

**CLIMATE CHANGE, INTERNATIONAL TRADE, AND  
RESPONSE MEASURES: OPTIONS FOR MITIGATING  
CLIMATE CHANGE WITHOUT HARMING  
DEVELOPING COUNTRY ECONOMIES**

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I. INTRODUCTION

Climate change presents immense risks and challenges for nations throughout the world, and it is clear that anthropogenic greenhouse gas emissions must be drastically reduced in order to avert potentially devastating impacts on the global environment. The Parties to the U.N. Framework Convention on Climate Change (UNFCCC) recognize the need for developed countries to reduce emissions and take action to mitigate the adverse effects of climate change.<sup>1</sup> However, the UNFCCC Parties (Parties) also recognize that measures taken by developed countries to mitigate climate change—known as response measures—could negatively impact developing economies and impede sustainable development efforts.<sup>2</sup> Developing country Parties have consistently argued that implementation of unilateral response measures taken by developed countries will hinder economic development in developing countries, especially if such measures affect international trade. The UNFCCC addresses these concerns by declaring that “[m]easures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.”<sup>3</sup> Moreover, it requires all Parties to “give full consideration to what

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1. United Nations Framework Convention on Climate Change art. 3, May 9, 1992, 1771 U.N.T.S. 107 [hereinafter UNFCCC].

2. *Id.* art. 4, paras. 8–10.

3. *Id.* art. 3, para. 5.

actions are necessary . . . to meet the specific needs and concerns of developing country Parties arising from . . . the impact of the implementation of response measures.”<sup>4</sup>

The response measures debate has evolved over the past decade, but the Parties have yet to agree on a solution to this complex issue that remains a significant concern for many developing countries. Although an agreement to compensate oil-producing developing states for lost oil revenues—which was one of the underlying goals of the early response measures debate—seems improbable, some compromise is needed because many response measures are expected to adversely affect developing country economies. For example, a carbon tax on aviation fuels could raise airfare just enough to reduce the number of tourists willing to travel to remote destinations, and biofuel production mandates may increase the cost of agricultural imports. At the same time, the impacts of climate change will be felt on a global scale, and response measures constitute a necessary component of climate change mitigation. Indeed, developing countries are demanding that developed countries act now to mitigate greenhouse gas emissions. Clearly, a path must be found to mitigate greenhouse gas emissions while harming developing country economies as little as possible. The response measures debate must therefore be reframed in a manner that accounts for these diverse concerns and objectives.

In proposing options for reframing the response measures debate, this Article recognizes certain baseline viewpoints of the Parties that are unlikely to change. First, developed countries will not agree to an outright ban on unilateral response measures. Indeed, it may be necessary to allow unilateral measures in order to convince certain developed countries to reduce emissions domestically. Second, many developing countries will be unwilling to accept obligations unless the negative impacts of response measures are addressed in a meaningful way. Third, developed countries must adopt response measures if they are to mitigate their greenhouse gas emissions, but some of these measures will cause the price of carbon to rise and affect economies worldwide.

With these assumptions in mind, we propose four options, although not necessarily mutually exclusive, for reframing the response measures debate:

- A notification and consultation approach in which a Party must notify all other Parties prior to implementing a

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4. *Id.* art. 4, para. 8.

response measure and which allows Parties concerned about the effects of a response measure to require consultations if it believes impacts to developing country economies are not adequately addressed.

- A “traffic light system” in which certain response measures are always prohibited (red light), some are always permitted (green light), and others may require additional scrutiny (amber light).
- A response measures impact assessment mechanism modeled on environmental impact assessments.
- An approach that exempts certain countries or products from “border carbon adjustments”—a tax or other measure applied to imported goods to reflect the costs that would have been imposed on them had they been produced in the importing country under that country’s climate change legislation.

Each of these approaches has flaws. For example, identifying response measures that are always permissible or always prohibited will be challenging because similar response measures may be implemented in very different ways. A border carbon tax of a few pennies per unit will certainly have fewer economic impacts than a border carbon tax of a few dollars per unit. Nonetheless, these approaches have significant benefits, and they may encourage all Parties to engage constructively in the response measures debate and develop a solution that protects vulnerable economies from negative impacts. A positive outcome to the response measures debate may encourage greater mitigation ambition; developed countries will understand that certain types of response measures are permissible (and perhaps impermissible), and developing countries will have assurances that the most economically damaging response measures will be limited or prohibited.

Part II begins with a history of the response measures debate. Part III briefly describes some of the potential economic impacts that may result from certain types of response measures. Part IV describes our four proposals for reframing the response measures debate. Part V briefly concludes that any movement on response measures will require a significant reframing of what developing countries ask of developed countries and that the four options identified in this Article may provide the way forward.

## II. HISTORY OF THE RESPONSE MEASURES DEBATE UNDER THE U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE

The response measures debate has evolved over the past decade. As described below, the Organization of the Petroleum Exporting Countries (OPEC) initially advocated for a fund through which developed countries would compensate developing countries for lost revenue resulting from diminished use of fossil fuels.<sup>5</sup> More recently, the debate has focused on ensuring that developed countries do not adopt unilateral border carbon adjustments that indirectly impose the costs of mitigation on developing countries.<sup>6</sup>

### A. *The Initial Debate over Response Measures*

Response measures taken by one country to mitigate the effects of climate change can have a profound effect on the social and economic development of other countries. Both the UNFCCC<sup>7</sup> and the Kyoto Protocol<sup>8</sup> reflect this idea. The UNFCCC Article 4.8<sup>9</sup> and Kyoto Protocol Article 3.14<sup>10</sup> call for developed countries to consider and minimize the adverse effects of response measures on developing countries. Attention paid to this issue has steadily grown over the past ten years and the discussion has evolved through various negotiating tracks. It has become a source of debate primarily pitting countries within the Group of 77 (G-77), a

5. See Jon Barnett & Suraje Dessai, *Articles 4.8 and 4.9 of the UNFCCC: Adverse Effects and the Impacts of Response Measures*, 2 CLIMATE POL'Y 231, 234 (2002); Jiegen Wei et al., *The Fossil Endgame: Strategic Oil Price Discrimination and Carbon Taxation*, 1 J. ENVTL. ECON. & POL'Y 48, 63 (2012).

6. See UNFCCC Secretariat, *Note by the Secretariat: Report on the Special Event Held in the Context of the Forum on the Impact of the Implementation of Response Measures at the Thirty-Fourth Sessions of the Subsidiary Bodies*, paras. 15, 17, 23, U.N. Doc. FCCC/SB/2011/INF.5 (Nov. 16, 2011) [hereinafter *Special Event Report*].

7. *Id.* See UNFCCC, *supra* note 1, art. 4, paras. 8–9.

8. Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 3, para. 14, Dec. 10, 1997, U.N. Doc. FCCC/CP/1997/7/Add.1, 2303 U.N.T.S. 148 (1998) [hereinafter *Kyoto Protocol to the UNFCCC*].

9. “Parties shall give full consideration to what actions are necessary under the Convention . . . to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures.” UNFCCC, *supra* note 1, art. 4, para. 8.

10. The Kyoto Protocol declares the following:

Annex I [Parties] shall strive to implement [their] commitments . . . in such a way as to minimize adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. . . . [T]he Conference of the Parties . . . shall . . . consider what actions are necessary to minimize the adverse effects of climate change and/or the impacts of response measures on Parties.

Kyoto Protocol to the UNFCCC, *supra* note 8, art. 3, para. 14.

bloc of developing countries, against the major developed countries, including the E.U. member states and the United States.

The Parties began to reveal their initial positions on the response measures issue in the late 1990s.<sup>11</sup> OPEC members believed that the UNFCCC provisions relating to response measures required Annex I countries (i.e., developed country Parties) to reimburse them for lost profits relating to their fossil fuel-oriented economies.<sup>12</sup> They viewed compensation as necessary since their economies at the time were greatly dependent on developed countries' need for oil.<sup>13</sup> They also called for foreign investment to assist with economic diversification.<sup>14</sup> OPEC members dropped their request for compensation early in the debate when it became clear that developed countries would never agree to such a compensation fund, but they have continued to push back against mitigation efforts in the interest of protecting their economies.<sup>15</sup>

Conversely, the Alliance of Small Island States (AOSIS) supported implementation of response measures by developed countries due to concern over the potentially devastating effects of climate change—sea level rise in particular—on low-lying islands.<sup>16</sup> AOSIS opposed OPEC's request for compensation, fearing that compensation payments would obstruct funding, research, and technology transfer to assist developing countries in adapting to the impacts of climate change.<sup>17</sup>

The European Union recognized that the negative impacts of response measures were likely to be economic in nature but firmly held that neither the UNFCCC nor the Kyoto Protocol created an obligation to compensate developing countries for the adverse effects of response measures.<sup>18</sup> The European Union also noted

11. See Jon Barnett, *The Issue of 'Adverse Effects and the Impacts of Response Measures' in UNFCCC 6* (Tyndall Ctr. for Climate Change Research, Working Paper No. 5, 2001), available at <http://tyndall.ac.uk/sites/default/files/wp5.pdf>.

12. *Id.* (stating that the Organization of the Petroleum Exporting Countries (OPEC) insisted that UNFCCC Article 4.8 “must include compensation for lost oil revenues as an impact-minimising measure”).

13. *Id.* at 4.

14. *Id.* at 17.

15. UNFCCC Chairs of the Subsidiary Bodies, *Note by the Chairs of the Subsidiary Body: Report on the In-Forum Workshop on Area (c)*, paras. 23–28, U.N. Doc. FCCC/SB/2013/INF.8 (Sept. 25, 2013) [hereinafter UNFCCC Chairs of the Subsidiary Bodies].

16. *Id.*; Barnett, *supra* note 11, at 8.

17. UNFCCC Chairs of the Subsidiary Bodies, *supra* note 15, para. 28.

18. See UNFCCC Secretariat, *Note by the Secretariat: Implementation of Article 4, Paragraphs 8 and 9, of the Convention (Decision 3/CP.3 and Articles 2.3 and 3.14 of the Kyoto Protocol): Programme of Work*, Paper I: Germany, para. 4, U.N. Doc. FCCC/SB/1999/MISC.6 (May 14, 1999).

that developing countries could experience positive impacts of response measures, such as “the reallocation of [greenhouse gas]-intensive production from Annex I to non-Annex I countries.”<sup>19</sup>

### B. *A Decade of Disagreement*

Despite a great deal of debate surrounding the response measures issue over the past fourteen years, no concrete obligations have been developed. In 2004, the Parties adopted the Buenos Aires Programme of Work on Adaptation and Response Measures in Decision 1/CP.10.<sup>20</sup> This work program mandated that presessional expert meetings on response measures be held in subsequent years.<sup>21</sup> At the first presessional expert meeting in 2005, Saudi Arabia noted that oil producers face the highest financial risks due to lower export revenues and higher import prices.<sup>22</sup> Other countries countered that higher oil prices would offset the losses of oil producing countries, that only the rate of growth would be reduced rather than an absolute reduction in revenues, and that by 2030 few countries would have oil resources left, making the reduction in profits a moot point.<sup>23</sup> At a second presessional expert meeting in 2006, the Parties referenced several successful efforts at economic diversification in oil-producing countries and pushed diversification as a preferred option to mitigate adverse effects of response measures.<sup>24</sup> At the thirteenth session of the Conference of Parties (CoP13), the Parties developed the Bali Action Plan,<sup>25</sup> which created the Ad-Hoc Working Group on Long-term Cooperative Action (AWG-LCA).<sup>26</sup> Among many

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19. *Id.*

20. Rep. of the Conference of the Parties, 10th Sess., Dec. 6–18, 2004, Decision 1/CP.10: Buenos Aires Programme of Work on Adaptation and Response Measures, at 2–6, U.N. Doc. FCCC/CP/2004/10/Add.1 (Apr. 19, 2005).

21. *Id.* at 5, para. 16.

22. Aysar A. Tayeb, Saudi Arabia, Presentation at the UNFCCC Expert Meeting on Response Measures: Insurance. . . . Financial Resilience, Country Perspective (Nov. 24, 2005), available at [http://unfccc.int/files/adaptation/adverse\\_effects\\_and\\_response\\_measures\\_art\\_48/application/pdf/ayasar\\_a.\\_tayeb\\_-\\_insurance\\_financial\\_resilience\\_country\\_perspective.pdf](http://unfccc.int/files/adaptation/adverse_effects_and_response_measures_art_48/application/pdf/ayasar_a._tayeb_-_insurance_financial_resilience_country_perspective.pdf).

23. UNFCCC Secretariat, *Note by the Secretariat: Report on the Expert Meeting on Response Measures*, para. 11, U.N. Doc. FCCC/SBI/2006/13 (Aug. 17, 2006), available at <http://unfccc.int/resource/docs/2006/sbi/eng/13.pdf>.

24. UNFCCC Secretariat, *Note by the Secretariat: Report on the Expert Meeting on Economic Diversification*, para. 14, U.N. Doc. FCCC/SBI/2006/18 (Aug. 24, 2006), available at <http://unfccc.int/resource/docs/2006/sbi/eng/18.pdf>.

25. Rep. of the UNFCCC Conference of the Parties, 13th Sess., Dec. 3–15, 2007, Decision 1/CP.13: Bali Action Plan, at 3, U.N. Doc. FCCC/CP/2007/6/Add.1 (Mar. 14, 2008), available at <http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf>.

26. *Id.* at 5, para. 2.

other things, the Parties tasked the AWG-LCA with reaching an agreed outcome on the “[e]conomic and social consequences of response measures.”<sup>27</sup> Discussions relating to further implementation of Decision 1/CP.10 and the AWG-LCA consideration of economic and social consequences of response measures have continued independently of each other. In addition, negotiations and discussions surrounding response measures have occurred independently in meetings relating to Article 3.14 of the Kyoto Protocol, which calls on Kyoto Protocol Parties to “consider what actions are necessary to minimize the adverse effects of climate change and/or the impacts of response measures.”

Over the course of several meetings of the AWG-LCA, the Parties continued to consider, negotiate, and consolidate text sent forward from previous sessions.<sup>28</sup> Without addressing specifics, the Parties continuously agreed that impacts of response measures can come in many forms, that consideration of impacts on the poorest and most vulnerable developing country Parties should be prioritized, and that the circumstances of the Parties with economies that are dependent on income generated from the consumption of fossil fuels should be fully taken into account.<sup>29</sup> The protracted negotiations resulted primarily from the inability of developed and developing countries to reach consensus on how to address, if at all, “unilateral measures, including tariff, non-tariff, and other fiscal and non-fiscal border trade measures.”<sup>30</sup>

Developing countries view border trade measures, such as a carbon tax on imported goods, as a way for developed countries to pass the cost of mitigation on to developing country manufacturers trying to export products to developed countries.<sup>31</sup> Developed countries consider such border trade measures as a legitimate way to prevent leakage—emissions that shift from countries implementing climate legislation to other countries with no or less stringent climate policies—and protect their industries from foreign competition that is unencumbered by the costs of carbon abate-

27. *Id.* at 4, para. 1.b.vi.

28. *See, e.g.*, Facilitator of the Sub-Group on LCA 1(b)(vi), Ad Hoc Working Group on Long-term Cooperative Action Under the Convention, *Non-Paper No. 44: Economic and Social Consequences of Response Measures* (June 11, 2009, 4:00 PM), available at [http://unfccc.int/files/meetings/ad\\_hoc\\_working\\_groups/lca/application/pdf/awglca1bvinp44061109.pdf](http://unfccc.int/files/meetings/ad_hoc_working_groups/lca/application/pdf/awglca1bvinp44061109.pdf).

29. *Id.* at 1.

30. Chee Yoke Ling & Hilary Chiew, *Heated Debate on Unilateral Measures*, 20 TWN BANGKOK NEWS UPDATE (Third World Network, Penang, Malaysia), Sept. 6, 2012, [http://www.twinside.org.sg/title2/climate/news/bangkok04/TWN\\_update20.pdf](http://www.twinside.org.sg/title2/climate/news/bangkok04/TWN_update20.pdf).

31. *See Special Event Report, supra* note 6, para. 15.

ment.<sup>32</sup> The proposed U.S. climate change legislation known as the American Clean Energy and Security Act illustrates this point; that bill would have required importers of energy-intensive products to acquire greenhouse gas emission allowances in amounts equal to the emission reduction credits associated with a similar product from a U.S. firm subject to emission reductions.<sup>33</sup> As a result of rising concern over the use of border trade measures, developing countries wanted to pursue discussions on unilateral response measures. However, developed country Parties refused to address unilateral measures through the AWG-LCA negotiations.

### C. *A Breakthrough in Cancun*

At the sixteenth session of the Conference of Parties (CoP16) in Cancun, the Parties adopted the Cancun Agreements, which contained agreed text on response measures that urged developed countries to:

implement policies and measures to respond to climate change in such a way as to avoid negative social and economic consequences for developing country Parties . . . and to assist these Parties to address such consequences by providing support, including financial resources, transfer of technology and capacity-building.<sup>34</sup>

While the UNFCCC and Kyoto Protocol had previously obligated Parties to consider the negative effects of response measures and strive to minimize these effects, the Cancun Agreements added the responsibility to avoid response measures that may have negative impacts on developing countries and to assist developing countries in overcoming the negative effects if they prove to be unavoidable. The text also called for cooperation and information sharing<sup>35</sup> but did not resolve the issue of whether developed countries should be

32. See J.D. WERKSMAN & T.G. HOUSER, WORLD RES. INST., COMPETITIVENESS, LEAKAGE AND COMPARABILITY: DISCIPLINING THE USE OF TRADE MEASURES UNDER A POST-2012 CLIMATE AGREEMENT 1, 4, (2008), available at [http://pdf.wri.org/working\\_papers/competitiveness\\_leakage\\_and\\_comparability.pdf](http://pdf.wri.org/working_papers/competitiveness_leakage_and_comparability.pdf).

33. American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. § 721 (2009). For a discussion of the trade implications of this bill, see Sanford E. Gaines, *Considering WTO Law in the Design of Climate Change Regimes Beyond Kyoto*, 8 IOP CONF. SERIES: EARTH & ENVTL. SCI. 2009, at 10–13.

34. Rep. of the Conference of the Parties, 16th Sess., Nov. 29–Dec. 10, 2010, Decision 1/CP.16: The Cancun Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-term Cooperative Action Under the Convention, para. 89, U.N. Doc. FCCC/CP/2010/7/Add.1 (Mar. 15, 2011) [hereinafter UNFCCC Rep. of the Conference of the Parties], available at [http://unfccc.int/files/cooperation\\_support/response\\_measures/application/pdf/decision1cp16.pdf](http://unfccc.int/files/cooperation_support/response_measures/application/pdf/decision1cp16.pdf).

35. *Id.* para. 92.

required to take any action to minimize the effects of response measures. The Cancun Agreements also requested the subsidiary bodies—the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI)—to convene a forum to assess the impact of the implementation of response measures with the objective of developing a work program to address these impacts.<sup>36</sup>

While the Parties generally agreed on the need to assess the impact of response measures, they disagreed over the appropriate operations and scope of the joint SBI/SBSTA work program. The Cancun Agreements invited the Parties to submit their views on the modalities for the operation of such a work program for consideration by the subsidiary bodies at their thirty-fourth sessions.<sup>37</sup> China's submission stated that the forum needed to focus on the adverse impacts of response measures on developing countries and on approaches to minimize those adverse impacts.<sup>38</sup> It recommended the forum to discuss equitable access to carbon space and adverse impacts of unilateral trade measures against goods and services from developing country Parties.<sup>39</sup> Singapore stated that the UNFCCC process should not conflict with the work of the World Trade Organization (WTO), which is the appropriate body to deal with trade-related response measures.<sup>40</sup> It also stated that the forum should not impinge on Parties' rights to implement domestic mitigation actions.<sup>41</sup>

The impacts of unilateral response measures on global trade emerged as a recurring theme during subsequent discussions under the subsidiary bodies. At the thirty-fifth meeting of the subsidiary bodies in 2011, the SBI and SBSTA convened a joint workshop to discuss response measures under the context of Article 3.14 of the Kyoto Protocol.<sup>42</sup> At this workshop, Singapore argued that no Party should use trade restrictions in an effort to mitigate climate change because they are inconsistent with Article 3.5 of the

36. *Id.* para. 93.

37. *Id.* para. 94.

38. UNFCCC Secretariat, *Views on the Modalities for the Operationalization of the Work Programme and on a Possible Forum on Response Measures: Submissions from Parties and Relevant Intergovernmental Organizations*, Paper no. 3: China, paras. 2, 4, U.N. Doc. FCCC/SB/2011/MISC.2 (Apr. 15, 2011).

39. *Id.*

40. *Id.* Paper no. 8: Singapore, para. 3.

41. *Id.*

42. See UNFCCC Secretariat, *Note by the Secretariat: Report of the Joint Workshop on Matters Relating to Article 2, Paragraph 3, and Article 3, Paragraph 14, of the Kyoto Protocol*, 1, U.N. Doc. FCCC/SB/2011/Inf. 6 (Nov. 23, 2011).

UNFCCC and trade agreements administered by the WTO.<sup>43</sup> Singapore stressed that the Parties need to ensure that outcomes of the UNFCCC process do not undermine the balance of the WTO rights and obligations and that the WTO is the only competent body for multilateral rulemaking on international trade.<sup>44</sup> OPEC stated that removal of fossil fuel subsidies would affect the competitiveness of non-Annex I countries and that these subsidies should not be eliminated without considering related needs.<sup>45</sup>

#### D. *The Modern Debate*

The Parties continued to discuss potential trade-related impacts of unilateral response measures through the AWG-LCA negotiations and attempted to draft text through the Economic and Social Consequences of Response Measures at the seventeenth session of the Conference of Parties (CoP17) in Durban in 2011.<sup>46</sup> However, the group was unable to reach consensus, and the Parties' positions were reflected in three "options" included in the AWG-LCA's final draft.<sup>47</sup> Option one would prohibit developed countries from implementing any unilateral measures impacting trade in goods and services from developing countries on grounds relating to climate change.<sup>48</sup> Option two would incorporate the language from the UNFCCC Article 3: "Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade."<sup>49</sup> Option three would not include any text regarding trade.<sup>50</sup> The Parties adopted none of these options. Instead, they adopted Decision 8/CP.17, which created a joint forum under the SBI and SBSTA to implement a work program on

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43. *Id.* at 9–10, para. 47.

44. *Id.* at 10, para. 48.

45. *Id.* at 11, para. 55(d).

46. *See Summary of the Durban Climate Change Conference: 28 November 11–December 2011*, 12 EARTH NEGOTIATIONS BULL. (Int'l Institute for Sustainable Dev., New York, NY), Dec. 13, 2011, at 19, available at <http://www.iisd.ca/download/pdf/enb12534e.pdf> (reporting on the response measures negotiations in Durban).

47. Chair of the Ad Hoc Working Group on Long-Term Cooperative Action Under the Convention, *Work Undertaken in the Informal Groups in the Preparation of a Comprehensive and Balanced Outcome to be Presented to the Conference of Parties for Adoption at its Seventeenth Session*, 16–17, U.N. Doc. FCCC/AWGLCA/2011/CRP.39 (Dec. 9, 2011).

48. *Id.*

49. *Id.* at 17.

50. *Id.*

the impact of response measures.<sup>51</sup> The Parties also adopted Decision 2/CP.17, which established that all future discussions related to response measures would be consolidated under the joint subsidiary body forum.<sup>52</sup>

The creation of the joint subsidiary body forum and consolidation of future discussions of response measures within this forum generated disagreement between developed and developing country Parties. Developed country Parties felt that the AWG-LCA had fulfilled its mandate under the Bali Action Plan regarding response measures and that all future discussions regarding response measures must be addressed through the joint forum.<sup>53</sup> However, developing country Parties felt the AWG-LCA had failed to address a number of issues, notably unilateral response measures, through its response measures discussions.<sup>54</sup> Developing countries argued that these issues needed to be addressed by the AWG-LCA in accordance with the Bali Action Plan, rather than through the subsidiary body forum.<sup>55</sup>

The joint SBI/SBSTA forum first convened in May 2012, at which time the SBI and SBSTA invited Parties to submit their views on the forum and work program for consideration by the subsidiary bodies at their thirty-seventh session.<sup>56</sup> Australia, the European

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51. See United Nations Framework Convention on Climate Change Conference of the Parties, *Forum and Work Programme on the Impact of the Implementation of Response Measures*, 1–2, U.N. Doc. FCCC/CP/2013/L.14 (Nov. 23, 2013).

52. See Rep. of the Conference of the Parties (UNFCCC), 17th Sess., Nov. 28–Dec. 11, 2011, Decision 2/CP.17: Outcome of the Work of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention, at 19, para. 91, U.N. Doc. FCCC/CP/2011/9/Add.1 (Mar. 15, 2012) [hereinafter Rep. of the Conference of the Parties (UNFCCC)].

53. See Ling & Chiew, *supra* note 30, at 1.

54. See *id.*

55. See *id.*; see also Statement by India, Argentina, African Group, China, Saudi Arabia, Qatar, Kuwait, Egypt, Algeria, Venezuela, Iraq, Thailand, Philippines, Libya, Iran, Malaysia, Indonesia, Nicaragua, Cuba, and Bolivia on the Economic and Social Consequences of Response Measures, UNFCCC, [http://unfccc.int/files/bodies/awg-lca/application/pdf/statement\\_india\\_others.pdf](http://unfccc.int/files/bodies/awg-lca/application/pdf/statement_india_others.pdf) (last accessed Jan. 4, 2014).

56. See Chairs of the Subsidiary Body for Scientific and Technological Advice & Subsidiary Body for Implementation, *Views from Parties and Relevant Organizations on the Following Areas of the Work Programme in Accordance with Decision 8/CP.17, Paragraph 1: Area (a), Sharing of Information and Expertise, Including Reporting and Promoting Understanding of Positive and Negative Impacts of Response Measures; Area (f), Relevant Aspects Relating to the Implementation of Decisions 1/CP.10, 1/CP.13 and 1/CP.16 and Article 2, Paragraph 3, and Article 3, Paragraph 14, of the Kyoto Protocol; Area (h), Building Collective and Individual Learning Towards a Transition to a Low Greenhouse Gas Emitting Society*, at 1, para. 1, U.N. Doc. FCCC/SBSTA/2012/L.18–FCCC/SBI/2012/L.25 (May 24, 2012) [hereinafter *Views from Parties and Relevant Organizations*]; UNFCCC Secretariat, *Submissions from Parties and Relevant Organizations*, at 2, para. 2, U.N. Doc. FCCC/SB/2012/MISC.2 (Oct. 19, 2012).

Union, Saudi Arabia, and the United States submitted responses.<sup>57</sup> In its submission, Australia noted that while mitigation of climate change is the ultimate objective of the UNFCCC, the WTO is the body that makes and enforces trade rules and applies trade rules or policies that address climate change.<sup>58</sup> Saudi Arabia stated that developing countries that are heavily reliant on fossil fuel exports want to ensure that response measures can be implemented without compromising economic growth.<sup>59</sup> The European Union and the United States reasserted that all further discussions relating to the impacts of response measures must occur through the subsidiary body forum, rather than through the AWG-LCA.<sup>60</sup>

Despite resistance from developed countries, response measures continued to be discussed at the meeting of the AWG-LCA contact group in August and September 2012.<sup>61</sup> At this meeting, the Chair circulated a paper containing three options regarding economic and social consequences of response measures.<sup>62</sup> Canada and the United States expressed concern that these options resembled draft decision language and stated that they would not agree to any draft decisions under the AWG-LCA regarding response measures, in accordance with CoPI7 Decisions 2 and 8.<sup>63</sup> Australia, New Zealand, and Switzerland agreed.<sup>64</sup> Argentina, speaking on behalf of the G-77 and China, argued that the AWG-LCA still needed to resolve the issue of economic and social consequences of response measures.<sup>65</sup>

During the AWG-LCA contact group discussions, India stated that the Parties needed to ensure that response measures, including unilateral measures, must not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade in accordance with UNFCCC Article 3.5.<sup>66</sup> India stressed that it is not concerned with domestic measures to miti-

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57. *Views from Parties and Relevant Organizations*, *supra* note 56, at 3.

58. *Id.* at 5.

59. *Id.* at 11, 15.

60. *Id.* at 9, 20.

61. *See AWG-LCA 15—Informal*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, [http://unfccc.int/meetings/bangkok\\_aug\\_2012/session/6958.php](http://unfccc.int/meetings/bangkok_aug_2012/session/6958.php) (last visited Dec. 19, 2013).

62. UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, RESPONSE MEASURES, AGENDA ITEM 3(B)(VI): UNILATERAL MEASURES (Sept. 4, 2012), *available at* [http://unfccc.int/files/adaptation/application/pdf/inrm\\_in\\_3b6\\_v3.pdf](http://unfccc.int/files/adaptation/application/pdf/inrm_in_3b6_v3.pdf) (last accessed Jan. 4, 2014).

63. *See* Ling & Chiew, *supra* note 30, at 2.

64. *Id.* at 3–4.

65. *Id.* at 3.

66. *Id.*

gate climate change but is very concerned with unilateral response measures that could negatively impact developing countries.<sup>67</sup> It said that any AWG-LCA decision must clearly prohibit unilateral measures that would affect developing countries' economic and social development or that would be a disguised restriction on trade.<sup>68</sup> Saudi Arabia, China, Argentina, and South Africa on behalf of the African group agreed with India's statement.<sup>69</sup> Singapore stated that it does not support unilateral response measures, especially ones that would apply extraterritorially.<sup>70</sup>

In response to developing country concerns, Australia clarified that the joint forum covers both positive and negative impacts associated with response measures and that Article 3.5 clearly prohibits unilateral measures that would be discriminatory or restrictive on trade.<sup>71</sup> Australia also stated that the WTO has jurisdiction over trade-related disputes and that the UNFCCC does not have the means to arbitrate such disputes.<sup>72</sup> Argentina, speaking for itself, said that the discussion concerned climate change, not trade.<sup>73</sup> India responded that it did not wish to interfere with the WTO decisions but that there was a need to establish parameters to determine when response measures would result in negative social and economic consequences.<sup>74</sup> Singapore and Saudi Arabia agreed that unilateral measures affect more than just trade, so this was an appropriate forum to discuss this issue.<sup>75</sup>

Developing country Parties attempted to address the impacts of response measures at the eighteenth session of the Conference of Parties (CoP18) in Doha, but developed country Parties again refused to enter into these discussions at the CoP level or under the AWG-LCA.<sup>76</sup> The response measures debate instead continued through the joint SBI/SBSTA forum, which was held in conjunction with the CoP18 negotiations in Doha in November 2012.<sup>77</sup>

67. *Id.*

68. *Id.*

69. *Id.* at 3–5.

70. *Id.* at 5.

71. *Id.* at 4.

72. *Id.*

73. *Id.*

74. *Id.* at 5.

75. *Id.*

76. Hilary Chiew, *Response Measures: Avoidance of Negative Trade Impacts of Unilateral Measures Reaffirmed*, 29 TWN DOHA NEWS UPDATE (Third World Network, Penang, Malaysia), Jan. 5, 2013, at 1–2, [http://www.twinside.org.sg/title2/climate/news/doha01/TWN\\_update29.pdf](http://www.twinside.org.sg/title2/climate/news/doha01/TWN_update29.pdf).

77. *Views from Parties and Relevant Organizations*, *supra* note 56, at 5.

During the discussions under the joint forum, developing countries emphasized that they cannot bear the extra burdens imposed by developed countries' response measures and that they require financial and technical support from developed countries in order to transition to a low carbon economy.<sup>78</sup> Developed country Parties responded that they had taken steps to address the consequences of response measures and that it is essential to consider the positive effects associated with such measures.<sup>79</sup>

The G-77 and China were concerned that developed countries were not adequately reporting on the social and economic consequences arising from implementation of their response measures.<sup>80</sup> Speaking on behalf of that group, Argentina said that the consequences of trade-related measures must be discussed under the context of UNFCCC Article 3.5.<sup>81</sup> Saudi Arabia said that negative impacts are already occurring through the imposition of taxes, levies, duties, subsidies, border tariff adjustments, and market barriers, and that developed countries must provide adequate information on the impacts of response measures.<sup>82</sup>

South Africa stated that border carbon adjustments (BCA) can have a negative impact on economic development in developing countries.<sup>83</sup> The BCAs are trade measures through which a country imposes an additional tax or fee on carbon emissions associated with imported goods.<sup>84</sup> The South Centre, an intergovernmental organization of developing countries,<sup>85</sup> asserted that these measures could potentially be challenged through the WTO under the most favored nation, national treatment, and general exception clauses.<sup>86</sup> It further argued that response measures implemented by developed countries must be based on the precautionary approach and under the principle of do no harm.<sup>87</sup> The potential impacts of response measures on developing countries must be assessed before implementation, and Parties must be fully accountable for the consequences of their measures through financial

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78. See Chiew, *supra* note 76, at 2.

79. *Id.* at 2.

80. *Id.* at 2.

81. *Id.* at 3.

82. *Id.* at 3–4.

83. *Id.* at 4.

84. See AARON COSBEY, BORDER CARBON ADJUSTMENT 1 (2008), available at [http://www.iisd.org/pdf/2008/cph\\_trade\\_climate\\_border\\_carbon.pdf](http://www.iisd.org/pdf/2008/cph_trade_climate_border_carbon.pdf).

85. See SOUTH CENTRE, <http://www.southcentre.int> (last visited Dec. 20, 2013).

86. Chiew, *supra* note 76, at 5.

87. *Id.*

compensation, technology transfer, and capacity-building support.<sup>88</sup>

Ghana, representing the African Group, stated that unilateral BCAs will have devastating impacts on African countries.<sup>89</sup> Ghana argued that WTO rules on climate change are inadequate to address these issues, and the WTO will need to negotiate new rules that incorporate the principles of special and differential treatment for developing countries.<sup>90</sup> Brazil and Argentina agreed with Ghana, stressing that mitigation efforts must take into account sustainable development needs and national circumstances.<sup>91</sup> OPEC stressed that the objectives of Decision 5/CP.14 are still relevant today: the impacts of response measures and the needs of developing countries resulting from such impacts must be identified, and actions to meet these specific needs must be considered.<sup>92</sup>

At CoP18 in Doha, the Parties continued to argue over the appropriate forum for discussing and resolving the response measures debate.<sup>93</sup> Ultimately, the Parties adopted the Agreed Outcome Pursuant to the Bali Action Plan (Agreed Outcome), which concluded the work of the AWG-LCA under the Bali Action Plan.<sup>94</sup> Concerning economic and social consequences of response measures, the Agreed Outcome reaffirms that “Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change.”<sup>95</sup> In addition, the Agreed Outcome reiterates the principle from UNFCCC Article 3.5: “measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on

88. *Id.*

89. *Id.* at 7.

90. *Id.*

91. *Id.* at 7–8.

92. *Id.* at 6.

93. *Views from Parties and Relevant Organizations, supra* note 56, at 5 (noting that “[t]he mitigation of climate change is the ultimate objective of the UNFCCC, while the World Trade Organization (WTO) is the competent body to make and enforce global trade rules, including their application to policies addressing climate change. The WTO has the formal mandate, relevant expertise and formal structures to appropriately deal with a broad range of issues relating to trade and environment, including in making trade and climate change as mutually supportive as possible.”).

94. Rep. of the Conference of the Parties, 18th Sess., Nov. 26–Dec. 8, 2012, Decision 1/CP.18: Agreed Outcome Pursuant to the Bali Action Plan, at 3, U.N. Doc. FCCC/CP/2012/8/Add.1 (Feb. 28, 2013) [hereinafter Bali Action Plan].

95. *Id.* at 10.

international trade.”<sup>96</sup> The Agreed Outcome invites the Parties to continue discussing the implications of response measures under the joint forum convened under the subsidiary bodies, which officially transferred all future discussions on response measures to the SBI and the SBSTA.<sup>97</sup>

### III. POTENTIAL NEGATIVE EFFECTS OF UNILATERAL RESPONSE MEASURES

The Parties’ debate of unilateral response measures has revolved around the potential negative effects these measures can have on developing country economies.<sup>98</sup> Although laws and regulations that impose taxes on fossil fuel use have a very clear effect on economies dependent on income from fossil fuel production,<sup>99</sup> potential negative effects may be less clear on countries that are less reliant on fossil fuel revenues. Many countries are dependent on tourism, manufacturing, and agriculture for the bulk of their income.<sup>100</sup> Consequently, unilateral response measures such as aviation taxes, renewable fuel standards, and BCAs could have significant effects on both developed and developing economies throughout the world.

#### A. Carbon Taxes on Aviation

One type of measure contemplated by developed countries is a carbon tax on aviation. The European Union, for example, has already developed a scheme of aviation taxes that requires airlines flying to or from Europe to buy permits for fifteen percent of the

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96. Compare *id.*, with UNFCCC, *supra* note 1, art. 3, para. 5.

97. Bali Action Plan, *supra* note 94, at 11, para. 54.

98. *Special Event Report*, *supra* note 6, at 5, para. 15.

99. See Jon Barnett et al., *Will OPEC Lose from the Kyoto Protocol?*, 32 ENERGY POL’Y 2077, 2077 (2004) (“The models suggest that policies and measures (PAMs) to implement the Kyoto Protocol (such as a carbon tax) will increase oil prices to consumers and reduce demand in developed countries which account for 60% of world oil consumption, thereby driving down global oil demand and prices received by producers.”).

100. Such economies function as follows:

For many developing countries tourism is one of fundamental pillars of their development process because it is one of the dominant activities in the economy, while for others, particularly by islands and some small economies, it is the only source of foreign currency and employment, and therefore constitutes the platform for their economic development.

David Diaz Benavidez, *The Viability and Sustainability of International Tourism in Developing Countries* (Feb. 23, 2001) (presented at WTO Symposium on Tourism Services, Feb. 22–23, 2001), available at [http://www.wto.org/english/tratop\\_e/serv\\_e/diaz.doc](http://www.wto.org/english/tratop_e/serv_e/diaz.doc).

carbon emissions they produce during a flight.<sup>101</sup> An analysis by Thomson Reuters Point Carbon showed that airlines would face a carbon pollution bill of €505 million (\$670 million) for 2012 under the E.U. scheme.<sup>102</sup> If airlines elect to pass this increase in operating costs on to the consumer, tourists will certainly adjust their travel preferences accordingly.<sup>103</sup> The E.U. scheme has been opposed by many countries outside the European Union, including China and the United States, which have repeatedly called for the aviation tax to be repealed.<sup>104</sup> The European Union temporarily suspended the aviation tax in November 2012, but the European Commissioner for Climate Action has made clear that the measure will be reinstated if the International Civil Aviation Organization is unable to agree to reduce aviation emissions.<sup>105</sup>

An aviation carbon tax may significantly affect economies heavily dependent on tourism. Aviation taxes are seen as one of the biggest challenges to the tourism industry, and such taxes may cut tourist visits to distant destinations.<sup>106</sup> One study concluded that a carbon tax on aviation fuel would change travel behavior. In particular, such a tax would affect “long-haul flights, because of high emissions, and short-haul flights, because of the emission during take-off and landing.”<sup>107</sup> Travel to remote destinations, such as isolated islands, would likely require increasingly expensive long-dis-

101. See *Aviation Bearing the Brunt of Carbon Taxes*, DEFENCEWEB (July 28, 2011), [http://www.defenceweb.co.za/index.php?option=com\\_content&view=article&id=17570:aviation-bearing-the-brunt-of-carbon-taxes&catid=35:Aerospace&Itemid=107](http://www.defenceweb.co.za/index.php?option=com_content&view=article&id=17570:aviation-bearing-the-brunt-of-carbon-taxes&catid=35:Aerospace&Itemid=107).

102. *Airlines Face \$670 Million Carbon Pollution Charge in 2012: Study*, THOMSON REUTERS (Feb. 9, 2012, 11:23 AM), <http://www.pointcarbon.com/news/1.1748098>.

103. See *infra* note 109 and accompanying text.

104. See, e.g., *Joint Declaration of the Moscow Meeting on Inclusion of International Civil Aviation in the EU-ETS*, RUSSIAN AVIATION, <http://www.ruaviation.com/docs/1/2012/2/22/50> (last visited Dec. 22, 2013) (stating that the signatories to the declaration, including the United States, China, Russia, and many others, “Adopt this Joint Declaration as a clear manifestation of their unanimous position that the EU and its Member States must cease application of the Directive 2008/101/EC to airlines/aircraft operators registered in third States”).

105. Claire Rosemberg, *EU Freezes Controversial Aviation Carbon Tax*, AFP (Nov. 12, 2012), <https://au.finance.yahoo.com/news/eu-freezes-controversial-aviation-carbon-113950753.html>; see also Stephen Gardner, *European Commission Proposes to Bring All Flights Across EU Territory Back into ETS*, 36 INT’L ENV’T. REP. 1435 (2013) (stating that, under a new proposed E.U. directive, international airlines would be subject to the Emissions Trading Scheme for portions of international flights that take place in E.U. airspace).

106. *Aviation Bearing the Brunt of Carbon Taxes*, *supra* note 101.

107. Richard S.J. Tol, *The Impact of a Carbon Tax on International Tourism*, 12 TRANSP. RES. PART D 129, 129 (2007), available at <http://www.fnu.zmaw.de/fileadmin/fnu-files/publication/workingpapers/RM4316.pdf>.

tance intercontinental flights.<sup>108</sup> Other commentators have agreed that “[h]oliday destinations which are more isolated, or a long way from the richest markets, such as French Polynesia or Mauritius,” may see a decline in tourism.<sup>109</sup>

Aviation carbon taxes could also have an impact on developing countries that export goods using air freight.<sup>110</sup> If developing countries are required to pay higher rates to send products overseas, the manufacturer will be forced either to charge the consumer more to compensate for additional shipping costs or to accept the lower profits generated per unit of product. Passing the cost on to the consumer could result in the product being less competitive in the foreign market.<sup>111</sup> As a result, aviation taxes on air freight will present a lose-lose situation for developing countries attempting to enter the foreign market.<sup>112</sup>

### B. *Biofuel Production Mandates and Renewable Fuel Standards*

Biofuel production mandates and renewable fuel standards (RFS) are methods of ensuring that a portion of energy use comes from renewable resources. One of the key motivations underlying the implementation of these measures is the desire to mitigate the effects of fossil fuel use on global climate change.<sup>113</sup> These measures typically require a minimum amount of production of biofuels and biodiesels, produced from crops such as corn and oil seeds.<sup>114</sup> Many countries and sub-national jurisdictions are considering, or have implemented, mandates requiring a certain percentage of traditional food crops to be used for energy production rather than food.<sup>115</sup>

As a result of biofuel production mandates, RFSs, and the general trend of reducing dependence on fossil fuels, world biodiesel

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108. *Id.* at 129, 132. The study also showed that medium-distance flights could see an increase. *Id.* at 133.

109. KAREN ELLIS ET AL., OVERSEAS DEV. INST., GROWTH IN A CARBON CONSTRAINED GLOBAL ECONOMY 68 (2010), available at <http://www.dfid.gov.uk/r4d/PDF/Outputs/ClimateChange/60742-4984.pdf>.

110. *Id.* at 7.

111. *See id.* at 68.

112. *See id.*

113. FOOD & AGRIC. ORG. OF THE UNITED NATIONS, THE STATE OF FOOD AND AGRICULTURE 26 (2008), available at <ftp://ftp.fao.org/docrep/fao/011/i0100e/i0100e.pdf>.

114. *See, e.g., Fuels and Additives, Renewable Fuel Standard (RFS)*, EPA, <http://www.epa.gov/otaq/fuels/renewablefuels> (last visited Jan. 4, 2014) (describing the renewable fuel standard program created under the Energy Policy Act of 2005).

115. *See* Jim Lane, *Biofuels Mandates Around the World: 2012*, BIOFUELS DIG. (Nov. 22, 2012), <http://www.biofuelsdigest.com/bdigest/2012/11/22/biofuels-mandates-around-the-world-2012>.

production has grown at a rate of thirty-five percent per year since 1991.<sup>116</sup> The U.S. RFS, which requires a minimum quantity of ethanol content in gasoline, increased the amount of U.S. corn used to make ethanol from fourteen percent in 2005 to thirty-eight percent in 2011.<sup>117</sup> As of 2012, about forty-five percent of all U.S. corn was dedicated to ethanol production.<sup>118</sup> Although ethanol production does not use the entire value of the corn (about one-third of the value is returned to the feed market), ethanol production diverts about thirty percent of corn value in the United States to ethanol production.<sup>119</sup> Mandates similar to the U.S. RFS exist in Canada, Brazil, the European Union, and many other countries.<sup>120</sup>

Rapid growth in the ethanol industry has diverted corn out of the food system, reducing supply and increasing the cost of corn as food.<sup>121</sup> In addition, farmers have switched production from soybeans and other food crops to corn to meet the growing demand for ethanol,<sup>122</sup> placing greater pressure on food prices. The impacts of rising food prices will disproportionately affect those in developing countries, “where grain comprises a larger share of the food budget.”<sup>123</sup> The U.N. Food and Agriculture Organization (FAO) has noted that grains constitute a significantly larger portion of diets in least developed countries than in the developed world (fifty-seven percent of calories consumed in least developed

116. Dileep K. Birur et al., *Impact of Biofuel Production on World Agricultural Markets: A Computable General Equilibrium Analysis 2* (GTAP, Working Paper No. 53, 2008), available at <https://www.gtap.agecon.purdue.edu/resources/download/4034.pdf>.

117. COLIN CARTER ET AL., THE EFFECT OF THE U.S. ETHANOL MANDATE ON CORN PRICES 1 (2012), available at [http://agecon.ucdavis.edu/people/faculty/aaron-smith/docs/Carter\\_Rausser\\_Smith\\_Ethanol\\_Paper\\_submit.pdf](http://agecon.ucdavis.edu/people/faculty/aaron-smith/docs/Carter_Rausser_Smith_Ethanol_Paper_submit.pdf).

118. *Renewable Fuel Standard May Cost Restaurants Billions; EPA Denies Repeal*, INST. FOOD TECH. (Dec. 3, 2012), <http://www.ift.org/food-technology/daily-news/2012/december/03/renewable-fuel-standard-may-cost-restaurants-billions-epa-denies-repeal.aspx>.

119. DAVID W. KREUTZER, BACKGROUND: RENEWABLE FUEL STANDARD, ETHANOL USE, AND CORN PRICES (2012), available at [http://thf\\_media.s3.amazonaws.com/2012/pdf/b2727.pdf](http://thf_media.s3.amazonaws.com/2012/pdf/b2727.pdf).

120. See Lane, *supra* note 115.

121. Timothy A. Wise concluded that “[t]here is widespread agreement that biofuels expansion, with its direct diversion of food and feed crops and its indirect impact through competition for land and other food-producing resources, has been an important contributor to the rise in food prices over the last six years.” Timothy A. Wise, *The Cost to Mexico of U.S. Corn Ethanol Expansion* 10 (Global Dev. & Env’t Inst., Working Paper No. 12-01, 2012). He further concluded that U.S. ethanol expansion “cost Mexico about \$1.5 billion in higher corn prices.” *Id.* at 2.

122. Andrew Martin, *Fuel Choices, Food Crises and Finger-Pointing*, N.Y. TIMES, Apr. 15, 2008, <http://www.nytimes.com/2008/04/15/business/worldbusiness/15food.html>.

123. D. Rajagopal et al., *Challenge of Biofuel: Filling the Tank Without Emptying the Stomach?*, 2 ENVTL. RES. LETTERS 2007, at 7, available at [http://iopscience.iop.org/1748-9326/2/4/044004/pdf/1748-9326\\_2\\_4\\_044004.pdf](http://iopscience.iop.org/1748-9326/2/4/044004/pdf/1748-9326_2_4_044004.pdf).

countries compared to twenty-two percent in the United States).<sup>124</sup> Importing countries that rely heavily on outside sources of basic food commodities are thus vulnerable to negative impacts resulting from biofuel production.<sup>125</sup> Djibouti, for example, imports *all* of its annually consumed cereal grains.<sup>126</sup>

Several studies have verified the existence of a positive correlation between the U.S. RFS and higher food prices. For example, one study found that “corn price would have been, on average, 30 percent lower from 2006 through 2010 had no increase in the demand for corn from ethanol producers occurred.”<sup>127</sup> More dramatically, a 2012 study estimates that the use of American-produced corn for biofuel has added \$6.6 billion to the food import bills of developing countries over a six-year period.<sup>128</sup> Aside from the added cost of food, “the amount of corn used to produce one gallon of ethanol fuel would feed one person for a day, and the U.S. diversion of corn for ethanol could feed as many as 570 million people worldwide annually.”<sup>129</sup> These studies demonstrate the considerable adverse effect that ethanol production in the United States has on food prices. In addition, while these studies recognize that other factors contribute to increased food prices, they all conclude that a substantial portion of the increase is caused by the reduced supply of corn. Moreover, most studies have concluded that some effects of climate change, such as drought, may exacerbate food prices as ethanol and food markets compete for a reduced corn harvest.<sup>130</sup>

In addition to these direct economic impacts, increased food prices can have substantial social consequences in developing countries. For example, “increases in the international food prices lead to a significant deterioration of democratic institutions and a

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124. CARTER ET AL., *supra* note 117, at 5.

125. Francis Ng & M. Ataman Aksoy, *Who Are the Net Food Importing Countries?* 15 (The World Bank Dev. Res. Grp., Policy Res. Working Paper No. 4457, 2008), available at [http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2008/01/02/000158349\\_20080102095804/Rendered/PDF/wps4457.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2008/01/02/000158349_20080102095804/Rendered/PDF/wps4457.pdf).

126. FOOD & AGRIC. ORG. GLOBAL INFO. & EARLY WARNING SYS. ON FOOD AND AGRIC., CEREAL SUPPLY/DEMAND BALANCES FOR SUB-SAHARAN AFRICA AS OF EARLY NOVEMBER 2013 16 (2013), <http://www.fao.org/giews/english/ewi/cereals/3.pdf>.

127. CARTER ET AL., *supra* note 117, at 28.

128. Timothy A. Wise, *The Cost to Developing Countries of U.S. Corn Ethanol Expansion* 13, (Global Dev. & Env't Inst., Working Paper No. 12-02, 2012), available at <http://www.ase.tufts.edu/gdae/Pubs/wp/12-02WiseGlobalBiofuels.pdf>.

129. Michael Sandoval, *Ethanol Mandate Leads to Violence, Social Unrest*, FOUNDRY (Feb. 7, 2013, 3:00 PM) <http://blog.heritage.org/2013/02/07/ethanol-mandate-leads-to-social-unrest>.

130. See Wise, *supra* note 128, at 15.

significant increase in the incidence of anti-government demonstrations, riots, and civil conflict” in low income countries.<sup>131</sup> A 2011 study attributed violent protests in North Africa and the Middle East in 2008 and 2011 to large peaks in global food prices caused by investor speculation and corn to ethanol conversion.<sup>132</sup> In Haiti, higher food prices led to riots and political instability in 2008, resulting in the dismissal of the country’s prime minister.<sup>133</sup>

### C. *Border Carbon Adjustments*

One of the primary concerns regarding response measures is that Parties will unilaterally implement mitigation measures that impact international trade. Border tax adjustments (BTA) and BCAs are examples of trade-related response measures that could have negative economic impacts on both developed and developing countries. A BTA is a tax imposed on imported products equivalent to a tax imposed on the similar domestically produced product.<sup>134</sup> A BTA often includes a rebate of the tax on domestically produced products destined for export markets.<sup>135</sup> BCAs impose charges on the carbon emissions associated with an imported product that are equivalent to the costs imposed on domestic industries producing like products resulting from climate policies.<sup>136</sup> BCAs can take the form of a BTA. For example, in 1992, the European Community proposed a carbon tax on domestically extracted and imported energy products such as lignite, natural gas, and coal based on the amount of carbon dioxide the product would emit during combustion as well as the product’s energy content.<sup>137</sup> More recently, proposed legislation in the United States and elsewhere would demand that foreign producers or importers buy carbon credits that are equivalent to the credits a domestic producer would be required to purchase.<sup>138</sup>

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131. Rabah Arezki & Markus Brückner, *Food Prices and Political Instability 1* (IMF, Working Paper No. 11/62, 2011), available at <http://www.imf.org/external/pubs/ft/wp/2011/wp1162.pdf>.

132. MARCO LAGI ET AL., NEW ENG. COMPLEX SYS. INST., *THE FOOD CRISES AND POLITICAL INSTABILITY IN NORTH AFRICA AND THE MIDDLE EAST 1-5* (2011), available at [http://necsi.edu/research/social/food\\_crises.pdf](http://necsi.edu/research/social/food_crises.pdf).

133. Martin, *supra* note 122, at 1.

134. CHRIS WOLD ET AL., *TRADE AND THE ENVIRONMENT: LAW AND POLICY* 239 (2005).

135. *Id.*

136. Int’l Ctr. for Trade & Sustainable Dev., *A Response to Response Measures: Solving Conflicts Between Trade and Climate Change Policy*, 5 *BIORES REV.* 4, 4 (2011), available at <http://ictsd.org/downloads/bioresreview/biores5-4.pdf>.

137. Proposal for a Council Directive Introducing a Tax on Carbon Dioxide Emissions and Energy, 1992 O.J. (C 196) 3.

138. COSBEY, *supra* note 84, at 2.

Governments adopt BCAs to (1) prevent leakage, an increase in emissions in other countries that result from the imposition of climate policies, and (2) ensure domestic industries are not harmed by the increased costs of compliance with climate policies.<sup>139</sup> Regardless of a tax's purpose, the General Agreement on Tariffs and Trade (GATT) permits the use of BTAs as long as a tax assessed on an imported product does not exceed the tax imposed on like domestic products,<sup>140</sup> and the tax is based on a characteristic of the product (such as the carbon content of fossil fuels).<sup>141</sup> Taxes imposed on imported products based on the carbon emitted during the production of that product would violate the GATT unless one of the GATT exceptions applies because such a tax does not relate to a characteristic of the product.<sup>142</sup> A BCA adopted to prevent leakage may be justified under the exception for measures relating to the conservation of exhaustible natural resources, depending on the way it is structured and implemented.<sup>143</sup> However, no exception applies to a BCA designed to protect the competitiveness of domestic industries.

Whether designed for environmental purposes and regardless of a BCA's GATT consistency, a BCA has the potential to negatively impact countries that are dependent on international trade by increasing the costs of imported goods and reducing export-related income. As described below, the potential impacts associated with these trade-related response measures can be assessed in three contexts: (1) measures imposed on imported goods, (2) measures imposed on exported goods, and (3) the imposition or removal of domestic subsidies.

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139. See AARON COSBEY ET AL., A GUIDE FOR THE CONCERNED: GUIDANCE ON THE ELABORATION AND IMPLEMENTATION OF BORDER CARBON ADJUSTMENT 7–8 (2012).

140. General Agreement on Tariffs and Trade art. 2, para. 2(a), art. 3, para. 2, art. 16, para. 4, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 [hereinafter GATT].

141. See WOLD ET AL., *supra* note 134, at 239–40.

142. Under the General Agreement on Tariffs and Trade (GATT), taxes on products themselves (“indirect” taxes) are eligible for border tax adjustment (BTA). Taxes assessed on processes or production methods (“direct” taxes) are therefore ineligible for BTA because they are not directly levied on a product itself. *Id.* at 240. However, taxes that are levied on specific inputs associated with production (“*taxes occultes*”), which include taxes assessed on the amount of energy consumed during production, are neither explicitly eligible nor ineligible for BTA; it is unclear whether such taxes would be permissible under the GATT. *Id.* at 241.

143. Gaines, *supra* note 33, at 3–4, 12–13.

## 1. BCAs Imposed on Imported Products May Impact Export Markets

BCAs could have a negative impact on export markets by raising the cost of foreign products and thereby reducing demand for those products in the market of the country imposing the BCA. Many U.S. proposals for climate legislation have included BCAs.<sup>144</sup> Thus, the threat of a BCA is real. In fact, a number of countries impose some form of tax on carbon, and some countries have been taxing carbon for more than twenty years.

Finland, for example, implemented a tax on carbon in 1990, and Sweden implemented one in 1991.<sup>145</sup> Carbon taxes are typically assessed on a per-carbon ton basis,<sup>146</sup> though the rate per ton differs greatly between countries: for example, Sweden's carbon tax rate is currently \$150 per ton, while in British Columbia the tax is \$30 per ton.<sup>147</sup> These taxes are assessed on the carbon content of fossil fuels and are generally permissible under the GATT because they are taxes based on a specific product characteristic.<sup>148</sup> Because carbon taxes are typically assessed at the consumer level, rather than at the time of production or importation,<sup>149</sup> they do not impose a direct burden on hydrocarbon-exporting countries. Carbon taxes, however, are intended to decrease carbon emissions by reducing fossil fuel consumption, and this corresponding reduction in demand may negatively impact economies that are reliant on fossil fuel export earnings.<sup>150</sup> If carbon taxes become more widespread or are implemented on a global scale, countries that are reliant on fossil fuel exports, such as Mexico, Kazakhstan, and Trinidad and Tobago, may be significantly impacted.<sup>151</sup> A study conducted by the Organization for Economic Co-operation and Development (OECD) determined that a *global* carbon tax would

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144. See, e.g., H.R. 2454, 111th Cong. § 401 (2009) (passed by the U.S. House of Representatives on June 26, 2009).

145. PHILIP BAGNOLI ET AL., *THE INCIDENCE OF CARBON PRICING: NORWAY, RUSSIA, AND THE MIDDLE EAST* 7 (2008), available at <http://www.oecd.org/eco/42505369.pdf>.

146. See, e.g., *id.* at 7.

147. *Where Carbon Is Taxed*, CARBON TAX CENTER (Sept. 6, 2014), <http://www.carbontax.org/progress/where-carbon-is-taxed>.

148. WOLD ET AL., *supra* note 134, at 240.

149. See *id.* at 240–41.

150. See BAGNOLI ET AL., *supra* note 145, at 6–7.

151. See *Mexico*, CIA WORLD FACTBOOK (Jan. 7, 2014), <https://www.cia.gov/library/publications/the-world-factbook/geos/mx.html>; *Kazakhstan*, CIA WORLD FACTBOOK (Jan. 7, 2014), <https://www.cia.gov/library/publications/the-world-factbook/geos/kz.html>; *Trinidad and Tobago*, CIA WORLD FACTBOOK (Jan. 7, 2014), <https://www.cia.gov/library/publications/the-world-factbook/geos/td.html>.

have a substantial impact on export-dependent Middle Eastern economies, resulting in a four percent decline in GDP by 2030.<sup>152</sup>

In an effort to further mitigate climate change, countries may also wish to assess taxes on the carbon intensity of domestically produced goods. These taxes could be assessed based on the amount of energy used to produce the product or the carbon emissions from the production process. To ensure that domestic producers are not competitively disadvantaged by these taxes, an equivalent tax may be imposed on like imported products. Countries may also be concerned that domestically-imposed carbon taxes could lead to carbon leakage, which may occur if production relocates to countries that do not tax carbon.<sup>153</sup> Taxes of this nature would have a negative impact on countries that export carbon-intensive products, which generally would incorporate any goods that require large amounts of energy to produce.

According to the Overseas Development Institute, economies that export chemicals, metals, cement, glass, lime, and pulp and paper would be most impacted by a carbon intensity tax.<sup>154</sup> While most developing countries do not export substantial quantities of these types of products, this form of BCA could significantly affect certain member countries. For example, Guyana is one of the poorest countries in the Western Hemisphere, and its economy is largely dependent on bauxite and gold exports.<sup>155</sup> Copper accounts for nineteen percent of government revenue in Chile, which also produces iron and steel, wood products, and cement.<sup>156</sup> In Papua New Guinea, gold, oil, and copper account for nearly two-thirds of export earnings.<sup>157</sup> South Africa produces and exports a variety of chemicals, iron, and steel and is the world's largest producer of platinum, gold, and chromium.<sup>158</sup> In Peru,

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152. BAGNOLI ET AL., *supra* note 145, at 8.

153. See SAMANTHA DERKSEN ET AL., INT'L CTR. FOR TRADE & SUSTAINABLE DEV., EU CLIMATE POLICIES AND DEVELOPING COUNTRY TRADE VULNERABILITY: AN OVERVIEW OF CARBON LEAKAGE-SENSITIVE TRADE FLOWS 1 (2011), available at <http://ictsd.org/downloads/2011/11/eu-climate-policies-and-developing-country-trade-vulnerability.pdf>.

154. See ELLIS ET AL., *supra* note 109, at 8.

155. *Guyana*, CIA WORLD FACTBOOK (Jan. 7, 2014), <https://www.cia.gov/library/publications/the-world-factbook/geos/gy.html>.

156. *Chile*, CIA WORLD FACTBOOK (Jan. 7, 2014), <https://www.cia.gov/library/publications/the-world-factbook/geos/ci.html>.

157. *Papua New Guinea*, CIA WORLD FACTBOOK (Jan. 7, 2014), <https://www.cia.gov/library/publications/the-world-factbook/geos/pp.html>.

158. *South Africa*, CIA WORLD FACTBOOK (Jan. 7, 2014), <https://www.cia.gov/library/publications/the-world-factbook/geos/sf.html>.

mining and mineral extraction accounts for more than sixty percent of exports.<sup>159</sup>

## 2. Measures Imposed on Exports May Impact Developing Countries Reliant on Imported Products and Materials

Efforts to reduce carbon emissions associated with domestic activities may impact international trade by reducing or restricting exports of manufactured goods or raw materials. In some instances, developed countries may impose export taxes on carbon-intensive products in an attempt to reduce domestic carbon emissions. Alternatively, countries may restrict or even prohibit export of fossil fuels and certain raw materials in order to conserve natural resources or support domestic sustainable development objectives.<sup>160</sup> Response measures in the form of export taxes or bans on specific products or materials could negatively impact developing countries that import such items by making such products more expensive or unavailable.

Export restrictions could potentially be imposed on a wide variety of products and materials. For example, a country may impose an export tax on fossil fuels to discourage exports in order to retain domestic supplies of fossil fuels. However, countries that rely on imports of carbon-intensive products, such as cement or steel, or on items that may be incorporated into domestic mitigation programs, such as crops used for biofuel, would likely face the greatest impacts from carbon-based export taxes or restrictions. Developing countries with no domestic fossil fuel resources would likewise be impacted by any response measures that increase the price of oil, coal, or natural gas.

The GATT permits countries to impose taxes or duties on exported products. Dispute settlement panels, however, have interpreted Article XI broadly, and it is possible that an excessive export tax could be deemed a “restriction[ ] on the exportation or the sale for export” of a product in violation of GATT Article XI.<sup>161</sup> For example, one dispute settlement panel concluded that Article XI prohibits export restrictions that “alter[ ] the competitive rela-

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159. *Peru*, CIA WORLD FACTBOOK (Jan. 7, 2014), <https://www.cia.gov/library/publications/the-world-factbook/geos/pe.html>.

160. See Anna-Maria Fyfe, *Export Restrictions on Natural Resources: The Case of Indonesia and Vietnam*, 6 BIORRES, Dec. 2012, at 22, available at [http://ictsd.org/downloads/biores\\_review/biores6-4.pdf](http://ictsd.org/downloads/biores_review/biores6-4.pdf). Many countries, for example, have adopted export bans of certain types of timber resources. In 1992, Vietnam imposed an export ban on raw cut and sawn wood as a means of conserving domestic forest resources. *Id.* at 24.

161. GATT, *supra* note 140, art. 11, para. 1.

tionship between foreign and domestic buyers,” such as by “imposing a materially greater commercial burden on exports than on domestic sales.”<sup>162</sup> Another panel concluded that an excessive civil penalty violated Article XI.<sup>163</sup>

#### D. *Subsidies*

Under international trade law, countries are generally permitted to provide subsidies for domestically produced goods and materials, provided that the subsidies do not cause material injury to the domestic industry of another WTO member or serious prejudice to the interests of another member.<sup>164</sup> In the climate change context, subsidies may be provided for renewable energy and energy efficiency products, biofuels, or emissions credits associated with cap-and-trade systems.<sup>165</sup> Developing countries that do not export renewable energy products and technologies would likely benefit from foreign subsidization of these products because subsidies can be very effective at promoting the production of emerging, climate-friendly technologies. Subsidies can influence the price of exported goods, which may allow importing countries to benefit from an exporting country's investments.<sup>166</sup> However, they can also make it difficult for unsubsidized exports to compete with subsidized goods on the international market.<sup>167</sup>

Governments also provide billions of dollars in subsidies for fossil fuel production and consumption. In 2009, global fossil fuel subsidies were estimated to total between \$312 and \$558 billion.<sup>168</sup>

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162. U.S.-Can. Free Trade Agreement Panel Report, *In the Matter of Canada's Landing Requirement for Pacific Coast Salmon and Herring*, para. 6.09, CDA-89-1807-01 (Oct. 16, 1989).

163. Panel Report, *Brazil—Measures Affecting Imports of Retreaded Tyres*, para. 7.372, WT/DS332/AB/R (June 12, 2007) (*adopted as modified by the Appellate Body* Dec. 17, 2007) (concluding that a fine of four hundred Brazilian Reis per tire, “which significantly exceeds the average prices of domestically produced retreaded tyres for passenger cars (R\$100–280)—is significant enough to have a restrictive effect on importation”).

164. See Agreement on Subsidies and Countervailing Measures art. 1, Apr. 15, 1994, 1869 U.N.T.S. 14 [hereinafter SCM Agreement].

165. Luca Rubini, *Climate Change Subsidies at the WTO: A Few Notes for Law Reform*, 6 *BIORES*, Dec. 2012, at 33, available at <http://ictsd.org/downloads/bioresreview/biores6-4.pdf>.

166. WOLD ET AL., *supra* note 134, at 531–33.

167. *Id.*

168. JOACHIM MONKELBAAN, TRANSPORT, TRADE AND CLIMATE CHANGE: CARBON FOOTPRINTS, FUEL SUBSIDIES AND MARKET-BASED MEASURES 18 (2011), available at <http://ictsd.org/downloads/2012/01/transport-trade-and-climate-change-carbon-footprints-fuel-subsidies-and-marketbased-measures.pdf>. For more on fossil fuel subsidies and applicable trade law, see generally Chris Wold, Grant Wilson & Sara Foroshani, *Leveraging Climate Change Benefits Through the World Trade Organization: Are Fossil Fuel Subsidies Actionable?*, 43 *Geo. J. Int'l L.* 635 (2012).

In an effort to reduce global carbon emissions, some policy analysts have proposed removing subsidies for fossil fuels production and consumption.<sup>169</sup> Removing fossil fuel subsidies reduces fossil fuel consumption in reforming countries, causing global fossil fuel prices to fall.<sup>170</sup> While energy importing countries will benefit from the fall in fossil fuel prices, energy exporters, such as Azerbaijan and Cameroon,<sup>171</sup> will be harmed.<sup>172</sup>

#### IV. REFRAMING THE RESPONSE MEASURES DEBATE

Clearly, certain response measures are likely to adversely affect developing country economies. At the same time, the current political deadlock over response measures leaves many developing countries vulnerable to the very response measures that could adversely affect their economies. Against this background, the Parties should reframe the response measures debate in a way that prevents or minimizes the use of response measures that will be most harmful to vulnerable economies yet maintains flexibility for developed countries to implement response measures necessary to mitigate catastrophic climate change.

This Article offers four options for doing so. These options recognize and take into account certain baseline viewpoints of the Parties that are unlikely to change. First, developed countries will not agree to an outright ban on unilateral response measures.<sup>173</sup> Indeed, allowing unilateral measures may be necessary to convince certain developed countries to reduce emissions domestically. As such, the options presented seek to limit in various ways when and how countries may implement certain types of response measures. Second, many developing countries will be unwilling to accept obligations unless the negative impacts of response measures are addressed in a meaningful way. As such, the options presented prohibit the most economically harmful response measures or require developed countries to show that they are minimizing

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169. See MONKELBAAN, *supra* note 168, at 20.

170. Jean-Marc Burniaux, Jean Chateau & Jehan Sauvage, *The Trade Effects of Phasing Out Fossil-Fuel Consumption Subsidies* 9, n.7 (OECD Trade & Env't Working Papers, Paper No. 2011/05, 2011).

171. See *Azerbaijan*, CIA WORLD FACTBOOK (Jan. 7, 2014), <https://www.cia.gov/library/publications/the-world-factbook/geos/aj.html>; *Cameroon*, CIA WORLD FACTBOOK (Jan. 7, 2014), <https://www.cia.gov/library/publications/the-world-factbook/geos/cm.html>.

172. MONKELBAAN, *supra* note 168, at 10–11.

173. At a meeting of the response measures forum in June 2013, the United States “confirmed that the United States would never agree to prohibiting unilateral measures anywhere.” UNFCCC Chairs of the Subsidiary Bodies, *supra* note 15, para. 42(d).

adverse impacts. Third, it must be recognized that developed countries must adopt response measures if they are to mitigate their greenhouse gas emissions; the price of carbon will continue to rise. Thus, consistent with the two previous points, response measures, even those that may have some adverse impacts on developing country economies, are not prohibited.

Incorporating these assumptions, several regimes might represent more acceptable alternatives to the Parties than a complete prohibition against unilateral trade measures as one form of response measure. As such, it may be possible to move the debate on response measures in a positive direction and reach a meaningful compromise on this issue. The options include the following:

- A notification and consultation approach in which a Party notifies all other Parties prior to implementing a response measure and which allows Parties concerned about the effects of a response measure to require consultations if its concerns are not adequately addressed.
- A “traffic light system” in which certain response measures are always prohibited (red light), some are always permitted (green light), and others may require additional scrutiny (amber light).
- A response measures impact assessment mechanism modeled on the environmental impact assessment regimes of countries all over the world.
- An approach that exempts certain countries or products from BCAs.

#### A. *A Notification and Consultation Approach*

A notification and consultation approach modeled on the notification scheme developed under the WTO’s Agreement on Technical Barriers to Trade (TBT Agreement)<sup>174</sup> may provide a means for developing countries to obtain the information they want concerning response measures while allowing developed countries the flexibility to adopt a range of response measures. Within the WTO, developing countries have complained about the lack of information concerning technical regulations<sup>175</sup> just as they have about

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174. Agreement on Technical Barriers to Trade, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1868 U.N.T.S. 120 [hereinafter TBT Agreement].

175. See, e.g., Colombia, Environmental Labels and Market Access: Case Study on the Colombian Flower-Growing Industry, WT/CTE/W/76, G/TBT/W/60, para. 2 (Mar. 9, 1998) (stating that “[i]n previous interventions before the [Committee on Trade and Envi-

response measures in the climate change regime. Technical regulations define product characteristics relating to the quality, shape, and size of a product, such as toxicity levels in electrical cables or energy efficiency requirements for appliances.<sup>176</sup> Technical regulations may vary from country to country, making it difficult for producers to meet them if they are not adequately informed. Technical regulations can also be discriminatory if they are designed to benefit domestic producers at the expense of foreign producers.

The TBT Agreement allows the WTO members to adopt measures to achieve legitimate policy objectives, such as the protection of human health and safety or the environment.<sup>177</sup> To prevent discrimination, it prohibits the WTO members from adopting technical regulations that are discriminatory or create unnecessary obstacles.<sup>178</sup> Because of these trade-related concerns, transparency became a central feature of the TBT Agreement.<sup>179</sup> To facilitate information exchange and ensure transparency, the TBT Agreement requires the WTO members to notify other members of draft technical regulations, which the WTO secretariat circulates to all members, and to establish a TBT inquiry point for communicating with members about technical regulations.<sup>180</sup> When WTO members have concerns about another member's technical regulation, it may seek consultations within the Committee on Technical Barriers to Trade<sup>181</sup> and make comments in writing.<sup>182</sup> To enhance implementation of these transparency provisions, the WTO established the Technical Barriers to Trade Information Management System (TBT IMS), a publicly available database that has information provided by the WTO members about their technical regulations.<sup>183</sup> The TBT IMS includes each member's notifications of

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ronment], Colombia has stated that some environmental measures adopted by particular developed countries, such as eco-labelling or packaging regulations, have negatively affected its exports").

176. TBT Agreement, *supra* note 174, Annex 1 (defining "technical regulation"); *see also* WOLD ET AL., *supra* note 134, at 351–52 (describing different types of technical regulations).

177. *See* TBT Agreement, *supra* note 174, arts. 2.2, 2.4.

178. *Id.* arts. 2.1, 2.2.

179. Doaa Abdel Motaal, Overview of the World Trade Organization Agreement on Technical Barriers to Trade 6, *available at* <http://cuts-international.org/Doaa-paper.doc>.

180. *See* TBT Agreement, *supra* note 174, arts. 2.9, 10.1.

181. *Id.* art. 13.1.

182. *Id.* art. 2.9.4.

183. *TBT Information Management System*, WORLD TRADE ORG., <http://tbtime.wto.org>.

technical regulations and conformity assessment procedures<sup>184</sup> (and any revisions to them), as well as specific trade concerns raised by members in the TBT Committee.<sup>185</sup>

These transparency provisions have been critical to the success of the TBT Agreement in minimizing or eliminating conflicts.<sup>186</sup> In many ways, this is not surprising. The notifications allow the WTO members to voice concerns at an early stage in the development of a technical regulation so that changes can be made.<sup>187</sup> Early notification and public disclosure also provide information to exporters so that they can meet new requirements prior to the entry into force.<sup>188</sup> Moreover, by bringing complaints to the TBT Committee, the WTO members have a structured, formal, and nonadversarial process to resolve potential problems.<sup>189</sup>

A similar notification and consultation mechanism could be established within the UNFCCC to address response measures. The Parties proposing to adopt response measures would notify the secretariat, who would then notify the Parties and the public through its website.<sup>190</sup> A separate portal, similar to the WTO's TBT IMS, could also be established if the parties wanted to keep information about response measures separate from other information. With a separate portal, for example, the Parties could post written

184. Conformity assessment procedures are those procedures used to determine whether a product complies with relevant technical regulations or standards. See TBT Agreement, *supra* note 174, art. 5.

185. *TBT Information Management System*, *supra* note 183.

186. Henrik Horn, Petros C. Mavroidis & Erik Wijkström, *Between Transparency and Adjudication: Environmental Measures in the WTO TBT Committee* 5 (ENTWINED Working Paper, 2012), available at <http://www.econ-law.se/Papers/TBT%2028Feb2012-2.pdf> (stating that the work of the TBT Committee has helped to “defuse conflicts” relating to environmental policy measures).

187. The European Union, for example, modified rules for wine products after several third parties complained about the rules, and Colombia withdrew labeling rules for alcoholic beverages when the European Union complained that the rules were too strict. *Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: On the Functioning of the Notification Procedure Under the WTO Agreement on Technical Barriers to Trade (TBT Agreement)*, §§ 3.1, 3.2, COM (2012) 354 final (June 29, 2012), available at <http://www.ipex.eu/IPEXL-WEB/dossier/document/COM20120354FIN.do>. This paper includes other examples of the WTO members modifying, withdrawing, or postponing implementation of technical regulations as a result of the TBT Agreement's notification and consultation provisions. See *id.*

188. Motaal, *supra* note 179, at 7.

189. See Horn et al., *supra* note 186, at 6 (describing the process within the TBT Committee as “situated somewhere along the spectrum between increasing transparency and adjudication”).

190. See *Notifications to Parties and Observers*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, [http://unfccc.int/parties\\_and\\_observers/notifications/items/3153.php](http://unfccc.int/parties_and_observers/notifications/items/3153.php).

comments regarding a response measure. The Parties planning to adopt a response measure could post their responses to the comments. If the Party does not respond in a satisfactory way, other Parties could request that the matter be discussed within the SBI, which is designed to address implementation issues,<sup>191</sup> or through a new body created specifically for consultations on response measures.

### B. *Traffic Light Ranking System*

Developing a system for ranking the acceptability of response measures may prove to be an effective way of resolving the response measures debate. The WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement) traffic light system<sup>192</sup> and the OECD Control System for waste recovery provide relevant examples of how this type of system could work in the response measures context.<sup>193</sup> Under the OECD Control System, amber and green lights represent different levels of control procedures for waste based on risk to human health and environment.<sup>194</sup> Amber lights designate “wastes presenting sufficient risk to justify their control.”<sup>195</sup> Green lights designate wastes that present low risk to human health and environment and are not subject to controls beyond those “normally applied in commercial transactions.”<sup>196</sup>

Similarly, the SCM Agreement employs red, amber, and green lights to rank the permissibility of subsidies based on their presumptive distortion of international trade. Red light subsidies are prohibited under all circumstances and sanctions or countermeasures may be imposed against the subsidizing country regardless of whether actual injury is caused by the subsidy.<sup>197</sup> Amber light subsidies are “actionable”; these subsidies may be sanctioned if they cause material injury to a domestic industry or serious prejudice to the interests of another member.<sup>198</sup> Finally, green lights repre-

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191. UNFCCC, *supra* note 1, art. 10.

192. See WOLD ET AL., *supra* note 134, at 544–47 (describing the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement) subsidies regime in terms of the traffic light system, although the SCM Agreement itself does not do so).

193. Organization for Economic Co-Operation and Development [OECD] Council, *Decision C(2001)107/Final Concerning the Control of Transboundary Movements of Wastes Destined for Recovery Operations, as Amended by C(2004)20*, 10, available at [http://trade.ec.europa.eu/doclib/docs/2006/october/tradoc\\_130520.pdf](http://trade.ec.europa.eu/doclib/docs/2006/october/tradoc_130520.pdf).

194. *Id.* at 10–11.

195. *Id.*

196. *Id.* at 10.

197. SCM Agreement, *supra* note 164, art. 3.

198. *Id.* art. 5.

sented subsidies that were freely permitted under all circumstances.<sup>199</sup> The green light category expired in 1999, and now no subsidies are freely permitted.<sup>200</sup>

This type of ranking system could be tailored to response measures but may require increased flexibility to accommodate the uncertainty of the costs and benefits of many response measures. In general, however, the traffic light system recognizes that certain types of response measures have broad and significant negative impacts on developing countries, while other measures do not.

- *Red light (prohibited) response measures:* Measures that have broad and significant negative effects should be presumed to be unacceptable and represented by a red light. The Parties may decide that this presumption is irrebuttable and these measures will never be acceptable. In the alternative, the Parties could decide that the presumption may be rebutted if the country imposing the measure can show that extensive efforts will be undertaken to remedy the negative effects of the measure and that these efforts will be effective in practice.
- *Amber light response measures:* An amber light should represent measures with uncertain or changing impacts. These measures should be initially viewed with neutrality and subject to a period of information gathering, perhaps by the Subsidiary Body on Implementation. This period may include provisional application of the measure, economic and environmental studies, cost-benefit analyses, alternatives analyses, or any other study that is able to establish the practical effects of imposing the measure.
- *Green light (permissible) response measures:* A green light should represent measures that are likely to have minimal impacts on foreign economies or environmental benefits that clearly outweigh their costs. These measures should be accompanied by a presumption of acceptability in the international community and may be undertaken unless a Party opposing the measure is able to show significant negative impacts on the welfare of its people or development of its economy. These measures could include, for example, taxes on the consumption of fuel.

Ranking response measures in this way may be difficult because varying levels of application will surely affect the severity of attend-

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199. *Id.* art. 8.

200. WOLD ET AL., *supra* note 134, at 546–47.

ant negative impacts. For example, a very small BTA on imported products may have an insignificant impact on imports (even while generating significant revenue), while a much larger BTA could have devastating impacts on trade. For this reason and regardless of initial ranking, all measures should be subject to periodic review to determine if they are having unintended or unforeseen consequences. If they are, then the regime should incorporate a mechanism for modifying the response measure.

Despite the challenges of designing this regime, it is possible to anticipate that certain types of unilateral measures will always have more severe effects than others. Part II.A of this Article described the significant impacts that aviation carbon taxes could have, particularly for remote countries. Although an aviation carbon tax would likely result in decreased greenhouse gas (GHG) emissions, the aviation industry represents a relatively small portion of global emissions.<sup>201</sup> Many other measures, such as improving efficiency of airplanes and switching to less carbon intensive fuels, may have a more significant positive impact on mitigation without the same negative economic impacts on foreign economies. As a result, aviation taxes on long-haul international flights should be designated with a red light. Conversely, a tax applied solely to domestic flights or domestic products should be designated with a green light.

Domestic taxes on the carbon intensity of products are another example of a green light response measure. These taxes can be a useful tool to reduce demand for carbon intensive products and spur investment in less carbon intensive technology, thereby reducing the GHG emissions. If a tax on the carbon intensity of goods is applied domestically with no BCA, the only negative effects on trade would be to the country imposing the measure.<sup>202</sup> Only if the domestic tax is paired with the BCAs in the form of import tariffs and export rebates would it rise to the level of an amber or red light measure. A preliminary analysis of negative effects on international trade of several categories of unilateral measures should be undertaken before any of them are definitively cast with a red, amber, or green light designation.

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201. See David McCullom et al., *Pew Ctr. on Global Climate Change, Greenhouse Gas Emissions from Aviation and Marine Transportation: Mitigation Potential and Policies 1* (2009), available at <http://www.c2es.org/docUploads/aviation-and-marine-report-2009.pdf>.

202. David Rich, *Climate Change, Carbon Taxes, and International Trade: An Analysis of the Emerging Conflict Between the Kyoto Protocol and the WTO 4–5* (Dec. 9, 2004) (unpublished student paper), available at <http://are.berkeley.edu/courses/EEP131/fall2006/NotableStudent04/ClimateChangeRich.pdf>.

### C. *An Information-Based Approach*

One of the primary concerns expressed in the response measures debate involves the lack of transparency and availability of information on the negative impacts associated with response measures.<sup>203</sup> Developing country Parties are concerned that response measures will, or already are, negatively impacting their economies.<sup>204</sup> These Parties, however, do not have sufficient access to information to enable them to prepare for or prevent these negative effects.<sup>205</sup> This is one reason why many developing country Parties want to prohibit developed country Parties from implementing unilateral response measures.

While the concerns raised by a lack of information and transparency are legitimate, a call for a ban on unilateral response measures is counterproductive; developed country Parties will not limit their capacity to implement response measures, and a general prohibition against unilateral response measures disregards the positive climate mitigation impacts that such measures may have.

One possible solution to this impasse involves incorporating an information-based approach to response measures within the UNFCCC. The UNFCCC Parties have committed to “employ appropriate methods, for example, impact assessments,” to minimize adverse effects of response measures.<sup>206</sup> A mechanism to assess the impact of response measures—a “response measures impact assessment”—could be developed to encourage transparency and cooperation between the Parties and enable potential impacts to be identified and addressed by both implementing and impacted Parties.

An impact assessment approach to response measures is consistent with previous statements made by the UNFCCC Parties. For example, the Parties committed to fully consider the actions necessary to mitigate the adverse effects of response measures on devel-

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203. In fact, because “[m]ost developing countries lack the capacity to assess the scope and magnitude of the adverse consequences of the implementation of response measures on their own,” developing countries called for “a Permanent Forum that would offer a continuous venue for dialogue and space for discussion and participation by experts, civil societies, NGO’s and IGO’s.” UNFCCC Secretariat, *Further Views on the Elements for the Development of a Work Programme and a Possible Forum on Response Measures*, 3, U.N. Doc. FCCC/SB/2011/MISC.4/Add.1 (Oct. 4, 2011).

204. A representative of the Organization of the Petroleum Exporting Countries (OPEC) recently presented findings that Gross Domestic Product in OPEC countries will show a “significant decrease in 2050 compared with the baseline.” UNFCCC Chairs of the Subsidiary Bodies, *supra* note 15, para. 25.

205. *Id.* para. 28.

206. UNFCCC, *supra* note 1, art. 4, para. 1(f).

oping countries and small island countries in particular.<sup>207</sup> The Parties also committed to “[p]romote and cooperate in the full, open and prompt exchange” of information relating to “the economic and social consequences of various response strategies.”<sup>208</sup> In the Cancun Agreements, the Parties further urged developed country Parties to implement response measures “in such a way as to avoid negative social and economic consequences for developing country Parties.”<sup>209</sup> If a response measure imposes negative consequences on a developing country, the Party implementing the measure should help mitigate these impacts by “providing support, including financial resources, transfer of technology and capacity-building.”<sup>210</sup> In Cancun, the Parties also agreed that “information relating to response measures should be considered in a structured manner.”<sup>211</sup> In doing so, “Parties should cooperate fully to enhance understanding of the economic and social consequences of response measures, taking into account the need for information from those affected, and evidence of actual impacts, and of both positive and negative effects.”<sup>212</sup> The Parties decided to consider whether existing information-sharing channels under the UNFCCC could be used in the response measures context.<sup>213</sup> OPEC and the South Centre have both argued that more information is needed on the impacts of response measures.<sup>214</sup>

Developed country Parties may support an information-based mechanism that does not require a specific substantive outcome because they wish to avoid any requirement to provide financial, technological, or capacity-building support to mitigate the negative consequences resulting from response measures. In addition,

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207. *Id.* art. 4, para. 8.

208. *Id.* art. 4, para. 1(h).

209. UNFCCC Rep. of the Conference of the Parties, *supra* note 34, para. 89.

210. *Id.*

211. *Id.* para. 91.

212. *Id.* para. 92.

213. *Id.*

214. OPEC emphasized that the impacts of response measures must be ascertained, the corresponding needs of developing countries must be identified, and countries implementing the response measures must consider how these specific needs can best be addressed. Chiew, *supra* note 76, at 6. South Centre has noted that the potential impacts of response measures on developing countries must be assessed prior to implementation, and the Parties must be fully accountable for the consequences of their measures through financial compensation, technology transfer, and capacity-building support. *See id.* at 5.

impact assessments are standard tools for assessing the impacts of projects,<sup>215</sup> laws,<sup>216</sup> trade agreements,<sup>217</sup> and other measures.<sup>218</sup>

To garner support of both developed and developing countries, a response measures impact assessment would need to balance the need of developing countries for information concerning the impacts of response measures with the burden of developed countries to assess the impacts on a number of developing countries. To balance these competing goals, a response measures mitigation assessment could include the following features:

- Identify and assess the projected and potential, direct and indirect, and positive and negative impacts associated with implementing a response measure.
- Identify alternatives to the proposed response measure when adverse impacts are disproportionate to mitigation benefits.
- Identify policy options maximizing positive sustainable development impacts and minimizing negative impacts associated with implementing a response measure.
- Ensure that the response measures impact assessment is conducted in cooperation with potentially affected developing countries.
- Ensure that the impact assessment process is transparent and the results are made publicly available.

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215. See National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§ 4321–4370e (2006) (requiring U.S. government agencies to conduct an assessment of potential impacts of federal laws, policies, or actions that may have a significant impact on “the quality of the human environment”); EUROPEAN COMM’N, HANDBOOK FOR TRADE SUSTAINABILITY IMPACT ASSESSMENT (2006), available at [http://trade.ec.europa.eu/doclib/docs/2006/march/tra doc\\_127974.pdf](http://trade.ec.europa.eu/doclib/docs/2006/march/tra doc_127974.pdf) (providing an overview of the Trade Sustainability Impact Assessment, an assessment tool created by the European Commission in 1999 to “integrate sustainable development into trade negotiations”).

216. See 42 U.S.C. § 4332.

217. The European Commission’s Trade Sustainability Impact Assessment (Trade SIA) is “a process undertaken during a trade negotiation which seeks to identify the potential economic, social and environmental impacts of a trade agreement.” EUROPEAN COMM’N, *supra* note 215, at 7. The two primary purposes of a Trade SIA are “to integrate sustainability into trade policy by informing negotiators of the possible social, environmental and economic consequences of a trade agreement” and “to make information on the potential impacts available to all actors.” *Id.*

218. The WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) requires the WTO members to ensure that sanitary or phytosanitary measures that may directly or indirectly affect international trade are based on a scientific risk assessment and should “take into account the objective of minimizing negative trade effects.” WTO Agreement on the Application of Sanitary and Phytosanitary Measures art. 5, Apr. 15, 1994, 1867 U.N.T.S. 493.

- Include a screening process so that response measures that are unlikely to have negative impacts do not need to undergo additional assessment.

A separate question is whether this process is conducted at the national level or is subject to some sort of international review. The assessment could take place at the national level with a Party then communicating the results of the assessment to the Parties through its national communications. A more “internationalized” approach could start similarly with the assessment taking place at the national level. A Party would then communicate the results of the assessment through its biennial report. The process for review of these biennial reports includes a monitoring and evaluation procedure of sorts that would allow other Parties to comment on the assessment.<sup>219</sup> In the alternative, the Subsidiary Body on Implementation could establish a new free-standing process for reviewing the outcomes of the response measures impact assessment conducted by a Party.

#### D. *Exemptions to Border Carbon Adjustments*

If the BCAs become a feature of Annex I response measures, an approach that exempts specific countries or goods from such BCAs could ensure that they do not adversely affect the economies of developing countries. This exemptions approach could take several different forms.<sup>220</sup>

First, exemptions could relate to specific goods or categories of goods to which the BCA does not apply. The Parties could identify specific industries that are particularly important from an economic perspective or identify products for which leakage is not a concern.

Second, exemptions could be made for products that are not produced (or not produced in economically significant amounts) by the Party imposing the BCA. Since two primary reasons for imposing a BCA are to prevent leakage and competitive disadvantages for domestically produced products, countries should not be allowed to impose a BCA when leakage will not occur or domestic production will not be affected. The challenge of this approach is identifying the products that are subject to the exemption.

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219. See Rep. of the Conference of the Parties (UNFCCC), *supra* note 52, 36–38.

220. For more information about the types of exemptions that could apply to border carbon adjustments and the trade law impacts of those exemptions, see COSBEY ET AL., *supra* note 139, paras. 25–42.

Third, exemptions to a BCA could be based on some characteristic of the country whose products would otherwise be subject to the BCA. A range of possible characteristics could be considered, including:

- The economic development status of a country (e.g., least developed countries);
- A country's vulnerability to climate change;
- Whether the country has adopted "adequate" legislation to mitigate GHG emissions;
- Whether a country has adopted commitments under the Cancun Agreements;
- Whether a country has adopted targets and timetables for limiting GHG emissions, either at the national level or for a specific economic sector (e.g., the transportation sector).

Because most developing countries have adopted Nationally Appropriate Mitigation Actions (NAMA) through the Cancun Agreements, this approach has appeal—at least for developing countries. Developed countries, however, are not likely to be convinced that adoption of nonbinding NAMAs is adequate. They may instead seek an approach based on the adequacy of domestic legislation or, perhaps, specific targets and timetables.

A sector-based approach may provide more flexibility for developing countries to impose emission controls on sectors where it would be most effective. For example, if a country's glass industry has taken significant steps to reduce GHG emissions, but the country has not adopted NAMAs, the glass exports would still be exempted from the BTAs. The sector approach, however, would also be much more difficult to apply and administer. The cost of gathering information about each sector of an economy and verifying that appropriate steps have been taken could be high, and such a pursuit may be technically infeasible. A country-wide approach would certainly be easier to apply, but defining what constitutes "adequate" domestic legislation would involve a lengthy debate.

## V. CONCLUSION

The need to address the adverse impacts of response measures is deeply embedded in the climate regime, with both the UNFCCC and the Kyoto Protocol directing the Parties to minimize the adverse impacts of response measures and to "meet the specific needs and concerns" of developing countries arising from the

implementation of response measures.<sup>221</sup> Despite persistent discussions, the Parties have not yet agreed on an approach to doing so. On the one hand, many developing countries have requested compensation or complete prohibitions on certain types of response measures. On the other hand, developed countries have refused to foot the bill for effects on foreign economies and do not want to put their industries at a competitive disadvantage, a perceived possibility if certain response measures are prohibited.

This Article described four options for breaking this impasse, options that recognize the underlying concerns of both developed and developing countries. These options are:

- A notification and consultation approach in which a Party notifies all other Parties prior to implementing a response measure and which allows the Parties concerned about the effects of a response measure to require consultations if their concerns are not adequately addressed.
- A “traffic light system” in which certain response measures are always prohibited (red light), some are always permitted (green light), and others may require additional scrutiny (amber light).
- A response measures impact assessment mechanism modeled on environmental impact assessments.
- An approach that exempts certain countries or products from “border carbon adjustments”—a tax or other measure applied to imported goods to reflect the costs that would have been imposed on them had they been produced in the importing country under that country’s climate change legislation.

Obstacles exist to the adoption of any of these approaches. Nonetheless, they attempt to identify the response measures that are the most economically harmful to developing countries while also preserving as many options as possible for developed countries. As such, all four options reframe the debate in a way that could breathe fresh air into what has become a relatively stale debate with firmly entrenched and immovable policy positions.

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221. UNFCCC, *supra* note 1, art. 4, para. 8.

