry have stemmed not from enlightened corporate management *per se* but from periodic tightening of environmental standards mandated by governments."[3]

In general, the big changes are regulatory driven: mandates trump enlightenment, and *costs* trump all. "[E]conomic constraints," as Kagan says, "seemed to deter even the most environmentally committed managers from leaping substantially ahead of their competitors."[4]

Still, there is some very encouraging information here about the importance of management and the potential for improving performance by influencing management. Kagan looked at two things: performance data and management "style." The style part was done first, before ever looking at the data. Based on interviews, he divided his managers into five categories: True Believers, Environmental Strategists, Committed Compliers, Reluctant Compliers, and Environmental Laggards.[5]

When he then analyzed the data, the mills run by True Believers were shown to have significantly lower water pollution—lower BOD, TSS, and AOX numbers,[6] and fewer spills—than did the Environmental

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3. LEVERAGING THE PRIVATE SECTOR, *supra* note 1, at 31.

4. *Id.*

5. *Id.* at 36.

6. *Id.* at 35. Biological oxygen demand (BOD), total suspended solids (TSS), and absorbable organic halides (AOX), "a proxy measure for dioxins and furans." *Id.*

Laggards and Reluctant Compliers. The True Believers' numbers were, in fact, only one-quarter to one-third of the Reluctant Compliers.

Kagan goes so far as to assert that "the strongest relationship found was between environmental management style and environmental performance"[7]—not location, jurisdiction, profitability, or size of the parent company, but management *style*.

Interestingly, he also observes that mills "that had been subjected to anti-chlorine campaigns by Greenpeace in the early-to-mid 1990s, tended to have lower pollution emissions and to take more beyond compliance measures such as measures for odor control."[8] So, management definitely matters—and a little social pressure can also be influential.

Kagan suggests that the implication of this research is that regulators should identify industry leaders, reward them for their efforts, and "work closely with them in determining what innovations are feasible . . . [and] can be made the basis of regulation for the entire industry."[9] Perhaps we might simply study the True Believers, identify what makes them tick, and teach it. We might also encourage contributions to Greenpeace.

Studying the nexus between environmental management and environmental performance is notoriously difficult, and the data occasionally mislead. Lori Snyder Bennear reports, for example, on a study trying to compare environmental performance in states that had management-based regulations (MBR) in the 1990s with performance in states without the MBR. The regulations at issue were adopted by fourteen states and required the *tracking* of the *use* of certain toxic chemicals, as well as requiring that plants identify alternatives that would reduce the use and release of toxics.[10] Initially, it was reported that releases were falling much faster in states with management-based regulations than in those without.[11] But a closer examination showed that the states with management-based regulations had lower releases before the regulations took effect, undermining any suggestion that the decreases were *caused* by the MBR.[12]

Often, one of the most valuable things that comes out of management-based programs is *information*. Paul Kleindorfer reports on the EPA's Risk Management Programs for Chemical Accident

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7. *Id.* at 41.
8. *Id.*
9. *Id.* at 43.
10. *Id.* at 52.
11. *Id.* at 53.
12. *Id.* at 64.

Prevention (RMP Rule), an outgrowth of the requirements of section 112(r) of the 1990 Clean Air Act Amendments. The RMP Rule requires that chemical facilities plan for managing the hazards at their facilities, develop public worst-case scenarios associated with potential releases, and report on their accidents.[13] Whether the program has had any effect on *performance* is still open to question—characterized here only in terms of what may be "expected" and where the RMP Rule "should lead."[14] But it has already generated some interesting confirmations of intuition: for example, that the more hazardous a facility, the more likely it is to have accidents—and serious ones;[15] that the greater the debt-equity ratio of the parent company, the more likely a facility is to have accidents;[16] and that African-American communities are more likely to be at risk from chemical accidents.[17] That kind of data itself may, in time, drive change much as the reporting associated with the Toxics Release Inventory has driven reductions in releases.

The difficulties of doing this kind of research are further highlighted in the contribution here by Richard "Pete" Andrews, Andrew Hutson, and Daniel Edwards. They set out to survey 3189 facilities, seeking "a better understanding of the effects of business-led approaches to environmental management, and particularly the effects of corporate and customer mandates."[18] Unfortunately, their survey only tested perceptions—*asking* managers "whether [their] facility's performance on 17 environmental indicators, such as energy and water use and hazardous waste generation, had increased, decreased, or not changed over the past three years."[19] Given this methodology, it is hard to know what to make of claims that "facilities that had mandates and EMSs in place were consistently more likely to report environmental performance improvements than were those that had neither."[20] Perhaps the perception of improvement, which is all the study really measured, was simply a function of the formalization of the EMS—or the threat of the mandate—and of expectations that might be associated with them. In any event, even the perceived differences were "modest in their

13. *Id.* at 87.
14. *Id.* at 102.
15. *Id.* at 88.
16. *Id.*
17. *Id.* at 100.
18. *Id.* at 119-20.
19. *Id.* at 123.
20. *Id.* at 124.

magnitude."[21] The bottom-line here, significant for a team that has been among the most prolific in EMS research, is that

> at the level of production facilities . . . the opportunities for serious 'continual improvement' in environmental performance may be far more narrowly constrained by sunk costs in particular production technologies and product characteristics . . . than idealistic visions of the leverage of voluntary EMS initiatives would suggest. . . . In short, significant ecological modernization of most industrial production processes may require powerful and persistent market or regulatory forces to change fundamentals.[22]

For many readers, this will not be a shocking finding. But despite this strong reinforcement of the continuing necessity and power of regulation, perhaps the most intriguing finding here is that the indicators that did show significant improvement—energy use, recycling, hazard waste generation, and leaks and spills—"represented activities over which managers and employees have direct and discretionary control at the facility level."[23] The larger goals of reducing air and water pollution, on the other hand, are likely to require capital investment in product or process changes, "all of which are more likely to require corporate-level decisions and commitments"[24]—decisions and commitments that do not appear to be forthcoming without regulatory encouragement.

These findings reinforce Kagan's evidence that money is the over-riding issue—at least on the big pollution issues. But, also like Kagan's findings, they suggest considerable merit in dealing with, and encouraging, individuals at the facility level on matters over which they have control. The influence of management at the facility level over the largely unregulated aspects of environmental performance appears both significant and worthy of further study and encouragement. The "Think Globally, Act Locally" bumper sticker comes to mind.

Another approach to influencing environmental management was investigated by Howard Kunreuther, Shelley Metzenbaum, and Pete Schmeidler, who ask whether a combination of mandatory insurance and private inspections might improve a firm's environmental management and, consequentially, its performance. The theory is sound: insurers would have "an economic incentive to conduct inspections that focus on

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21. *Id.*
22. *Id.* at 132.
23. *Id.* at 124.
24. *Id.*

risk reduction"[25] and, in fact, the system has worked in some limited circumstances.

The most famous instance concerns the insuring of boilers. In 1865, more than 1200 passengers were killed in a boiler explosion on the steamboat SULTANA on the Mississippi River.[26] Shortly after, the Hartford Steam Boiler Inspection and Insurance Company (HSB) began to require boiler inspections as a condition of insurance. In the interest of reducing its own exposure to claims, HSB also initiated studies of boiler construction, and safer designs have resulted. Today, almost every state mandates periodic inspections of pressure vessels, and most firms that operate them purchase insurance with rates based on those inspections.[27]

Another positive example occurred in the 1980s as asbestos concerns rose and insurance coverage for removing asbestos from older buildings became available.[28] Those seeking asbestos removal then began to require the insurance of their contractors. Today, such insurance has become, de facto, "both a license and a prerequisite for doing business."[29]

Likewise, property transfer liability insurance has found a niche in covering risks from the potential contamination of property. An inspection is typically required for the insurance and it is *lenders*, in this case, who are driving the process—requiring the insurance as part of sales.[30]

But other efforts at regulating with insurance have not gone so well. The 1984 amendments to the Resource Conservation and Recovery Act (RCRA), for example, required firms with underground storage tanks to provide insurance (or other collateral). Large firms simply self-insured, while smaller ones claimed they could not afford it, forcing EPA to establish "state guarantee funds, financed primarily through gasoline taxes," to provide the required coverage.[31]

A similar experiment with a voluntary insurance program to cover chemical-related risks "has not taken hold."[32] Facilities wanted a "seal of approval" from EPA for successfully going through the process but, more importantly, they wanted a guarantee of lower insurance premiums.

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25. *Id.* at 139.
26. *Id.* at 150.
27. *Id.*
28. *Id.* at 145.
29. *Id.*
30. *Id.* at 145-46.
31. *Id.* at 143.
32. *Id.*

Insurers, citing "the ambiguity associated with the risk," declined to offer such discounts.[33]

Despite this uneven history, the authors identify workers' compensation programs as a likely place for success. They propose a pilot study involving the Louisiana Workers' Compensation Corporation (LWCC). The pilot would focus on "extreme risks" in businesses where workers' compensation rates are especially high.[34] The authors suggest a series of questions to be answered by the study, such as whether an expanded inspection regime might identify "precursor conditions" of accidents and, ultimately, whether accidents and injuries would be reduced.[35] Perhaps benefits could be realized from such a program, since workers' compensation, as the authors note, "has long been an area where government and insurers have worked closely together."[36] Such a scheme might prove effective in other environmental areas too, but it also remains true that "[t]he insurance industry does not want to be viewed as a police officer,"[37] and any significant program for mandatory environmental insurance would likely have to clear some very high political hurdles.

Nonetheless, insurance and inspection regimes have proven effective in some very focused areas, and further research may well define other areas similarly ripe for targeting.

Jason Scott Johnston's research returns to a consideration of management-based efforts in a single industry, in this case the metal-finishing industry, one providing essential parts for everything from automobiles to military aircraft, and one "whose environmental impact may far exceed its economic significance."[38] It is also an industry of thousands of small firms, strong international competition, thin profit margins, and low capitalization—a real set of challenges for any environmental scheme, regulatory or voluntary.

Johnston opines that the "fundamental question," and one little considered to date, is really "[w]hether the achievement of America's increasingly ambitious and increasingly expensive twenty-first century environmental goals means the end of small- and medium-sized independent domestic manufacturing firms and their replacement by foreign outsourcing and huge, vertically integrated domestic

33. *Id.* at 144.
34. *Id.* at 155.
35. *Id.*
36. *Id.* at 154.
37. *Id.* at 150.
38. *Id.* at 167.

manufacturing enterprises."[39] He concludes that, indeed, "significant further improvement in the industry's environmental performance is likely to be achieved only if firms become larger."[40]

Evidence from EPA's Strategic Goals Program (SGP), which was started in 1998, specifically to improve environmental performance in the metal-finishing industry, was not encouraging. Johnston acknowledges that the program did have some "win-win" stories, "cases in which relatively uninformed small metal finishers learned how they could both increase their profits and reduce their pollution by being more efficient in their use of water, metals, and other raw material inputs."[41]

But problems with the SGP included low participation rates, a "failure to generate firm-specific data," and most significantly, the aggregation of data in ways that confused results.[42] Closer analysis suggested that "much of the progress" that had been claimed actually occurred "before the program even began."[43]

On the positive side, it is clear that "the more widely best-practice information is shared and adopted, the better industry's overall environmental performance."[44] But the real problem, according to Johnston, is analogous to the pre-Superfund handling of hazardous wastes, when large chemical and petrochemical companies relied on small, undercapitalized disposal firms to handle their wastes and to provide them a contractual shield against liability. "A very basic economic lesson," he says, "is that so long as large firms can effectively escape responsibility for the environmental compliance burden . . . by contracting out . . . to smaller outside firms, they will have an incentive to do so."[45] His recommendation is that EPA should focus on "creating incentives for large manufacturers . . . to internalize those [metal-finishing] operations and manage them more responsibly."[46] Toward that end, he proposes a tradable permits system, modeled on the program for phasing out lead in gasoline, "for easing the transition to new, tougher environmental requirements and a new, vertically integrated metal-finishing industry."[47]

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39. *Id.* at 168.
40. *Id.* at 170.
41. *Id.* at 169.
42. *Id.* at 180-81.
43. *Id.* at 182.
44. *Id.* at 192.
45. *Id.* at 193.
46. *Id.* at 193-94.
47. *Id.* at 194.

The Clean Charles 2005 Initiative (CCI), which was intended to make Boston's Lower Charles River "fully fishable and swimmable" by 2005, provided another opportunity to examine the efficacy of management-based initiatives.[48] An earlier study had suggested that the Initiative's "outcome-focused performance goal" was the source of much of its success.[49] But researchers Tapas Ray and Kathleen Segerson suggest otherwise. They argue, in fact, "that threatened and actual enforcement of existing, traditional regulations played a significant role."[50]

Even so, setting the performance goal is credited with "trigger[ing] the heightened enforcement. It motivated EPA staff to want to enforce regulations that would contribute to the goal and to view that enforcement as a high priority."[51] Though the authors offer no conjectures, one can not help wondering if such a combination of performance goals, in conjunction with a heightened public focus on monitoring data (as was the case with CCI), might not serve to motivate EPA staff to be a bit more diligent about enforcement in other areas.

Andrew King takes a look at "stakeholder partnerships," yet another vehicle for influencing environmental management and management systems. He looks particularly at a collaboration between Greenpeace and an East German refrigerator manufacturer to produce a CFC-free refrigerator, and at several efforts by Environmental Defense (ED) to partner with American corporations toward environmental performance improvements.

The principal impediment to such collaborations, as King observes, is the control of intellectual property. "Corporations benefit," as he says, "from keeping their technology private, but EOs [environmental organizations] benefit from making it public."[52]

In the case of the East German refrigerator maker, for example, they were successful in producing the new product, but "Greenpeace's efforts to diffuse the technology to competitors undercut" the manufacturer's ability to make a profit.[53] As its spokesman put it, "[t]he market has responded and we are left behind. We did not think it would happen so quickly."[54] So, the product was born, but the company died—not a business model that is likely to encourage emulation.

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48. *Id.* at 201.
49. *Id.*
50. *Id.* at 202.
51. *Id.* at 220.
52. *Id.* at 242.
53. *Id.* at 234.
54. *Id.* at 233.

King touts ED's experience in the United States as illustrative of "ways that partnerships can be structured to protect intellectual property."[55] While that may be true, the actual accomplishments of the cited projects seem, at first glance, less than sterling. ED engaged in a project with Federal Express (FedEx), for example, to develop a more efficient delivery vehicle. FedEx designed the truck; "ED's primary role was to act as a professional 'facilitator' and to make sure that environmental issues received fair treatment."[56] *If* FedEx were to replace "all of its 10,000 Class 4 Walkin vehicles" with the new vehicles, smog-related emissions of its fleet would be reduced seventy-five percent.[57] The United Parcel Service (UPS) is already working on "a competing hybrid diesel-electric vehicle."[58] King reports that "Federal Express may be able to appropriate some return through a slight first-mover advantage"[59] but, in fact, though the project was launched in the spring of 2000, there are no reports here that *any* vehicles have yet been produced.

The results of other partnerships were similarly mixed. ED entered into a project with the SC Johnson Company to help bring environmental considerations into product design and to better understand consumers' environmental preferences. But the resulting system was so complex that designers "quickly began to doubt and distrust the system," and it "'fell into disuse almost from the get-go.'"[60] In a partnership with Starbucks, ED performed a life-cycle analysis that "confirmed the value of using ceramic cups rather than paper ones for in-store consumption,"[61] but designs for a new, more insulated paper cup were shelved in favor of insulating sleeves.

King is likely correct that "alliances to certify sourcing will continue to be the most common form of partnership."[62] In such partnerships, after the parties agree on the rules (e.g., for recycled paper, hormone-free animal products, sustainable forestry products, low emission vehicles), the EO certifies that the rules are being followed. "Such partnerships minimize the investment to the corporate partner,

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55. *Id.* at 234.
56. *Id.*
57. *Id.* at 235.
58. *Id.*
59. *Id.*
60. *Id.* at 236. (quoting Interview by Andrew King with Ken Alson, Former Director, Sustainable Product Innovation at SC Johnson (Oct. 17, 2003)).
61. *Id.*
62. *Id.* at 243.

protect the intellectual property of suppliers, and allow direct certification of a management process (the sourcing system)."[63]

Given all these stories, one may be puzzled by the editors' concluding assertion that "[i]n those cases where management-based strategies have failed to result in observable changes in firms' environmental performance, researchers need to probe further to consider at least three alternative explanations for their null findings."[64]

1. that the "true impacts . . . may come from incremental across-the-board improvements . . . rather than dramatic improvements in a single measure";
2. "the true impacts . . . may be observable...over a long time horizon. Even a decade or two might be too short"; and
3. there may have been problems with the way the studies were designed, including "insufficient incentives."[65]

The list is indicative of the tone of disappointment pervading the book—disappointment that the various management-based strategies have not shown greater influence on environmental performance outcomes. The editors argue, essentially, that the impacts may be more subtle than expected, that they may show up over a longer period of time or not be susceptible to easy measurement or that appropriate incentives have not been devised.

The subtlety, to this reviewer, however, is of a different sort—and one about which the researchers have reason to be more optimistic. Though the combined research reported here provides powerful evidence that economics and regulation remain over-whelming drivers of traditional measures of pollution, there are also some very positive results. Andrews and his coauthors provide evidence, for example, that management-based approaches *can* cause significant improvements in recycling, energy conservation, waste generation and handling, resource use, and spill and leak incidents. Management-based thinking can also cause us to rethink entire industries like metal-finishing and to consider whether public policy should not encourage more internalization of their associated risks (Johnston). Performance goals can even motivate a government agency to do its enforcement job (e.g., CCI). The dissemination and adoption of "best management practices" can improve overall performance throughout an industry (Johnston). And though there is clearly a lot more to be learned about EO-industry partnerships,

63. *Id.*
64. *Id.* at 253.
65. *Id.* at 253-54.

Greenpeace did help create a CFC-free refrigerator, energy efficient vehicles are being studied by FedEx and UPS, environmental considerations in product- and process-design decisions are at least being talked about—and the confirmation that Starbucks should use ceramic cups in-house is not such a small thing (King). Further, if "True Believers" can operate paper mills with significantly less water pollution than "Reluctant Compliers," perhaps we are onto something. The question is how to follow up on it—how to define "it" and promote it.

The editors seem disheartened to conclude that "[p]erhaps management systems should then be viewed . . . as a means of reducing environmental impacts not currently addressed by government regulation . . . such as spill avoidance and energy conservation."[66] The primary message here should be that management-based systems *work*—on things that regulation does not. Collaborative strategies can also work, such as ED's partnerships, insurance requirements, or those like the CCI.

Future researchers might be well advised to accept this book as sufficient evidence that management-based approaches are not going to be an alternative to traditional regulation—and move on. Concentrate on what they can do. All the accumulated impacts of all the things the government does *not* regulate are surely a significant part of total impacts.

The truly large environmental issues—like climate change and resource conservation—are, after all, much larger than end-of-pipe regulatory controls alone are ever likely to address, important though those controls certainly are. The real challenge for the future is to "get at" all those things that regulations do not—and likely never will—reach. The researchers whose efforts are assembled here are on the right track and might well do even more significant work if they could let go of the "alternative" idea and be happy.

66. *Id.* at 258.