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## Institutional Interactions at the Crossroads of Trade and Environment: The Dominance of Liberal Environmentalism?



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*This article argues that institutional interactions that cut across the domains of trade and environment are embedded in overarching norms that shape their evolution and impact. In making this argument, it analyzes three cases of such interactions within the climate change and biosafety regime complexes: those relating to trade-related climate policies and measures, forest carbon sinks, and trade in genetically modified organisms. The analysis highlights the dominance of liberal environmentalism (a set of global norms promoting economic efficiency and environmental improvements through market-based mechanisms) in shaping institutional interactions within these regime complexes, even as liberal environmentalism is contested by key actors. This, in turn, has implications for effective management of institutional interlinkages within regime complexes in global environmental governance. KEYWORDS: biodiversity, biosafety, climate change, forestry, genetically modified organisms, institutional interactions, institutional interlinkages, neoliberal environmentalism, regime complex, trade.*

FOR NEARLY TWENTY YEARS NOW, THE GLOBAL GOVERNANCE LITERATURE HAS enhanced understanding about interplay among international institutions, including in global environmental governance. The focus of such research, however, has been, as Arild Underdal puts it, “primarily on interaction at the level of specific regimes and less on links to the kind of basic ordering principles or norms highlighted in realist and sociological analyses of institutions”;<sup>1</sup> in other words, less on explanatory approaches based on constellations of power, competing knowledge claims, normative structures, or other factors. As Amandine Orsini, Jean-Frédéric Morin, and Oran Young illustrate in this issue, the notion of regime complexes has been one important response to such critiques.<sup>2</sup> In this article, we seek to take this research and policy agenda further by advancing a norms-based explanation of institutional interactions within regime complexes in global environmental governance.<sup>3</sup>

Our point of departure is that a regime and its provisions and procedures cannot be understood in isolation from the broader normative context

within which it is embedded, as, for instance, Ken Conca also convincingly argues.<sup>4</sup> This insight applies to the policy domains of security, human rights, and trade, and just as much to the environment. As do other factors, for example, the constellation of interests (Jean-Frédéric Morin and Amandine Orsini, in this issue) or institutional dynamics (Dries Lesage and Thijs Van de Graaf, in this issue), underlying norms guide the behavior of actors within a specific regime and thereby shape its design and development. Such an approach also highlights that the generation and persistence of norms require shared expectations and purposes among actors; hence, that agency remains important and relevant.<sup>5</sup>

We hold, furthermore, that the normative structures that shape individual regimes also impact interactions between regimes and, consequently, regime complexes. If regimes express or reflect broader norms, then it follows that regime interactions and regime complexes may be sites for contestation over different norms. This applies in particular to regime complexes that cut across more than one global governance domain (e.g., environment and trade). Such complexes are shaped by collusion or contestation over the broader norms that underpin these domains—with the likelihood that certain norms will dominate.

Steven Bernstein's influential analysis posits, for example, the dominance in a global environmental governance context of what he terms the "compromise of liberal environmentalism."<sup>6</sup> This comprises the norms of economic efficiency and environmental improvements through unfettered markets, deregulation, and privatization, with reliance on market-based governance mechanisms where necessary.<sup>7</sup> Building on Bernstein's insights here, we argue that liberal environmentalism shapes not only the provisions and practices of specific environmental regimes, but also their interactions with the global trade regime and other international institutions. Ultimately, it also dominates whole complexes of regimes that address specific subjects at the intersection of international trade and the environment. In turn, regime complexes are sites for promulgating, but also for constantly challenging, the dominance of liberal environmentalism.

While space constraints do not permit a comprehensive assessment of this claim, we illustrate its added value in a comparative manner by briefly applying it to three cases of institutional interactions that are embedded within the regime complexes on climate change and biosafety. These three cases are: the interaction between the UN climate regime and the World Trade Organization (WTO) on trade-related climate policies and measures; the interaction between the UN climate regime and the Convention on Biological Diversity (CBD) on forest carbon sinks; and the interaction between the CBD's Cartagena Protocol on Biosafety and the WTO on trade in genetically modified organisms (GMOs).

In each case, several developments hint at the dominance of liberal environmentalism in shaping the nature of these interactions and their outcomes. Yet we also show that this dominance is being contested across the cases we examine, a trend that is partly mirrored in recent regime changes.

### **Trade-related Climate Policies and Measures**

The climate change regime complex encompasses institutions whose mandate includes trade-related policies and measures by which countries are to achieve reductions in greenhouse gas emissions. We restrict our analysis here to the core interaction between the UN climate regime, comprising the UN Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol, and the trade regime of the WTO—especially regarding emissions reductions by industrialized countries under the Kyoto Protocol. This notwithstanding, the climate change regime complex comprises a large array of additional institutional arrangements of relevance to climate and trade, including a series of transnational and multilateral technology partnerships on climate and energy as well as bilateral and multilateral trade agreements.<sup>8</sup>

In both the climate and trade regimes, scholarly analyses suggest that a US-led coalition was “highly influential in establishing a market approach to managing climate change.”<sup>9</sup> The Umbrella Group, comprising the United States and various non-European Union (non-EU) industrialized countries, tabled initiatives for WTO-compliant elements in the Kyoto Protocol, especially the flexibility mechanisms. Moreover, accommodating the interests of their domestic industries, the group successfully rejected trade-restrictive proposals by the EU for a binding list of policies and measures and their mandatory coordination as well as those for quantitative limits to the use of flexibility mechanisms.<sup>10</sup> The EU had advanced such proposals owing to its self-acclaimed leadership role in climate negotiations. But European determination for binding policies and measures was also “predicated, in part, on the fear that the US would never accept legally binding [emission] targets.”<sup>11</sup> Developing countries largely seconded the Umbrella Group’s opposition to trade restrictions, fearing that such policies would become a form of “green protectionism.”<sup>12</sup> Since the adoption of the Kyoto Protocol in 1997, moreover, decisions under the UNFCCC have avoided major trade-restrictive modalities altogether. Eventually, the EU has also become a major advocate of market-based climate governance mechanisms, most prominently with its leading emissions trading scheme.

In the WTO, in particular in its Committee on Trade and Environment, a group of non-EU industrialized countries, including the United States, has again effectively prevented legal concessions toward trade-related provi-

sions of environmental regimes, a position supported by many developing countries as well. This reluctance is in line with these countries' "desire to preserve their immunity as non-parties to some significant [multilateral environmental agreements] from multilateral 'anti-competitive' environmental commitments."<sup>13</sup> The WTO dispute settlement mechanism hence remains the most likely arena where overlaps between the trade and climate regimes might be settled.<sup>14</sup> In line with this, the compliance mechanism of the climate regime does not include trade sanctions for greenhouse gas-intensive products, even though these were proposed by the EU.<sup>15</sup>

These positional differences between the United States and developing countries on one side and the EU on the other—and the market-based WTO-compatible compromises arising out of such differences—correspond to underlying sets of norms in global governance. The observed reluctance of the United States and developing countries toward trade-restrictive measures can be seen as embedded in liberal environmentalism, replacing an earlier dominance of slightly more trade-skeptical discourses prior to the 1990s.<sup>16</sup> In the case of climate change, liberal environmentalism implies a focus on efficiency gains from technological innovation, the diffusion of climate-friendly goods through trade, and the promotion of emissions trading over traditional regulation. It claims synergistic aspects among trade and environment, while sidelining detrimental ones.

The dominance of liberal environmentalism reveals itself not only in the rejection of certain regulatory proposals, but also in a process of self-censorship. Ever since the Kyoto summit, negotiators, including those from the EU, have increasingly refrained from tabling ambitious proposals for trade-restrictive climate protection measures such as mandatory coordination of policies. This is in part because members of the UN climate regime want to avoid legal challenges and potential sanctions against them via the WTO.<sup>17</sup>

Recent developments suggest, however, that the dominance of liberal environmentalism is increasingly being challenged in the climate-trade arena. Robyn Eckersley, for example, discerns a "generic counter-discourse" in statements from environmental nongovernmental organizations (NGOs) or green think tanks.<sup>18</sup> Moreover, the past years have witnessed a shift of interests in US domestic politics toward more trade-restrictive approaches, but in order to safeguard domestic industries rather than for environmental reasons. For instance, the US Congress has discussed legislative proposals requesting purchase of emissions allowances for imported goods to be allowed to enter the country. The EU has also begun considering similar measures to equally address growing concerns about the competitiveness of its industries.<sup>19</sup> The debate on border carbon adjustments within and beyond both regimes hints at a possible questioning of the dom-

inance of liberal environmentalism in this regime complex. However, this development might simply reflect that safeguarding industries and jobs has become a primary concern, rather than implying a shift away from a broader liberalist norm.

In sum we find evidence for a strong, but increasingly contested, role of liberal environmentalism in this regime complex—with the United States and developing countries largely pushing for more market-liberal approaches and the EU, especially at Kyoto and in the years after its adoption, failing to establish more trade-restrictive measures. But the analysis also suggests that our norms-based lens needs to be complemented by power- and interest-based approaches to provide a more complete picture of the underlying reasons for these developments.

### **Forest Carbon Sinks**

Thanks to the emergence of the issue of reducing emissions from deforestation and degradation (REDD) on the climate policy agenda, the climate change regime complex has expanded considerably in recent years. It now also encompasses public and transnational institutions, which address the overlap among climate, biodiversity, and forestry, and whose mandates are either forest-focused (e.g., the Forest Stewardship Council and the International Tropical Timber Organization) or forest-related (e.g., the CBD and the Food and Agriculture Organization of the United Nations).<sup>20</sup>

Within the regime complex, one of the main institutional interactions concerns the UN climate and biodiversity regimes on which we focus in this section. Whereas the UNFCCC and Kyoto Protocol are aimed at reducing greenhouse gas emissions with a view toward avoiding dangerous climate impacts, the CBD seeks to promote the conservation and sustainable use of biodiversity as well as the fair and equitable sharing of benefits arising from the utilization of genetic resources. Overlaps between the two regimes have emerged in the implementation stages of the Kyoto Protocol, particularly relating to the inclusion of forests as carbon sinks in the Clean Development Mechanism (CDM), and finally in the design of REDD as a climate mitigation strategy.

Including forest carbon sinks in emissions accounting, and especially in the CDM, has been a controversial issue since the 1990s. While the inclusion of sinks in the CDM lowers the cost of compliance with Kyoto targets, critics argue that the rules on CDM sinks do not sufficiently safeguard biodiversity concerns and could frustrate the objectives of the CBD. The main concerns raised are that current rules allow for projects that result in destructive large-scale, monoculture plantations and the use of invasive alien species and GMOs.<sup>21</sup> Similarly, while a future REDD mechanism pro-



vides an opportunity to cost-effectively reduce emissions through tackling deforestation, its specific design may lead to either positive or negative impacts on biodiversity.<sup>22</sup>

The inclusion of sinks in the CDM is closely related to the emergence of market-based mechanisms in the climate regime in general. Despite its withdrawal from the Kyoto Protocol in 2001, the United States has been influential in the CDM sinks discussion.<sup>23</sup> Since the inception of the climate regime, it has sought to expand opportunities for using market-based mechanisms, including through the use of sinks.<sup>24</sup> Referring to the United States and other countries in the Umbrella Group, Karin Bäckstrand and Eva Lövbrand identify flexibility, cost-effectiveness, and a “seductive narrative of ‘maximized synergies’” as the key elements of the “legitimizing discourse” for the inclusion of sinks in the CDM.<sup>25</sup> Northern countries favoring the inclusion of sinks in the CDM have emphasized the cost-saving potential of expanding the scope of the mechanism while countries in the South have highlighted various cobenefits, including financial and technology transfers.

These legitimizing discourses again reflect a norm of liberal environmentalism that favors market-based approaches to environmental governance. Nonetheless, they also remain contested, as is evident from ongoing efforts by different actors, such as the EU and the Alliance of Small Island States,<sup>26</sup> to push for consideration of biodiversity concerns in the climate regime. Bäckstrand and Lövbrand argue that persisting concerns expressed about sinks in the CDM are part of a “critical discourse” that contests a dominant market-oriented liberal environmentalist perspective.<sup>27</sup> This critical discourse not only underlines the potentially negative effects on biodiversity, but also draws attention to the social and equity aspects of including sinks in the CDM as well as the use of market-based mechanisms more generally. The discourse, which found support among NGOs as well as some developing countries, provides an explanation for the push to include biodiversity considerations in a REDD mechanism by NGOs, scientists, and several parties to the UNFCCC.<sup>28</sup> Such efforts to incorporate biodiversity concerns may increase the costs of compliance and indirectly challenge the dominance of the norm of liberal environmentalism. While it is clear that biodiversity concerns are not completely ignored in the UN climate regime, parties have yet to give biodiversity conservation a prominent place.

In short this case shows that, instigated by the United States but also supported by other developed and developing countries, market-liberal approaches have so far dominated rule development in the UN climate regime, potentially at the detriment of biodiversity concerns. However, the EU, small island states, and a host of NGOs have increasingly sought to

contest this dominance by pushing for rules that seek to enhance the integrity of the mechanisms on forest carbon sinks adopted under the UNFCCC, in part because of the consequences for biological diversity.

### **Trade in Genetically Modified Organisms**

The regime complex on biosafety comprises a number of institutions that, from the 1980s onward, have made “attempts to span and occupy the newly emerging regulatory field of international trade in genetically modified organisms.”<sup>29</sup> These include, *inter alia*, the Organisation for Economic Co-operation and Development, the UN Industrial Development Organization, the World Health Organization, the UN Environment Programme, and the Food and Agriculture Organization. But from the mid-1990s, the WTO and the biosafety treaty under the CBD have been the major contenders vying for regulatory authority. Here, we concentrate on the interaction between these two institutions.

The relationship between the Cartagena Protocol on Biosafety under the CBD and the WTO’s Agreement on the Application of Sanitary and Phytosanitary Measures (SPS agreement) has been highly scrutinized, given the potential for trade in GMOs to be restricted under the Cartagena Protocol.<sup>30</sup> Two key aspects have been under scrutiny: the interpretation of what constitutes precautionary restrictions on trade in each institution and the extent to which the Cartagena Protocol’s calls for stringent information-sharing prior to GMO trade might conflict with global trade rules.

The Cartagena Protocol seeks to ensure safe trade in GMOs by calling for the “advance informed agreement” of an importing country prior to such trade. The notion of advance informed agreement derives from the longer-established “prior informed consent” relied on in a global context to govern trade in hazardous wastes and restricted chemicals. Prior informed consent is explicitly intended to be a compromise between the two extremes of an outright ban on risky trade and a lack of any restrictions through caveat emptor (“let the buyer beware”).<sup>31</sup>

Yet the overarching normative context within which this regulatory compromise is being interpreted remains contested, as is evident from how advance informed agreement is being institutionalized within the Cartagena Protocol. Informed agreement was promoted within the protocol by the EU and many developing countries as a way to govern GMO risks by calling for stringent information disclosure and the possibility of precautionary restrictions on trade. In contrast, it has been interpreted by the United States and other GMO-producing countries as a vehicle to ensure efficiency in decisionmaking and to facilitate trade—through minimal information disclosure and decisions based on sound science rather than precaution.<sup>32</sup>



On both counts (precautionary restrictions and information disclosure), institutional interactions between the Cartagena Protocol and the WTO suggest a dominance of a liberal environmentalist approach to global GMO governance. This is evident, for example, from the narrowly circumscribed language on precaution eventually adopted within the protocol, which is not incompatible with the formulation in the SPS agreement.<sup>33</sup> On the one hand, the potential for the protocol to institutionalize a more stringent precautionary approach to GMO trade than that of the SPS agreement remains alive, given the always present possibility of flexibly interpreting its provisions. Yet this potential notwithstanding, its inclusion of precautionary language has not, to date, directly influenced transatlantic GMO trade disputes in a manner detrimental to trade or contrary to SPS requirements.<sup>34</sup>

This is partly because reliance on the Cartagena Protocol as a bulwark against the WTO has been rendered difficult as a result of diverse memberships across the two global regimes. Given that key GMO exporters such as the United States have not ratified the protocol, it has proved harder to evoke its obligations, such as they are, in countering a push for liberalized GMO trade.

A dominance of liberal environmentalism is also discernible in how information disclosure relating to the GMO trade is being institutionalized within the Cartagena Protocol. These obligations, a *raison d'être* to negotiate this global treaty, remain minimally trade-disruptive. What is more, they may even, paradoxically, have trade-facilitating effects, given the obligations they also place on GMO-importing countries to share information with potential exporters about their domestic biosafety regulations.<sup>35</sup> As a result, there is arguably a prioritization of market access for GMOs over biosafety considerations in the existing GMO regime complex—an outcome aligned with an overarching liberal environmentalist bias in global environmental governance.<sup>36</sup>

Nonetheless, the dominance of a market-liberal approach does not go wholly unchallenged in this regime complex. The ongoing transatlantic GMO trade conflict between the United States and the EU not only goes back to short-term economic preferences, but reflects fundamentally divergent normative views about the appropriate aims of GMO governance as well as the means to fulfill them. In contrast to climate change where self-censorship by the EU has kept some market- or trade-restrictive approaches from being proposed or adopted, in the GMO case the EU has consistently pushed for trade-restrictive policies in all global GMO regulatory fora, even as the United States has consistently opposed them.

This normative transatlantic tension endures partly because the very existence of a governance problem remains contested here. The US position is that there is no need for global GMO governance since GMOs are not

intrinsically hazardous. Given this US view it is harder to push back decisively against a privileging of open markets and trade facilitation, even though the EU, supported by many developing countries, continually demands the flexibility to do so.

In sum, this case suggests that liberal environmentalism dominates in institutionalizing regulatory responses to global GMO governance, even as it is consistently contested by the EU and other GMO-importing (developing) countries. This flags an issue meriting further attention in going beyond the norm-based approach adopted here: how contestation over liberal environmentalism is shaped by the specific global political economy of GMO trade.

## **Conclusion**

In this article, we analyzed core institutional interactions at the interface of trade and environment in the climate change and GMO regime complexes. We illustrated the added value of our norms-based perspective by suggesting that the institutional interactions we examined are embedded in overarching norms and they are characterized, to a greater or lesser extent, by a dominance of liberal environmentalism, which is mirrored in the interests of influential parties.

Our findings lead to a number of interesting (comparative) claims that merit further conceptual and empirical analysis. First, in the case of trade-related climate policies and measures, we postulate a dominance of a liberal environmental perspective that privileges market approaches, both through the influence of the United States and through self-censorship of the EU. In the case of forest carbon sinks, we claim a dominance of liberal environmentalism in how rules on sinks in the CDM emphasize cost-effectiveness and flexibility, but potentially at the cost of biodiversity considerations. Whether climate-induced incentives to reduce deforestation will be synergistic or conflict with biodiversity objectives will reveal itself only in the design of the still-new REDD mechanism. Finally, in the case of trade in genetically modified organisms, we suggest that a liberal environmentalist approach to risk governance remains most contested in this realm (given the EU's desire for stringent regulation), but it is also here that a challenge to it is most fiercely resisted (given the US view that GMOs do not merit global regulation in the first place).

Another intriguing aspect of our analysis is that the coalitions promoting a liberal environmentalist view of global environmental governance vary across issue areas. For example, developing countries end up on different sides of a normative spectrum promoting or resisting liberal approaches. In the climate-trade and forest carbon sinks cases, a push back

against a liberal environmentalist approach tends to line up the EU against the United States and developing countries. But in the GMO case, developing countries tend to ally themselves with the EU's calls for restrictive measures like precaution and stringent information disclosure.

In terms of policy options for dealing with institutional interactions at the nexus of trade and environment, our findings suggest that the usual political practice of calling for better coordination among specific international institutions, while ignoring the overarching norms that shape institutional interactions, is doomed to fail. Thus, to be successful, attempts to manage such interactions in favor of environmental goals (e.g., through a stronger integration of certain climate or biodiversity policies under one institutional umbrella) need to take into account the potential barriers set by liberal environmentalism as well as influential parties whose positions reflect this dominant set of norms.

We conclude by identifying some topics for further inquiry. First of all, our brief case analyses were restricted to a few core institutional interactions. Thus, to further corroborate our finding of a dominance of liberal environmentalism, additional studies would need to scrutinize other institutional interactions—not only within the climate and GMO complexes, but also in others. Moreover, further research is needed on the mutual constitution of overarching norms and specific rules and principles. In this article, we argued that dominant overarching norms shape specific regime rules at the crossroads of trade and environment. Equally important, however, would be to consider how individual regimes, institutional interactions, and entire regime complexes constitute certain global norms and contribute to their prevalence.

Finally, the findings from each of our cases—and the variations across them—suggest that in addition to norms, other factors (such as power constellations, institutional dynamics, and problem structures) impact institutional interactions within global environmental regime complexes. Additional studies with testable hypotheses would thus complement norms- and discourse-based approaches like ours and could help establish causal connections between liberal environmentalism and other explanatory factors. These considerations serve to reiterate that there is much explanatory ground yet to be covered to grasp the phenomenon of institutional interactions and to provide for their effective management in political practice. 🌐

## Notes

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1. Arild Underdal, "Determining the Causal Significance of Institutions: Accomplishments and Challenges," paper prepared for the conference "Institutional Dimensions of Global Environmental Change Project Synthesis," Nusa Dua, Bali, Indonesia, December 2006, p. 9.

2. We would, however, prefer the term *institutional complex* to *regime complex*, as, following Robert O. Keohane, we consider institutions to encompass organizations, regimes, and implicit rules. See Robert O. Keohane, *International Institutions and State Power* (Boulder: Westview Press), p. 3. Existing analyses of such complexes refer not only to regimes, but also to other types of international institutions (e.g., international organizations or more informal institutional arrangements). But for coherence's sake, and given the broad understanding of regime complexes outlined by Orsini, Morin, and Young, we follow the terminology of this issue.

3. We understand norms here as legitimate social purpose or "collective intentionality," that is, "intersubjective frameworks of understandings that include a shared narrative about the conditions that make regimes [or governance more broadly] necessary and . . . the objectives intended to [be] accomplish[ed]." John Gerard Ruggie, "What Makes the World Hang Together? Neo-utilitarianism and the Social Constructivist Challenge," *International Organization* 52, no. 4 (1998): 855–885, 870. This understanding extends beyond a focus that is only on agreed standards of behavior or rules of conduct.

4. Ken Conca, *Governing Water: Contentious Transnational Politics and Global Institution Building* (Cambridge: MIT Press, 2006).

5. John Gerard Ruggie, "Embedded Liberalism and the Postwar Economic Regimes," in John Gerard Ruggie, ed., *Constructing the World Polity: Essays on International Institutionalization* (London: Routledge, 1998), pp. 62–84, 65.

6. Steven Bernstein, "Liberal Environmentalism and Global Environmental Governance," *Global Environmental Politics* 2, no. 3 (2002): 1–16.

7. An alternative, more trade-skeptical norm would instead hold that "trade leads to an ecologically unequal exchange" and that "the WTO's rules permit countries to use the environment as a free resource." See Robyn Eckersley, "Understanding the Interplay Between the Climate and Trade Regimes," in Benjamin Simmons, Harro van Asselt, and Fariborz Zelli, eds., *Climate and Trade Policies in a Post-2012 World* (Geneva: UNEP, 2009), pp. 11–18, 15.

8. Thomas L. Brewer, "The WTO and the Kyoto Protocol: Interaction Issues," *Climate Policy* 4, no. 1 (2004): 3–12; Thomas L. Brewer, "The Potential of Regional and Bilateral Sectoral Agreements," in Benjamin Simmons, Harro van Asselt, and Fariborz Zelli, eds., *Climate and Trade Policies in a Post-2012 World* (Geneva: UNEP, 2009), pp. 65–68.

9. Emily Boyd, Esteve Corbera, and Manuel Estrada, "UNFCCC Negotiations (pre-Kyoto to COP-9): What the Process Says About the Politics of CDM-Sinks," *International Environmental Agreements: Politics, Law and Economics* 8, no. 2 (2008): 95–112, 106.

10. See *Earth Negotiations Bulletin*, [www.iisd.ca/enbvol/enb-background.htm](http://www.iisd.ca/enbvol/enb-background.htm): vol. 12, no. 45, p. 2; vol. 12, no. 55, p. 4; vol. 12, no. 66, pp. 5–6; vol. 12, no. 76, p. 6; vol. 12, no. 163, pp. 19–20.

11. Farhana Yamin, "The Role of the EU in Climate Negotiations," in Joyeeta Gupta and Michael Grubb, eds., *Climate Change and European Leadership: A Sustainable Role for Europe?* (Dordrecht: Kluwer, 2000), pp. 47–66, 54.

12. Urs P. Thomas, "Trade and the Environment: Stuck in a Political Impasse at the WTO After the Doha and Cancún Ministerial Conferences," *Global Environmental Politics* 4, no. 3 (2004): 17–18.

13. Alice Palmer and Richard Tarasofsky, *The Doha Round and Beyond: Towards a Lasting Relationship Between the WTO and the International Environmental Regime* (London: Royal Institute of International Affairs, 2007), p. 16.

14. Kati Kulovesi, *The WTO Dispute Settlement System: Challenges of the Environment, Legitimacy and Fragmentation* (Dordrecht: Kluwer Law International, 2011), pp. 234–235; Fariborz Zelli and Harro van Asselt, "The Overlap Between the UN Climate Regime and the World Trade Organization: Lessons for Climate Governance Beyond 2012," in Frank Biermann, Philipp Pattberg, and Fariborz Zelli, eds., *Global Climate Governance Beyond 2012* (Cambridge: Cambridge University Press, 2010), pp. 79–96. There are ongoing discussions on the likelihood of such a dispute, for example, due to the profound redefinition of the WTO dispute settlement system's stance on environmental protection since the so-called shrimp/turtle case. For a more detailed account, see Tracy Epps and Andrew Green, *Reconciling Trade and Climate: How the WTO Can Help Address Climate Change* (Cheltenham: Edward Elgar, 2010).

15. Olav Schram Stokke, "Trade Measures and Climate Compliance: Institutional Interplay Between WTO and the Marrakesh Accords," *International Environmental Agreements: Politics, Law and Economics* 4, no. 4 (2004): 339–357.

16. Eckersley, "Understanding the Interplay," pp. 16–17.

17. Robyn Eckersley, "The Big Chill: The WTO and Multilateral Environmental Agreements," *Global Environmental Politics* 4, no. 2 (2004): 24–40.

18. Eckersley, "Understanding the Interplay," p. 15.

19. For instance, José Manuel Durão Barroso, president of the European Commission, in his speech delivered at the European Parliament, Brussels, 23 January 2008; Harro van Asselt and Thomas Brewer, "Addressing Competitiveness and Leakage Concerns in Climate Policy: An Analysis of Border Adjustment Measures in the US and the EU," *Energy Policy* 38, no. 1 (2010): 42–51.

20. Peter Glück, Arild Angelsen, Marie Appelstrand, Samuel Assembe-Mvondo, Graeme Auld, G. Karl Høgl, David Humphreys, and Christoph Wildburger, "Core Components of the International Forest Regime Complex," in Jeremy Rayner, Alexander Buck, and Pia Katila, eds., *Embracing Complexity: Meeting the Challenges of International Forest Governance* (Vienna: International Union of Forest Research Organizations, 2010), pp. 37–55.



21. Malte Meinshausen and Bill Hare, "Sinks in the CDM: After the Climate, Biodiversity Goes Down the Drain. An Analysis of the CDM Sinks Agreement at CoP-9" (Greenpeace, 2003), [www.greenpeace.org](http://www.greenpeace.org).

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23. Boyd, Corbera, and Estrada, "UNFCCC Negotiations (pre-Kyoto to COP-9)," p. 107.

24. *Ibid.*, p. 99.

25. Karin Bäckstrand and Eva Lövbrand, "Planting Trees to Mitigate Climate Change: Contested Discourses of Ecological Modernization, Green Governmentality, and Civic Environmentalism," *Global Environmental Politics* 6, no. 2 (2006): 50–75, 60–61.

26. Boyd, Corbera, and Estrada, "UNFCCC Negotiations (pre-Kyoto to COP-9)," p. 105.

27. Bäckstrand and Lövbrand, "Planting Trees to Mitigate Climate Change," pp. 64–65.

28. *Ibid.*, p. 69.

29. Sebastian Oberthür and Thomas Gehring, "Institutional Interaction in Global Environmental Governance: The Case of the Cartagena Protocol and the World Trade Organization," *Global Environmental Politics* 6, no. 2 (2006): 1–31, 11.

30. Oberthür and Gehring, "Institutional Interaction in Global Environmental Governance"; Oran R. Young, "Deriving Insights from the Case of the WTO and the Cartagena Protocol," in Oran R. Young, W. Bradnee Chambers, Joy A. Kim, and Claudia ten Have, eds., *Institutional Interplay: Biosafety and Trade* (Tokyo: United Nations University Press, 2008), pp. 131–158.

31. Cyrus Mehri, "Prior Informed Consent: An Emerging Compromise for Hazardous Exports," *Cornell International Law Journal* 21 (1988): 365–389; see also Amanda Wolf, "Informed Consent: A Negotiated Formula for Trade in Risky Organisms and Chemicals," *International Negotiation* 5, no. 3 (2000): 485–521.

32. Aarti Gupta, "Transparency as Contested Political Terrain: Who Knows What About the Global GMO Trade and Why Does It Matter?" *Global Environmental Politics* 10, no. 3 (2010): 32–52.

33. For a detailed comparison of the provisions on precaution in the Cartagena Protocol versus the SPS agreement, see Aarti Gupta, "Advance Informed Agreement: A Shared Basis to Govern Trade in Genetically Modified Organisms?" *Indiana Journal of Global Legal Studies* 9, no. 1 (2002): 265–281.

34. In the quintessential example, a 2003 WTO case brought by the United States against the EU alleged that the EU was violating its SPS obligations, given its restrictive approach to GMO imports. In its defense, the EU invoked, inter alia, its rights and obligations under the Cartagena Protocol. The WTO ruling in May 2006 found largely in favor of the United States, arguing that the EU was partially in violation of its SPS obligations. Yet importantly, it did not rule on the substantive elements of EU GMO regulation, including the reliance on precaution therein. Instead, the finding was based largely on procedural grounds, including the failure of the EU to conduct risk assessments prior to imposing restrictions. In reaching this conclusion, moreover, the dispute settlement panel did not take the Cartagena Protocol obligations into account. See, for example, Sarah Liberman and Tim Grey,



“The World Trade Organization’s Report on the EU’s Moratorium on Biotech Products: The Wisdom of the US Challenge to the EU in the WTO,” *Global Environmental Politics* 8, no. 1 (2008): 33–52.

35. For a detailed elaboration of this argument, see Aarti Gupta, “Transparency to What End? Governing by Disclosure Through the Biosafety Clearing House,” *Environment and Planning C: Government and Policy* 28, no. 2 (2010): 128–144.

36. While this conclusion may not hold for the EU’s regional GMO governance approach, it refers here to the global context.