

CHAPTER 6

Industry Self-regulation and Environmental Protection

Andrew King
Andrea M. Prado
Jorge Rivera

Environmental problems are no longer local or regional, or even continental. They are global. And their solution requires coordination and regulation at the global level. Solving these problems will require governing institutions with global reach, massive resources, and an incentive to protect the environment. Who can take on this job?

One potential list of candidates starts with the world's top 100 economies. The list begins with some familiar names –the European Union, the United States, China, and Brazil. Certainly all will have a role to play, but one can easily envision barriers each might face. Then somewhere around the 12th rank an odd thing occurs: the names shift from those of nations to those of corporations. For the remainder of the list, corporations become common. In fact, about half of the top “economies” in the world are private corporations. Some of the comparisons are staggering. Exxon’s revenues are larger than Australia’s GDP, Volkswagen’s bigger than Pakistan’s, Costa Rica’s economy smaller than that of Lowes’.

The list of the world’s top economies is jarring in part because it inverts our thinking about how the economic “game” is played – in particular who are the “players” and who are the “umpires”. People tend to think of companies as players in a game umpired by governments and civil society. Institutions (e.g. regulating states) set the rules of the game, and firms compete within those rules. But firms actually have a much more complicated role. They also act as umpires that shape the rules of the competition.

In this chapter, we look at some of the ways that corporations coordinate to set the rules of the business competition. Such coordination is often called “industry self-regulation” because it involves regulation of business activities without the direct aid of central government. However, none of the words that make up this title is perfectly appropriate. “Industry self-regulation” is sometimes created by actors that are not “industrial”. Its enforcement may not be “self” regulated, but rely instead on the sanctions of outsiders. And, how much it regulates behavior remains an open question.

“Industry self-regulation” is distinguished most by what it is not. It is not regulation by government. And this lack of governmental authority is what makes it so problematic, provocative, and so potentially important. No effective world government exists, and thus solutions for many important problems will require cooperative agreements that are self-regulating and self-enforcing. Self-regulation among firms may be one vehicle for solving widespread environmental problems. Thus, whether or not firms, with their massive resources and global reach, can self-regulate represents one of the most important questions we must answer in determining how best to make this planet more sustainable.

This chapter starts by discussing the difficulties and promises of self-regulation as a mechanism to address environmental problems.

THE PERIL AND PROMISE OF INDUSTRY SELF-REGULATION

Adam Smith famously remarked that, “People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.” Such a conspiracy represents a kind of agreement, and since it is done without the aid or support of government, it is a form of “industry self-regulation”. Such collusion is not the type of self-regulation we consider in this chapter, but

Adam Smith's comment should provide us with both hope and concern. The prevalence he describes should make us hopeful that firms can indeed cooperate and self-regulate. The result that such cooperation often ends in a "conspiracy against the public" should remind us of the potential risks of any self-regulated industry agreement.

The form of self-regulation that we explore in this chapter creates value to society – or at least that is what is claimed and hoped. By colluding on a set of rules, firms do not conspire against the public. Rather they improve public welfare as well. How can they be both raising their own profits and bettering society? They can do this, economic models suggest, because sometimes the rules of the business competition are so out of whack that they are ruining the "game" for everyone – firms, customers, and stakeholders. Changing the rules can make a better competition and make everyone better off. Economists call these cases where market exchange is out of whack and needs correction "market failure".

Market failures occur when free exchange does not produce an efficient allocation of goods and services. The rules of the competition and trade somehow produce an inferior outcome. Everyone is made poorer—the players, the audience, and the rule makers. The only good news is that this very inefficiency creates an opportunity to form better rules that make everyone better off. It is this potential for general gain that makes the idea of industry self-regulation so intriguing. If new and better rules will benefit large and powerful corporations, perhaps these companies will be motivated to lead such rule changes.

Such is the hope, but there is also a great risk when firms are allowed to shape the rules of competition. New rules might benefit everyone, or they might, as Adam Smith warned, benefit the firms at the expense of the public. If firms are indeed going to be important agents of change, they must be disciplined by knowledgeable stakeholders. They should be rewarded

when they act in the common interest. The research reviewed in this chapter attempts to better understand the promise and danger of industrial attempts to create self-regulatory solutions to environmental problems.

ANIMAL, VEGETABLE, OR MINERAL? CATEGORIZING THE COMMON FORMS OF ISR

Self-regulatory agreements are “institutions” and they shape, in the words of Douglass North, “the rules of the game” (North, 1990). But if there is any advantage to new rules, then the old ones must have been incomplete or inefficient. What are the problems to the rules that these new self-regulations may be attempting to solve? Scholars have proposed two main options.

The first problem that may drive self-regulation is that existing rules leave information “asymmetrically distributed”. This problem is not limited to environmental goods and services, but it is unusually common for them because the environmental attributes of most products and services are invisible. Take for example a pound of coffee. It is impossible for a consumer to determine if that coffee was grown in a sustainable manner (for example, under a forest canopy of native trees). As a result, producers know the environmental attributes of their products but consumers do not. In the presence of such asymmetric information, consumers reasonably doubt unverified claims by producers. When this doubt is greatest a “market for lemons” can arise in which only low quality goods are traded. For environmental goods and services, such conditions lead to a market where only environmentally damaging products are provided.

The second problem that may drive self-regulation is that the cost of environmental harm is borne by others than those that caused the harm. Environmental effects are usually “externalities” that do not appear on the polluter’s balance sheet. The rights to many environmental resources are not clearly defined, held, or protected. The earth’s atmosphere, for

example, is commonly held by all and thus the services it provides are “free” goods. People can use it to carry their pollution away, and given that is free and commonly held, they will tend to abuse it in ways that harm everyone.

Considered together, these problems form a two by two matrix in which some sort of institutional control is needed in three of the Quadrants (see Figure 1). Over the last 15 years, scholars interested in business and environmental regulation have tried to distinguish which self-regulations were addressing which of these problems. They have done so by first hypothesizing some basic stylized predictions for which firms might participate in the institution, how they might be affected by participation, and who might benefit from the institution.

-----Insert Figure 6.1 Approximately Here-----

Quadrant 1 (Q1): Certifications

When asymmetric information causes inefficient exchange, self-regulation might provide a way to convey to the customer or stakeholder unobservable information about the product. For example, certification of compliance with certain practices can communicate to the customer that the product is “organic” – that is pesticides and herbicides have not been used in the production of the good. This attribute, “organic” production, illustrates a common problem for environmental products: the environmental attributes of the product often relate to the way it was produced – and these attributes are not apparent to the consumer. As a result, many of these programs set standards for these unobservable management practices. In some cases, the sponsors of these programs explicitly state that their goal is to help stakeholders distinguish products from “good” and “bad” firms.

Industry self-regulations of this type have been organized by variety of sponsors– including firms, non-governmental organizations and multi-stakeholder initiatives. One of the

most influential sponsors is the International Organization for Standardization (ISO). ISO constitutes an example of certification-type self-regulation. ISO certifications include ISO 9000, ISO 14000, and ISO 26000. These standards encompass a set of guidelines to implement quality, environmental management systems and social responsibility practices. For instance, ISO 14000 specifies a set of environmental management systems including the development of environmental objectives and policies, the provision of training and documentation, delegation of responsibilities and internal performance audits (Delmas, 2002). In order to obtain certification, firms go through an audit that certifies compliance with the standard requirements. ISO relies on a system of third-party auditors that conduct inspections around the world.

Q1: Empirical Evidence

Most scholarly research on certification programs has attempted to demonstrate that the program matches simple stylized facts from a signaling model (see Figure 1). The models suggest that certified organizations should have higher (but otherwise unobservable) performance and should gain some financial reward (such as a price premium) relative to non-certified organizations (King, Lenox, and Terlaak, 2005; Terlaak and King, 2006; Corbett, Montes-Sancho, and Kirsch, 2005). Clearly, demonstrating either of these hypotheses is a difficult empirical challenge. It requires the scholar to measure quality that is not observable to stakeholders as well as changes in financial performance of heterogeneous participants (including private and publicly owned organizations). Most scholars have tried to use archival data to identify the attributes of the participant organizations that may predict their propensity to gain certification under a particular program (Albernini and Segerson, 2002; Christmann and Taylor, 2001; Delmas and Montiel, 2009; King, Lenox and Terlaak, 2005; Rivera and DeLeon, 2005). To understand the effect on performance, scholars have tended to try to distinguish the performance of firms before and after

they join (Terlaak and King, 2006). In some cases, both approaches are used. In the most advanced research, the performance of participating firms is compared to non-members that are as similar as possible (e.g. the control group) (Corbett, Montes-Sancho, and Kirsch, 2005).

Q 1: Do certification systems reveal superior environmental performers? Contrary to predictions, few studies of US firms find that certified organizations have superior performance to non-certified organizations. Only Toffel (2006) finds that participants have superior performance, measured as the change in the facility's chemical emissions (not the degree to which these emissions are greater or lesser than comparable others). Potoski and Prakash (2005) also find that ISO 14001 certified facilities reduce their pollution emissions faster compared with non-participants. Outside of the US context, Dasgupta, Hettige, and Wheeler (2000) report that adoption of environmental management practices along the lines prescribed by ISO 14001 improved Mexican manufacturers' self-reported compliance with public law.

Evaluating ISO 1400 certifiers in the US, King, Lenox and Terlaak (2005) are unable to demonstrate that certifying facilities have superior performance to non-certifiers, but argue that performance improvement is precisely what certifying firms are trying to communicate to their exchange partners. The authors try to validate their claim by showing that facilities are more likely to adopt ISO 14000 when their exchange partners are less able to monitor internal efforts to improve. They demonstrate, for example, that facilities are more likely to certify when they have distant or foreign exchange partners. Similarly, Welch, Mori, and Aoyagi-Usui (2001) argue that ISO 14000 is being used to communicate performance efforts at facilities to remote corporate officers. Consistent with this claim, the authors show that decentralized organizations are more likely to adopt ISO 14001. They also find that adopters are subject to more local

regulation, which might imply that some organizations use adoption to signal to regulators their commitment to compliance.

In contrast with research on ISO 14000, research on other certification programs generally fail to find any evidence that participation in the program reveals superior performance. Research suggests that corporate codes of conduct to promote labor practices (Locke, Qin, and Brause, 2007; Locke, Amengual, and Mangla, 2009) and sustainability certifications for agricultural commodities (Blackman and Rivera, 2010) do not reveal superior working conditions or environmental practices respectively.

Q1: Do participants benefit? The second stylized fact that has been explored in the literature is the degree to which participants benefit from certifications. If certifications are indeed signaling superior performance in order to obtain a sales premium, participating organizations should benefit from their participation.

Once again, research has mostly explored the effect of ISO standards in the United States. This research suggests that participants do indeed gain a measureable benefit: either a financial return or a sales winning advantage (Corbett, et al., 2005; Terlaak and King, 2006). Corbett shows that ISO 9000 certified firms achieved significant financial gains. Terlaak and King (2006) show that facilities grow faster following certification, and that this effect is greater in industries with higher asymmetric information between buyers and suppliers. These results are consistent with predictions from a simple signaling model.

Few studies have been able to measure financial gains from certifications other than those sponsored by ISO. In one notable exception, Rivera (2002) shows that participation in the Costa Rican sustainable tourism certification program is significantly related to higher prices (Rivera,

2002). He shows, however, that it is only certification at the highest levels of the program which allows price premiums (Rivera, 2010).

Q1: Questions raised by research on certifications

The stylized results presented above raise some fundamental questions. If most programs do not provide credible evidence of superior performance, what role are they playing? And, if they fail to separate “good” and “bad” actors, why do firms choose to certify? Finally, if stakeholders are mostly unable to use certifications to assess the unobserved quality of goods, why do they seem to reward firms from certifying?

Stakeholder confusion. Research is beginning to suggest that stakeholders give undue credence to certifications. A recent experiment by Hiscox and Smyth (2008) testing whether or not customers will pay more for “sustainable” goods revealed the credulousness of consumers. In the experiment, he placed a fake certification tag on some towels and candles in a New York department store. The tag claimed that the towels had been produced in a manner that protected workers and the environment. The fact that customers paid more for these products revealed that customers are willing to pay a price premium for “sustainable” products. The fact that they did so because of a fake certification also revealed that customers are willing to believe unsupported certification claims [see Devinney (Chapter XX) and Gershoff and Irwin (Chapter XX) this volume for similar studies).

Certification programs may add to customer confusion. Certifications come in a dizzying array of forms and use a wide variety of rules and mechanisms (Darnall and Carmin, 2005). Moreover, the criteria necessary for participation in the different initiatives tend to be complex, technical, and involve multiple performance dimensions (Smith and Fischlein, 2010). Finally, some of these institutions have multiple objectives, such as providing a means to differentiate

good and bad performing firms while also providing a useful best practice guideline (Terlaak, 2007). As a result, stakeholders often have difficulty interpreting what participation reveals about unobserved environmental performance.

The names, acronyms, and labels of some certification programs can add to stakeholder confusion. In forestry, the Sustainable Forestry Initiative (SFI) and the Forestry Stewardship Council (FSC) are often confused, but one is sponsored by industry and the other is independent. By the end of 2009, the website ecolabelling.org identified more than 300 different industry self-regulation programs (Harbaugh, Maxwell, and Roussillon, 2010). In the presence of multiple programs, consumers are often unsure of the exact quality standard—is it a relatively easy or difficult standard (Harbaugh, et al., 2010)? As a result, consumers, buyers, and producers have a hard time understanding the difference among these programs. See Baron and Lyon (Chapter XX) this volume for further discussion.

Social Explanations. If stakeholders cannot make accurate inference from certifications or if certification programs do not separate “good” and “bad” actors, the economic logic of the programs no longer holds. Accordingly, economists predict that such programs should cease to exist. Yet, we see many examples where participation continues and programs are given credence by stakeholders. What other theories might explain this behavior?

Scholars like Magali Delmas and Andrew Hoffman have attempted to provide an answer by drawing on sociological theories (Delmas, 2002; Delmas and Toffel, 2004; Hoffman, 1999; Hoffman, 2001). They note that pre-conscious constraints prevent rational consideration, because powerful schema provides rigid frames for decision-making (Berger and Luckmann, 1966). Similarly, post-conscious constraints cause decision-makers to fail to recognize their interests or to be able to do so effectively (DiMaggio, 1988). Hoffman (1999) argues, for

example, that over time metaphors for “pollution” shifted from being an obligation to a strategic choice. Decisions, he argues, were made within the frames of these metaphors. Delmas (2002: 91) concludes that normative and cognitive “aspects of a country’s institutional environment explain the differences in adoption [of ISO 14000] across countries.”

Boiral (2007) uses case studies to argue that ISO 14001 might be operating as a ‘rational myth’ that spurs ‘ceremonial behavior.’ Despite the often idealized statements about the standard’s advantages the author finds only relative improvements in environmental practices and performance. Rational myths were maintained to justify the implementation of ISO 14001, give it a more legitimate appearance, help dissimulate internal contradictions and avoid jeopardizing the continuity of the system.

Quadrant 3 (Q3): Collective Responsibility

In Quadrant 3, externalities or missing markets cause inefficient use of communal resources. Since this usually means that firms do not bear the full cost of the social problems they create, why would managers want to change the situation through industry self-regulation?

One reason is that stakeholders take actions to impose these “external” costs on offending firms (see Baron and Lyon (Chapter XX) this volume for further discussion on private politics). They lobby for increased government regulation or they engage in direct action to penalize firms. If such, regulation were effectively targeted to impose appropriate costs on each offending firm, there would be no need for self-regulation. Often, however, regulation penalizes all firms, be they good or bad. Stakeholders also impose a common cost on all firms in an industry by sanctioning firms collectively or randomly.

In response to these industry-wide pressures, firms may choose to create industry self-regulation as a collective defense mechanism. A number of potential explanations have been

offered for how this might work. A common argument is that firms seek to forestall regulatory or stakeholder action by improving just enough that regulators or stakeholders no longer have sufficient motivation to incur in a fixed cost of regulating (Rivera, 2010; Segerson and Dawson, 2001). As a result, firms incur some cost of regulation, but avoid a much higher cost. In this model, everyone gains: stakeholders gain improved environmental performance, and firms, regulators, and customers avoid costly regulatory administration.

Q3: Empirical Evidence

Research suggests a few stylized predictions for the effect of these programs. As with self-regulation in Quadrant 1, both firms and stakeholders should benefit from these institutions. In this case, however, the benefit could spill over to all firms, not just the participants and the entire industry should be rewarded. For their additional support of the industry, stakeholders should gain some consideration – for example improved environmental protection.

These predicted patterns of general improvement make empirical analysis of these programs very difficult. Nevertheless, some scholars have uncovered intriguing evidence.

Q3: Do participants improve environmental performance? Studies provide mixed evidence on the degree to whether these self-regulations improve the environmental performance of firms. For example, Rees (1994) notes that the Institute of Nuclear Power Operation (INPO) was successful because it was able to support its internal sanctions through a threat to reveal non-compliance to the Nuclear Regulatory Commission (Rees, 1994). In contrast, studies of several other programs show that participating firms do not improve their performance compared with non-participants (Darnall and Sides, 2008; King and Lenox, 2000; Howard, Nash, and Ehrenfeld, 2000; Rivera and de Leon, 2004).

King and Lenox (2000) demonstrate that participants in the Responsible Care program do not improve their environmental performance faster than non-participants. Howard-Grenville, Nash and Coglianese (2008) find that in many participating firms; managers did not have the knowledge or resources needed to implement the required standards. Rivera and de Leon (2004) find similar results for the Sustainable Slopes Program. Participating ski areas were also more likely to have lower third-party environmental performance ratings (Rivera and de Leon, 2004).

Why are these programs not meeting their aspirations? A common problem seems to be that these programs lack mechanisms for verifying compliance with the agreed standard and/or a viable means for sanctioning non-compliance. In 1999, Chemical Week reported that members of the chemical industry were becoming concerned with the lack of internal compliance to the Responsible Care program and had as a result taken the “velvet glove” off (Barnett and King, 2008).

Various researchers have suggested that tighter requirements, such as explicit sanctions for non-compliers, public disclosure, and independent monitoring and verification mechanism can improve the performance of these institutions (King and Lenox, 2000; Rivera and deLeon, 2005). Lenox and Nash (2003) argue that self-regulatory institutions that have demonstrated a serious commitment to expel non-compliant members are less likely to suffer from adverse selection. In support of this claim, they found empirical evidence that a forestry trade association’s self-regulation program, which featured a credible threat of expulsion, attracted a disproportionate number of participants that exhibited superior environmental performance.

Does the industry benefit? In contrast to evidence that programs in Quadrant 3 have provided little environmental benefit, several studies have found evidence that the programs provide financial benefits to the industry. Some scholars have looked at the financial benefits

that a self-regulation initiative generates for all industry members. Lenox (2006) finds that the creation of the Responsible Care program generated dramatic financial benefits to most firms in the industry. Barnett and King (2008) find that the Responsible Care program reduce the tendency that a negative event of a firm such as a chemical accident, could have in decreasing the stock price of another firm. Thus, empirical evidence suggests that as predicted by theory, the financial benefits of programs in Quadrant 3 go not to participating firms, but to the industry as a whole.

Q3: Questions raised by research on collective responsibility

Many questions remain about self-regulation in Quadrant 3. Most critically, scholars are puzzled by the apparent contradiction in the empirical evidence concerning the functioning of these institutions. On the one hand they seem to provide no apparent benefit to stakeholders. On the other, they are used as a vehicle for stakeholder outreach, and they apparently provide firms with a financial benefit. What could be going on?

Barnett and King (2008) propose that the purpose of one prominent program, Responsible Care, may have been misunderstood. Rather than an agreement to improve environmental performance, it was, they argue, an agreement to disclose information. This disclosure of information helped reduce concerns about chemical risks and reduced the degree to which accidents at one firm would harm the reputation of another. Their argument modifies existing models, but retains their basic structure. The program, they argue provides a benefit to stakeholders (information) which reduces the tendency for stakeholders to punish the industry.

Other scholars have used theories from sociology to argue that self-regulation may take on meaning that it does not deserve. These institutions, by their prominence and their affiliation, may gain a sense of “legitimacy”. This legitimacy could cause stakeholders to reward

participating firms whether or not the program provides real benefits to stakeholders (D'Aveni, 1990).

Scholars have also pondered how these programs get initiated. For example, what allows firms to come together to create a common strategy and common set of rules? Anecdotal evidence seems to suggest that major negative events tend to spark the formation of these programs. For example, the nuclear accident at Three Mile Island sparked the nuclear industry to form the Institute of Nuclear Power Operations (INPO). Similarly, the Responsible Care Program of the chemical industry was formed after an accident in Bhopal, India killed approximately 10,000 people and may have injured up to 100,000. Other evidence seems to point to the importance of a leading actor to help coordinate agreement on a standard. Rees (1997) reports that in the case of Responsible Care, Robert Kennedy, CEO of Union Carbide, played this important role.

Quadrant 4: Mixed-method approaches

Programs in Quadrant 4 have been least studied. Although the founders of several programs expressed the hope that they would accomplish both objectives, scholars have noted that attempting to accomplish both goals may be difficult or even counter-productive (Terlaak, 2007). This is because accomplishing the two goals seems to involve conflicting strategies (see Figure 2). As shown in Figure 2, when the goal of the self-regulatory institution is improvement of all firms in an industry, membership should include all relevant firms, but when the goal is to separate “good” from “bad” firms, only the better should participate. Similarly, because it is less costly for the worst performers to improve, self-regulatory institutions who seek to improve collective performance should allocate resources to improve the worst performers. However, if the self-regulatory institution is designed to separate “good” and “bad” performers, no special

assistance should be provided to the worst performers. Finally, the financial returns are distributed differently in the two examples. In the case of collective responsibility, the entire industry benefits by the improved reputation that the program provides. For certifications, only the participants benefit from the higher price premiums they can charge by having distinguished themselves from the low-performing firms.

-----Insert Figure 6.2 Here-----

Example

The best example of a program in Quadrant 4 is the Equator Principles. This agreement was formed among banks engaged in project finance, and it was designed to address growing concern among stakeholders about the environmental and social costs caused by project finance and among investors concerned with the potential for loan default. A few high profile projects (e.g. the Holcim Vietnam Plant) threatened to damage the reputation of the entire industry. According to the founders of the Equator Principles, the program was intended to reassure stakeholders that leading banks were acting to reduce the propensity for social harm and reassure investors that investments had undergone proper due diligence.

GENERAL PRINCIPLES FOR EFFECTIVE SELF-REGULATION

Principles

What principles have emerged from the empirical studies reviewed in this chapter?

Gains from self-regulation. All of the studies on industry self-regulation note that the institutions begin with some claim to creating gains for society. For example, when the Responsible Care program was initiated, its proponents claimed it would reduce accidents,

assuage stakeholders, eliminate the need for costly regulation, and maintain the profitability of the industry. Although such claims might simply represent public relations, notes from internal documents and reports suggest that such feelings are held by some founders and important members. Thus, research on self-regulation seems to confirm a functional explanation of institutions (i.e. institutions arise to improve inefficient market exchange).

Credible enforcement of rules. Research on industry self-regulation has considered the importance of visible verification of rule compliance and credible enforcement of rules. In the majority of cases, scholars have concluded that both visibility and credible enforcement are critical to the effective functioning of self-regulation.

The mechanism for achieving visibility varies across the institutions being analyzed. Self-regulations in Quadrant 3 seem to have the greatest difficulty in developing systems for allowing visibility. Few of these institutions include effective verification systems. Instead, they seem to rely on “incestuous” relations to passively provide visibility. Rees (1997), for example, argues that the tendency of chemical firms to be connected in complex supplier/buyer relationships allows firms in the industry to monitor compliance with the Responsible Care program. The participants in the Equator Principles also rely on these nested relations to provide oversight. Banks tend to syndicate in on numerous loans, and therefore have insight on the extent to which other firms are following agreements.

Certification programs tend to have more direct and credible mechanisms for maintaining visibility. In most cases, these programs rely on official inspection and certification of compliance with rules. To make the result of these inspections credible to stakeholders, the inspector usually needs to be independent from the institutional governance, or the sponsor of the institution must have interests that are clearly aligned with the stakeholder and not with the firm.

Environmental goods are usually credence goods, thus the “quality” of the good cannot be verified even after the purchase. As a result, stakeholders must infer the credibility of the certification by gauging the interests of the certifier.

Independent certification represents a major problem for many self-regulatory programs. In many cases, certifiers pay auditors to assess their compliance. As a result, firms are inclined to select lenient auditors (Swift, Humphrey and Gor, 2000). In all cases, auditing only validates compliance at periodic times, when audits are scheduled, but real compliance with management system standards is an ongoing activity (O’Rourke, 2002). Thus, the implementation of the standards can be more of a symbolic than a substantive act (Christmann and Taylor, 2006).

The ability of the auditor can influence the accuracy of the information provided by certification. Some auditors may lack sufficient business knowledge (Swift et al., 2000) or technical knowledge of specific industries (Boiral, 2003; O’Rourke, 2002; Yeung and Mok, 2005). As audited firms need to provide documentation to external auditors, less qualified auditors may uncritically accept the internal report prepared by the firm (Yeung and Mok, 2005). As a result one auditor might certify a firm while another one would fail the same firm (Boiral, 2003; Yeung and Mok, 2005). These concerns are been addressed by certifying organizations through initiatives such as ISEAL Alliance

Several studies argue that sanctions are necessary for maintaining the efficiency of a self-regulatory program. In a comparison of four self-regulation programs, the one with explicit sanctions for malfeasance was the one that was able to avoid adverse selection problems (Lenox and Nash, 2003). For sanctions to work, however, they must be available and credible. The cost to the sanctioner of applying them must be less than the benefit the sanctioner obtains. Many of the programs discussed in this chapter fail this test because collective sanctions require removing

a participant from the group, and this raises problems for the group. Removing non-compliers from the group suggests that participants have not maintained compliance with the program.

Sanctioning is a particularly difficult problem for self-regulatory programs in Quadrant 3. Anti-trust regulation prevents certain types of sanctioning behavior, and bi-lateral sanctions do not leverage the advantage of the collective agreement. Such bi-lateral sanctions are also vulnerable to free-riding behavior as each actor waits for another to take on the costly role of sanctioner. One effective means of sanctioning is noted by Rees (1994) in his study of the Institute of Nuclear Power Operations. In that program, violators of the industry program are turned over to the government for further inspection and potential enforcement. Such transfers need not be public, and their existence reassures the Nuclear Regulatory Commission that the INPO is functioning.

Sanctioning is much easier for certifications than for collective responsibility programs. Both types of programs have two main components: the set of guidelines or requirements and the monitoring and sanction mechanisms (Gereffi, Garcia-Johnson and Sasser, 2001). The mechanism for sanctioning for non-compliance in the case of certifications is straightforward. Certifications are not provided, not renewed, or removed for violations of rules. In practice, however, misaligned incentives may prevent effective sanctioning. Sponsors of certifications often have a financial or reputational interest in their program, and they seek to encourage adoption by avoiding sanctioning. The current business model for certifiers also reduces the incentive for sanctioning. Certifiers are often paid by the firm, and thus face conflict incentives when performing audits.

Supportive Institutional Environment. Most of the research on industry self-regulation has been done in nations with highly developed regulatory environments. This makes

comparison of the effect of the institutional environment difficult. Nevertheless, several studies note connections to national institutions as particularly important in allowing self-regulation (see Christmann and Taylor (Chapter XX) this volume).

Although some scholars have proposed that industry self-regulation could substitute for missing state institutions, existing evidence suggests that regulation actually complements the functioning of these institutions. Greater reporting requirements, such as the US Toxic Release Inventory, allow stakeholders a means for analyzing the efficacy of programs. Correspondingly, the threat of state regulation helps provide the incentive for self-regulation, and state regulators can provide a credible enforcement mechanism for voluntary programs. Finally, government oversight can directly reduce the tendency for firms to violate self-regulatory agreements (Khanna and Damon, 1999).

Evidence also suggests that informed customers and intermediaries support the functioning of self-regulatory institutions. For example, Prado (2010) notes that flower producers often choose the weakest certifications – accept when they are importing to Switzerland. She notes Swiss consumers buy more flowers per capita than any other nation, and are known to be very discerning customers. She hypothesizes that these Swiss customers are more likely to require the most stringent environmental certification.

The adoption of programs often requires new management practices or creates opportunities in unexpected places. For instance, firms interested in promoting responsible labor practices could address the root causes of poor working conditions by enabling suppliers to better schedule their work and to improve quality and efficiency (Locke, et al., 2007). Locke et al. (2009) find that responsible sourcing practices more focused on joint problem solving, information exchange and diffusion of best practices than on compliance with a code of conduct

has led to improvements in working conditions in factories around the world. Finally, an active community of local non-governmental organizations can be helpful in monitoring and supporting participation in self-regulatory programs.

FUTURE DIRECTIONS

After more than a decade of research on industry self-regulation, it is important to highlight a basic agenda for future research. The literature has focused on a limited number of programs—including ISO 14001, ISO 9000, Responsible Care, Sustainable Slopes, and the Forestry Stewardship Council—pointing to a couple of obvious gaps in the literature.

First, we still do not know if the emerging findings about key program characteristics can be generalized to the hundreds of other initiatives currently being implemented around the world. Second, most existing research has focused on examining self-regulation in manufacturing and natural resource extraction industries. We know very little about the effects of institutions in other sectors of the economy such as banking or insurance. Third, we do not understand what happens to the environmental and financial performance of participating firms that drop-out or are expelled from a program.

Additionally, most empirical studies have examined industry self-regulation in developed countries. We know little about the effectiveness initiatives diffusing in developing countries, where these institutions often become the only de facto policy tool available for attempting to promote environmental practices within the business community. More research is necessary to understand why firms in these countries are adopting self-regulatory initiatives, and what types of programs are more likely to improve businesses' environmental and financial performance.

As discussed previously, these initiatives need performance-based standards, third-party oversight, and sanctions/reward system in order to function effectively. Yet, we know very little about what are the optimal levels of stringency that would make these conditions sufficient to avoid opportunism. After all, a draconian program that doesn't attract enough business participation may also be as ineffective as a lax one that promotes minimal environmental protection.

Another stream of research that is worth exploring is the relationship of self-regulation and government intervention. This relationship is a source of debate among scholars. There are those who argue that these programs "crowd-out" more thorough government interventions (Esbenshade, 2004). While others argue that they help strengthen government enforcement of national laws (O'Rourke, 2003; Rodriguez-Garabito, 2005). More research is necessary to understand when either of these positions accurately predicts the effects of industry self-regulation.

In terms of research methods it is essential that future studies to evaluate the effects of participation in industry self-regulation, consider what would have been the firms' situation without participation in the program. Blackman and Rivera (2010) found that from 37 studies that have seek to measure the environmental and socioeconomic impacts of certifications, only 14 make a serious attempt to construct a credible counterfactual and therefore, can be considered tests of causal impacts. Heckman correction and propensity score matching are statistical techniques to address self-selection problems (Greene, 2000; Maddala, 1986; Rosenbaum and Rubin, 1983).

CONCLUSIONS AND IMPLICATIONS

We began this chapter by noting that business enterprises represent one of the few actors with the power, global reach, and incentive to respond to growing environmental problems. As we discussed in our introduction, the resources available to business enterprises rival all but the largest nations, and their independence allows them freedom of action not available to most nations. In addition, business enterprises may have the incentive to act to create institutions which better regulate market exchange to prevent the inefficiencies caused by missing property rights and asymmetric information. Other stakeholders, such as non-governmental or multi-stakeholder organizations, can also participate in the creation of these institutions.

The research reviewed in this chapter show that self-regulatory programs created by business enterprises take forms that appear to be designed to solve exchange problems. Some seem to resolve problems caused by asymmetric information. Others seem to help regulate externalities. A very few appear to try to do both. The rapid growth of these programs appears to some eyes to suggest a proactive response from businesses and other organizations to growing environmental problems.

Existing research both confirms earlier findings on self-regulation of common pool resources and reveals new questions for scholars of industry self-regulation. The body of this research suggests, however, that self-regulatory programs often fail to live up to their promise. Evidence on many of the programs suggests that they fail to provide benefits to the stakeholders that they claim to protect. Why then do these programs garner support from stakeholders? One possibility is that the very hope that these programs embody creates the conditions that cause them to fail. Customers buy goods with suspect labels because they think that doing so supports good intentions. Regulators provide members of industry self-regulations with regulatory relief because they assume that they must be somewhat better than non-members.

Academics too fall victim to this kind of destructive wishful thinking. At a conference in 2010 at which several papers were presented demonstrating the failure of self-regulatory programs, a well-known scholar chastised the panel for emphasizing the failure and not the promise of these programs. Their existence, he argued, raised awareness of issues and thereby aided environmental causes. In fact, we believe that nothing could be further from the truth. A lack of attentive stakeholder oversight allows these programs to operate “out of equilibrium”. Without oversight, firms can garner private benefits from self-regulation without providing social benefits. Firms can create misleading programs that substitute good feeling for good action. If one message comes out of research on self-regulatory institutions it is that the risk of a “conspiracy against the public” is always present. Scholars have a duty to accurately report the effect of self-regulatory programs.

Where does the existing body of reporting leave us? It leaves the authors of this chapter both skeptical and hopeful. Stakeholders—including the government—must stop creating or endorsing strictly voluntary programs that do not include the institutional conditions for maintaining compliance with institutional rules. This includes the necessity of credible and public evaluation and the visible sanctioning of rule breakers. Without such disciplined oversight, the promise of industry self-regulation will go unmet. If, however, stakeholders can effectively police the use of industry self-regulation, businesses and other organizations may indeed help create the new rules needed to achieve a more sustainable planet.

REFERENCES

- ALBERINI, A. and SEGERSON, K. (2002). 'Assessing Voluntary Programs to Improve Environmental Quality'. *Environmental and Resource Economics*, 22/1-2: 157-184.
- BARNETT, M. L. and KING, A. A. (2008). 'Good Fences Make Good Neighbors: A Longitudinal Analysis of an Industry Self-Regulatory Institution.' *Academy of Management Journal*, 51/6: 1150-1170.
- BERGER, P. and LUCKMANN, T. (1966). *The Social Construction of Reality*. New York: Doubleday.
- BLACKMAN, A. and RIVERA, J. (2010). 'Environmental Certification and the Global Environment Facility.' *Advisory Report*, Washington, DC: United Nations' Global Environmental Facility.
- BOIRAL, O. (2003). 'ISO 9000: Outside the Iron Cage.' *Organization Science*, 14/6: 720-737.
- (2007). 'Corporate Greening through ISO 14001: A Rational Myth?' *Organization Science*, 18/1: 127-146.
- CHRISTMANN, P. and TAYLOR, G. (2001). 'Globalization and the Environment: Determinants of Firm Self-Regulation in China.' *Journal of International Business Studies*, 32/3: 439-458.
- ——— (2006). 'Firm Self-Regulation through International Certifiable Standards: Determinants of Symbolic versus Substantive Implementation.' *Journal of International Business Studies*, 37/6: 863-878.
- CORBETT, C. J., MONTES-SANCHO, M. J. and KIRSCH, D. A. (2005). 'The Financial Impact of ISO 9000 Certification in the United States: An Empirical Analysis.'

Management Science, 51/7: 1046-1059.

D'AVENI, R. (1990), 'Top Managerial Prestige and Organizational Bankruptcy,' *Organization Science*, 1/2: 187-220.

DARNALL, N. and CARMIN, J. (2005). 'Greener and Cleaner? The Signaling Accuracy of US Voluntary Environmental Programs.' *Policy Sciences*, 38/2-3: 71-90.

—— and SIDES, S. (2008). 'Assessing the Performance of Voluntary Environmental Programs: Does Certification Matter?' *Policy Studies Journal*, 36/1: 95-117.

DASGUPTA, S., HETTIGE, H. and WHEELER, D. (2000). 'What Improves Environmental Compliance? Evidence from Mexican Industry.' *Journal of Environmental Economics and Management*, 39/1: 39-66.

DELMAS, M. A. (2002). 'The Diffusion of Environmental Management Standards in Europe and in the United States: An Institutional Perspective.' *Policy Sciences*, 35/1: 91-119.

—— and MONTIEL, I. (2009). 'Greening the Supply Chain: When Is Customer Pressure Effective?' *Journal of Economics and Management Strategy*, 18/1: 171-201.

—— and TOFFEL, M. W. (2004). 'Stakeholders and Environmental Management Practices: An Institutional Framework.' *Business Strategy and the Environment*, 13: 209-222.

DIMAGGIO, P. J. (1988). 'Interest and Agency in Institutional Theory.' In L. G. Zucker (ed.), *Institutional Patterns and Organizations: Culture and Environment*. Cambridge, MA: Ballinger.

GEREFFI, G., GARCIA-JOHNSON, R. and SASSER, E. (2001). 'The NGO-Industrial Complex.' *Foreign Policy*, 125: 56-65.

- GREENE, W. (2008). *Econometric Analysis*, Upper Saddle River, N.J.: Prentice Hall, Inc.
- HARBAUGH, R., MAXWELL, J. W. and ROUSSILLON, B. (2010). 'Uncertain Standards.' Working Paper, Kelley School of Business, Indiana University
- HISCOX, M. J. and SMYTH, F. B. (2008) 'Is There Consumer Demand for Improved Labor Standards? Evidence from Field Experiments in Social Product Labeling.' Working Paper, Department of Government, Harvard University.
- HOFFMAN, A. J. (1999). 'Institutional Evolution and Change: Environmentalism and the US Chemical Industry.' *Academy of Management Journal*, 42/4: 351-371.
- HOFFMAN, A. J. (2001). 'Linking Organizational and Field-Level Analyses: The Diffusion of Corporate Environmental Practice.' *Organization and Environment*, 14/2: 133-156.
- HOWARD, J., NASH, J. and EHRENFELD, J. (2000). 'Standard or Smokescreen? Implementation of a Voluntary Environmental Code.' *California Management Review*, 42/2: 63-82.
- NASH, J. and COGLIANESE, C. (2008). 'Constructing the License to Operate: Internal Factors and their Influence on Corporate Environmental Decisions.' *Law and Policy*, 30/1: 73-107.
- ESBENSHADE, J. (2004). *Monitoring Sweatshops: Workers, Consumers and the Global Apparel Industry*, Philadelphia: Temple University Press.
- KHANNA, M. and DAMON, L. A. (1999). 'EPA's Voluntary 33/50 Program: Impact on Toxic Releases and Economic Performance of Firms.' *Journal of Environmental Economics and Management*, 37/1: 1-25.
- KING, A. A. and LENOX, M. J. (2000). 'Industry Self-Regulation without Sanctions: The

- Chemical Industry's Responsible Care Program.' *Academy of Management Journal*, 43/4: 698-716.
- and TERLAAK, A. (2005). 'The Strategic use of Decentralized Institutions: Exploring Certification with the ISO 14001 Management Standard.' *Academy of Management Journal*, 48/6: 1091-1106.
- LENOX, M. J. (2006). 'The Role of Private Decentralized Institutions in Sustaining Industry Self-Regulation.' *Organization Science*, 17/6: 677-690.
- and NASH, J. (2003). Industry Self-Regulation and Adverse Selection: A Comparison across Four Trade Association Programs.' *Business Strategy and the Environment*, 12: 343-356.
- LOCKE, R. M., AMENGUAL, M. and MANGLA, A. (2009). 'Virtue out of Necessity? Compliance, Commitment, and the Improvement of Labor Conditions in Global Supply Chains.' *Politics and Society*, 37/3: 319-351.
- QIN, F. and BRAUSE, A. (2007). 'Does Monitoring Improve Labor Standards? Lessons from Nike.' *Industrial and Labor Relations Review*, 61/1: 3-31.
- MADDALA, M. (1986). *Limited-Dependent and Qualitative Variables in Econometrics*, Cambridge. UK: Cambridge University Press.
- NORTH, D.C. (1990). *Institutions, Institutional Change, and Economic Performance*, Cambridge, UK: Cambridge University Press.
- O'ROURKE, D. (2002). Monitoring the Monitors: A Critique of Corporate Third-Party Labor Monitoring.' In: R. Jenkins, R. Pearson, and G. Seyfang (eds.), *Corporate Responsibility and Ethical Trade: Codes of Conduct in the Global Economy*. London: Earthscan.

- (2003). ‘Outsourcing Regulation: Analyzing Non-Governmental Systems of Labor Standards and Monitoring.’ *Policy Studies Journal*, 31/1: 1-29.
- POTOSKI, M. and PRAKASH, A. (2005). ‘Covenants with Weak Swords: ISO 14001 and Facilities' Environmental Performance’. *Journal of Policy Analysis and Management*, 24/4: 745-769.
- PRADO, A.M. (2010). ‘Choosing among Environmental and Labor Certifications: An Exploratory Analysis of Producer Adoption.’ Working Paper, New York University.
- REES, J. (1994). *Hostages of Each Other: The Transformation of Nuclear Safety since Three Mile Island*. Chicago: University of Chicago Press.
- (1997). ‘Development of Communitarian Regulation in the Chemical Industry.’ *Law and Policy*, 19: 477-528.
- RIVERA, J. (2002). ‘Assessing a voluntary environmental initiative in the developing world: The Costa Rican Certification for Sustainable Tourism.’ *Policy Sciences*, 35/4: 333-360.
- and DELEON, P. (2004). ‘Is Greener Whiter? Voluntary Environmental Performance of Western Ski Areas.’ *Policy Studies Journal*, 32/2-3: 417-437.
- ——— (2005). ‘Chief Executive Officers and Voluntary Environmental Performance: Costa Rica's Certification for Sustainable Tourism.’ *Policy Sciences*, 38/2: 107-127.
- (2010). *Business and Public Policy: Responses to Environmental & Social Protection Processes*. Cambridge, UK: *Cambridge University Press*.
- RODRIGUEZ-GARAVITO, C. A. (2005). ‘Global Governance and Labor Rights: Codes of Conduct and Anti-Sweatshop Struggles in Global Apparel Factories in Mexico and

- Guatemala.' *Politics and Society*, 33/2: 203-233.
- ROSENBAUM, P. and RUBIN, D. B. (1983). 'The Central Role of the Propensity Score in Observational Studies for Causal Effects.' *Biometrika*, 70: 41-55.
- SEGERSON, K. and DAWSON, N. L. 'Environmental Voluntary Agreements: Participation and Free-Riding.' in E. W. Orts and K. Deketelaere (eds.) *Environmental Contracts: Comparative Approaches to Regulatory Innovation in Europe and the United States*. Dordrecht: Kluwer Law International.
- SMITH, T. M. and FISCHLEIN, M. (2010). 'Rival Private Governance Networks: Competing to Define the Rules of Sustainability Performance.' *Global Environmental Change*, 20/3: 511-522.
- SWIFT, T. A., HUMPHREY, C. and GOR, V. (2000). 'Great Expectations?: The Dubious Financial Legacy of Quality Audits.' *British Journal of Management*, 11/1: 31-45.
- TERLAAK, A. (2007). 'Order without Law? The Role of Certified Management Standards in Shaping Socially Desired Firm Behaviors.' *Academy of Management Review*, 32/3: 968-985.
- and KING, A. A. (2006) 'The Effect of Certification with the ISO 9000 Quality Management Standard: A Signaling Approach.' *Journal of Economic Behavior and Organization*, 60/4: 579-602.
- TOFFEL, M. W. (2006). 'Resolving Information Asymmetries in Markets: The Role of Certified Management Programs.' Working Paper, Harvard Business School.
- WELCH, E. W., MORI, Y. and AOYAGI-USUI, M. (2001). 'Voluntary Adoption of ISO 14001 in Japan: Mechanisms, Stages and Effects.' 11/1: 43-62.

YEUNG, G. and MOK, V. (2005). ‘What are the Impacts of Implementing ISOs on the Competitiveness of Manufacturing Industry in China?’ *Journal of World Business*, 40/2: 139-157.

Figure 6.1: Categorization of industry self-regulation

		Externalities	
		Yes	No
Asymmetric Information	Yes	<p>Quadrant 4: Mixed Method</p> <p><u>Driver:</u> Loss of price premium Shared threat or loss</p> <p><u>Members:</u> Not known</p> <p><u>Effect:</u> Not known</p>	<p>Quadrant 1: Certifications</p> <p><u>Driver:</u> Inefficient market Loss of premium to better performers</p> <p><u>Members:</u> Better performers</p> <p><u>Effect:</u> Participants, customers, and stakeholders all benefit</p>
	No	<p>Quadrant 3: Collective Responsibility</p> <p><u>Driver:</u> Inefficient use of shared resources</p> <p><u>Members:</u> Those with larger share of resources</p> <p><u>Effect:</u> Participants contribute more Industry and stakeholders benefit</p>	<p>Quadrant 2: Self-regulation not needed</p>

Figure 6.2: Strategies of mixed-method self-regulation

	Collective Responsibility	Certifications
--	----------------------------------	-----------------------

Membership	Include all	Include the better performing
Environmental Performance	Worst improve most	Average improve to meet standard.
Financial Performance	Entire industry benefits	Participants benefit.