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THE NEOLIBERAL TURN IN ENVIRONMENTAL REGULATION

Jason J. Czarnezki* and Katherine Fiedler**

Abstract

Regulation has taken a neoliberal turn, using market-based mechanisms to achieve social benefits, especially in the context of environmental protection, and promoting information dissemination, labeling, and advertising to influence consumer preferences. Although this turn to neoliberal environmental regulation is well under way, there have been few attempts to manage this new reality. Instead, most commentators simply applaud or criticize the turn. If relying on neoliberal environmental reform (i.e., facing this reality regardless of one's view of this turn), regulation and checks on these reforms are required. This Article argues that in light of the shift from traditional to neoliberal "substantive" environmental regulation, "procedural" checks are required through regulation and legislation to improve the quality of the market-based and informational neoliberal approaches, including oversight via regulation that ensures accuracy in valuation of natural resources, increases and improves the quality of the information provided by consumers, and requires greater accountability and accuracy from institutions making green claims to consumers.

I. INTRODUCTION

Regulation has taken a neoliberal turn. Neoliberalism denotes "forms of political-economic governance premised on the extension of market relationships."¹ Neoliberal environmental regulation includes the use of market-based mechanisms to achieve environmental protection (often referred to as "free-market environmentalism") and information dissemination and regulation (such as labeling and advertising) to influence consumer preferences.² This neoliberal turn in

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¹ Wendy Lerner, *Neo-liberalism: Policy, Ideology, Governmentality*, 63 *STUD. POL. ECON.*, no. 3, 2000, at 5, 5.

² One might consider these tools as part of the same neoliberal category, as informational regulations can be considered market-based in that the ultimate catalyst of systemic change is producer response to potential reputational harm from revealed information or response to a shift in consumer preferences.

environmental regulation has received much criticism—that progressives have sold out to conservative free-market principles, and consumers are overwhelmed by the “green choices” provided by consumer brands.³ The turn also has its share of supporters—arguing the approach creates incentives for technological innovation, improves efficiency, and lowers transaction costs by eschewing government mandates in favor of markets and replacing regulatory prohibitions with private property rights.⁴

While this turn to neoliberal environmental regulation is a reality, there have been few attempts to manage it rather than simply applauding or criticizing the turn. As our reliance on neoliberal environmental reform continues (regardless of one’s view of this turn), regulation and checks on the neoliberal turn are required. This Article argues that in light of the shift from traditional “substantive” environmental regulation to neoliberal “substantive” environmental regulation, “procedural” checks are required through regulation and legislation to improve the quality of the market-based and informational neoliberal approaches.

Part II of this Article defines neoliberal regulation and discusses the historical rise of neoliberal environmental regulation beginning with the Reagan and Clinton presidencies. Part III categorizes and discusses two key components of modern neoliberal environmental regulation: (1) market-based mechanisms; and (2) information labeling, considering examples at both the state and federal levels. The former seeks to avoid the problems and costs of traditional and centralized environmental law, and the latter seeks institutional isomorphism, pressuring consumers and institutions to conform to others in their preferences for environmentally friendly goods and sustainable business practices. In attempting to smooth the turn to neoliberal environmental regulation, Part IV argues that this regulatory shift needs “procedural” oversight via regulation that ensures accuracy in valuation of natural resources, increases and improves the quality of the information provided to consumers, and requires greater accountability and accuracy from institutions making green claims to consumers.

II. THE RISE OF NEOLIBERALISM

Neoliberalism describes governance through a reliance on “market relationships.”⁵ “We now live in an era of ‘neoliberal governance’ in which political actors have abandoned the idea of central state decision making and instead rely on market processes, individual self-sufficiency and responsibility, devolution of decision making down to local scales, and the concomitant ‘hollowing out’ of the

³ See Jason J. Czarnezki, Andrew Homan & Meghan Jeans, *Creating Order Amidst Food Eco-Label Chaos*, 25 DUKE ENVTL. L. & POL’Y F. 281, 281–82 (2015) [hereinafter Czarnezki et al., *Creating Order*].

⁴ See generally TERRY L. ANDERSON & DONALD R. LEAL, *FREE MARKET ENVIRONMENTALISM* 21–25 (rev. ed. 2001) (explaining the difference between free market and political environmentalism).

⁵ Larner, *supra* note 1, at 5.

nation-state.”⁶ The historical rise of neoliberal environmental regulation perhaps began during the presidency of Jimmy Carter, but gained major traction during the Ronald Reagan and Bill Clinton presidencies, both of which laid the foundation for the type of free-market and institutional isomorphic regulation seen today.⁷ This Part defines American neoliberal regulation and traces its rise, in the environmental context, since the 1980s following the end of the two decades wherein Congress passed numerous environmental statutes.

A. *What Is Neoliberal Environmental Regulation?*

While neoliberalism may evade any one specific definition, it has been expressed over the last thirty years through various forms of local, national, and international experiments in laissez-faire political economy around the world, using regulations that aim to deploy markets as the solution to environmental problems.⁸ As discussed below, there are multiple regulatory tools available for addressing environmental harms, or, for that matter, any resource or commodity. As seen in Table 1 below, these regulatory methods can be divided into the categories of traditional and neoliberal regulation.⁹

⁶ E. Melanie DuPuis & Brian J. Gareau, *Neoliberal Knowledge: The Decline of Technocracy and the Weakening of the Montreal Protocol*, 89 SOC. SCI. Q. 1212, 1213 (2008) (citations omitted).

⁷ This is not to say that Congress did not employ market and informational approaches. *See, e.g.*, the Environmental Impact Statement requirement in the National Environmental Policy Act (NEPA). 42 U.S.C. § 4332(C) (2012) (establishing procedural requirements of information disclosure for federal projects that will significantly affect the environment).

⁸ *See* Robert Plastow, *Neoliberalism in Environmental Governance: A Paradoxical Double Movement?*, ACADEMIA 1 (May 2010) (unpublished manuscript), http://www.academia.edu/2703516/Neoliberalism_in_environmental_governance_a_paradoxical_double_movement [<http://perma.cc/QT76-RLF2>].

⁹ *See* LAWRENCE LESSIG, *CODE: VERSION 2.0* 123 (2006) (noting the regulatory constraints of the law, social norms, the market, and architecture); *see generally* Jay P. Kesan & Rajiv C. Shah, *Shaping Code*, 18 HARV. J.L. & TECH. 319, 320 (2005) (recognizing that the law is not the “exclusive method of social regulation”); DAVID M. DRIESEN ET AL., *ENVIRONMENTAL LAW: A CONCEPTUAL AND PRAGMATIC APPROACH* 2 (2d ed. 2011) (discussing “command-and-control regulation,” market-based alternatives, and information-based approaches to environmental protection); JASON J. CARNEZKI, *EVERYDAY ENVIRONMENTALISM* (2011) (including chapters discussing the “limitations and promise of law”).

Table 1: Traditional/Prescriptive Regulation versus Neoliberal Environmental Regulation

Traditional/Prescriptive Regulation		vs.	Neoliberal Environmental Regulation	
Type	Also Known As		Type	Also Known As
Standard-setting (including both performance standards and process standards)	Technology-based standards; health-effects standards		Market-based	Cost-benefit analysis, economic incentives; subsidies; taxes
Bans	Prohibitions		Information	Labeling; inventories; disclosures

The traditional approach in environmental governance has been governmental regulation, commonly known as “command and control” regulation practices that rely on legally established limits enforced by the state.¹⁰ Professor James Salzman refers to these as “prescriptive” regulations, mandating “what parties can and cannot do—*Thou Shalt* or *Thou Shalt Not*.”¹¹ “This is both the most direct and the most common form of environmental law.”¹² Government regulations can set effects-based or technology-based standards, demanding that harms do not surpass a specific threshold or requiring the use of certain technologies to reduce harm.¹³

All environmental standards seek to reduce adverse effects in some way. Effects-based environmental standards, often referred to as “health-based” or “environment-based” standards, do so by expressly determining the level of environmental quality deemed acceptable as a goal. . . . In establishing effects-based standards, we ask what level of environmental quality is adequate, or necessary, to protect health or environmental resources. The difficult part is deciding what is “adequate.”¹⁴

For example, the Clean Air Act requires that the Environmental Protection Agency (EPA) promulgate National Ambient Air Quality Standards for criteria air pollutants that “in the judgment of the Administrator, based on such criteria and

¹⁰ See Plastow, *supra* note 8, at 2.

¹¹ James Salzman, *Teaching Policy Instrument Choice in Environmental Law: The Five P’s*, 23 DUKE ENVTL. L. & POL’Y F. 363, 364 (2013).

¹² *Id.*

¹³ Jason J. Czarnezki, *New York City Rules! Regulatory Models for Environmental and Public Health*, 66 HASTINGS L.J. 1621, 1626 (2015).

¹⁴ DRIESEN ET AL., *supra* note 9, at 127.

allowing an adequate margin of safety, are requisite to protect the public health.”¹⁵ Traditional environmental regulation can also require agencies to set standards and regulate entities to meet standards that available (or potentially available) technologies are capable of achieving.¹⁶ For example, “[w]hen Congress passed the Clean Water Act, it changed the primary focus of federal law from the harm visited on the receiving water stream segments to end-of-pipe, technology-based permit limits.”¹⁷

“There is considerable debate . . . over the efficiency of prescriptive regulations.”¹⁸ On the one hand, they may be “inefficient and unwieldy,” providing “little incentive for innovation because once the regulated party has satisfied the necessary requirement[s], the law creates no incentive to reduce harmful activities further.”¹⁹ On the other hand, traditional environmental regulation may encourage production-process and design innovations, through mandated reductions that can be accomplished only by such innovations, for example.²⁰

Whatever the perceived or real costs and benefits of traditional prescriptive environmental regulation, “many policies today contain elements of the neoliberal agenda and what has been called ‘freemarket [sic] environmentalism’ has proliferated in a dialogue between environmentalism and proponents of neoliberalism.”²¹ This dialogue continued with speed since the 1980s following the end of the track record of congressional passage of environmental statutes spanning two decades, resulting in the modern neoliberal environmental regulatory state.

B. The Rise of Neoliberal Environmental Regulation in American Politics

Given the lack of environmental legislation passed at the national level in the U.S. since the 1980s,²² the types of inquiries and substantive boundaries of the field of environmental law have been traditionally defined by an influential group of federal environmental statutes, primarily passed by Congress in the 1960s through 1980s and including the Clean Air Act,²³ the Clean Water Act,²⁴ and the National

¹⁵ 42 U.S.C. § 7409(b)(1) (2012).

¹⁶ DRIESEN ET AL., *supra* note 9, at 185.

¹⁷ David Drelich, *Restoring the Cornerstone of the Clean Water Act*, 34 COLUM. J. ENVTL. L. 267, 304 (2009).

¹⁸ Salzman, *supra* note 11, at 365.

¹⁹ *Id.*

²⁰ *Id.* at 365–66.

²¹ See Plastow, *supra* note 8, at 2.

²² For a list of federal environmental legislation since 1945, see Table 10.1 in Dennis L. Soden & Brent S. Steel, *Evaluating the Environmental Presidency*, in THE ENVIRONMENTAL PRESIDENCY 313, 315–17 (Dennis L. Soden ed., 1999); see also David Case, *The Lost Generation: Environmental Regulatory Reform in the Era of Congressional Abdication*, 25 DUKE ENVTL. L. & POL’Y F. 49, 51 (2014).

²³ Clean Air Act of 1963, 42 U.S.C. §§ 7401–7431 (2012).

²⁴ Clean Water Act of 1972, 33 U.S.C. §§ 1251–1388 (2012).

Environmental Policy Act.²⁵ However, given the lack of new federal environmental legislation over the last two and a half decades (at least in the traditional sense), and with the support of think tanks and even environmental groups, there has been a rise in neoliberal and free market environmentalism beginning with the rise of Ronald Reagan's free market economics and Clinton's neoliberal "New Democratic" approach.²⁶

During the 1980s neoliberalism took hold under President Reagan (and under Prime Minister Margaret Thatcher in the United Kingdom), influenced by free-market economists that sought deregulation and dismantlement of the regulatory and administrative state.²⁷ Reagan's objective was "to decentralize government, overhaul regulations, and reestablish a laissez-faire economic system."²⁸ He also sought to move the environmental administrative agencies such as the EPA and Department of Interior (DOI) away from their traditional pursuits and toward a direction more friendly to business and less inclined to "command-and-control" regulation.²⁹

President Reagan's Executive Order (EO) 12291³⁰ put a regulatory moratorium on new rules and "put his imprint on the regulatory process by requiring the EPA and all administrative agencies to perform 'regulatory impact analyses' and submit the results, including cost-benefit analyses providing justification for regulatory activities, to the [Office of Management and Budget's] Office of Information and Regulatory Affairs (OIRA)".³¹ Reagan's EO 12291, as well as EO 12498, which

²⁵ National Environmental Policy Act of 1969, 42 U.S.C. §§ 4331–4370 (2012).

²⁶ See Sharon Beder, *Neoliberal Think Tanks and Free Market Environmentalism*, 10 ENVTL. POL. 128 (2001), <http://www.uow.edu.au/~sharonb/thinktanks.html> [<http://perma.cc/22X5-C6R3>]; see generally BYRON W. DAYNES & GLEN SUSSMAN, *WHITE HOUSE POLITICS AND THE ENVIRONMENT: FRANKLIN D. ROOSEVELT TO GEORGE W. BUSH* (James P. Pfiffner et al. eds., 2010) (evaluating the environmental impacts and legacies of past presidents).

²⁷ See Plastow, *supra* note 8, at 1.

²⁸ Soden & Steel, *supra* note 22, at 334; see also DAYNES & SUSSMAN, *supra* note 26, at 186 (describing Reagan as "antiregulatory").

²⁹ Jonathan P. West & Glen Sussman, *Implementation of Environmental Policy: The Chief Executive*, in *THE ENVIRONMENTAL PRESIDENCY* 77, 94 (Dennis L. Soden ed., 1999).

³⁰ Exec. Order No. 12,291, 3 C.F.R. (1982).

³¹ West & Sussman, *supra* note 29, at 87, 95–96. Exec. Order No. 12,291, Section 2 states:

In promulgating new regulations, reviewing existing regulations, and developing legislative proposals concerning regulation, all agencies, to the extent permitted by law, shall adhere to the following requirements:

- (a) Administrative decisions shall be based on adequate information concerning the need for and consequences of proposed government action;
- (b) Regulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society;
- (c) Regulatory objectives shall be chosen to maximize the net benefits to society;

created a regulatory planning process,³² “enabled OIRA to delay, scrutinize, and revise hundreds of environmental regulations, minimizing the burdens and compliance costs to industry.”³³

The election of George H.W. Bush following Reagan’s two-term presidency allowed for the continuation of Republican preferences for deregulation and a free market to achieve environmental goals.³⁴ For example, George H.W. Bush’s Council on Competitiveness (which was terminated by President Bill Clinton) was designed to consider the impact of proposed rules on the economy in general or specific economic sectors with a goal of minimizing regulatory burdens on the economy.³⁵

The 1990 Clean Air Act Amendments were passed and signed into law during the Bush Administration with overwhelming bipartisan support,³⁶ employing free-market principles. The Acid Rain Program (ARP)³⁷ aimed to reduce sulfur dioxide through a cap and trade program, the first in the country, implemented in three phases, beginning in 1995, 2000, and 2010.³⁸ The EPA set a cap of sulfur dioxide emissions and allocated allowances to the power sector.³⁹ The ARP also regulated nitrogen oxide emissions, but under a traditional regulatory scheme, not a cap and trade program.⁴⁰ For the sulfur dioxide cap and trade program, sources may sell or save any allowances they do not need due to reductions in their own emissions.⁴¹ The goal of the program was to reduce annual sulfur dioxide emissions “by 10

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- (d) Among alternative approaches to any given regulatory objective, the alternative involving the least net cost to society shall be chosen; and
 - (e) Agencies shall set regulatory priorities with the aim of maximizing the aggregate net benefits to society, taking into account the condition of the particular industries affected by regulations, the condition of the national economy, and other regulatory actions contemplated for the future.

Exec. Order No. 12,291, 3 C.F.R. § 2 (1981).

³² See Exec. Order No. 12,498, 3 C.F.R. (1985) (stating it was created to “establish Administration regulatory priorities, increase the accountability of agency heads for the regulatory actions of their agencies, provide for Presidential oversight of the regulatory process, reduce the burdens of existing and future regulations, minimize duplication and conflict of regulations, and enhance public and Congressional understanding of the Administration’s regulatory objectives”).

³³ West & Sussman, *supra* note 29, at 87.

³⁴ See Soden & Steel, *supra*, note 22, at 336.

³⁵ West & Sussman, *supra* note 29, at 97–98.

³⁶ Clean Air Act Amendments of 1990, H.R. Res. 3030, 101st Cong. (1990) (enacted), <https://www.govtrack.us/congress/votes/101-1990/h137> [<http://perma.cc/4WK2-HZTX>].

³⁷ 40 C.F.R. §§ 72–78 (2012).

³⁸ *Acid Rain Program: SO₂ Reductions*, U.S. E.P.A., <http://www.epa.gov/airmarkets/programs/arp/index.html> [<http://perma.cc/B854-BE8Y>] (last visited Aug. 18, 2015).

³⁹ *Id.*

⁴⁰ *Acid Rain Program: NO_x Reductions*, U.S. E.P.A., <http://www2.epa.gov/airmarkets/acid-rain-program> [<http://perma.cc/22U8-P5CC>] (last visited Oct. 28, 2015).

⁴¹ *Acid Rain Program: SO₂ Reductions*, *supra* note 38.

million tons below 1980 levels.”⁴² The Acid Rain Program has been successful thus far, leading to dramatic reductions in sulfur dioxide and nitrogen oxide.⁴³

The Reagan and Bush Presidencies from 1980 to 1992 sought less government, free markets, and deregulation. “The Clinton administration, and the two Republican administrations that preceded it, were willing to experiment with flexible approaches (including market incentives) as supplements, or in some cases, alternatives to command-and-control regulation.”⁴⁴ The irony and difference of the presidency of Bill Clinton that followed was that there was a desire for more government and regulation, but that those government services and regulatory processes should be based on free market principles and reliance upon the market—principles of the “New Democratic” version of neoliberal regulation.

The Clinton Presidency marked a dramatic shift in Congress’ view of the nation’s environmental laws as statutes, “once generally considered a positive force behind the improvement in the quality of our country’s air and water were [now] characterized by a new congressional majority as the tools of an overgrown and domineering federal bureaucracy which sought to regulate the specific details of individual property owners’ and businesses’ lives.”⁴⁵ Newt Gingrich’s “Contract with America” insisted on the need for risk assessment and cost-benefit analyses for assessing the cost of all federal regulations on the private sector.⁴⁶

In light of the prevailing political climate, the Clinton Administration, which included the environmentally minded Al Gore as Vice President, sought to improve environmental regulation and all regulatory processes. These improvements would be accomplished by “reinventing” government with initiatives that sought to improve government performance, cutting red tape, streamlining government purchasing procedures, simplifying federal rules, and better coordinating federal management, as well as cutting layers of management jobs.⁴⁷ For example, President Clinton’s Executive Order 12866, which replaced the two Reagan cost-benefit orders, sought to create a more balanced approach, “reaffirming” regulatory decision-making processes in order to improve health and the environment through efficiency and cost-benefit analysis.⁴⁸ EO 12866 states “agencies should assess all

⁴² *Id.*

⁴³ U.S. E.P.A., 2012 PROGRESS REPORT: SO₂ AND NO_x EMISSIONS, COMPLIANCE, AND MARKET ANALYSES 1 [hereinafter 2012 PROGRESS REPORT], http://www.epa.gov/airmarkets/documents/progressreports/ARPCAIR12_01.pdf [<http://perma.cc/7RBS-EQ9V>] (last visited Aug. 19, 2015).

⁴⁴ West & Sussman, *supra* note 29, at 105.

⁴⁵ Andrew Mcfee Thompson, *Free Market Environmentalism and the Common Law: Confusion, Nostalgia, and Inconsistency*, 45 EMORY L.J. 1329, 1329 (1996).

⁴⁶ DAYNES & SUSSMAN, *supra* note 26, at 108.

⁴⁷ West & Sussman, *supra* note 29, at 94, 96.

⁴⁸ See Exec. Order No. 12,866, 58 Fed. Reg. 190 (Sept. 30, 1993) (“The American people deserve a regulatory system that works for them, not against them: a regulatory system that protects and improves their health, safety, environment, and well-being and improves the performance of the economy without imposing unacceptable or unreasonable costs on society; regulatory policies that recognize that the private sector and private markets

costs and benefits of available regulatory alternatives, including the alternative of not regulating.”⁴⁹ The order indicates that cost-benefit analysis (CBA) should include both quantitative and qualitative measures and regulation should seek to “maximize net benefits . . . unless a statute requires another regulatory approach.”⁵⁰ “Clinton’s broader definition of CBA—which includes tangible and non-tangible considerations, encourages but does not require regulatory decisions based on CBA, and seeks to maximize ‘net benefits’ but does not require that they be monetized—suggests the need to balance diverse values and goals when defending administrative regulations.”⁵¹

Clinton’s specific initiatives included Project XL, which was “an effort to help business, state and local governments, and federal facilities work with EPA to develop and test innovative approaches to achieve better and more cost-effective environmental and public health protection,” operating from 1995 to 2002.⁵² Clinton said to companies: “If you can meet even higher environmental performance standards, we will provide flexibility and cut red tape so you can find the cheapest, most efficient ways to do it.”⁵³ The Clinton Administration, with Al Gore at the helm, also created the National Performance Review, which sought to create a government that “works better and costs less.”⁵⁴

What is remarkable, and shows the powerful legacy of Reagan and Clinton, is the extent to which the Republican and Democratic presidencies that followed carried on the regulatory traditions of those administrations. For example, George W. Bush suspended all rulemaking via the Card Memo,⁵⁵ and Barack Obama, while pro-regulation, continued to give enormous power to the Office of Management and

are the best engine for economic growth; regulatory approaches that respect the role of State, local, and tribal governments; and regulations that are effective, consistent, sensible, and understandable. We do not have such a regulatory system today. With this Executive order, the Federal Government begins a program to reform and make more efficient the regulatory process. The objectives of this Executive order are to enhance planning and coordination with respect to both new and existing regulations; to reaffirm the primacy of Federal agencies in the regulatory decision-making process; to restore the integrity and legitimacy of regulatory review and oversight; and to make the process more accessible and open to the public.”).

⁴⁹ *Id.* at § 1.

⁵⁰ *Id.*

⁵¹ West & Sussman, *supra* note 29, at 87.

⁵² *Project XL*, U.S. EPA., <http://archive.epa.gov/projectxl/web/html/index.html> [<https://perma.cc/54M6-KV9D>] (last updated Oct. 24, 2015). For project examples, see <http://archive.epa.gov/projectxl/web/html/projects.html>.

⁵³ West & Sussman, *supra* note 29, at 94.

⁵⁴ *A Brief History of the National Performance Review*, NAT’L PERFORMANCE REV., <http://govinfo.library.unt.edu/npr/library/papers/bkgrd/brief.html> [<http://perma.cc/5RHB-UH4B>] (last updated Feb. 1997).

⁵⁵ *Memorandum from Andrew Card*, THE AM. PRESIDENCY PROJECT (Jan. 20, 2001), <http://www.presidency.ucsb.edu/ws/?pid=79291> [<http://perma.cc/8HV5-HBDE>] (requesting that the heads and acting heads of Executive Departments and Agencies “send no proposed or final regulation to the Office of the Federal Register”).

Budget and promoted Clintonesque cost-benefit regulation through the selection of law professor Cass Sunstein to lead the Office of Information and Regulatory Affairs.⁵⁶

The George W. Bush Administration used a number of free-market mechanisms in environmental regulation. For instance, utilizing existing authority under the Clean Water Act, the EPA implemented the Water Quality Trading Policy, which allows “one source to meet its regulatory obligations [TMDLs] by using pollutant reductions created by another source that has lower pollution control cost,” in the hopes of achieving water quality standards more efficiently.⁵⁷ One report estimated that implementing these market-based approaches to water quality improvement could save \$900 million per year, as compared with a strict command and control approach.⁵⁸ The EPA and the U.S. Department of Agriculture (USDA) provide grant funding in order to “encourage[] the implementation of water quality trading programs.”⁵⁹ These grant programs include EPA’s Targeted Watershed Grant, EPA’s Section 319 grants, and the USDA’s Conservation Innovation Grants Program, set forth in the 2002 Farm Bill.⁶⁰ However, the success of the water quality trading program has been questionable: “[o]nly 100 facilities have participated in trading, and 80 percent of trades have occurred within a single trading program”⁶¹

Similar to these executive efforts, Congress followed suit in implementing free-market mechanisms. The 2002 Farm Bill also included market-based environmental mechanisms, including the Conservation Security Program, which set up payments for ecosystem services.⁶² Similarly, the 2008 Farm Bill sought “to facilitate the participation of farmers and landowners in environmental services markets,” as methods for farm conservation and land management.⁶³ The USDA is directed to develop guidelines for measuring ecosystem services, such as carbon storage, water

⁵⁶ See Lisa Heinzerling, *Quality Control: A Reply to Professor Sunstein*, 102 CAL. L. REV. 1457 (2014) (critiquing Sunstein’s cost-benefit analysis).

⁵⁷ U.S. E.P.A., WATER QUALITY TRADING POLICY 1 (Jan. 13, 2003), http://water.epa.gov/type/watersheds/trading/upload/2008_09_12_watershed_trading_final_policy2003.pdf [<http://perma.cc/5TAC-X53Y>].

⁵⁸ *Id.* at 2.

⁵⁹ Mindy Selman et al., *Water Quality Trading Programs: An International Overview*, WRI ISSUE BRIEF 1, 3 (Mar. 2009), http://www.wri.org/sites/default/files/pdf/water_trading_quality_programs_international_overview.pdf [<http://perma.cc/58U3-PSFR>].

⁶⁰ *Id.*

⁶¹ U.S. E.P.A., EPA WATER QUALITY TRADING EVALUATION: FINAL REPORT ES-1 (Oct. 2008), <http://water.epa.gov/type/watersheds/trading/upload/wqt.pdf> [<http://perma.cc/6S9A-RD98>].

⁶² Alison G. Power, *Ecosystem Services and Agriculture: Tradeoffs and Synergies*, 365 PHIL. TRANSACTIONS ROYAL SOC’Y 2959, 2961 (2010).

⁶³ RENÉE JOHNSON, PROVISIONS SUPPORTING ECOSYSTEM SERVICES MARKETS IN U.S. FARM BILL LEGISLATION 1 (Dec. 15, 2009), http://www.eoearth.org/files/182801_182900/182890/r134042.pdf [<http://perma.cc/QK7R-2WMD>] (noting “providers of environmental services can be compensated in private markets for the services they provide”).

filtration, and flood control.⁶⁴ These market-based mechanisms, and the programs within which they have been implemented, continue to function, as seen by subsequent farm bills.

The Clear Skies Initiative (CSI) was the first of a series of programs that complemented the Cross-State Air Pollution Rule (CSAPR, discussed below). The CSI, introduced in 2003, would set a cap on sulfur dioxide and nitrogen oxide emissions.⁶⁵ If sources of these emissions are able to make reductions early in the program, they can earn allowances to be used later.⁶⁶ However, this initiative was never enacted, as it did not get through the Senate Committee on Environment and Public Works.⁶⁷

Also within the air context, the NO_x Budget Trading Program (NBP), implemented between 2003 and 2008, “was a cap and trade program created to reduce the regional transport of NO_x emissions from power plants and other large combustion sources in the eastern United States.”⁶⁸ NBP was replaced by the Clean Air Interstate Rule (CAIR).⁶⁹ CAIR was promulgated in 2005 and implemented in two phases.⁷⁰ In 2009, the NO_x emissions program was initiated by setting a cap, followed by the implementation of the SO₂ emissions program in 2010.⁷¹ In 2015, the Phase II caps will be set for each of the two programs.⁷² The goal of CAIR “is to address regional interstate transport of soot . . . and smog . . . , which are associated with thousands of premature deaths and illnesses each year.”⁷³ The Cross-State Air Pollution Rule was set to replace CAIR in 2012,⁷⁴ however the D.C. Circuit stayed and vacated the rule.⁷⁵ Therefore, CAIR remained in place for several more years.⁷⁶ In combination with ARP, by 2012, CAIR reduced annual SO₂ emissions to 3.3 million tons, or 68% below 2005 levels, and annual NO_x emissions to 1.7 million tons, or 53% below 2005 levels.⁷⁷ The Clean Air Mercury Rule (CAMR) intended “to permanently cap and reduce mercury emissions from coal-fired power plants for

⁶⁴ JOHNSON, *supra* note 63, at 1, 5.

⁶⁵ *Clear Skies: Basic Information*, U.S. E.P.A., <http://www.epa.gov/airskies/basic.html> [<https://perma.cc/VNK2-ZFZK>] (last updated Oct. 10, 2015).

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *NO_x Budget Trading Program*, U.S. E.P.A., <http://www.epa.gov/airmarkets/programs/nox/index.html> [<http://perma.cc/EC5G-SP3B>] (last updated Aug. 13, 2015).

⁶⁹ *Id.*

⁷⁰ *Clean Air Interstate Rule (CAIR)*, U.S. E.P.A., <http://www.epa.gov/airmarkets/programs/cair/index.html> [<https://perma.cc/5PBL-Q76G>] (last updated Aug. 21, 2015).

⁷¹ *Id.*

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ 2012 PROGRESS REPORT, *supra* note 43, at 2.

⁷⁶ *Clean Air Interstate Rule (CAIR)*, *supra* note 70; *Cross-State Air Pollution Rule (CSAPR)*, U.S. E.P.A., <http://www.epa.gov/crossstaterule/> [<http://perma.cc/655T-4WVN>] (last updated July 28, 2015).

⁷⁷ 2012 PROGRESS REPORT, *supra* note 43, at 1.

the first time ever.”⁷⁸ However, the D.C. Circuit vacated the rule, and the Supreme Court later dismissed the EPA’s petition for certiorari to review this vacatur.⁷⁹

The Obama Administration has continued the trend of using free-market environmental regulation. CSAPR “requir[ed] 28 states in the eastern half of the U.S. to significantly improve air quality by reducing power plant emissions that cross state lines and contribute to ozone and fine particle pollution in other states,” again regulating nitrogen oxides and sulfur dioxide.⁸⁰ The implementation of this program was delayed following the D.C. Circuit’s decision to vacate the rule.⁸¹ The D.C. Circuit on October 23, 2014, granted the EPA’s request to lift the stay on the rule and shift the deadlines by three years.⁸² The first phase of CSAPR will now be implemented in 2015, and the second phase in 2017.⁸³

Similarly, the Clean Power Plan, proposed on June 2, 2014, set forth the goal of “cut[ting] carbon emissions from the power sector by 30 percent nationwide below 2005 levels” by 2030.⁸⁴ The rule allows states to develop their own plans to meet these goals, which can include market-based programs.⁸⁵

The 2014 Farm Bill included many programs that implement market-based mechanisms, using the valuation of ecosystem services and alternate land uses in order to incentivize conservation practices. The Conservation Stewardship Program (CSP) of the 2014 Farm Bill is a voluntary program that provides incentives to agricultural producers for “maintain[ing] and improv[ing] their existing conservation systems and adopt[ing] additional conservation activities.”⁸⁶ The CSP provides payments to its participants annually for new conservation activities and for maintaining those already in place.⁸⁷ Payments are also made for the adoption of conservation crop rotation practices: “[T]he higher the performance, the higher the

⁷⁸ *Clean Air Mercury Rule*, U.S. E.P.A., <http://archive.epa.gov/mercuryrule/web/html/index.html> [<http://perma.cc/L7GC-XYF3>] (last updated Aug. 29, 2015).

⁷⁹ *Id.*; *New Jersey v. United States Env’tl Prot. Agency*, No. 05-1097 (D.C. Cir. 2008) (vacating the CAMR because it allowed the EPA to regulate mercury emissions under an improper section of the Clean Air Act).

⁸⁰ 2012 PROGRESS REPORT, *supra* note 43, at 2.

⁸¹ *Cross-State Air Pollution Rule (CSAPR)*, *supra* note 76.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *EPA Proposes First Guidelines to Cut Carbon Pollution from Existing Power Plants/Clean Power Plan Is Flexible Proposal to Ensure a Healthier Environment, Spur Innovation and Strengthen the Economy*, Press Release, U.S. E.P.A. (June 2, 2014), <http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceac8525735900400c27/5bb6d20668b9a18485257ceb00490c98!OpenDocument> [<http://perma.cc/F5AW-SJ7B>].

⁸⁵ Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34,830, 34,838, 34,847 (June 18, 2014) (to be codified at 40 C.F.R. pt. 60).

⁸⁶ U.S.D.A., *2014 Farm Bill: Conservation Stewardship Program*, NAT. RES. CONSERVATION SERV. [hereinafter *2014 Farm Bill*], <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farmbill/?cid=stelprdb1242683> [<http://perma.cc/WX7P-X2CX>] (last visited Aug. 19, 2015).

⁸⁷ *Id.*

payment.”⁸⁸ The Agricultural Conservation Easement Program (ACEP) also provides funding for the purchasing of wetland reserve easements.⁸⁹ Similarly, the Healthy Forests Reserve Program (HFRP) provides funding for restoration projects or easements of forest resources.⁹⁰

Given the continued trend at the national level toward incorporating economic principles into environmental regulation, it is not surprising to see policies based on market mechanisms at all levels of government and which, due to the political constraints of traditional environmental law and regulation, provide consumers with information about the nature of the goods being purchased. In addition, coupled with the need and desire for environmental improvement, we have seen industry voluntarily implement private environmental governance⁹¹ and, like some federal programs, offer consumers information and labels about the environmental conditions in the making of goods. This is the turn toward neoliberal environmental regulation—an attempt to avoid the problems and costs of traditional and centralized environmental law through cost-benefit balancing, and to seek institutional isomorphism, pressuring consumers and institutions to conform to others in their preferences for environmentally friendly goods and sustainable business practices.

III. NEOLIBERAL ENVIRONMENTAL REGULATION

Part III categorizes and describes modern neoliberal environmental regulation into (1) market-based mechanisms, and (2) information labeling, considering examples at both the state and federal level as illustrated in Table 2 below. The former seeks to avoid the problems and costs of traditional and centralized environmental law, and the latter seeks institutional isomorphism, pressuring consumers and institutions to conform to others in their preferences for environmentally friendly goods and sustainable business practices.

⁸⁸ *Id.*

⁸⁹ U.S.D.A., *Agricultural Conservation Easement Program*, NAT. RES. CONSERVATION SERV., <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/> [<http://perma.cc/PQX5-346M>] (last visited Aug. 19, 2015).

⁹⁰ U.S.D.A., *Healthy Forests Reserve Program*, NAT. RES. CONSERVATION SERV., <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/forests/> [<http://perma.cc/M4D4-W3XJ>] (last visited Aug. 19, 2015).

⁹¹ See Michael P. Vandenbergh, *Private Environmental Governance*, 99 CORNELL L. REV. 129, 133 (2013).

Table 2: Types and Examples of Neoliberal Environmental Regulation

Type	Examples
Market-based	Cap-and-trade greenhouse gas programs; valuation of ecosystem services; conservation subsidies
Information	Toxic Release Inventory; organic labeling; Vermont GMO labeling bill

Products of this proliferation, which we have also seen outside the environmental context (e.g., school choice, urban renewal), include tradable emission permits, eco-taxes, transferable fishing quotas, use of the valuation of ecosystem services, user fees for public goods and the privatization of public space,⁹² as well as consumer labeling. Recently, due to the failure to regulate the environmental costs of our food choices directly, the new national dietary guidelines sought to incorporate environmental standards, until Congress objected.⁹³

Society can pursue market-based regulations that take into consideration cost-benefit analyses, economic incentives (e.g., subsidies) or disincentives (e.g., taxes), and the valuation of ecosystem services. “[M]arket-based approaches, such as pollution charges and trading of pollution permits/credits, attempt to harness market

⁹² This could include privately owned public spaces in New York City, and the rise of land conservation easements rather than traditional conservation of public lands through national or local parks. See Jessica Owley, *Neo-Liberal Land Conservation and Social Justice*, INT’L UNION FOR CONSERVATION NAT. ACAD. ENVTL. L. E-J. 7–8 (Apr. 16, 2012) (“Conservation easements are part of a trend of compensating landowners for environmental services and amenities. They are part of a soft environmental policy that reinforces the neoliberalization of conservation. Soft policies involve instruments that are flexible, subject to negotiation, and consistent with market approaches. In these approaches, market forces are harnessed in an effort to improve ecosystem management and enhance human well-being. In this respect, neoliberalism restructures conservation mechanisms to facilitate the spread of market-based mechanisms. One of neoliberalism’s chief techniques for achieving that goal is reregulating nature through forms of commodification. Commodification is a process whereby states transform previously untradeable things into tradable commodities. By recognizing the right to develop land as a property right that can be broken off the property-rights bundle, conservation easements do just that. The win-win aspect of conservation easements wherein landowners receive compensation, developers receive permits, and the public receives increased environmental protection appears to fit into the neoliberal ‘promise of a world where one can eat one’s conservation cake and have development dessert too.’”) (citations omitted).

⁹³ Dan Charles, *Congress to Nutritionists: Don’t Talk About the Environment*, NPR (Dec. 15, 2014), <http://www.npr.org/blogs/thesalt/2014/12/15/370427441/congress-to-nutritionists-dont-talk-about-the-environment> [<http://perma.cc/E2NW-HLKZ>]. The idea of including environmental considerations in dietary guidelines also gained traction in Sweden, until the idea was abandoned for political reasons. Jason J. Czarnezki, *The Future of Food Eco-Labeling: Organic, Carbon Footprint, and Environmental Life-Cycle Analysis*, 30 STAN. ENVTL. L.J. 3, 24 (2011).

forces to achieve equal or greater amounts of pollution control [than prescriptive regulation] in a more cost-efficient manner.”⁹⁴

“Proponents of free market environmentalism advocate utilizing market forces to allocate and enforce environmental rights, while challenging the ability of more centralized political controls to adequately and efficiently protect the environment.”⁹⁵ Market-based approaches, while currently popular, may prove challenging to implement. To the extent privatization is required, environmental resources are not easily amenable to commodification, and there are normative concerns that rub against privatization of environmental amenities in the public domain.⁹⁶ Financial penalties (e.g., charges, taxes), however, increase the cost of polluting activities, discouraging pollution and waste and forcing the polluter to bear the costs of her activities.⁹⁷ The challenge to any such financial penalty is getting the price right and alleviating political concerns as taxes seem never to be popular.⁹⁸ Rather than a stick, the financial payment can also be a carrot in the form of payment or subsidy. Thus, one solution to the palatability problem for behavior-modifying regulation (discussed below) is to choose carrots versus sticks based on the level of public palatability of the regulation. This section will discuss valuation methodologies for resources and services, especially those that do not hold a direct market value. This section will then describe examples of how market-based mechanisms have been employed, including their early use, ecosystem services, cap and trade programs, and the incorporation of market-based mechanisms into existing regimes.

A. Valuation Methods

Market-based mechanisms, as opposed to command-and-control regulations, may have the potential to “provide a more cost-effective way of achieving a given level of environmental quality.”⁹⁹ Market-based mechanisms require the valuation of natural resources in order to incorporate environmental regulations into the market forces. Methods used for the valuation of natural resources vary according to the type of resource and whether direct markets for the resource exist. When direct markets exist, methods include the market price approach, the appraisal method, and

⁹⁴ Jerold S. Kayden, *Market-Based Regulatory Approaches: A Comparative Discussion of Environmental and Land Use Techniques in the United States*, 19 B.C. ENVTL. AFF. L. REV. 565, 565 (1992).

⁹⁵ See Thompson, *supra* note 45, at 1330.

⁹⁶ Salzman, *supra* note 11, at 368.

⁹⁷ *Id.* at 370.

⁹⁸ *Id.* at 371.

⁹⁹ ROBERT W. HAHN & ROBERT N. STAVINS, ECONOMIC INCENTIVES FOR ENVIRONMENTAL PROTECTION: INTEGRATING THEORY AND PRACTICE ¶ 2.3 (Ctr. For Sci. & Int’l Affairs, Discussion Paper No. 91-15, 1991), http://belfercenter.ksg.harvard.edu/files/disc_paper_91_15.pdf [<http://perma.cc/KHJ4-K9MP>].

the replacement cost method, among others.¹⁰⁰ Even where no markets exist, the valuation of natural resources can still be accomplished through methods such as the contingent valuation method, hedonic price method, and travel cost method, among others.¹⁰¹ These valuation methods can estimate use and nonuse values. Use values describe the actual use and enjoyment of the environment or of natural resources, whether it be direct (e.g., hunting, hiking, resource extraction) or indirect (e.g., nature television shows or ecosystem services).¹⁰² Option values, another form of use values, describe the value of maintaining the option to use a natural resource in the future.¹⁰³ Nonuse values include bequest values, or the value of ensuring that future generations will be able to use a natural resource, and existence values, or the value that one places upon “simply knowing that something exists, even if they will never see it or use it.”¹⁰⁴

The market price approach simply considers the market valuation of a natural resource.¹⁰⁵ The appraisal method compares the fair market value of natural resources that have been damaged with comparable ones that remain undamaged.¹⁰⁶ As seen in the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Oil Pollution Act of 1990 (OPA), natural resources can also be valued according to their restoration and replacement cost, or “the cost to restore, rehabilitate, or replace the resource or resource services without injury to the level of the resource stock or service flow.”¹⁰⁷ The valuation of ecosystem services is an effort to break down the value of ecosystems into marketable resources in order to estimate the value of an ecosystem that, as a whole, has no direct market.

Contingent valuation allows natural resources to be valued when there is no direct market by surveying individuals as to how much they would be willing to pay to protect or maintain certain natural resources, thus estimating both use and nonuse values.¹⁰⁸ The hedonic pricing method compares sites containing different natural resources, such as one near a forest or one with a view.¹⁰⁹ By comparing the difference in the two property values, assuming all else, but the natural resources considered, is equal, the price of the natural resource with no direct market value

¹⁰⁰ C.A. ULIBARRI & K.F. WELLMAN, NATURAL RESOURCE VALUATION: A PRIMER ON CONCEPTS AND TECHNIQUES 5 (1997), http://www.environmentalmanager.org/wp-content/uploads/2008/04/valuation_primer_from_doe.pdf [<http://perma.cc/2PWZ-JBT9>].

¹⁰¹ *Id.*

¹⁰² *Valuation of Ecosystem Services*, ECOSYSTEM VALUATION, <http://www.ecosystemvaluation.org/1-02.htm> [<http://perma.cc/7QFL-FWPX>] (last visited Aug. 19, 2015).

¹⁰³ *Id.*

¹⁰⁴ *Id.*

¹⁰⁵ ULIBARRI & WELLMAN, *supra* note 100, at 7.

¹⁰⁶ *Id.* at 11.

¹⁰⁷ *Id.* at 13.

¹⁰⁸ *Socioeconomic Assessment: Natural Resource Value*, NAT'L ESTUARINE RESEARCH RESERVE SYS., <http://nerrs.noaa.gov/doc/siteprofile/acebasin/html/socioecn/rvnatres.htm> [<http://perma.cc/6H37-FUCS>] (last visited Oct. 6, 2015).

¹⁰⁹ *Id.*

can be inferred.¹¹⁰ The travel cost method considers the time and travel expenses required to use a natural resource, for example, those costs required to visit a state park.¹¹¹ By multiplying these costs by the number of users of the resource, the use value of a resource can be estimated.¹¹²

B. Examples

Market-based mechanisms can be found in federal environmental legislation as far back as the Rivers and Harbors Act of 1902, in which projects were to be assessed by considering both the costs and benefits.¹¹³ Again, the Flood Control Act of 1936 required the consideration of both the costs and benefits of flood control projects.¹¹⁴ But the early legislation of the environmental movement in the 1960s and 1970s, which defined the traditional field of environmental law, including the Clean Air Act of 1970 and the Clean Water Act of 1972, largely ignored the use of market-based mechanisms, focusing instead on technology or environmental standards.¹¹⁵ It is only recently that we have embraced the use of market-based approaches, such as incentives, disincentives, and environmental valuation, and expanded its implementation, as a part of the neoliberal environmental turn (see Part II above).

1. Early Use of Market-Based Mechanisms

Triggering the expansion of the use of market-based mechanisms were the National Environmental Policy Act of 1969, requiring the use of cost-benefit analyses in environmental impact statements, Executive Order 12291 in 1981, requiring cost-benefit analyses to justify major rules, and, especially, the passage of both CERCLA in 1980 and OPA in 1990.¹¹⁶ Both CERCLA and OPA use market-based mechanisms and environmental valuation, for the assessment of natural resource damages.¹¹⁷ For example, CERCLA's damage assessment process "explicitly calls for the estimate of interim lost values of injured natural resources

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ JONATHAN ARMAH ET AL., PRINCIPLES AND GUIDELINES FOR EVALUATING FEDERAL WATER PROJECTS: U.S. ARMY CORPS OF ENGINEERS PLANNING AND THE USE OF BENEFIT COST ANALYSIS 11 (Aug. 2009), <http://www.fas.org/irp/agency/dhs/fema/evans.pdf> [<http://perma.cc/KHG6-ZB5E>]; see also DOUGLAS W. LIPTON ET AL., ECONOMIC VALUATION OF NATURAL RESOURCES: A HANDBOOK FOR COASTAL RESOURCE POLICYMAKERS 4 (June 1995), <http://www.mdsg.umd.edu/sites/default/files/files/Economic%20Valuation%20of%20Natural%20Resources.pdf> [<http://perma.cc/7X5Q-EMNF>].

¹¹⁴ LIPTON ET AL., *supra* note 113, at 4.

¹¹⁵ *Id.* at 5.

¹¹⁶ *Id.*; Lawrence I. Kiern, *Liability, Compensation, and Financial Responsibility Under the Oil Pollution Act of 1990: A Review of the First Decade*, 24 TUL. MAR. L.J. 481, 482 (2000) (discussing the passage of OPA being prompted by the Exxon Valdez oil spill, as well as several other oil spills in 1989 and early 1990).

¹¹⁷ LIPTON ET AL., *supra* note 113, at 5.

and resource services.”¹¹⁸ In both statutes, natural resource damages include “the cost of restoring injured natural resources to their baseline condition, compensation for the interim loss of injured resources pending recovery, and the reasonable costs of a damage assessment.”¹¹⁹ These calculations are made using market and nonmarket methods, as discussed above, including considerations of interim lost use, contingent valuation, and use and nonuse values.¹²⁰ OPA’s natural resource damages assessment procedures were finalized in 1996.¹²¹ Unlike previous rules, this final rule stated that the purpose of OPA’s natural resource damage assessments was to “make the environment and the public whole.”¹²² OPA and CERCLA are “compensatory in nature and . . . in theory . . . have been located roughly within the domain of corrective justice.”¹²³ However, as retroactive market mechanisms, these statutes highlight some of the limitations of market-based environmental policies, in that valuation is often more easily conducted after damage has been done.

2. Valuation of Ecosystem Services

The valuation of ecosystem services has allowed for market-based mechanisms to become more holistic in scope and to expand to natural resources beyond those directly exchanged in the market. Ecosystem services have increasingly been considered in environmental decision-making, and land use decision-making in particular. Ecosystem services describe the “benefits humans obtain from ecosystems,” and can be categorized as supporting, regulating, provisioning, or cultural services.¹²⁴ Examples of these services include food and water provisions,

¹¹⁸ *Id.*

¹¹⁹ *Natural Resource Damages: Frequently Asked Questions*, U.S. E.P.A., <http://www2.epa.gov/superfund/natural-resource-damages-frequently-asked-questions#2> [<http://perma.cc/9JQR-6G65>] (last visited October 24, 2015); see Comprehensive Environmental Response, Compensation, and Liability Act §§ 107(a)(4)(C), (f)(1), 42 U.S.C. §§ 9607(a)(4)(C), (f)(1) (2012); Oil Pollution Act §§ 1001(5), 1002(b)(2), 33 U.S.C. § 2701(5), 2702(b)(2) (2012); see also Patrick E. Tolan, *Natural Resource Damages Under CERCLA: Failures, Lessons Learned, and Alternatives*, 38 N.M. L. REV. 409, 417 (2008) (discussing the use of baseline conditions, compensation, and interim loss for damage restoration).

¹²⁰ *Natural Resource Damages: Frequently Asked Questions*, *supra* note 119. See also Jason J. Czarneski & Adrienne K. Zahner, *The Utility of Nonuse Values in Natural Resource Damage Assessments*, 32 B.C. ENVTL. AFF. L. REV. 509, 520 (2005) (arguing that nonuse values should be used more frequently in natural resource damage assessments).

¹²¹ James S. SeEVERS, Jr., Note, *NOAA’s New Natural Resource Damage Assessment Scheme: It’s Not About Collecting Money*, 53 WASH. & LEE L. REV. 1513, 1514; see 15 C.F.R. § 990 (2014).

¹²² SeEVERS, *supra* note 121, at 1538.

¹²³ Douglas R. Williams, *Valuing Natural Environments: Compensation, Market Norms, and the Idea of Public Goods*, 27 CONN. L. REV. 365, 374 (1995).

¹²⁴ Brendan Fisher et al., *Valuing Ecosystem Services: Benefits, Values, Space and Time* 4 (United Nations Env’t Programme, Div. of Env’tl. Policy Implementation, Working Paper No. 3, 2011), http://www.bioecon-network.org/pages/UNEP_publications/03%20Valuing

air quality and climate regulation, gene pool protection, and recreation, among others.¹²⁵ The value of the erosion prevention provided by coral reefs, for example, has been estimated to equal \$153,214 per hectare per year on average.¹²⁶ The value of these services is enormous: “for the entire biosphere, the value [of just seventeen ecosystem services] (most of which is outside the market) is estimated to be in the range of US \$16-54 trillion per year . . . [b]ecause of the nature of the uncertainties, this must be considered a minimum estimate.”¹²⁷ Valuation of ecosystem services “help[s] to make decisions about allocating resources between competing uses whereby it should be realized that monetary values that are based on market prices only, usually neglect the rights (values) of future generations.”¹²⁸ Thus, the valuation of ecosystem services provides a more complete understanding of the value of natural resources, beyond the more obvious direct market prices.¹²⁹

Valuation of ecosystem services is used in land-use decision-making to allow for more “holistic decision processes that integrate and balance conservation with land use goals.”¹³⁰ For example, China’s Natural Forest Conservation Program and Grain to Green Program both acknowledge the enormous value of ecosystem services and provide payments for logging forbearance, forest reseeded, and crop conversion.¹³¹ These programs exemplify a determination that the value of conservation of these natural resources exceed the continuation of logging or intensive crop production.¹³²

Meanwhile, the United States Office of Environmental Markets was developed in response to the Farm Bill of 2008 to “support[] the Secretary [of Agriculture] in the development of emerging markets for . . . ecosystem services.”¹³³ In Eugene, Oregon, the Eugene Water and Electric Board (EWEB) transitioned from a “stifled regulation-based approach” to an incentive-based approach premised on the value

%20Ecosystem%20Services.pdf [http://perma.cc/WT96-MFCC].

¹²⁵ Rudolf de Groot et al., *Global Estimates of the Value of Ecosystems and Their Services in Monetary Units*, 1 ECOSYSTEM SERVICES 50, 53 (2012), <http://www.science-direct.com/science/article/pii/S2212041612000101> [http://perma.cc/YT76-XD4D].

¹²⁶ *Id.* at 55 (summarizing the monetary value of twenty-two ecosystem services per biome).

¹²⁷ ZYGMUNT J.B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 16 (Vicki Been et al. eds., 4th ed. 2010).

¹²⁸ De Groot et al., *supra* note 125, at 51 (citation omitted).

¹²⁹ *Id.*

¹³⁰ Joshua Kahan, *A Framework for Ecosystem Services Conservation Zoning: An Integration into Land Use Planning* 1 (May 1, 2007) (unpublished Masters of Environmental Studies Capstone Project, University of Pennsylvania), http://repository.upenn.edu/cgi/viewcontent.cgi?article=1014&context=mes_capstones [http://perma.cc/DHU4-M7B7].

¹³¹ Jianguo Liu et al., *Ecological and Socioeconomic Effects of China’s Policies for Ecosystem Services*, 105 PNAS 9477, 9477–79 (2008), http://chans-net.org/sites/chans-net.org/files/JLiu_2008_PNAS.pdf [http://perma.cc/Y85Z-XV8K].

¹³² *Id.* at 9477.

¹³³ *Office of Environmental Markets*, U.S. DEP’T OF AGRIC., http://www.usda.gov/oce/environmental_markets/ [http://perma.cc/WLM3-FCD2] (last visited Aug. 19, 2015).

of the ecosystem services provided by riparian areas.¹³⁴ Rather than require landowners to maintain a 200-foot riparian buffer zone, landowners can now receive compensation for voluntarily maintaining or improving riparian areas on their land.¹³⁵ In Hawaii, studies have been conducted to determine the land-use development plan for the largest private landowner that will best “balance[] multiple private and public values,” factoring in ecosystem services such as climate regulation, food, and energy security.¹³⁶

3. *Cap and Trade Programs*

Cap and trade programs are examples of market-based mechanisms, which rely on the valuation of air or water quality, as “policymakers establish a socially desirable level of aggregate emissions for a given pollutant.”¹³⁷ From this level, emissions are then allocated among producers who receive permits to continue to emit that pollutant.¹³⁸ For example, the California carbon cap and trade program includes 85% of greenhouse gas sources within the state and sets its limits according to the mandated greenhouse gas emissions levels set forth in the Global Warming Solutions Act.¹³⁹

Under the EPA’s Acid Rain Program, the Agency allocates allowances for sulfur dioxide and nitrous oxide emissions, which can then be bought and sold, or banked.¹⁴⁰ As the EPA explains, “[t]he Acid Rain Program represents a dramatic departure from traditional command and control regulatory methods that establish specific, inflexible emissions limitations with which all affected sources must comply. Instead, [it] introduces an allowance trading system that harnesses the incentives of the free market to reduce pollution.”¹⁴¹

¹³⁴ *VIP Treatment: Rewarding Landowners for Riparian Stewardship*, OR. EXPL., <http://oe.oregonexplorer.info/ExternalContent/VIPRiparianStewardship/index.html#page1.html> [<http://perma.cc/32FJ-LPTL>] (last visited Oct. 28, 2015).

¹³⁵ *Id.*

¹³⁶ Joshua H. Goldstein et al., *Integrating Ecosystem-Service Tradeoffs into Land-Use Decisions*, 109 PNAS 7565, 7565 (2012), <http://www.pnas.org/content/109/19/7565.full.pdf+html> [<http://perma.cc/7F2T-E3DA>].

¹³⁷ James Salzman & J.B. Ruhl, *Currencies and the Commodification of Environmental Law*, 53 STAN. L. REV. 607, 617 (2000).

¹³⁸ *Id.*

¹³⁹ Dallas Burtraw & Sarah Jo Szambelan, *A Primer on the Use of Allowance Value Created Under California’s CO₂ Cap-and-Trade Program*, NEXT 10, May 11, 2012, at 2–3, http://next10.org/sites/next10.org/files/20120504_Primer_Revised_V5.pdf [<http://perma.cc/KP3N-QVKQ>].

¹⁴⁰ *Acid Rain Program: SO₂ Reductions*, *supra* note 38.

¹⁴¹ *Id.*

4. *Incorporating Market Mechanisms into Existing Regimes*

Traditional environmental regulatory regimes are also integrating environmental valuation, much like CERCLA and OPA integrate market valuation, within traditional command-and-control policies. This integration and consideration of environmental valuation has surrounded climate change mitigation and adaptation decision-making: “economic science has developed models that attempt to quantify the difference between the cost of mitigation actions (and their benefits in terms of avoided negative impacts) and the costs of inaction, aiming to calculate the optimal mitigation strategy from an economic perspective.”¹⁴² The EPA has considered and continues to consider market-based approaches to reduce greenhouse gas emissions as a part of their overall climate policy.¹⁴³ The “EPA and other federal agencies use the social cost of carbon [SCC] to estimate the climate benefits of rulemakings.”¹⁴⁴ The SCC includes “(but is not limited to) changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services.”¹⁴⁵

C. *Informational Labeling*

Modern neoliberal environmental regulation in the form of information disclosure seeks institutional isomorphism—pressuring consumers and institutions to conform to others (both institutions and consumers) in their preferences for environmentally friendly goods and sustainable business practices.¹⁴⁶ This can be

¹⁴² Jorge Hargrave et al., *Cost-Benefit Analyses of Climate Change*, 164 INT’L POL’Y CTR. FOR INCLUSIVE GROWTH 1, 1 (2012), <http://www.ipc-undp.org/pub/IPCOnePager164.pdf> [<http://perma.cc/CU8D-VRMK>]. See also INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT § 5.7 (2007) (estimating the effect climate change will have on world GDP).

¹⁴³ *Evaluating Climate Policy Options, Costs and Benefits*, U.S. E.P.A., <http://www.epa.gov/climatechange/EPAactivities/economics.html> [<http://perma.cc/64KW-F3NU>] (last visited Aug. 19, 2015).

¹⁴⁴ *The Social Cost of Carbon*, U.S. E.P.A., <http://www.epa.gov/climatechange/EPAactivities/economics/scc.html> [<http://perma.cc/G5RB-YCNX>] (last visited Aug. 19, 2015).

¹⁴⁵ INTERAGENCY WORKING GROUP ON SOCIAL COST OF CARBON, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 1, 1 (2010), <http://www.whitehouse.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf> [<http://perma.cc/WP3U-9V6K>].

¹⁴⁶ Paul J. DiMaggio & Walter W. Powell, *The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields*, 48 AM. SOC. REV. 147, 147–50 (1983), <https://www.ics.uci.edu/~corps/phaseii/DiMaggioPowell-IronCageRevisited-ASR.pdf> [<https://perma.cc/K67X-88BJ>]. The organizational structure, which used to arise from the rules of efficiency in the marketplace, now arises from the institutional constraints imposed by the state and the professions. *Id.* at 147. “[The] efforts to [achieve] rationality with uncertainty and constraint often lead, in the aggregate, to homogeneity in structure,

accomplished through legal requirements and private corporate practices. Thus, corporate entities pursue environmental initiatives (e.g., corporate sustainability and big organics), and consumers exert preferences, via their purchasing power, for environmentally friendly goods through government mandated and economically driven voluntary labeling. In this manner, consumer preferences dictate environmental change through purchases of goods that created less harm in their creation, rather than environmental change through direct substantive regulation of those harms.

The government may regulate through mandatory information generation and labeling. Such information-based approaches can inform society about environmental and public health harms. Generation of information about the environmental consequences of actions can provide a means of encouraging better environmental performance for government institutions, private entities, and individuals.¹⁴⁷ The theory behind informational approaches “is that the government can change people’s behavior by forcing them to think about the harm they are causing and by publicizing that harm.”¹⁴⁸ Information can direct government decision-making about how and whether to protect the environment, and can motivate private cleanup and avoidance of environmental problems.¹⁴⁹ Examples of informational regulation include the Energy Star energy efficiency labeling program, the Toxic Release Inventory, the USDA Organic food labeling program, and the menu-labeling requirements found in the federal 2010 Affordable Care Act, requiring calorie information to be displayed on both vending machines and menus of restaurants with more than twenty locations nationwide. Professor Michael Vandenberg, the leading scholar on private environmental governance, has even advocated for the creation of an Individual Carbon-Release Inventory,¹⁵⁰ and has advocated for a global carbon labeling scheme.¹⁵¹

Informational regulation can be useful when political will does not permit direct regulation, and studies indicate that information can trigger environmental norms. For example, increased awareness of consequences of individual transportation

[institutional isomorphism].” *Id.* “As an innovation spreads, a threshold is reached beyond which adoption provides legitimacy rather than improves performance.” *Id.* at 148. “[I]somorphism is a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions.” *Id.* at 149. “[T]here are two types of isomorphism: competitive and institutional.” *Id.* “Organizations compete not just for resources and customers, but for political power and institutional legitimacy, for social as well as economic fitness.” *Id.* at 150.

¹⁴⁷ DRIESEN ET AL., *supra* note 9, at 329.

¹⁴⁸ Salzman, *supra* note 11, at 373.

¹⁴⁹ DRIESEN ET AL., *supra* note 9, at 329–31.

¹⁵⁰ Michael P. Vandenberg & Anne C. Steinemann, *The Carbon-Neutral Individual*, 82 N.Y.U. L. REV. 1673, 1729–31 (2007).

¹⁵¹ See Michael P. Vandenberg et al., *Time to Try Carbon Labelling*, 1 NATURE CLIMATE CHANGE 4, 4 (2011).

behavior has a positive effect on willingness to reduce personal car use.¹⁵² However, it can be costly to produce accurate and verifiable information, and informational regulation does not require changes in consumer or corporate behavior.

This subpart focuses on two types of labeling: (1) that required by federal and state public law and; (2) that induced by private business—to illustrate the turn toward neoliberal environmental regulation. Food and durable good production and processing could be regulated directly by statute, but instead consumers are being asked to facilitate environmental change through purchasing power to encourage companies to respond to those preferences. Of course, the challenge, or perhaps problem, with this type of neoliberal regulation is that informational distribution does not necessarily change actual practices and consumers' preferences may be poorly linked to actual environmental progress.

1. *Government Labels and Third-Party Certification*

The past two decades have seen increased interest and prominence in labeling for environmental and energy concerns. In 1992, the EPA introduced its Energy Star program as a “voluntary labeling program designed to identify and promote energy-efficient products” in order to “reduce greenhouse gas emissions.”¹⁵³ Under the Organic Foods Production Act of 1990 (OFPA) and the National Organic Program (NOP), the U.S. government creates production, handling, and labeling standards for organic agricultural products. In the United States and abroad, environmental labeling for food is gaining wide interest, as exemplified by the passage of Vermont's GMO labeling legislation.¹⁵⁴ The challenge with this trend is that labels can create consumer confusion, they may be at best proxies for the environmental information that is actually desired by consumers, and high-quality information may be challenging to gather.

(a) *Energy Star*¹⁵⁵

Begun as a voluntary product-labeling program, the Energy Star program is now a joint effort of the EPA and the U.S. Department of Energy to promote the consumer purchase of energy-efficient products for the home. The program helps consumers by allowing the Energy Star label to be placed on energy-efficient products ranging from computer printers to dehumidifiers and by providing tools for assessing the energy efficiency of existing homes and new home designs. The

¹⁵² Annika M. Nordlund & Jörgen Garvill, *Effects of Values, Problem Awareness, and Personal Norm on Willingness to Reduce Personal Car Use*, 23 J. ENVTL. PSYCHOL. 339, 345 (2003).

¹⁵³ *History*, ENERGY STAR, <http://www.energystar.gov/about/history> [<http://perma.cc/H9ZK-7TCG>] (last visited Aug. 19, 2015).

¹⁵⁴ VT. STAT. ANN. tit. 9, § 3043 (2014).

¹⁵⁵ This section relies on Chapter 3 of JASON J. CZARNEZKI, *EVERYDAY ENVIRONMENTALISM* 42–43 (2011); *see also* ENERGY STAR, <https://www.energystar.gov/> [<https://perma.cc/6S6L-UA4G>] (last visited Oct. 28, 2015).

program claims to have prevented 40 million metric tons of greenhouse gases and saved more than \$16 billion in utility bills in 2007 alone,¹⁵⁶ with much of this reduction and savings coming from the labeling of consumer products.¹⁵⁷ While the Energy Star program could do a better job of overseeing the label's integrity,¹⁵⁸ by focusing consumer buying power, these labels can increase the market for certain products and product characteristics. Governmental procurement has the same power, with the added ability to influence individual buying behavior through direct mandate or indirectly through increasing market availability. However, the Energy Star program is designed to cover more than consumer products like appliances and computers. In fact, entire newly built single-family homes and multi-family units can become Energy Star qualified.¹⁵⁹

Information about home energy usage in existing homes can be delivered at multiple points. Existing homes need energy audits to recommend energy saving changes. Energy Star recommends contractors to do audits through its Home Performance program, though many nonaffiliated contractors can do energy audits in most local areas. Buyers also can gain information about home energy use upon purchase.¹⁶⁰ Ideally, existing and prospective homeowners would know the potential upgrades needed to help efficiency, as well as fully appreciate their initial costs and their long-term economic and environmental payback. Ironically, as early as 1977, through President Carter's Residential Conservation Service, utility companies and fuel companies were tasked with providing customers highly discounted home energy audits to increase energy conservation.¹⁶¹ However, just five years later, during the Reagan Administration, the program lapsed due to lack of funding.

¹⁵⁶ ENERGY STAR, ENERGY STAR OVERVIEW OF 2007 ACHIEVEMENTS (2008), <http://www.energystar.gov/ia/partners/publications/pubdocs/2007%20CPPD%204pg.pdf> [<http://perma.cc/EX6C-GMEU>].

¹⁵⁷ See Kesan & Shah, *supra* note 9, at 371 (citing CLIMATE PROTECTION DIVISION, ENVTL. PROTECTION AGENCY, THE POWER TO MAKE A DIFFERENCE: ENERGY STAR AND OTHER PARTNERSHIP PROGRAMS 11 (2000)) ("Moreover, the entire Energy Star program for labeling consumer products has prevented emissions of 5.7 million metric tons of carbon equivalent and saved over two billion dollars on energy bills in 1999 alone").

¹⁵⁸ See ENVTL. PROTECTION AGENCY, OFF. OF INSPECTOR GEN., ENERGY STAR PROGRAM CAN STRENGTHEN CONTROLS PROTECTING THE INTEGRITY OF THE LABEL (2007), <https://web.archive.org/web/20090512005850/http://www.epa.gov/oig/reports/2007/20070801-2007-P-00028.pdf> [<https://perma.cc/634B-Z88V>].

¹⁵⁹ See *New Guidelines for Energy Star Certified New Homes*, ENERGY STAR, https://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_2011_comments [<https://perma.cc/VZN6-YNAH>] (last visited Aug. 19, 2015).

¹⁶⁰ See, e.g., KAN. STAT. ANN. § 66-1228 (2013).

¹⁶¹ See generally James A. Walker et al., *A Review of the Residential Conservation Service Program*, 10 ANN. REV. ENERGY 285 (1985) (reviewing the program, its history, its results, and the relevant statistics).

(b) *Organic Foods Production Act*¹⁶²

The organic food market is flourishing. People want chemical-free foods for personal health and environmental reasons. In light of the economic benefits of organic production—organic products sell for much more than conventional ones—the modern organic production and distribution system is now dominated by large-scale “industrial organic” or “big organic” producers.” With large-scale production, even if organic, comes increased greenhouse gas emissions and questionable agricultural methods. Yet organic production also yields food produced and processed in a chemical-free environment, which is in demand. Organic food has almost quadrupled its market share in the last decade, and sales of organic food sales have grown from \$3.6 billion in 1997 to over \$39 billion in 2014.¹⁶³ But all of this may not have happened without a regulatory model creating a value-added food label like “organic.”

Under the Organic Foods Production Act (OFPA) and the National Organic Program (NOP), the U.S. government creates production, handling, and labeling standards for organic agricultural products.¹⁶⁴ Individuals buy organic products to keep their bodies free of synthetics and pesticides, as well as promote sustainable and chemical-free agriculture.¹⁶⁵ Organic farming emphasizes the use of renewable sources, land management that maintains natural soil fertility, water conservation, rich biodiversity, and long-term sustainability.¹⁶⁶

OFPA establishes a national organic certification program where agricultural products may be labeled as organic if produced and handled without the use of synthetic substances. The program prohibits using synthetic fertilizers, growth hormones and antibiotics in livestock,¹⁶⁷ and adding synthetic ingredients during processing.¹⁶⁸ However, exceptions exist, and some nonagricultural products and

¹⁶² This section on OFPA and the following section on COOL rely on Jason J. Czarnecki & Elena M. Mihaly, *The Food Statutes*, in FOOD, AGRICULTURE, AND ENVIRONMENTAL LAW 223 (2013); Organic Foods Production Act of 1990, 7 U.S.C. §§ 6501–6523 (2012).

¹⁶³ ORGANIC TRADE ASS’N, STATE OF THE INDUSTRY, https://www.ota.com/sites/default/files/indexed_files/StateOfOrganicIndustry.pdf [<https://perma.cc/67T6-LCTZ>] (last visited Oct. 28, 2015).

¹⁶⁴ 7 U.S.C. §§ 6501–6523 (2012).

¹⁶⁵ See Margot J. Pollans, *Bundling Public and Private Goods: The Market for Sustainable Organics*, 85 N.Y.U. L. REV. 621, 649–52 (2010).

¹⁶⁶ Anne Plotto & Jan A. Narciso, *Guidelines and Acceptable Postharvest Practices for Organically Grown Produce*, 41 HORT. SCI. 287 (2006) (citing 7 C.F.R. § 205.2 (2014)).

¹⁶⁷ National Organic Program; Access to Pasture (Livestock), 75 Fed. Reg. 7154, 7162 (Feb. 17, 2010) (to be codified at 7 C.F.R. pt. 205).

¹⁶⁸ 7 U.S.C. §§ 6508(b)(1), 6509(c)(3), 6510 (2012). See also Plotto & Narciso, *supra* note 166, at 287 (“Food must be produced without synthetic chemicals, except for those specifically allowed by regulations, and without substances (nonsynthetic and nonagricultural) prohibited by regulations, including no sewage sludge, ionizing radiation or bioengineering (7 CFR 205.105).”).

synthetics can be used on organic produce if they are on the National List.¹⁶⁹ Such products include waxes (carnauba and wood rosin) on organic fruit and fruit products; ethylene for postharvest ripening of tropical fruit and citrus degreening; and citric acid and ascorbic acid for fresh-cut fruits.¹⁷⁰ Chlorine is the most commonly used synthetic for sanitation of fruit and vegetable surfaces.¹⁷¹

Agricultural practices must follow an organic plan approved by an accredited certifying agent and the producer and handler of the product.¹⁷² OFPA creates process-based standards, but does not implement standards or require tests for actual chemical content in food and does not assess overall land use practices. Thus, “certified organic” labeling informs consumers about the food production process, but does not directly describe food quality or indicate a lack of land degradation, though organic food still is likely to have fewer chemicals than conventional counterparts.¹⁷³

The U.S. Organic Food Production Act (OFPA) monopolizes the use of the term “organic,” requiring all products labeled as “organic” to be certified through the government-approved certifiers that comply with all OFPA regulations under the National Organic Program.¹⁷⁴ Under one view, it is effective to have a single government label bringing singular meaning to a word developing significant cache in the food market.

The OFPA, from the point of view of regulatory design and administrative law, was strikingly innovative. At the same time that alternatives to traditional command-and-control regulation such as risk-based decisionmaking and market-like incentives were drawing so much attention, the OFPA created a system that could tie public environmental and ethical values into existing, real markets; that informed the development of governmental organic standards with input from a National Organic Standards Board composed of nongovernmental representatives from different facets of the organic industry; and that

¹⁶⁹ CATHERINE GREENE ET AL., EMERGING ISSUES IN THE U.S. ORGANIC INDUSTRY, ECONOMIC INFORMATION BULLETIN; NO. 55, 2 (June 2009), <http://www.ers.usda.gov/Publications/EIB55/> [<http://perma.cc/CGW6-VM97>].

¹⁷⁰ Plotto & Narciso, *supra* note 166, at 288. See National List of Allowed and Prohibited Substances, 7 C.F.R. §§ 205.605–.606 (2014).

¹⁷¹ Plotto & Narciso, *supra* note 166, at 290 (citing 7 C.F.R. § 205.605(b) (2014)).

¹⁷² 7 U.S.C. §§ 6504–6505 (2012).

¹⁷³ Michelle T. Friedland, *You Call That Organic?—The USDA’s Misleading Food Regulations*, 13 N.Y.U. ENVTL. L.J. 379, 391(2005). However, “[b]ecause food produced in accordance with the NOP regulations will not be intentionally sprayed with pesticides or intentionally grown or raised using genetically engineered seed or other inputs, the likelihood of the presence of pesticide residue or genetically engineered content will clearly be lower than in foods intentionally produced with pesticides and genetic engineering techniques. But organic food will not be free of such contamination. Evidence clearly indicates that both pesticides and genetically engineered plant materials often drift beyond their intended applications, and organic food, like any food, may be accidentally contaminated.” *Id.* at 398.

¹⁷⁴ 7 U.S.C § 6505(a)(1)(A) (2012).

centered regulatory compliance on a system of approved private-sector certification rather than a large federal bureaucracy. The OFPA is a marketing-oriented statute designed to regularize what was at the time a potentially confusing Babel of competing standards with an official federal “organic” label. Not only was a federal label thought useful in promoting consumer confidence in the growing organic industry within the United States, but it was also viewed as helpful in facilitating trade in “a potentially lucrative international organic market.”¹⁷⁵

Despite this approach, consumer confusion remains regarding the meaning of “organic.” What counts as organic? For many, the organic label means healthy, environmentally friendly, safe, and pesticide-free. While in some cases these characteristics are true, they are not elements of the legal definitions of organic—and legal definitions matter. The NOP created under OFPA creates a four-tiered labeling system for organic foods.¹⁷⁶ All organics are not created equally.

Table 3: Categories of USDA Organic Foods

Content of Organic Ingredients	Organic Seal?	Permitted Label Phrases
100%	Yes	“100% Organic”
95%-99%	Yes	“Organic”
70%-94%	No	“Made with Organic Ingredients”
69% or less	No	Can only list organic ingredients

First, a product can be labeled “100% organic” and carry the USDA and certifying agent seals if it contains 100% organically produced ingredients as defined by OFPA (e.g., without synthetic substances).¹⁷⁷ Second, a product must contain at least 95% organic ingredients to be labeled simply “organic” and use the USDA and private certifying agent seals.¹⁷⁸ Third, a product with at least 70% organically produced ingredients (or perhaps better stated, with *only* 70% organic ingredients) can be labeled “made with organic ingredients” and carry the seal of a

¹⁷⁵ Donald T. Hornstein, *The Road Also Taken: Lessons from Organic Agriculture for Market- and Risk-Based Regulation*, 56 DUKE L.J. 1541, 1549–50 (2007) (citing JEAN M. RAWSON, CONG. RESEARCH SERV., ORGANIC AGRICULTURE IN THE UNITED STATES: PROGRAM AND POLICY ISSUES 3 (2006)).

¹⁷⁶ 7 C.F.R. § 205.301 (2014). In addition to looking for “organic” labeled foods, consumers can look at five-digit PLU codes. Organic foods all start with 9.

¹⁷⁷ 7 C.F.R. §§ 205.301(a), 205.303 (2014). OFPA defines “synthetic” as “a substance that is formulated or manufactured by a chemical process or by a process that chemically changes a substance extracted from naturally occurring plant, animal, or mineral sources, except that such term shall not apply to substances created by naturally occurring biological processes.” 7 U.S.C. § 6502(21) (2012); 7 C.F.R. § 205.2 (2014).

¹⁷⁸ 7 C.F.R. §§ 205.301(b), 205.303 (2014).

private certifying agent.¹⁷⁹ Fourth, for products containing less than 70% organic ingredients, organic ingredients may be listed on the label, but neither the word “organic” nor any seal can be used.¹⁸⁰ Thus, consumers of organic products should look for the USDA seal over the sole seal of other certifying agents, including state governments, because it guarantees at least 95% organic content. Although individual U.S. states have the right to seek approval of stricter standards, to date, none have attempted to exercise this right.

Two key and related questions arise in determining the effectiveness of organic labeling. First, when a consumer sees the word “organic” on a label, are the different meanings of organic clear to the average consumer? And second, does “certified organic” mean what consumers think it means? Potentially adding to the confusion, agribusiness has sought watered-down definitions of “organic” so they can reap the economic benefits of the growing popularity of organic products. For example, lobbied by industry to loosen the standard for “organic,” the Secretary of Agriculture created rules allowing nonorganic feed to be used in dairy cattle herds that were transitioning to an organic diet and permitting the use of synthetic substances in the handling of products labeled as organic.¹⁸¹

The U.S. Court of Appeals for the First Circuit in *Harvey v. Veneman*¹⁸² declared these rules in contravention of the plain language of the OFPA.¹⁸³ Despite this, producers can use chemicals in the production and handling stages if the synthetics are not harmful and are necessary because no natural substitute exists.¹⁸⁴ For example, ethylene can be used in post-harvest activities like ripening.¹⁸⁵ That said, and despite attempts to the contrary, current NOP rules ban genetically modified organisms, sewage sludge, and irradiation in certified organic foods.¹⁸⁶ The organic brand also excludes poultry, eggs, or milk from animals raised with antibiotics or growth hormones.

¹⁷⁹ 7 C.F.R. §§ 205.301(c), 205.304.

¹⁸⁰ 7 C.F.R. §§ 205.301(d), 205.305.

¹⁸¹ *Harvey v. Veneman*, 396 F.3d 28, 30 (1st Cir. 2005) (“Organic food regulations providing that synthetic substances may be used in processed organic foods ‘as a processing aid or adjuvant’ if they meet six criteria and listing thirty-eight synthetic substances specifically allowed in or on processed products labeled as organic, are invalid . . .”).

¹⁸² 396 F.3d 28 (1st Cir. 2005).

¹⁸³ *Id.* at 40 (citation omitted).

¹⁸⁴ 7 U.S.C. § 6517(c)(1)(A) (2012).

¹⁸⁵ 7 C.F.R. § 205.605(b) (2014).

¹⁸⁶ Friedland, *supra* note 173, at 383–84. The regulations also prohibit most uses of ionizing radiation, the application of sewage sludge as fertilizer, and the use of drugs or hormones to promote growth in livestock. 7 C.F.R. §§ 205.105(f)–(g), 205.237(b)(1) (2014).

(c) *Country of Origin Labeling Provisions of the 2002 Farm Bill*

Country of origin labeling (COOL) requires that a food product notify consumers of its source location.¹⁸⁷ While the underlying rationale for COOL in the United States is improving the safety of foreign goods and economic protectionism for domestic products, COOL also allows consumers to choose food products that did not travel so far to market and thus may have a lower carbon footprint (i.e., lower food miles). Also, COOL may provide implicit information to buyers as educated consumers may know, for example, whether produce was grown out of season in a greenhouse or came from an unsustainable or depleted fishery. COOL requirements were enacted in American law under the Farm Security and Rural Investment Act of 2002 (better known as the 2002 Farm Bill)¹⁸⁸ and its implementing regulations,¹⁸⁹ as well as the Food, Conservation, and Energy Act of 2008 (the 2008 Farm Bill).¹⁹⁰

Despite objections to COOL by powerful producers and retailers, the idea had much support from consumer and product safety organizations.¹⁹¹ Under the American COOL law, retailers, such as grocery stores, supermarkets, and club warehouse stores, must provide customers with information regarding the source of certain foods.¹⁹² Food products subject to the legislation include “covered commodities,” such as cut and ground meats (beef, veal, pork, lamb, goat, and chicken), wild and farm-raised fish and shellfish, fresh and frozen fruits and vegetables, nuts (peanuts, pecans, and macadamia nuts), and ginseng.¹⁹³

There are four labeling categories to indicate a product’s source: (1) U.S. origin exclusively; (2) origin and production entirely outside the U.S.; (3) products of the U.S. and non-U.S. that have combined origin; (4) products of blended origin.¹⁹⁴ Difficulties arise in designating the country of origin because many food products, particularly meats, are produced in multiple countries. For example, beef might come from a cow that was born and fed in Canada, but slaughtered and processed in

¹⁸⁷ See Peter Chang, *Country of Origin Labeling: History and Public Choice Theory*, 64 FOOD & DRUG L.J. 693, 708 (2009); Anastasia Lewandoski, *Country-of-Origin Labeling*, 9 SUSTAINABLE DEV. L. & POL’Y 62 (2008).

¹⁸⁸ Farm Security and Rural Investment Act of 2002 (Farm Bill, 2002), Pub. L. No. 107-171, § 10816, 116 Stat. 134, 533 (codified at 7 U.S.C. § 1638 (2006)).

¹⁸⁹ See 7 C.F.R. §§ 60.100–60.400, 65.100–65.500 (2014).

¹⁹⁰ Food, Conservation, and Energy Act of 2008 (Farm Bill, 2008), Pub. L. 110-234, § 11002, 122 Stat. 923, 1351–1354 (codified at 7 U.S.C. § 1638 (2006)).

¹⁹¹ See Chang, *supra* note 187, at 702.

¹⁹² Agricultural Marketing Service, *Country of Origin Labeling (COOL)*, U.S. DEPT. OF AGRICULTURE, <http://www.ams.usda.gov/AMSV1.0/Cool> [<http://perma.cc/7ZL9-DESJ>] (last visited Oct. 8, 2015).

¹⁹³ *Id.*; see also 7 C.F.R. §§ 60, 65 (listing food products included as covered commodities).

¹⁹⁴ C. Parr Rosson III & Flynn J. Adcock, *The Potential Impacts of Mandatory Country-of-Origin Labeling on U.S. Agriculture*, in INTERNATIONAL AGRICULTURAL TRADE DISPUTES: CASE STUDIES IN NORTH AMERICA 38 (Andrew Schmitz et al. eds., 2005).

the United States. Similarly, products from several countries often are mixed, such as for ground beef. For “covered” red meats and chicken, the COOL law:

- Permits the U.S. origin label to be used only on items from animals that were exclusively born, raised, and slaughtered in the United States;
- Permits meat or chicken with multiple countries of origin to be labeled as being from all of the countries in which the animal may have been born, raised or slaughtered;
- Requires meat or chicken from animals imported for immediate U.S. slaughter to be labeled as from both the country the animal came from and the United States;
- Requires products from animals not born, raised or slaughtered in the United States to be labeled with their correct country(ies) of origin; and
- Requires, for ground meat and chicken products, that the label list all countries of origin, or all “reasonably possible” countries of origin.¹⁹⁵

These meat-labeling requirements have proven to be quite controversial because of the steps that U.S. feeding operations and packing plants must adopt to segregate foreign-origin livestock from U.S. livestock.¹⁹⁶ The “catch-all” label (see second bullet, above) was a favorite to many meat processors and retailers, even on products that would qualify for the U.S.-only label, because it was both allowed and the easiest requirement to meet.¹⁹⁷ After objections from COOL supporters that the label would be overused and thus undermine the intent of COOL—to distinguish between U.S. and non-U.S. meats—a final rule (August 2008) clarified the “multiple countries of origin” language.¹⁹⁸ The rule stated “that meats derived from both U.S.- and non-U.S.-origin animals may carry a mixed-origin claim (e.g., ‘Product of the U.S., Canada, and Mexico’), but that the mixed-origin label cannot be used if only U.S.-origin meat was produced on a production day.”¹⁹⁹

To pacify continued concerns that COOL’s purpose was being evaded, Secretary of Agriculture Tom Vilsack asked industry representatives in a February 2009 letter to voluntarily provide additional information:

¹⁹⁵ REMY JURENAS, CONGRESSIONAL RESEARCH SERVICE, COUNTRY-OF-ORIGIN LABELING FOR FOODS 6 (2010), http://assets.opencrs.com/rpts/RS22955_20100715.pdf [<http://perma.cc/3NRN-5BFE>]; *see also* 7 C.F.R. § 65.300 (d)–(h) (stating the different permits for red meats and chicken covered under COOL legislation).

¹⁹⁶ JURENAS, *supra* note 195, at 6.

¹⁹⁷ *Id.*

¹⁹⁸ Mandatory Country of Origin Labeling of Beef, Pork, Lamb, Chicken, Goat Meat, Perishable Agricultural Commodities, Peanuts, Pecans, Ginseng, and Macadamia Nuts, 73 Fed. Reg. 45,106–45,110 (Aug. 1, 2008).

¹⁹⁹ JURENAS, *supra* note 195, at 6 (citing U.S. DEP’T OF AGRIC., COUNTRY OF ORIGIN LABELING (COOL) FREQUENTLY ASKED QUESTIONS, <http://www.ams.usda.gov/sites/default/files/media/COOL%20FAQs%20Final.pdf> [<http://perma.cc/K7JD-NXS5>] (last visited Oct. 28, 2015)).

[P]rocessors should voluntarily include information about what production step occurred in each country when multiple countries appear on the label. For example, animals born and raised in Country X and slaughtered in Country Y might be labeled as ‘Born and Raised in Country X and Slaughtered in Country Y’. Animals born in Country X but Raised and Slaughtered in Country Y might be labeled as ‘Born in Country X and Raised and Slaughtered in Country Y.’²⁰⁰

For perishable agricultural commodities, ginseng, peanuts, pecans, and macadamia nuts, retailers may claim U.S. origin only if they were exclusively produced or not subsequently substantially transformed in the United States.²⁰¹ For farm-raised fish and shellfish, a U.S.-labeled product must be derived exclusively from fish or shellfish hatched, raised, harvested, and processed in the United States; wild fish and shellfish must be derived exclusively from those either harvested in U.S. waters or by a U.S. flagged vessel, and processed in the United States or on a U.S. vessel.²⁰² Also, labels must differentiate between wild and farm-raised seafood.²⁰³

Future COOL legislation may seek to add the aforementioned labeling scheme to essentially all foods by requiring foods to identify the country in which the final processing occurs, and mandating that manufacturer websites identify the country (or countries) of origin for each ingredient.²⁰⁴ However, despite the covered commodities, there exists a substantial list of products that do not require the COOL label—“processed food items.”²⁰⁵ The USDA, the purveyor of the interim final rule, has broadly defined processing to include any item “undergoing a specific processing to change the character of the commodity or combining it with at least one other covered commodity or substantive food component”²⁰⁶—peanut butter, thus, is exempt. Items are also exempt if they enter a hotel and restaurant, small-scale retail outlets, butcher shops, and fish markets.²⁰⁷ “Therefore, large retail outlets selling covered commodities to grocery shoppers are likely to be the only place country-of-origin labels will be required.”²⁰⁸

²⁰⁰ Letter from Thomas Vilsack, Secretary of Agric., to Industry Representative (Feb. 20, 2009), http://www.usda.gov/documents/0220_IndustryLetterCOOL.pdf [<http://perma.cc/K9ET-FRG6>].

²⁰¹ See 7 C.F.R. § 65.300(g).

²⁰² 7 C.F.R. § 60.128(c)–(d).

²⁰³ 7 C.F.R. § 60.200(d).

²⁰⁴ Chang, *supra* note 187, at 715 (citing Draft Bill Amending the Food and Drug Globalization Act of 2009, H.R. 759, 11th Cong. (2009)).

²⁰⁵ Matt Mullins, *Not Cool: The Consequences of Mandatory Country of Origin Labeling*, 6 J. FOOD L. & POL’Y 89, 89 (2010) (citing Mandatory COOL, 74 Fed. Reg. 2,682 (Jan. 15, 2009) (to be codified at 7 C.F.R. pts. 60 & 65)).

²⁰⁶ Mullins, *supra* note 205, at 89–90 (citation omitted).

²⁰⁷ Rosson & Adcock, *supra* note 194, at 38.

²⁰⁸ *Id.*

(d) *Vermont GMO Labeling*²⁰⁹

In May 2014, Vermont Governor Peter Shumlin signed into law the “act relating to the labeling of food produced with genetic engineering.”²¹⁰ Supported by a coalition of public interest groups and businesses, Vermont’s new law, which will go into effect on July 1, 2016, serves as an example of mandatory eco-labeling in two different ways. First, it requires that food sold in retail stores in Vermont be labeled “as produced entirely or in part from genetic engineering” if it is “entirely or partially produced with genetic engineering.”²¹¹ Second, the law prohibits foods that are defined as “produced with genetic engineering” from bearing the label “natural” or a variant thereof.²¹² Vermont’s law essentially serves as a mandatory reverse eco-label, allowing consumers to identify and potentially avoid foods produced with genetic engineering.

The advantage of Vermont’s labeling scheme is that unlike most eco-labeling, the label reduces liability and cost rather than increasing it. For instance, if the manufacturer of a processed food wishes to label the food “GMO Free,” it must bear the costs not only of more expensive ingredients, but also third-party certification, and it must take on the risk of potential liabilities due to product contamination.²¹³ On the other hand, a producer of processed foods that knows that some of its ingredients are either produced with genetic engineering or are likely to be produced with genetic engineering can simply include the required language on its packaging and comply with the law.

Proponents of the law claim that it serves the public’s “right to know” what is in its food. However, Vermont’s law is not without its critics. Shortly after Gov. Shumlin signed the bill into law, an industry trade group sued the state, asserting that the law violated the U.S. Constitution. The complaint argues that the law is preempted, that it violates the dormant commerce clause, and that it violates the First Amendment. Proponents argue that federal preemption does not apply because the federal regulation of genetically engineered foods and food labeling does not expressly preempt or occupy the field.²¹⁴ The Second Circuit Court of Appeals, upholding a similar Vermont law that required labels on products containing trace

²⁰⁹ This section relies upon Czarnecki et al., *Creating Order*, *supra* note 3, at 297–98; VT. STAT. ANN. tit 9, § 3043 (effective July 1, 2016).

²¹⁰ *Id.* at 297, 297 n.86 (“Several other states have passed similar laws but none have definite effective dates because they require ‘triggers’—their effective dates are connected with the passage of analogous laws in other states.”).

²¹¹ VT. STAT. ANN. tit 9, § 3043(a)(2) (effective July 1, 2016).

²¹² *Id.* § 3043(c).

²¹³ Jeremy Bernfeld & Eliza Barclay, *Bracing for a Battle, Vermont Passes GMO Labeling Bill*, NPR (Apr. 24, 2014), <http://www.npr.org/blogs/thesalt/2014/04/24/306442972/bracing-for-a-battle-vermont-passes-gmo-labeling-bill> (on file with the Utah Law Review) (discussing GMO-free labeling and how onerous the sourcing processes are).

²¹⁴ Laura B. Murphy, Jillian Bernstein & Adam Fryska, *More Than Curiosity: The Constitutionality of State Labeling Requirements for Genetically Engineered Foods*, 38 VT. L. REV. 477, 529–34 (2013).

amounts of mercury, held that Vermont's regulation of a product label was unlikely to violate the dormant commerce clause.²¹⁵

The most hotly debated question is whether the law unconstitutionally burdens commercial speech. Commentators differ on whether federal courts should apply the *Central Hudson* test or the more deferential *Zauderer* test.²¹⁶ *Central Hudson* applies an intermediate level of scrutiny to mandatory labels and requires that a labeling law advance a "substantial government interest." *Zauderer* applies when the purpose of a label is to alleviate "consumer confusion" and requires that the label serve a legitimate government interest.²¹⁷ If Vermont's labeling law survives scrutiny in federal court, the motivation to avoid the mandatory label could create a category of food that occupies a place between conventional and organic foods.

2. *Self-Declared Private Labels*

A major form of voluntary, private-sponsored labeling consists of "self-declared" or "first-party" claims, some of which state a single attribute like "sustainable," or more recently, make an environmental claim based on a number of self-created standards. "A self-declaration environmental claim is one that is made without independent third-party certification by manufacturers, importers, distributors, retailers, or anyone else likely to benefit from such a claim."²¹⁸ The proliferation of self-declared eco-labeling schemes has caused widespread consumer confusion and skepticism over the veracity of environmental claims, leading many manufacturers and retailers to turn to independent, third-party entities to certify that environmental product claims are valid.²¹⁹ Due to the potential legal liabilities and

²¹⁵ Nat'l Elec. Mfrs. Ass'n. v. Sorrell, 272 F.3d. 104, 107 (2d. Cir. 2001).

²¹⁶ See Murphy, Bernstein & Fryska, *supra* note 214, at 486–87, 522.

²¹⁷ Laura Murphy, *Do Tell: The Case for Mandatory Labeling of GE Foods*, 28 ABA NAT. RESOURCES & ENV'T 1 (Fall 2013); Murphy, Bernstein & Fryska, *supra* note 214, at 517–18.

²¹⁸ Richard B. Stewart, *A New Generation of Environmental Regulation?*, 29 CAP. U. L. REV. 21, 136 n.449 (2001). See also Atsuko Okubo, *Environmental Labeling Programs and the GATT/WTO Regime*, 11 GEO. INT'L ENVTL. L. REV. 599, 608 (1999) ("The other subcategory of the voluntary, private-sponsored labeling schemes is based on self-declaration claims, or first-party claims. A self-declaration environmental claim is an environmental claim that is made, without independent third-party certification, by manufacturers, importers, distributors, retailers, or anyone else likely to benefit from such a claim. Such a declaration can take such forms as statement symbols, package labels and advertising.") (citation omitted).

²¹⁹ Elliot B. Staffin, *Trade Barrier or Trade Boon?: A Critical Evaluation of Environmental Labeling and Its Role in the "Greening" of World Trade*, 21 COLUM. J. ENVTL. L. 205, 216–17 (citing U.S. E.P.A., STATUS REPORT ON THE USE OF ENVIRONMENTAL LABELS WORLDWIDE 6–7 (1993); Avi Gesser, *Canada's Environmental Choice Program: A Model for A "Trade-Friendly" Eco-Labeling Scheme*, 39 HARV. INT'L L.J. 501, 512 (1998) (discussing environmental labeling in Canada, and stating, "Understandably, consumers are skeptical about the truthfulness of environmental claims made by the manufacturers themselves. As a result, unregulated first-party environmental

reputational risks posed by “self-declared” or “first-party” eco-labels (e.g., seals of approval, certification), retailers should familiarize themselves with the legal framework governing such labels.

IV. SMOOTHING THE TURN

If relying on neoliberal environmental reform (i.e., facing this reality regardless of one’s view of this turn), regulation of the neoliberal turn is required. In light of the shift from traditional substantive environmental regulation to neoliberal substantive environmental regulation, procedural checks are required through regulation and legislation. Such procedural checks, building on initiatives like the FTC Green Guides, would improve the quality of the market-based and informational neoliberal approaches. Procedural checks should include oversight via regulation that ensures accuracy in valuation of natural resources, increases and improves the quality of the information provided by consumers, and requires greater accountability and accuracy from institutions making green claims to consumers.

A. Improving Market-Based Approaches

Despite criticism of the neoliberal turn in environmental regulation, it is still a reality. Critics have argued that the move to market-based mechanisms as a solution to environmental problems means that progressive environmentalists have sold out their values and “have accepted the conservative definition of the problem—that environmental degradation is caused by a failure to ‘value’ the environment and a lack of properly defined property rights and therefore environmental degradation results from a failure of the market to attach a price to environmental goods and services.”²²⁰

Market-based approaches to environmental problems and solutions, proponents argue, provide more holistic analyses of options and greater efficiency.²²¹ These policies should “allow any desired level of pollution cleanup to be realized at the lowest overall cost to society.”²²² Meanwhile, command-and-control policies, so the

labeling programs provide little assistance for many environmentally conscious consumers. This is not only because producers may make misleading claims about the environmental friendliness of their products, but also because they may lack the resources and expertise to properly evaluate their goods.”)

²²⁰ Beder, *supra* note 26, at 131 (citation omitted).

²²¹ TERRY L. ANDERSON & DONALD R. LEAL, *FREE MARKET ENVIRONMENTALISM* 21 (2001) (“The incentive structure in the political sector is less likely to tend toward efficiency because voters are rationally ignorant, because benefits can be concentrated and costs diffused, and because individual voters seldom (probably never) influence the outcome of elections.”).

²²² Bei Zhang, *Market-Based Solutions: An Appropriate Approach to Resolve Environmental Problems*, 11 *CHINESE J. POPULATION RESOURCES & ENV’T* 87, 87 (2013).

story goes, fail to take into account costs, or even the liberty to implement differing techniques to achieve favorable environmental results.²²³

However, market-based policies are still lacking in certain regards. First, there are some challenges in the valuation of the resources at issue, a necessary part of the market-based mechanism. One such challenge stems from the fact that in valuing the environment and natural resources, regulators either assume that the value will remain unchanged or predict how these resources will be valued by future generations, also known as discounting.²²⁴ For example, the costs of mitigating or adapting to climate change are large now, and many of the benefits will largely remain unseen for several generations.²²⁵ The selection of a discount rate can, itself, also be influenced by our current values, as described by the rate of social time preference, or “the rate at which society is willing to exchange consumption and enjoyment opportunities in the present for similar opportunities in the future.”²²⁶

Personal preferences will also dictate the values attributed to certain environmental resources or services: “While markets may accurately measure individual consumer preferences, they are incapable of reflecting collective environmental values because most environmental resources are incapable of being accurately priced.”²²⁷ “Markets persistently fail to produce the ecological and health information necessary to allocate efficiently environmental resources,” and make a mistake by focusing on willingness to pay.²²⁸ This subjective influence must be considered in any environmental valuation analysis and environmental issues, such as climate change, vulnerable to this must also be clearly identified.

Equity issues are also rooted in these market-based approaches, as the value attributed to the environment or certain natural resources can differ throughout populations and across time and place.²²⁹ For example, “the economic value of a service will be very different depending on the livelihood circumstances, income levels and other socio-economic conditions such as price levels, population density, distances between beneficiaries and the resource”²³⁰

The market-based approach, despite providing some clarity to environmental decision-making processes, is burdened by uncertainty.²³¹ First, the value of some ecosystem services, for example, is not fully known or understood.²³² Over- or

²²³ *Id.*

²²⁴ See ULIBARRI & WELLMAN, *supra* note 100, at 38.

²²⁵ Frank Ackerman & Kevin Gallagher, *Getting the Prices Wrong: The Limits of Market-Based Environmental Policy*, 8 (Global Dev. & Env't Inst., Working Paper No. 00-05, 2000).

²²⁶ ULIBARRI & WELLMAN, *supra* note 100, at 38.

²²⁷ Michael C. Blumm, *The Fallacies of Free Market Environmentalism*, 15 HARV. J.L. & PUB. POL'Y 371, 371 (1992).

²²⁸ *Id.* at 388.

²²⁹ ULIBARRI & WELLMAN, *supra* note 100, at 42.

²³⁰ See de Groot et al., *supra* note 125, at 58 (citations omitted).

²³¹ See, e.g., Joseph E. Aldy & Robert N. Stavins, *Using the Market to Address Climate Change: Insights from Theory and Experience*, 2 J. AM. ACAD. ARTS & SCI. 45, 52 (2012).

²³² de Groot et al., *supra* note 125, at 59.

undervaluation could result in the permanent loss of certain natural resources or lost economic or development opportunities. Second, the value of certain resources might change over time.²³³ Third, threshold pollutants are difficult to value, in that the increase in cost as the pollutants aggregate is not linear.²³⁴ Thus, “it is important to realize that in certain circumstances related to nonlinear damage functions, market-based solutions cannot work well due to its inherent character.”²³⁵ Market-based solutions, while proven to be successful in some areas of environmental policy, should not be implemented universally, or at least not without caution.

Many of these challenges with market-based environmental policies are associated with a lack of principles and regulations that guide the development of these mechanisms.²³⁶ These principles and regulations are necessary to ensure that the policies are implemented and reviewed appropriately and consistently.²³⁷ This guidance can also help alleviate the stigma that exists against market-based policies, which can often lead to political or community resistance.²³⁸ Much of this stigma stems from the idea that these mechanisms defend the “right to pollute.”²³⁹ This stigma can be alleviated by transparencies in the development and operation of these mechanisms, as well as consistency and accuracy in the valuation techniques involved.²⁴⁰

Market-based mechanisms, now entrenched in our current environmental policies, require reevaluation and the implementation of oversight tools. Guidelines and regulations must be implemented to ensure consistency, accuracy, and transparency in market-based environmental policies. More importantly, perhaps, we must understand the limitations of these policies, where more traditional mechanisms will still be required. For example, market-based mechanisms can be successful where “there is little risk of irreversible damages; the relevant outcomes are relatively short-term; there are no fundamental ethical or philosophical issues at stake; prices are not excessively volatile; and traditional regulation is expensive or ineffective.”²⁴¹

Many of the aforementioned challenges to market-based environmental policies can also be alleviated through greater disclosure of information. Ideally, decision makers and consumers would have a complete set of information to evaluate the value of existing resources and all externalities associated with proposed actions. However, “market forces do not necessarily lead to full (or efficient) disclosure of information,” leading to the conclusion that there is a good rationale for disclosure requirements. Markets cannot function well with distorted and imperfect information; hence, requirements that lead to improved information

²³³ See Fisher et al., *supra* note 124.

²³⁴ Ackerman & Gallagher, *supra* note 225, at 10.

²³⁵ Zhang, *supra* note 222, at 90.

²³⁶ *Id.* at 89.

²³⁷ *Id.*

²³⁸ *Id.* at 89–90.

²³⁹ *Id.* at 90.

²⁴⁰ *Id.*

²⁴¹ Ackerman & Gallagher, *supra* note 225, at 12–13.

can (by and large) lead to better resources allocations.”²⁴² Ecosystem services analyses, for example, can help fill this informational need and “[r]egulation that mandates consideration of a more complete set of information concerning the environmental and economic impacts of resources use ensures more efficient management of resources by correcting resource market inefficiencies resulting from incomplete information.”²⁴³

To alleviate many of the above concerns, it is also important that these complete information sets come from a variety of sources, “rather than under information monopoly conditions.”²⁴⁴ As environmental valuation can be vulnerable to subjective influences, it is best that the information sets extensively cover ecosystem services and externalities, but also from the perspectives of diverse populations, when applicable. Thus, this solution is twofold: legally mandated expansion of ecosystem services, or other environmental valuation analyses, and regulation that requires the consideration of these complete information sets. This solution may require that market-based environmental policies not be isolated from traditional regulatory schemes, as the market alone will not generate this information, but will rather stifle its proliferation. Instead, a hybrid scheme could mandate information generation, while also setting for market-based mechanisms.

Market-based environmental policies can also build in resilience or adaptation options. A resilient policy might allow for the desired outcome within a certain range of uncertainty, which might remain inherent, despite increased information availability.²⁴⁵ An adaptive policy might allow policymakers “to respond to new information as it becomes available.”²⁴⁶ These two options perhaps allow for the integration of the precautionary principle into a classic cost-benefit analysis.

B. Improving Information Regulation

The proliferation of eco-labels and informational regulation has led to concerns of greenwashing²⁴⁷ and a lack of transparency, clarity, and trust in labeling, all of

²⁴² Keith H. Hirokawa & Elizabeth J. Porter, *Aligning Regulations with the Informational Need: Ecosystem Services and the Next Generation of Environmental Law*, 46 AKRON L. REV. 963, 982–83 (2013) (quoting Bruce C. Greenwald & Joseph E. Stiglitz, *Externalities in Economies with Imperfect Information and Incomplete Markets*, 101 QUARTERLY J. ECON. 229 (1986)).

²⁴³ *Id.* at 986.

²⁴⁴ Felix Schlapfer, *Contingent Valuation: Confusions, Problems, and Solutions*, 68 ECOLOGICAL ECON. 1569, 1570 (2009).

²⁴⁵ AUSTRALIAN GOV'T: OFFICE OF BEST PRACTICE REGULATION, ENVIRONMENTAL VALUATION AND UNCERTAINTY 27 (July 2014), http://www.dpnc.gov.au/sites/default/files/publications/012a_Research_Report_Environment.pdf [<http://perma.cc/MR3S-ED6W>].

²⁴⁶ *Id.*

²⁴⁷ Jane Hoffman & Mike Hoffman, *What Is Greenwashing?*, SCI. AM. (Apr. 1, 2009), <http://www.scientificamerican.com/article/greenwashing-green-energy-hoffman/> [<http://perma.cc/Y6P6-FSSN>] (explaining the term greenwashing as what occurs “when a hopeful public eager to behave responsibly about the environment is presented with

which exacerbate consumer confusion and can lead to industry liability. Consumers also desire an increase in information about products and improved quality of that information. For eco-labels that are of high quality and successful, markets must be created, products meeting those standards must be available, and administrative and certification costs must be addressed.

Federal and state agencies with jurisdiction over green claims have much to do to improve the clarity, consistency, and credibility of green claims for products, but regulatory reform is only one part of the solution.²⁴⁸ Industry will also play a critical role in creating more transparency, accountability, and meaning among green market claims.²⁴⁹ Some combination of government, industry, and stakeholder-driven solutions will ultimately be necessary to bolster the integrity and utility of labeling as a tool to drive and communicate environmental improvements in our food production systems.²⁵⁰ These solutions include using mandatory labels as a baseline, improving third-party certification standards, creating stronger standards in consumer protection law, and embracing life-cycle analysis.²⁵¹

Known from an investigation into the USDA organic certification, governments can provide significant trust among consumers, and the funding governments provide can be used to promote large-scale acceptance of the certification.²⁵² Centralized government eco-labels are more effective than numerous private ones, and simple, clear, obvious, and transparent seal-of-approval logos and labels have generally shaped consumer behavior more than the complex information-disclosure labels.²⁵³

Given the problems inherent in labeling, independent third-party certification schemes are widely regarded as an important tool in driving improvements throughout the chain of food production systems. For producers, they can offer an incentive structure and roadmap for improving production.²⁵⁴ For buyers, they can provide a basis to establish measurable sustainability goals, enhance brand credibility, and buffer against risk, and for consumers, certified products offer a level

‘evidence’ that makes an industry or a politician seem friendly to the environment when, in fact, the industry or the politician is not as wholly amicable as it or he might be.”)

²⁴⁸ Czarnecki et al., *supra* note 209, at 305.

²⁴⁹ *Id.*

²⁵⁰ *Id.*

²⁵¹ *Id.*

²⁵² NICHOLAS INST. FOR ENVTL POL’Y SOLS., DUKE U., AN OVERVIEW OF ECOLABELS AND SUSTAINABILITY CERTIFICATIONS IN THE GLOBAL MARKETPLACE 30–31 (Jay S. Golden, ed., Oct. 2010) <http://center.sustainability.duke.edu/sites/default/files/documents/ecolabelsreport.pdf> [<http://perma.cc/3HAA-4PVT>].

²⁵³ See Abhijit Banerjee & Barry D. Solomon, *Eco-Labeling for Energy Efficiency and Sustainability: A Meta-Evaluation of US Programs*, 31 ENERGY POL’Y 109 (2003); Tom Berry, Dan Crossley & Jemima Jewell, *Check-out Carbon: The Role of Carbon Labelling in Delivering a Low-Carbon Shopping Basket*, FORUM FOR THE FUTURE 7, 12 (June 2008), <https://www.forumforthefuture.org/sites/default/files/project/downloads/check-out-carbon-final300608.pdf> [<https://perma.cc/X9JS-MZXB>].

²⁵⁴ Czarnecki et al., *supra* note 209, at 306.

of assurance, verification, and transparency into their purchases.²⁵⁵ Indeed, well-designed and effectively implemented certification schemes can fuel improvements by providing market recognition to those working to address and minimize the adverse impacts of food production.²⁵⁶

Future certification schemes must reduce the costs and administrative burdens of pursuing formal certification, increase the number of available products that are certified, rally around a fewer number of high-quality labels that will limit confusion and increase consumer recognition and support, incentivize continuous improvement of information generation and quality, and embrace life-cycle analysis.²⁵⁷ A mandatory labeling scheme would allow for better and more consistent enforcement and for consumers to more consistently “reward manufacturers marketing environmentally superior products.”²⁵⁸ The governing agency would be better able to enforce violations with a mandatory scheme, expending less resources on each action, as “any misleading advertisement would automatically constitute a violation.”²⁵⁹

Any labeling guidelines must be clear, and ideally based on scientific language.²⁶⁰ Vague guidelines confuse consumers and allow companies to promulgate vague statements on their products that further reduce the value of any labeling scheme. Proponents of specific standards thus argue that any future environmental regulations should provide definitions that are as specific as possible, “directing advertisers to make precise claims about the ingredients or environmental effects of their products [because] [v]ague standards are inadequate for creating meaningful distinctions among product labels.”²⁶¹ This can also be accomplished by reducing the number of standards for a certain type of environmental claim, in order to increase clarity and reduce consumer confusion.²⁶² Terminology must also be updated to reflect current technology and environmental awareness.²⁶³

²⁵⁵ *Id.*

²⁵⁶ *Id.*; NICHOLAS INST. FOR ENVTL. POL’Y SOLS., *supra* note 252, at 33 (stating “it is important to increase the rigor of the certification over time to ensure validity among discerning consumers”).

²⁵⁷ Jason J. Czarnezki, *The Future of Food Eco-Labeling: Organic, Carbon Footprint, and Environmental Life-Cycle Analysis*, 30 STAN. ENVTL. L.J. 3, 4 (2011) (noting that “environmental costs of modern industrial and large-scale food production and consumption have begun to enter public consciousness”).

²⁵⁸ Jessica E. Fliegelman, *The Next Generation of Greenwash: Diminishing Consumer Confusion Through a National Eco-Labeling Program*, 37 FORDHAM URB. L. J. 1001, 1037 (2010).

²⁵⁹ *Id.*

²⁶⁰ *Id.* at 1038.

²⁶¹ *Id.* (quoting Jamie Grodsky, *Certified Green: The Law and Future of Environmental Labeling*, YALE J. ON REG. 147, 166 (1993)).

²⁶² *Id.* at 1038–39.

²⁶³ *Id.* at 1043–44.

Eco-labeling regulations can also be improved through national uniformity, rather than different standards in each state, for example.²⁶⁴ Without uniform eco-labeling standards, enforcement is more difficult and companies incur greater “direct costs like printing new labels for each state and indirect costs such as maintaining two or more product inventories and imposing separate distribution and record-keeping requirements for each state.”²⁶⁵

V. CONCLUSION

The United States has taken a different path than many of its counterparts, tending to rely on a “market-regulation” approach whereby consumers express their desire for specific welfare practices through their purchasing decisions.²⁶⁶ The challenge in this trend is that it asks for the challenging valuation of natural resources and asks consumers to make choices in the aggregate that will achieve environmental goals when they may not be in the best position to do so. We may underestimate actual values, and consumer choice may not be the best proxy for the environmental goals actually desired by consumers. And high-quality data for valuation and information purposes may be challenging to acquire. Without smoothing out some of these challenges, due to economic interests and institutional isomorphism, the quality of valuation and the meaning of labels and claims may decline in quality.²⁶⁷ Regardless of whether it is the pursuit of free-market or information regulation, guidelines and regulations must be implemented to ensure consistency, accuracy, enforcement,²⁶⁸ and transparency in market-based environmental policies. That said, and more importantly, perhaps, we must understand the limitations of these policies where more traditional mechanisms will still be required.

²⁶⁴ In the absence of national legislation, we welcome improvement of eco-labels through state action. *See* Czarnezki, *supra* note 257, at 30–32 (arguing for state “organic plus” standards).

²⁶⁵ Fliegelman, *supra* note 258, at 1040.

²⁶⁶ Sean P. Sullivan, *Empowering Market Regulation of Agricultural Animal Welfare Through Product Labeling*, 19 *ANIMAL L.* 391, 391 (2013).

²⁶⁷ *See, e.g.*, Peter Whoriskey, *Think Your Milk and Eggs Are ‘Organic’? These Aerial Farm Photos Will Make You Think Again*, *WASH. POST* (Dec. 11, 2014), http://www.washingtonpost.com/blogs/wonkblog/wp/2014/12/11/think-your-milk-and-chicken-are-organic-these-aerial-farm-photos-will-make-you-think-again/?tid=HP_more%3Ftid%3DHP_more [<http://perma.cc/K8YD-SWK7>].

²⁶⁸ *See* Jason J. Czarnezki, Andrew Homan & Meghan Jeans, *Greenwashing & Self-Declared Seafood Eco-Labels*, 28 *TUL. ENVTL. L.J.* 37 (2014) (discussing FTC enforcement); *see also* Jason J. Czarnezki & Emily Montgomery, *Genetically Engineered Salmon Needn’t Be Mystery Meat for Consumers*, *HUFFPOST GREEN* (July 22, 2011), http://www.huffingtonpost.com/jason-j-czarnezki/genetically-engineered-salmon_b_906736.html [<http://perma.cc/J4VB-6E6H>] (arguing for an increased FDA role in food labeling).