
CAN NON-STATE CERTIFICATION SYSTEMS BOLSTER
STATE-CENTERED EFFORTS TO PROMOTE
SUSTAINABLE DEVELOPMENT THROUGH THE
CLEAN DEVELOPMENT MECHANISM?

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INTRODUCTION

Increasing economic globalization has coincided with the emergence and escalating influence of non-state actors and organizations in domestic and international policymaking, from shaping policy agendas to promoting private authority.¹ The latter phenomenon has arisen, at least in part, from a critique of states' failures to adopt effective and enduring environmental policies. Rather than contest "command and control" institutions, non-state strategies embrace market approaches built around incentives and price mechanisms.² Several forms of non-state authority have emerged, including corporate social responsibility, provision of information through labeling, and self-reporting.³

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1. Rodney Bruce Hall & Thomas J. Biersteker, *The Emergence of Private Authority in the International System*, in *THE EMERGENCE OF PRIVATE AUTHORITY IN GLOBAL GOVERNANCE* 3, 4 (Rodney Bruce Hall & Thomas J. Biersteker eds., 2002).

2. Tim Bartley, *Certifying Forests and Factories: States, Social Movements, and the Rise of Private Regulation in the Apparel and Forest Products Fields*, 31 *POL. & SOC'Y* 433, 433–34 (2003).

3. Steven Bernstein & Benjamin Cashore, *Can Non-State Global Governance Be Legitimate? An Analytical Framework*, 1 *REG. & GOVERNANCE* 347, 347–48 (2007).

This Article focuses on a specific institutional formation within private authority—non-state market-driven (“NSMD”) global governance,⁴ commonly referred to as global certification programs. Certification schemes are distinctive, according to Bernstein and Cashore, because they transform the global marketplace by developing “deliberative and adaptive governance institutions designed to embed social and environmental norms in the global marketplace that derive authority directly from interested audiences, including those they seek to regulate, not from sovereign states.”⁵ As Hall and Biersteker have noted, in such processes non-state actors undertake functions traditionally associated as exclusive to state policy making activities: they “set agendas, they establish boundaries or limits for action . . . and they provide order and security. . . . [They also] act simultaneously both in the domestic and in the international arenas.”⁶ Five features separate the NSMD system from other non-state policy mechanisms: (1) its authority is not derived from the state, (2) there are institutionalized governance mechanisms, (3) the authority is market based, (4) its policy arena is the social domain, and (5) there exist enforcement mechanisms and mandatory requirements.⁷ NSMD global governance first emerged in 1993 in the forestry sector and has subsequently arisen in numerous other sectors, such as ecotourism, coffee, fisheries, organic foods, and aquarium species.⁸ Given that these schemes do not rely on state sovereign authority, NSMD certification programs must cultivate sufficient private authority and legitimacy to govern on their own.⁹

4. BENJAMIN CASHORE ET AL., GOVERNING THROUGH MARKETS: FOREST CERTIFICATION AND THE EMERGENCE OF NON-STATE AUTHORITY 4 (2004).

5. Bernstein & Cashore, *supra* note 3, at 348.

6. Hall & Biersteker, *supra* note 1, at 4.

7. See CASHORE ET AL., *supra* note 4, at 17, 20; Bernstein & Cashore, *supra* note 3, at 361; Benjamin Cashore, *Legitimacy and the Privatization of Environmental Governance: How Non-State Market-Driven (NSMD) Governance Systems Gain Rule-Making Authority*, 15 GOVERNANCE 503, 503–04.

8. CASHORE ET AL., *supra* note 4, at 5, 11–12.

9. Tim Bartley, *Institutional Emergence in an Era of Globalization: The Rise of Transnational Private Regulation of Labor and Environmental Conditions*, 113 AM. J. SOC. 297, 302 (2007).

TABLE 1: KEY FEATURES OF NSMD GOVERNANCE¹⁰

Role of the state	State does not use its sovereign authority to directly require adherence to rules
Institutionalized governance mechanism	Procedures in place designed to created [sic] adaptation, inclusion, and learning over time across a wide range of stakeholders
The social domain	Rules govern environmental and social problems
Role of the market	Support emanates from producers and consumers along the supply chain who evaluate the costs and benefits of joining
Enforcement	Compliance must be verified

Recent research on NSMD systems has focused on identifying possible “futures” of the model in an effort to focus scholarship on understanding how such non-state programs might evolve to gain the legitimacy and authority to govern;¹¹ such futures include the following possibilities: (1) NSMD systems gain “full-fledged political legitimacy,” (2) NSMD systems exist as “strong, but niche or small-market-focused” systems, (3) NSMD systems institutionalize “as a weak system,” (4) hybrids emerge that combine government and private authority, and (5) governments move in to regulate the problem.¹²

We focus our attention on an overlooked future alternative that we characterize as *symbiotic* to describe a particular relationship between public and private authority. The key feature of a symbiotic relationship is that NSMD certification is used to address unforeseen or undesired externalities of an existing government or intergovernmental agreement. Such an approach avoids the situation in which hard-won intergovernmental or domestic public policy agreements have to be revisited—something that a plethora of literature tells us rarely occurs quickly, if at all, and that comes with huge risks, including backsliding from commitments. By addressing such externalities in the marketplace, successful NSMD systems would work in symbiotic fashion to increase the legitimacy and support of the intergovernmental or public policy agreement—

10. Benjamin Cashore et al., *The Emergence of Non-State Environmental Governance in European and North American Forest Sectors*, in TRANSATLANTIC ENVIRONMENT AND ENERGY POLITICS 209, 214 (Miranda A. Schreurs et al. eds., 2009) (adapted from Cashore, *supra* note 7, at 509).

11. See generally Graeme Auld et al., *The Emergence of Non-State Market-Driven (NSMD) Global Environmental Governance: A Cross-Sectoral Assessment*, in GOVERNANCE FOR THE ENVIRONMENT: NEW PERSPECTIVES 183 (Magali A. Delmas & Oran R. Young eds., 2009); Bernstein & Cashore, *supra* note 3.

12. Auld et al., *supra* note 11, at 190, 192.

entrenching, rather than taking away from, state-centered processes.

When and how might symbiotic relationships emerge? What precise organizational forms might they take? How do authority and legitimacy requirements for NSMD systems differ from the ideal-type “political legitimacy” future identified by Bernstein and Cashore?¹³ The purpose of this Article is to shed light on these questions so that practitioners and scholars may be able to draw on the full range of impacts that NSMD systems might have. In the symbiotic forms we explore, governmental arrangements effectively integrate NSMD efforts, and NSMD systems complement state-based commitments, thus reinforcing the status of both parties, instead of seeing them as in competition. We illustrate the potential of symbiotic relationships by reviewing the emergence of the Gold Standard certification program for carbon projects,¹⁴ which provides us with a case study to explore such a symbiotic arrangement. Rather than reopening the negotiation process, the developers of the Gold Standard used certification as a means to target environmental and social aspects of carbon-reduction targets that had not been included in the Kyoto Protocol.¹⁵ We argue that the path toward gaining legitimacy for NSMD systems under such a relationship is very different from the conditions Bernstein and Cashore posited in their 2007 article.¹⁶ Answering and understanding the questions posed above will allow us to assess the merits and potential of such a design as an approach to global environmental governance.

The remainder of this Article elaborates these points. Following this Introduction, Part I outlines an analytical framework by Bernstein and Cashore regarding the evolutionary future of NSMD governance. Part II introduces our empirical case study—the Clean Development Mechanism’s Gold Standard—which we use to explore the emergence of a symbiotic relationship between public and private authority, and Part III addresses the future of the Gold Standard. Part IV addresses the advantages of symbiotic NSMD initiatives. Part V discusses the implications of the symbiotic relationship with regard to its legitimacy and authority requirements, and Part VI discusses the design of effective global environmental governance. We conclude by identifying the need for better integration of scholarship on private authority, public policy, intergovernmental relations, and corporate governance.

13. Bernstein & Cashore, *supra* note 3, at 351.

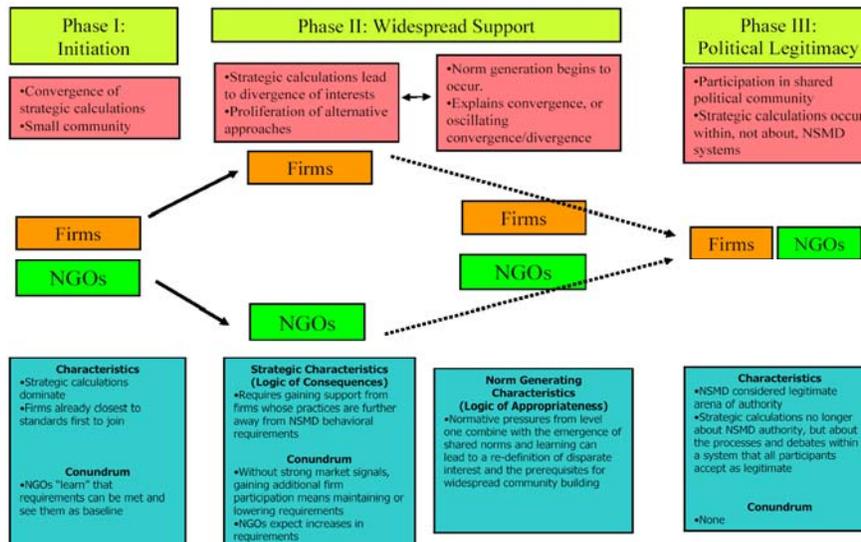
14. For a discussion of the Gold Standard, *see* Part II.

15. Only projects eligible for certification as Clean Development Mechanisms as defined under the Kyoto Protocol, which was created by a multilateral state-based process, can meet Gold Standard requirements.

16. Bernstein & Cashore, *supra* note 3, at 354–62.

I. THEORIZING ABOUT THE FUTURE OF NSMD

Bernstein and Cashore's three-stage process for NSMD institutionalization and acquisition of legitimacy serves as a launching pad for this investigation (Diagram 1).

DIAGRAM 1: THE THREE PHASES OF NSMD GOVERNANCE¹⁷

Bernstein and Cashore argue that to gain authority, the NSMD system must first achieve "political legitimacy," which they define as an "acceptance [and justification] of shared rule by a community as appropriate and justified."¹⁸ In turn, they identify a three-stage process for institutionalization and acquisition of legitimacy, through which NSMD systems will proceed in an attempt to succeed in governing. The following outlines the three stages of their argument.¹⁹

Phase I: Initiation – In Phase I, firms that are early actors, that have been publicly shamed or boycotted, or that already meet a substantial number of the standard's criteria will join the scheme. In this initiation phase, economic demand for participation in the NSMD system is not sufficient to spur membership. Bernstein and Cashore claim that Phase I will result in a niche market, where firms and environmental/social stakeholders will act in their own interests and widespread support among the sector's firms will not

17. *Id.* at 356.

18. *Id.* at 348.

19. *Id.* at 347–71.

be achieved.²⁰

Phase II: Building Widespread Support – The key feature of Phase II is the initial relaxation of standards (in the absence of price premiums and demand), as firms who have yet to join will not do so until standards are weakened. If the standards are not diluted, the system is likely to attract only a niche market, as in Phase I, because the firms that have yet to conform likely have higher costs in meeting the standards. If the architects of the NSMD system refuse to lower standards, one consequence, which has been observed with certification of the forest sector, may be the development of competing standards by industry firms and associations. This will lead to a “divergence” of standards and a resultant polarization of the landscape of firm behavior. Through shared learning, heightened public awareness, and competition, these standards may converge again at later stages. Upon reaching Phase II, Bernstein and Cashore identify three paths forward: (1) governments are finally engaged and regulate as a result of public awareness and significant contest among firms (in this scenario, the NSMD system is disbanded); (2) divergence continues, with periodic episodes of convergence, but firms seek “exit strategies” and widespread support is not achieved; or (3) institutionalization and achievement of legitimacy of NSMD systems, advancing to the final stage, or Phase III.²¹

Phase III: Political Legitimacy – In Phase III, the NSMD system gains the widespread support of stakeholders, including representatives from business, social, and environmental interests. The sector’s stakeholders look to NSMD governance “as [a] legitimate arena[] in which to mediate disputes and address policy problems.”²² In Phase III, the NSMD system has gained political legitimacy and can become institutionalized. Bernstein and Cashore claim that this third phase is the most important and ultimate goal of NSMD systems.²³

To be effective, NSMD systems must gain and maintain widespread support among firms involved in each step of the supply chain/project development. Bernstein and Cashore’s framework explores only the scenario in which the ultimate goal of the NSMD system is to gain private authority through the acquisition of “political legitimacy.” While other efforts have built upon the framework to identify a variety of other possible futures, little attention has been placed on assessing their evolutionary logics or dynamics of collaboration. We argue that an institutional arrangement featuring such a relationship might require a different legitimization process than the one described by Bernstein and

20. *Id.* at 355–57.

21. *Id.* at 357–61.

22. *Id.* at 361.

23. *Id.* at 349.

Cashore. In the following Part, we describe the genesis of the Gold Standard. This case study will be used to explore the evolution of symbiotic arrangements, with particular emphasis on the distinctive Phase III—pursuit of political legitimacy.²⁴

II. INTRODUCTION TO THE GOLD STANDARD

The Gold Standard certification program validates whether or not emission-reduction projects under the Kyoto Protocol adequately address nonclimate environmental and sustainable-development concerns.²⁵ Reduction projects eligible for Gold Standard certification are Clean Development Mechanism (“CDM”) projects, the only abatement projects under the Kyoto Protocol carried out in developing countries.²⁶ The CDM was defined under Article 12 of the Kyoto Protocol as a flexible policy instrument in which “Annex I” Parties (developed countries that have ratified the Protocol and adhere to reduction targets) can partner with “non-Annex I” Parties (developing countries that have ratified but are exempt from targets) in emission reduction activities.²⁷ In other words, it is a mechanism by which developed countries can meet their carbon reduction targets by promoting “clean development” in *other* (less developed) nations. Such projects effectively substitute for reduction of carbon emissions in the developed countries. For example, a CDM project has recently been approved in Hubei Province, China to develop a hydropower station to supply 57,440 MWh annually. The electricity generated will replace the generation from existing thermal power plants connected to the same electricity grid.²⁸

According to the Kyoto Protocol language, an additional purpose of the CDM—beyond assisting Annex I Parties in meeting their reduction targets—is to promote sustainable-development benefits for non-Annex I Parties.²⁹ Article 12 of the Kyoto Protocol states that:

24. *Id.* at 361.

25. THE GOLD STANDARD, THE GOLD STANDARD BROCHURE (2007), available at http://www.cdmgoldstandard.org/fileadmin/editors/files/1_communication/brochure/GS_brochure_2007.pdf [hereinafter THE GOLD STANDARD BROCHURE].

26. ENERGY & ENV'T GROUP, U.N. DEV. PROGRAMME, THE CLEAN DEVELOPMENT MECHANISM: A USER'S GUIDE at 5 (2003) [hereinafter CDM USER'S GUIDE].

27. Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 12, Dec. 10, 1997, 37 I.L.M. 32, available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf> [hereinafter Kyoto Protocol].

28. United Nations Framework Convention on Climate Change, Clean Development Mechanism Project Design Document Form, July 28, 2006, available at <http://cdm.unfccc.int/UserManagement/FileStorage/NYILEP2ZHDX8WCAB97RGF0Q6OV15JT>.

29. Kyoto Protocol, *supra* note 27, art. 12.

The purpose of the clean development mechanism shall be to assist Parties not included in [the] Annex I in *achieving sustainable development* and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3.³⁰

The impetus behind inclusion of sustainable development benefits was the realization that projects invested in developing countries have the potential not only to reduce global greenhouse gases in a cost-effective manner, but also to contribute to the improvement of conditions in the developing nations.³¹ Yet some projects (e.g., fuel switching, which can have ancillary benefits of reducing local air pollutants) are able to generate more sustainable-development benefits than others (e.g., reduction of hydrofluorocarbon (“HFC”) releases).³²

Since its inception, the CDM program has generated considerable criticism, varying from complaints regarding the lengthy credit-issuance process to complaints concerning the lack of standardized baseline and monitoring methodologies to complaints addressing the deficiency of financial and personnel support for the CDM Executive Board.³³ Additionally, many have criticized the CDM progress to date, claiming that few sustainable development benefits have actually resulted from the Mechanism.³⁴ Moreover, non-climate environmental benefits, such as the preservation of biodiversity, have not been a priority for CDM project developers. While the standards of the CDM take into account the project’s ability to offset carbon emissions, they can ignore or even negatively impact environmental and sustainable development concerns.³⁵ The Gold Standard certification program aims to address these perceived weaknesses and is the first independent benchmark for CDM best practices.³⁶

The Gold Standard specifically addresses the concerns of environmental and nongovernmental social organizations that have noted that the CDM does not guarantee environmental integrity and

30. *Id.* (emphasis added).

31. HARMUT STAHL ET AL., FED. INTERNATIONALE DE FOOTBALL ASS’N, GREEN GOAL LEGACY REPORT 86 (Christa Friedl ed., Michael Gromm trans., 2006), available at <http://www.oeko.de/oekodoc/292/2006-011-en.pdf>.

32. Aaron Cosbey et al., Realizing the Development Dividend: Making the CDM Work for Developing Countries 9 (May 2005) (unpublished document on file with The International Institute for Sustainable Development).

33. *Id.* at 60–61.

34. *Id.* at 9–10; Mark Kenber, Senior Policy Officer, WWF Climate Change Programme at Terra Tec, Leipzig: Quality Standards for CDM and JI Projects under Domestic and Regional Trading Regimes (2003).

35. Cosbey et al., *supra* note 32, at 13–17.

36. THE WORLD WILDLIFE FUND, THE GOLD STANDARD—BACKGROUND AND OVERVIEW (2003) [hereinafter GOLD STANDARD BACKGROUND].

sustainable development benefits. According to such organizations, the environmental weaknesses include: (1) a lack of sufficient definition of “additionality,” which can lead to no net reduction in greenhouse gas emissions, as business-as-usual projects are granted credits; (2) potential non-climate impacts adverse to such environmental concerns as biodiversity and ecosystem conservation, as large-scale hydroelectric power and monocropping projects are eligible under the CDM; (3) perpetuation of non-renewable energy sources, as fossil fuel projects can generate credits; and (4) inadequate standardization of environmental impact assessments before project initiation.³⁷ Critics note that project developers are likely to gravitate to the least expensive reduction activities, which may have the least impact.³⁸

Additionally, the geographic distribution of CDM investment does not fulfill the Kyoto Protocol’s goal of delivering projects equitably. A significant percentage of credits lie in Brazil, India, and Chile alone, and there are only a handful in the pipeline from Africa, most of which are being developed in the wealthiest African country, South Africa.³⁹ While foreign investment will naturally gravitate towards stable democracies with established institutions and low risk, the Mechanism does not take any safeguards to avoid the imbalanced distribution.⁴⁰

It has been argued that the perceived failures to develop sustainable development benefits stem from (1) insufficient stakeholder processes, as comment periods are too short and host-country stakeholders often lack Internet access and/or language capabilities to review project design documents;⁴¹ (2) prohibitive costs of small-scale projects, which often lead to greater sustainable development benefits, despite the abridged requirements for these projects;⁴² and (3) the absence of a definition of “sustainable development,” which creates obstacles to the evaluation of project benefits.⁴³

Given this criticism, the CDM may not be able to rid itself of uncertainty, which will affect investor decisions and deflate the price of CDM credits. In addition, project investors will face

37. Kenber, *supra* note 34; THE WORLD WILDLIFE FUND, THE GOLD STANDARD: QUALITY STANDARDS FOR CDM AND JI PROJECTS 6 (2002) [hereinafter GOLD STANDARD QUALITY STANDARDS].

38. Cosbey et al., *supra* note 32, at 20; Michael Schlup, Dir., The Gold Standard, Address at Climate or Development? International Conference at the Hamburg Institute of International Economics (Oct. 28–29, 2005).

39. Cosbey et al., *supra* note 32, at 26.

40. *Id.*

41. GOLD STANDARD QUALITY STANDARDS, *supra* note 37, at 5.

42. Corinne Boone, Managing Dir., CantorCO2e, Address at the United Nations Climate Change Conference (COP 11 and CMP 1): Structuring Voluntary Emission Reduction Transactions—What Buyers Want (2005).

43. Cosbey et al., *supra* note 32, at 50.

heightened political and reputational risks as the lack of confidence in environmental integrity and sustainable development assistance undermines their investments.⁴⁴ Most fundamentally, because investors do not have clarity in “additionality rules,” they cannot be assured that credits will amount to real emission reductions.⁴⁵ In light of these risks and the aforementioned failures of the CDM to safeguard sustainable-development and environmental benefits, the need for additional clarification of the standards for bona fide CDM projects that result in sustainable development benefits was obvious.

A. *The Emergence of the Gold Standard as a Solution*

The World Wide Fund for Nature (“WWF”), a non-governmental organization active in international climate change policy, initiated the Gold Standard in 2002.⁴⁶ Today, the Gold Standard is an independent organization governed by an advisory board and steering committee.⁴⁷ To qualify for Gold Standard certification, project developers must generate emission reduction projects that are not only recognized by the CDM governing body, known as the Executive Board, but also meet the Gold Standard’s criteria.⁴⁸ Thus, the projects must satisfy criteria put forward by both the public authority, which in this case is the CDM Executive Board, and the private authority established by the Gold Standard.

The Gold Standard has created three screens—project type, baseline and additionality, and sustainable development—for project approval. Thus, projects that seek approval from the Gold Standard must not only fulfill the CDM criteria but must also proceed through the Standard’s criteria presented in the three screens.⁴⁹ If a project passes through all three screens, it can advance to verification and eventual sale. For example, a microsolar-lantern project in Zambia has recently been accredited with the Gold Standard. The project reduces the need for kerosene, and it trains Zambian locals to build the lanterns and lightbulbs as well as sources the materials locally when possible.⁵⁰ Gold Standard projects can be sold within the compliance scheme to Annex I countries as well as to non-compliance parties (e.g., a sporting event offsetting its greenhouse-gas emissions).⁵¹

44. GOLD STANDARD QUALITY STANDARDS, *supra* note 37, at 6.

45. *See* STAHL ET AL., *supra* note 31, at 86.

46. GOLD STANDARD BACKGROUND, *supra* note 36.

47. THE GOLD STANDARD, THE GOLD STANDARD MANUAL FOR CDM PROJECT DEVELOPERS 5 (2006).

48. THE GOLD STANDARD BROCHURE, *supra* note 25, at 5.

49. *Id.* at 5, 13.

50. The Gold Standard, Product Registry, <https://gs1.apx.com/myModule/rpt/myrpt.asp?r=111> (last visited Sept. 2, 2009).

51. The Gold Standard, Certifying GS Carbon Credits, <http://wwwcdmgoldstandard.org/Certifying-GS-Carbon-Credits.112.0.html> (last

Thus, in contrast to certification programs in other sectors, the Gold Standard has the unique objective of augmenting existing public policy requirements. Moreover, the Gold Standard relies on public policy processes and intergovernmental agreements. A key purpose of the CDM was to promote non-carbon environmental and social values that might be compromised by projects focusing on carbon. Hence, if the parties to the Kyoto Protocol were to do away with the CDM Mechanism, the status of the Gold Standard as a mechanism to internalize CDM externalities would be ambiguous at best.

Promoters of the Gold Standard rely upon market incentives to encourage project buyers to support their NSMD systems. It is argued that investment in projects meeting the more rigorous Gold Standard criteria present lower financial and reputational risks.⁵² Reputational risk is particularly important to buyers on the voluntary, or noncompliance, market, as they are often buying offset projects to become visible leaders or to satisfy public scrutiny.⁵³ Research on voluntary versus compliance carbon-credit markets reveals that the highest prices of credits are associated with government-mandated projects.⁵⁴ Voluntary programs, where many have voiced widespread concerns about leakage or adequate accounting, generate credits that fetch the lowest prices.⁵⁵ Yet the same research finds that certification of voluntary approaches increases credibility that the carbon sequestration or reductions are real, which, as we would expect, pushes the price of certified voluntary markets closer to the state compliance prices.⁵⁶

An important additional consideration should be noted: the credits bought on the voluntary market will be “retired.” This means they cannot be used by Annex I countries to meet reduction targets.⁵⁷ This results in an increase in the price of available credits as supply is tightened, making investment in direct carbon-emissions reduction the cost-effective approach.

B. Support

The Gold Standard has piqued several buyers’ interest. For example, the FIFA World Cup held in Germany in 2006 offset its

visited June 12, 2009).

52. GOLD STANDARD BACKGROUND, *supra* note 36.

53. THE GOLD STANDARD BROCHURE, *supra* note 25, at 5, 13.

54. Matthew Kotchen, Assistant Professor, Univ. of Cal., Santa Barbara, Address at the Federal Trade Commission’s Workshop on Carbon Offsets and Renewable Energy Certificates: An Economics Perspective on the Market for Voluntary Carbon Offsets (Jan. 8, 2008).

55. Katherine Hamilton, Navigating a Nebula: Institutional Use of the United States’ Voluntary Carbon Market (May 18, 2006) (unpublished M.A. thesis, Yale University) (on file with Natural Capitalism Solutions).

56. Kotchen, *supra* note 54.

57. GOLD STANDARD QUALITY STANDARDS, *supra* note 37, at 4.

emissions with Gold Standard credits. Virgin Atlantic offers its passengers the choice to offset their flight-related emissions through the Gold Standard program.⁵⁸ In addition, several governments have chosen to offset their emissions with Gold Standard credits.⁵⁹ When the United Kingdom held the presidency of the G8, emissions associated with its meetings were offset by Gold Standard reduction projects.⁶⁰ Additionally, the eleventh Conference of the Parties of the United Nations Framework Convention on Climate Change, first Meeting of the Parties of the Kyoto Protocol, held in December of 2005, offset some emissions with Gold Standard credits.⁶¹ The Gold Standard project linked with the 2005 meeting involved 430 tons of credit generated through a project in Honduras.⁶² The revenue from the carbon credits will be used to create a computer department at the local school; the electricity generated will be sold to the local grid; and waste products will be used for fertilization and irrigation. Environment Canada, responsible for offsetting the conference's emissions, stated that their purchase of Gold Standard credits had multiple rationales: to support the voluntary market, to meet stakeholder expectations and pressure from nongovernmental organizations, to gain both environmental and sustainable livelihood ancillary benefits, and to reduce risk.⁶³

On the supply side, as of September 2008, the Gold Standard had over two hundred validated greenhouse gas reduction projects in its registry from over thirty countries. Its projects represent roughly 15 million metric tons of carbon dioxide equivalent.⁶⁴

58. Press Release, Virgin Atlantic Airlines, Virgin Atlantic to Debut In-Flight Carbon Offset Scheme (Nov. 8, 2007), *available at* <http://www.brandrepublic.com/News/765404/Virgin-Atlantic-debut-in-flight-carbon-offset-scheme/>.

59. Press Release, The Gold Standard, Gold Standard Registry Experiences Rapid Growth in Carbon Market Projects and Users (Sept. 10, 2008), *available at* <http://www.apx.com/news/pr-Gold-Standard-Registry-Experiences-Rapid-Growth.asp>.

60. Press Release, The Gold Standard, UK Makes Commitment to Gold Standard, <http://www.cdmgoldstandard.org/UK-Renews-Commitment.310.0.html> (last visited June 12, 2009).

61. According to Blaine Mohinger of Environment Canada, the government had already brokered a deal with the Pembina Institute to offset its emissions; therefore, it could only buy a portion from the Gold Standard. Blaine Mohinger, *Env't Can., Address at the United Nations Climate Change Conference (COP 11 and MOP 1): Offsetting the COP/MOP (2005)*.

62. *Bearing Hopes and Fears, Delegates Gather for UN Climate Talks*, ENV'T NEWS SERV., Nov. 28, 2005, <http://www.ens-newswire.com/ens/nov2005/2005-11-28-01.asp>.

63. Mohinger, *supra* note 61.

64. Press Release, The Gold Standard, *supra* note 59.

III. FUTURE OF THE GOLD STANDARD: THE DISTINCTIVENESS OF THE SYMBIOTIC NSMD RELATIONSHIP

In terms of the Bernstein/Cashore analytical framework, the Gold Standard currently remains in Phase I. The pool of compliant projects in development is still quite small, and in many regards the Gold Standard is attractive only to a niche market. “Green” events and companies are buying Gold Standard offsets, and they can be classified as early adopters, typical Phase I actors.⁶⁵ In addition, participating Gold Standard buyers are associated with governments that are attempting to lead by example.⁶⁶ The prominence of these “role models” is actually an indicator that the Gold Standard has not yet gained widespread recognition and support.

The Gold Standard experience to date does not appear markedly different from that of the typical NSMD system in Phase I. It is logical to assume that the relationship with the Kyoto Protocol helped the Gold Standard clear a threshold of credibility much more quickly than NSMD systems without the governmental connection. However, to the extent that the success of the standard ultimately depends on market value being attached to compliance, this advantage may only pertain to the initial stages of NSMD development. Indeed, the slow adoption of the Gold Standard is indicative of the typical challenges associated with gaining acceptance for a new standard.

If the Gold Standard were to progress to Phase II, Bernstein and Cashore posit that it would likely have to lower its requirements in an attempt to lure more firms (unless the market incentives changed for some exogenous reason).⁶⁷ It remains to be seen which aspects of the Gold Standard are of highest burden, and, accordingly, which would have to be weakened. In Phase II, the NSMD system often faces competing standards developed by industry interests or civil society groups.⁶⁸ Competing certification schemes design standards in an effort to gain widespread support, and as a result, there is potential overlap, confusion, and erosion of confidence in all standards. Bernstein and Cashore argue that the emergence of norms in a community (following a “logic of appropriateness”) might provide force to countervail pressures for divergence and fragmentation.⁶⁹

It is difficult to evaluate the potential for competition among carbon offset certification programs at this stage in the development of the Gold Standard. However, there is reason to posit that the Phase II dynamics are different for NSMD systems that are part of a

65. Bernstein & Cashore, *supra* note 3, at 355–57.

66. THE GOLD STANDARD, PREMIUM QUALITY CARBON CREDITS 7.

67. Bernstein & Cashore, *supra* note 3, at 357.

68. *Id.* at 357–58.

69. *Id.* at 358.

symbiotic relationship with an intergovernmental (or governmental) entity. Specifically, the official recognition of the symbiotic NSMD system constitutes a formidable barrier to entry for prospective standard makers. Any group considering the development of a rival standard—regardless of motive—is likely to recognize the advantage enjoyed by the Gold Standard. This may deter competitors and allow the Gold Standard to avoid the downward pressure associated with Phase II. As discussed below, this dynamic might alternatively be seen as NSMD legitimization through formal governmental recognition.

To be clear, the competitive advantage of the symbiotic NSMD system is more than that enjoyed by the prototypical “first mover” (although that too is enjoyed by the Gold Standard). The association between the NSMD system and the governmental entity provides a qualitative differentiation for the Gold Standard. This ought to be seen as a comparative advantage for the Gold Standard versus competitors or potential competitors.

What might Phase III look like for the Gold Standard? Many certification systems have been developed to fill a void in public policy. Their creators attempt to bypass public authority altogether and gain legitimacy to serve only as non-state authority.⁷⁰ Yet the Gold Standard was developed as a mechanism to promote certain effective impacts of an existing government policy—rather than to fill a void. At no point does the Gold Standard undermine the legitimacy and authority of the CDM Executive Board. Whereas the traditional NSMD certification programs are not constrained by public policy, the Gold Standard requires project developers to meet CDM criteria in advance of certification.⁷¹ The validity of the Gold Standard as an extension of the CDM program is underscored by the states that have signed on to the Kyoto Protocol. Governments have already demonstrated interest in ensuring that *their* offsets meet Gold Standard criteria.⁷² And while at the moment, Gold Standard credits are being bought only on the voluntary market, one could imagine a Phase III scenario in which Annex I (developed) countries under the Kyoto Protocol buy only Gold Standard credits to meet their targets.

This complex relationship between private and public authority suggests several possible “futures” for the Gold Standard. The Gold Standard could remain in a niche market, catering to government lead-by-example programs and other early actors.⁷³ Or the Gold

70. *Id.* at 361.

71. Most NSMD certification systems do require “adherence” to national policies, but the actual certification systems focus on policies or standards they develop, or to a specific subset of government policies that are preidentified by the certification system.

72. Press Release, The Gold Standard, *supra* note 60.

73. Bernstein & Cashore, *supra* note 3, at 357.

Standard could be formally integrated into the governmental program (i.e., the Gold Standard successfully transforms the CDM, with the three screens for social and environmental benefits joining existing CDM project criteria).⁷⁴ In this scenario, the Gold Standard's governing powers would formally work in tandem with the CDM criteria, or they could even, at some point, decide to divest themselves of the Standard and allow the Standard to become fully absorbed by the public authority or the CDM Executive Board.

We focus our attention on another possible outcome: the maturation of the symbiotic relationship between public policy and NSMD governance into a stable, complementary, reinforcing companion to the government program. In this scenario, the voluntary market will come to treat Gold Standard certification of credits as indispensable, just as the Gold Standard relies on CDM approval. Most significantly, this would mean that parties seeking to promote policy objectives could do so by attempting to influence the certification standard rather than the public policy process. Interestingly, with the assumption that CDM credits are more robust than non-CDM credits, this could result in advances in climate policy within the voluntary sector. As a result, the CDM market would become tightened as credits bought on the voluntary market were retired to ensure integrity of reductions.⁷⁵

IV. POTENTIAL OF SYMBIOTIC NSMD INITIATIVES FOR GLOBAL ENVIRONMENTAL GOVERNANCE

The symbiotic NSMD relationship with the public policy process offers several potential advantages. First, it could be more efficient than the state-based process to achieve some of the certification program's objectives.⁷⁶ Advancement of the Gold Standard would not have to contend with hurdles of state sovereignty and face other barriers associated with the policy process, such as challenges in implementation. Perhaps most significantly, the use of NSMD systems in tandem with the public policy process *bypasses* hurdles inherent in reopening the negotiating process and possibly reengaging in hard-won battles. Thus, this model of shared public/private management of an environmental problem could hold lessons for the design of global environmental governance. As Gunningham argues, policy "intersection" of non-state efforts in conjunction with government intervention can often be more effective than a single-instrument approach in achieving desired

74. GOLD STANDARD BACKGROUND, *supra* note 36.

75. Press Release, U.K. Dep't for the Env't, Food & Rural Affairs, Carbon Offset Scheme Launched (Sept. 12, 2005).

76. Michael E. Cloghesy, *A Corporate Perspective on Globalisation, Sustainable Development, and Soft Law*, in *HARD CHOICES, SOFT LAW: VOLUNTARY STANDARDS IN GLOBAL TRADE, ENVIRONMENT AND SOCIAL GOVERNANCE* 323, 328 (John J. Kirton & Michael J. Trebilcock eds., 2004).

outcomes.⁷⁷ He argues that a greater range of actors in policymaking can relieve governments' limited financial and personnel resources while yielding broader support and legitimacy from civil society and those being regulated. He suggests, "[t]ogether, and in conjunction with state action, they [state and non-state governance] achieved far more than State action alone was ever likely to."⁷⁸ Thus, the symbiotic-governance model could prove to be a desirable goal for NSMD systems and could inform the design of environmental-governance schemes more broadly.

V. LEGITIMACY AND AUTHORITY REQUIREMENTS OF A SYMBIOTIC RELATIONSHIP

Symbiotic NSMD governance mechanisms confront existing understandings of legitimacy issues governing NSMD ideal types.⁷⁹ There are at least five ways in which the legitimacy dynamic for the symbiotic NSMD system would appear to diverge from that associated with the conventional stand-alone NSMD system. First, there is typically a fear that the legitimacy of NSMD systems undermines state authority and capacity.⁸⁰ The symbiotic arrangements pose no such danger. Indeed, the robustness of a symbiotic NSMD arrangement *requires* legitimacy of both the state and non-state elements. Unlike the conventional NSMD system, the legitimacy of the Gold Standard draws heavily upon the public authority; its meaning is derived entirely from the CDM of the Kyoto Protocol. It would be contrary to the goals of the symbiotic NSMD system to undermine the legitimacy of the state authority.⁸¹ The more legitimacy for intergovernmental agreements, such as those that foster CDM projects, the more support there will be among governments, civil-society organizations, and project initiators for NSMD systems to internalize negative externalities. Similarly, we would expect the legitimacy of intergovernmental agreements and projects to be enhanced, not detracted from, when NSMD systems successfully fill the lacunae in the public policy. The failure of an intergovernmental agreement to capture negative byproducts of the policy, for example, might cause governments and civil-society interests to reduce their support for the public policy efforts. With the NSMD system addressing such shortcomings, the

77. NEIL GUNNINGHAM & PETER GRABOSKY, SMART REGULATION: DESIGNING ENVIRONMENTAL POLICY 417 (1998).

78. *Id.* at 410.

79. Cashore, *supra* note 7, at 504.

80. *Id.* at 510–11.

81. We note, however, that the mere existence of a symbiotic NSMD may reduce the legitimacy of those governmental initiatives/projects that are not involved in the NSMD *symbiotic* relationship. Hence, we would expect in those cases that legitimacy would decline from what it otherwise would have been, but that support of the NSMD system would greatly advance from what it otherwise would have been. Our thanks to Cyril Loisel for making this point.

overall policy regime is more stable.

Second, the legitimacy requirements for symbiotic NSMD systems seem narrower and less challenging than those confronting the conventional NSMD system. This is because symbiotic relationships *accept* the legitimate authority of the public policy mechanisms and the problem(s) they are attempting to ameliorate.⁸² This stands in contrast to the typical scenario in which skepticism toward NSMD programs is underscored by the lack of a public policy. If the problem targeted by the NSMD system is so dire, members of the doubtful community might ask, why is the government not doing anything about it? Hence, while symbiotic NSMD systems must build either pragmatic, moral, or cognitive legitimacy⁸³ from those they seek to govern, their legitimacy hurdles are much lower. In this regard we note that one mechanism Suchman offers for achieving legitimacy is to mirror an organization after another one that already has legitimacy. In the case of symbiotic relationships, such a condition already exists, allowing a direct link to a culturally ingrained, preexisting “logic of appropriateness.”⁸⁴

Third, we would expect legitimacy requirements to focus more on specific mechanisms as to how and what the NSMD system needs to do, rather than debates about abstract norms regarding the appropriateness of, say, market versus regulatory instruments. This is important. Both Hall⁸⁵ and Sabatier and Jenkins-Smith⁸⁶ argue that it is much easier for disparate groups, following internal learning processes, to agree to “secondary” or “first order” policies (which include mechanisms for policy implementation and policy settings) than it is to agree on more value-laden and entrenched notions surrounding more abstract policy goals and means (such as the appropriate use of market versus command-and-control regulations).

Fourth, we expect a symbiotic relationship to reduce the “competition for legitimacy” that characterizes certification in other sectors, such as forestry certification. In these cases, as Cashore and Cashore, Auld, and Newsom have documented, a key empirical question is understanding how certification programs initiated by environmental groups on the one hand and industry associations on the other hand—with different ideas about how prescriptive and

82. Cashore, *supra* note 7, at 510.

83. Mark C. Suchman, *Managing Legitimacy: Strategic and Institutional Approaches*, 20 ACAD. MGMT. REV. 571, 572 (1995).

84. See James G. Marsh & Johan P. Olsen, *The Institutional Dynamics of International Political Orders*, 52 INT'L ORG. 943, 951 (1998).

85. See generally Peter A. Hall, *Policy Paradigms, Social Learning, and the State: The Case of Economic Policymaking in Britain*, 25 COMP. POL. 275 (1993).

86. Hank C. Jenkins-Smith & Paul A. Sabatier, *The Dynamics of Policy-Oriented Learning*, in POLICY CHANGE AND LEARNING: AN ADVOCACY COALITION APPROACH 41, 41–56 (Paul A. Sabatier & Hank C. Jenkins-Smith eds., 1993).

wide-ranging standards ought to be—compete for legitimacy in the marketplace.⁸⁷ Since the emergence of competitors can seek to weaken certification programs with higher standards, the lack of competition will, we expect, leave standards higher than they otherwise would have been. We theorize that when symbiotic relationships exist, it is unlikely that a competition for legitimacy will emerge because the legitimacy requirements for another entity to enter the field would be very high.⁸⁸ This notion was introduced already in the discussion of the symbiotic NSMD relationship as a barrier to entry.

There are, to be sure, similar legitimacy requirements as well. For instance, Cashore, Auld, and Newsom⁸⁹ have found that the development of self-interested “pragmatic legitimacy” is a necessary but insufficient requirement if NSMD systems are ultimately to gain widespread, culturally engrained “cognitive” acceptance or “political legitimacy.” We would expect a similar logic to occur for those actors supporting the symbiotic NSMD system. Put another way, even a symbiotic NSMD system must be evaluated by supporters as being in their strategic self interest, or initial support is unlikely to occur.

Fifth, the symbiotic arrangement may help the NSMD system manage the tension between legitimacy and the practical demands of building and maintaining power that poses a challenge for all transnational rulemaking bodies.⁹⁰ It remains true that symbiotic NSMD systems, since they impose constraints on supporters, must appeal to the interests of the firms and organizations they seek to govern. However, the NSMD system linked to the intergovernmental regime has two advantages. First, as discussed above, the linkage provides some *prima facie* legitimacy, allowing the NSMD system to bend in the direction of interest satisfaction without jeopardizing organizational legitimacy. Second, because the NSMD system is part of a broader framework, the costs to parties that might walk away if their interests were not fully protected are higher. This means that the NSMD system may not have to compromise its normative legitimacy in order to placate key players.

VI. SYMBIOTIC NSMD RELATIONSHIPS AND CORPORATE GOVERNANCE

Symbiotic relationships could address a major obstacle for activists seeking to engage corporate boards as part of an

87. CASHORE ET AL., *supra* note 4, at 221; Cashore, *supra* note 7, at 522–23.

88. See CASHORE ET AL., *supra* note 4, at 229. Particular credit goes to Jonathan Koppell for making this point.

89. *Id.* at 34–35.

90. See generally Steven Bernstein, *Legitimacy in Global Environmental Governance*, 1 J. INT'L L. & INT'L REL. 139 (2005); Jonathan G.S. Koppell, *Global Governance Organization: Legitimacy and Authority in Conflict*, 18 J. PUB. ADMIN. RES. & THEORY 177, 177–203 (2008).

environmental strategy. There is a longstanding debate within corporate governance scholarship regarding the role of the board of directors.⁹¹ This subject raises both normative and empirical questions because there has never been agreement on the proper function of boards—in particular the independent directors—even though the institution of corporate boards predates regulatory requirements for their existence.⁹² Some would see the board's role narrowly (i.e., hiring and firing the CEO), while others would offer the board a more expansive role as a partner with management in shaping corporate strategy in addition to representing the interests of shareholders and perhaps other stakeholders.⁹³ These debates stem, in part, from the mixed evidence about what boards *actually* do, regardless of the role prescribed by corporate-governance theory or law. Numerous studies have attempted to address this matter with an emphasis on the value added by the existence of corporate boards.⁹⁴

Both dimensions of the issue have been highlighted by recent events. In particular, the failures of leading financial institutions over the last two years have shined a light on corporate boards. What were the directors doing when management was making decisions that led to disastrous outcomes? The treatment of this question reveals the underlying disagreement alluded to in the preceding paragraph. Some critics have argued that the boards demonstrably failed, while others argue that the mistakes made by management were beyond the purview of directors.⁹⁵ The uncertainty introduced by this episode compounds developments that have given new urgency to the question of board function. Even before recent events cast light on corporate boards, groups with an interest in influencing corporate behavior began focusing on boards of directors as a strategy that seemed more promising than appealing to management.⁹⁶

91. Benjamin E. Hermalin & Michael S. Weisbach, *Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature*, 9 FED. RES. BOARD OF N.Y. ECON. POL'Y REV. 7, 10 (2003).

92. *Id.* at 10.

93. Donald Nordberg, *Rebalancing the Board's Agenda: A Discussion Paper 3–4* (May 29, 2007) (unpublished manuscript, on file with the Social Science Resource Network), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=989309.

94. Lucian Bebchuk, Alma Cohen & Allen Ferrell, *What Matters in Corporate Governance?*, 22 REV. FIN. STUD. 783; Renée B. Adams, Benjamin E. Hermalin & Michael S. Weisbach, *The Role of Boards of Directors in Corporate Governance: A Conceptual Framework & Survey* (Apr. 9, 2009) (unpublished manuscript, on file with the Social Science Resource Network).

95. Ibolya Balog, *Ethics on Their Shoulders: Boards Bear the Burden*, ACCT. TODAY, Nov. 27, 2006, at 14.

96. Anastasia O'Rourke, *A New Politics of Engagement: Shareholder Activism for Corporate Social Responsibility*, 12 BUS. STRATEGY & ENV'T 227, 227–28 (2003); W. Trexler Proffitt, Jr. & Andrew Spicer, *Shaping the*

Naturally, the success or failure of such strategies hinges on the role that boards define for themselves. A board of directors that adopts a more narrow interpretation of its function is less likely to respond to interest group appeals because arguments for environmental responsibility or sensitivity to the concerns of overseas workers will be seen as beyond the scope of their responsibility. On the other hand, boards with a more expansive vision of their role may be open to such appeals, and, in turn, put pressure on management to alter business practices. Thus, for groups that view the board as a potential point of access through which corporate policy can be altered, the definition of board role is hardly an academic matter. For this reason, some activists have argued that directors ought to take a more expansive view of their own role.⁹⁷ An alternative approach is to build a strategy that takes a more conventional view of the board function and to find tools that affect the company in ways that lie within an even more narrowly defined sphere of director interest.

The non-state approach is seen as a means of overcoming governmental inaction in many arenas. However, an unappreciated and unintended consequence of relying upon market mechanisms versus state-based regulation is the extent to which the board has a role in formulating a corporate response. Compliance with a governmental regulatory requirement—whether its origins are domestic or transnational—is unambiguously a matter of board interest. Directors are responsible for ensuring that the company adheres to all legal standards and certainly would hold management responsible for failures to operate the company in a legal fashion.

However, the non-state approach does not rely upon the imperative of regulation to sway corporate decision making but rather invokes the logic of markets. The decision to adhere to the requirements of a NSMD global-governance organization is, by many accounts, beyond the purview of corporate directors.⁹⁸ This is a critical difference between market-oriented and state-based approaches that has not been considered by analysts of NSMD regimes.

While legitimacy of such systems is an important issue, the market logic of the NSMD system has an unintended drawback: it keeps a firm's compliance decisions out of the hands of corporate boards. Unlike regulatory requirements, which are clearly of great concern to corporate directors, certification schemes pose a business-

Shareholder Activism Agenda: Institutional Investors and Global Social Issues, 4 STRATEGIC ORG. 165 (2006); Erin M. Reid & Michael W. Toffel, *Responding to Public and Private Politics: Corporate Disclosure of Climate Change Strategies* 8–9 (Harvard Bus. Sch., Working Paper No. 09-019, 2009), available at <http://www.hbs.edu/research/pdf/09-019.pdf>.

97. Reid & Toffel, *supra* note 96, at 7.

98. See CASHORE ET AL., *supra* note 4, at 59–216.

strategy decision, which is generally seen as the prerogative of management.⁹⁹

The potential symbiotic role of NSMD systems would overcome these challenges because it appeals on the basis of market and regulatory logic. This opens the door to engagement by the board of directors. From the perspective of shareholder activists who seek to promote a social objective by influencing corporate directors, this is an incredibly important advantage over stand-alone NSMD global governance.

CONCLUSION

This examination of the Gold Standard's emergence and its path to political legitimacy sheds light upon the complexities of NSMD governance. It has highlighted the idea that government policy can be advanced through the NSMD model. This represents a step forward from the conventional understanding of NSMD systems only as an alternative to state mechanisms or, even more disparagingly, a fallback position when governmental action is impossible. The Gold Standard experience shows that the NSMD arrangement could even enhance the performance of state-centric regimes. While additional research is needed to flesh out the dynamics of such symbiotic relationships, this initial exploration shows how a symbiotic approach could address pressing environmental and social problems. To this end, we note that scholarship on public policy, international relations, and private authority must be increasingly integrated to understand better what types of innovative policy baskets¹⁰⁰ might be identified and assessed for their potential to offer more effective and efficient approaches to environmental governance.

With respect to the CDM in particular, our analysis reveals that on a very basic level it can help build wider support and knowledge of the Kyoto Protocol, as project planners without a need to meet their own carbon targets become intimately involved in the mechanics of the agreement in an effort to craft projects that will appeal to those seeking credits. More profoundly, the CDM program could be a catalyst for sustainable development, with the potential to make cleaner technologies more competitive in the developing world. It could promote private-sector engagement in developing countries, lead to the creation of new energy infrastructure, spur investment in small-scale projects (that offer sustainable development benefits but are generally less appealing to foreign investors), prompt dissemination of best practices, and encourage

99. See generally Erika Sasser et al., *Direct Targeting as an NGO Political Strategy: Examining Private Authority Regimes in the Forestry Sector*, 8 BUS. & POL. 1 (2006).

100. GUNNINGHAM & GRABOSKY, *supra* note 77, at 4.

capital flows in developing countries.¹⁰¹ Perhaps most importantly, the CDM can demonstrate that sustainable development, environmental improvement, and investment can be achieved in tandem.¹⁰² Given all these potential benefits, it is important to determine whether a symbiotic relationship between a NSMD (Gold Standard) system and an intergovernmental body increases the likelihood of success. One might argue that the greatest benefit offered by this symbiotic relationship is the opportunity to refine the requirements without reopening the Kyoto rulebook and renegotiating other aspects of the agreement.

Of course, with the Gold Standard in its nascent stages, it is difficult to determine whether a stable symbiotic relationship will emerge or what specific pathway it will follow. The concern associated with any NSMD system is that it does not reach beyond its niche market in Phase I, or, perhaps even worse, that it causes an unintended weakening of standards through Phase II competition. As the Gold Standard model matures, researchers should look for trends in both the voluntary and compliance markets. In addition, the future of the CDM after 2012, when the first compliance period of the Kyoto Protocol comes to a close, is unresolved. An assessment of the future of the Gold Standard and its ability to gain authority post-2012 could highlight the implications of the symbiotic relationship.

Our examination demonstrates that a symbiotic government/NSMD relationship challenges existing ways in which the interaction among private authority, public policy, intergovernmental relations, and corporate governance is conceptualized. If scholarship is to be advanced and if potentially new and effective arrangements are to be understood, then greater attention to such symbiosis seems warranted.

101. CDM USER'S GUIDE, *supra* note 26, at 11; GOLD STANDARD QUALITY STANDARDS, *supra* note 36, at 3; Cosby et al., *supra* note 32, at 1-2.

102. CDM USER'S GUIDE, *supra* note 26, at 15.