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## The IMO's Climate Change Challenge: Application of the Principle of Common but Differentiated Responsibilities and Respective Capabilities

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# The IMO's Climate Change Challenge: Application of the Principle of Common but Differentiated Responsibilities and Respective Capabilities

Stathis N. Palassis\*

## *Abstract*

Since 1997 the International Maritime Organization, the United Nations agency responsible for the regulation of the international shipping sector, has been developing rules for the reduction of the sector's greenhouse gas emissions. Significant difficulties have, however, emerged in the creation of appropriate economic instruments for reducing its greenhouse gas emissions, bringing to the forefront the application of the principle of common but differentiated responsibilities and respective capabilities ("CBDDRC"). A key principle within international climate change law, CBDDRC allows developing States, least developed States and the most environmentally vulnerable to be differentially treated based on their special situation and needs. Developing States, within the International Maritime Organization, rely on this principle in questioning the appropriateness of application of uniform international shipping standards to the greenhouse economic instruments currently in development, viewing this uniformity as economically disadvantageous to them. Developed State members, on the other hand, maintain the traditional view that all of the Organization's instruments, including those for the reduction of ship-source greenhouse gas emissions, must have uniform application to all States. This article addresses the difficulties that have arisen in creating economic instruments for the reduction of the international shipping sector's greenhouse gas emissions and highlights the significant compatibility issues between the work of the International Maritime Organization and international climate change law. By providing a contemporary analysis of the international law principle of CBDDRC and its application to the international shipping sector it is argued that the International

Maritime Organization cannot currently attain the synthesis necessary to effectively apply the CBDDRC principle. The article advocates that further work is needed in identifying the legal content of the CBDDRC principle and its constituent elements that are necessary before States can effectively negotiate the formation of a differential layer of responsibilities for developing States.

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### *I. Introduction*

The reduction of levels of greenhouse gases in order to stabilize the global climate is one of the greatest environmental challenges faced by the international community.<sup>1</sup> Increased concentrations of greenhouse gases in the atmosphere, and in particular increased carbon dioxide emissions, have led to rising global temperatures effecting global weather and climate

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1. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014 SYNTHESIS REPORT 6–9 (2014), *available at* <http://www.ipcc.ch/report/ar5/syr/> (stating that greenhouse gases are primarily the carbon dioxide emissions, related to human activities, released into the atmosphere, that accelerate the greenhouse effect) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

patterns.<sup>2</sup> The challenge of reducing global greenhouse gas concentrations and stabilizing global climate ultimately captures all aspects of the energy, industry and transport sectors including the reduction of carbon dioxide emissions from international shipping.<sup>3</sup> The international shipping sector plays an integral part in international trade; it underpins the global economy and is the most cost-effective and environmentally efficient mode of transport.<sup>4</sup> As international trade increases there will be a parallel growth in commercial shipping and ship-source pollution will also rise dramatically.<sup>5</sup> It is thus necessary that international shipping adopt measures to minimize its greenhouse gas emissions.<sup>6</sup>

Since 1997, the International Maritime Organization (“IMO”)<sup>7</sup> has been developing rules concerning the reduction of the international shipping sector’s greenhouse gas emissions within its wider role of reducing all forms of ship-sourced

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2. See *id.* (providing a detailed report on current climate change research involving causes, and specifically addressing ocean temperatures).

3. See *Air Pollution, Energy Efficiency and Greenhouse Gas Emissions*, INT’L MARITIME ORG., <http://www.imo.org/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Default.aspx> (last visited Dec. 14, 2014) (estimating that in 2007 the international shipping sector contributed approximately 2.7% of the total global carbon dioxide emissions) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

4. See MARINE ENV’T. PROT. COMM. INT’L MARITIME ORG., REDUCTION OF GHG EMISSIONS FROM SHIPS 6 (2010) [hereinafter REDUCTION OF GHG EMISSIONS], available at <http://www.imo.org/OurWork/Environment/PollutionPrevention/AirPollution/Documents/INF-2.pdf> (stating that while shipping is the most efficient and environmentally sound method for transporting goods, it still creates substantial greenhouse gas emissions) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

5. See *id.* at 6 (predicting growth in shipping capacity due to an expanding global economy).

6. See *id.* at 1 (describing the need for emissions regulation in a growing shipping industry).

7. See *Brief History of IMO*, INT’L MARITIME ORG., <http://www.imo.org/About/HistoryOfIMO/Pages/Default.aspx> (last visited Dec. 14, 2014) (stating that the IMO is an autonomous specialised agency of the United Nations that became active in 1958 with the mission “to promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation”) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

pollution.<sup>8</sup> Even though the IMO has successfully regulated other ship-sourced air pollutants,<sup>9</sup> economic measures for the reduction of greenhouse gas emissions and a move towards “low-carbon shipping” have proven more difficult.<sup>10</sup> In establishing economic-based instruments a significant rift has emerged within the IMO between developed and developing State members.<sup>11</sup> At the heart of the debate on carbon pricing are complex legal issues surrounding the role and responsibility of developing States to reduce their greenhouse gas emissions.<sup>12</sup> Developing States strongly rely on the international law principle of common but differentiated responsibilities and respective capabilities (the “CBDRRC principle”),<sup>13</sup> thereby questioning the appropriateness of uniform international shipping standards, which they view as economically disadvantageous.<sup>14</sup>

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8. See REDUCTION OF GHG EMISSIONS, *supra* note 4, at 5 (describing the nine criteria outlined by the secretariat of the IMO for the feasibility study directed at developing market based measures to address GHG emissions from maritime transport).

9. See International Convention for the Prevention of Pollution by Oil from Ships, Annex VI, Nov. 2, 1973, 1340 U.N.T.S. 184 (amended by Protocol Relating to the Convention for the Prevention of Pollution by Oil from Ships, Feb. 17, 1978, 1340 U.N.T.S. 61) [hereinafter MARPOL Convention] (describing that the IMO has adopted laws regulating ships’ oxides of nitrogen emissions, levels of oxides of sulfur content in fuel, the deliberate emissions of ozone depleting substances, and incineration).

10. See INTERNATIONAL LAW ASSOCIATION, SOFIA CONFERENCE (2012), *Legal Principles Relating to Climate Change* 6, (2012), available at <http://www.ila-hq.org/download.cfm/docid/4FBED782-B7F9-4195-9877E671452CBC45> [hereinafter Sofia Conference] (describing the difficulties of instituting GHG emissions reform through the legal system following the Kyoto agreement) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

11. See REDUCTION OF GHG EMISSIONS, *supra* note 4, at 17–18 (identifying differences in the economic impact of environmental policies on developing and developed countries).

12. See *id.* at 18 (noting that developing countries bear a greater economic impact when faced with environmental regulation, particularly in the shipping context).

13. See Sofia Conference, *supra* note 10, at 3 (describing the CBDRRC principle in the context of environmental reform).

14. See Christopher D. Stone, *Common but Differentiated Responsibilities in International Law*, 98 AM. J. INT’L L. 276, 301 (2004) (identifying why less developed countries rely on common but differentiated principles).

Developed States on the other hand maintain the position of uniform international shipping standards for any economic instruments proposed to be adopted.<sup>15</sup> The debate is demonstrating that there are significant compatibility issues between the work of the IMO and international climate change law that need to be reconciled.<sup>16</sup> It is against this background that the present article aims to evaluate the CDDRRC principle's application to the IMO's economic instruments for the reduction greenhouse gas emissions.<sup>17</sup>

The article will first, provide a legal analysis of the CDDRRC principle;<sup>18</sup> and secondly, evaluate the application of the CDDRRC principle to the international shipping sector.<sup>19</sup> The article will demonstrate that the IMO is not currently able to synthesise into its work rules international climate change law. The IMO ought to first focus on the common responsibility of the international shipping sector to reduce its greenhouse gas emissions. States parties can then tackle the separate and more difficult stage of differentiated responsibilities. As this article will argue, this type of focus will require a negotiation of the legal elements of the CDDRRC principle in the forming of a differential layer of responsibilities.

## *II. Common but Differentiated Responsibilities*

### *A. Identification of Common but Differentiated Responsibilities*

The CDDRRC principle has emerged from within the contemporary international environmental legal framework and is contained in many multilateral environmental instruments ("MEAs").<sup>20</sup> It is beyond the scope of the article to outline all

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15. *See id.* at 301 (describing that developed states see CDDRRC principles as giving less developed states loopholes that make treaties ineffective).

16. *See id.* at 277 (overviewing the different standards for CDDRRC found in treaties, and the difficulties they pose for signatories).

17. *See infra* Part III.

18. *See infra* Part II.A.

19. *See infra* Part II.B.

20. *See infra* notes 32, 34, 36 (describing the recognition of the CDDRRC principle in international agreements).

instances of the CBDTRC principle's incorporation into MEAs,<sup>21</sup> and instead will focus on its use within the international law of sustainable development and climate change.<sup>22</sup>

In 1972 the Stockholm Declaration of the United Nations Conference on the Human Environment ("Stockholm Declaration")<sup>23</sup> initially introduced the notion of differentiated standards and responsibilities for developing States into international environmental lawmaking.<sup>24</sup> It provides that:

Without prejudice to such criteria as may be agreed upon by the international community, or to standards which will have to be determined nationally, it will be essential in all cases to consider the systems of values prevailing in each country, and the extent of the applicability of standards which are valid for the most advanced countries but which may be inappropriate and of unwarranted social cost for the developing countries.<sup>25</sup>

It was not until twenty years later however that States met in Rio de Janeiro, from June 3 to June 14<sup>th</sup>, 1992, for the convening of the historic United Nations Conference on

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21. See *infra* notes 23, 30, 35, 41 (listing international regimes that provide for the CBDTRC principle include those concerning biological diversity, desertification, the ozone layer, the law of the sea, and marine dumping).

22. See *infra* notes 23, 30, 35, 41 (listing international regimes that provide for the CBDTRC principle include those concerning biological diversity, desertification, the ozone layer, the law of the sea, and marine dumping).

23. See United Nations Conference on the Human Environment, Stockholm, Swed., June 5–16, 1972, *Declaration of the United Nations Conference on the Human Environment*, U.N. Doc. A/CONF./48/14/REV.1 (June 16, 1972) [hereinafter Stockholm Declaration] (outlining 26 principles for environmental protection that were agreed upon by states meeting in Stockholm at the landmark U.N. Conference on the Human Environment "UNCHE") (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

24. See *id.* (declaring that developing states should not be economically hindered by environmental action).

25. *Id.* princs. 23.

Environment and Development (“UNCED”).<sup>26</sup> The UNCED was a truly landmark event for international environmental law and policy because of the extensive adoption of new green principles, including the principle of precaution, CBDRRRC and polluter pays.<sup>27</sup> According to Duncan French the CBDRRRC principle was one of the most “conspicuous aspects” of the UNCED that was evident in all the Rio instruments.<sup>28</sup> The principle permeated through all the Rio initiatives thus providing an inclusionary and equitable approach for developing and developed States alike.<sup>29</sup> The CBDRRRC principle was incorporated into the Rio Declaration on Environment and Development (“Rio Declaration”),<sup>30</sup> Agenda 21,<sup>31</sup> the Statement of Forestry Principles,<sup>32</sup> as well as in the United Nations Framework Convention on Climate Change

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26. See United Nations Conference on Environment and Development, Rio de Janeiro, Braz. June 3–14, 1992, *Rio Declaration on Environment and Development*, 1 U.N. Doc. A/CONF.151/26/Rev.1 (Aug. 12, 1992) [hereinafter Rio Declaration] (stating in the preamble, the dates on which the United Nations Conference on Environment and Development met in Rio de Janeiro) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

27. See *id.* princs. 7, 15, 16 (listing provisions of the Rio Declaration on Environment and Development).

28. Duncan French, *Developing States and International Environmental Law: The Importance of Differentiated Responsibilities*, 49 INT’L & COMP. L. Q. 35, 35–36 (2000) (describing that all of the documents produced at UNCED included CBDRRRC principles).

29. See *id.* at 35–36 (listing the documents and the CBDRRRC principles included in them).

30. See *Rio Declaration*, *supra* note 28, at 1 (declaring as a goal the establishment of “a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of society and people.”).

31. See United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3–14, 1992, *Agenda 21*, U.N. Doc. A/Conf.151/26 (June 14, 1992) (addressing environmental problems such as desertification and forestry loss) (on file with THE WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

32. See United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3–14, 1992, *Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests*, ¶ b, U.N. Doc. A/CONF.151/26 (Vol III) (June 14, 1992) (identifying environmental issues in forestry) (on file with THE WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

(“UNFCCC”),<sup>33</sup> the Convention on Biological Diversity (“CBD”),<sup>34</sup> and the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (“UNCCD”).<sup>35</sup>

The provisions of the Rio Declaration significantly expanded upon the CDDRRC principle.<sup>36</sup> Principle 6 sets the scene for developing States by providing that:

The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.<sup>37</sup>

Principle 11 provides that uniform standards may be inappropriate for developing States:

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33. See United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107 [hereinafter UNFCCC] (describing this was not an easy treaty to negotiate due primarily to three factors: firstly, scientific uncertainty over what can be viewed as unsettled climate change science; second, the significant economic costs of adopting greenhouse gas reduction measures; and third, the CDDRRC over reduction measures between developed and developing States) (on file with THE WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

34. See Convention on Biological Diversity, June 5, 1992, 1760 U.N.T.S. 79 [hereinafter CBD] (noting that, “special provision is required to meet the needs of developing countries, including the provision of new and additional financial resources and appropriate access to relevant technologies, [n]oting in this regard the special conditions of the least developed countries and small island States”) (on file with THE WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

35. See The United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, art. 4(2)(b), June 17, 1994, 1954 U.N.T.S. 3 [hereinafter UNCCD] (stating that the parties shall “give due attention . . . to the situation of affected developing country parties with regard to international trade, marketing arrangements and debt with a view to establishing an enabling international economic environment conducive to the promotion of sustainable development.”).

36. See *Rio Declaration*, *supra* note 28, Princ. 6 (giving special priority to needs of developing countries).

37. *Id.* princ. 6.

States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and development context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.<sup>38</sup>

Principle 7 then provides for differentiated responsibilities for developing States:

States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.<sup>39</sup>

The CBDRRC principle is also contained in the international climate change regime that is primarily comprised of the UNFCCC and the Kyoto Protocol to the UNFCCC ("Kyoto Protocol").<sup>40</sup> The UNFCCC is an aspirational soft law instrument.<sup>41</sup> Its preamble emphasizes that climate change requires a broad-based and effective international response based on the CBDRRC principle:

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38. *Id.* princ. 11.

39. *Id.* princ. 7.

40. *See* Kyoto Protocol to the United Nations Framework Convention on Climate Change, FCCC/CP/1997/C.7/Add1 (Dec. 11, 1997) [hereinafter Kyoto Protocol] (setting internationally binding emissions reduction targets for signatory nations) (on file with THE WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

41. *See id.* art. 2 (stating that the objective of the treaty is to achieve greenhouse gas stabilization).

Acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an appropriate and effective international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions.<sup>42</sup>

While the treaty may be seen as limited in terms of its substantive legal obligations, it is fundamental in terms of its creating an institutional framework and thus primarily contains strategic and procedural commitments.<sup>43</sup> In addition, the treaty provides that climate protection needs to occur on the basis of generational equity in accordance with the CBDRRC principle and with developed States leading climate protection measures.<sup>44</sup>

Article 4 announces a series of commitments that commence with a further recognition of the CBDRRC principle.<sup>45</sup> At the same time, the UNFCCC also creates obligations specifically for industrialized States that are contained in Annex I<sup>46</sup> of the treaty.<sup>47</sup> Annex I States are required to adopt national policies and take measures on the mitigation of climate change,

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42. UNFCCC, *supra* note 33, pmb1.

43. *See id.* art. 4(1) (coordinating national and international as well as governmental and non-governmental efforts to address climate change).

44. *See id.* art. 3(1) (“The Parties should protect the climate system . . . on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly the developed country Parties should take lead in combating climate change and the adverse effects thereof.”).

45. *See id.* art. 4(1) (“All parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall . . .”).

46. *See* United Nations Framework Convention on Climate Change, *Parties & Observers*, [http://unfccc.int/parties\\_and\\_observers/items/2704.php](http://unfccc.int/parties_and_observers/items/2704.php) (last visited Dec. 14, 2014) (defining Annex I States as members of the Organization for Economic Cooperation and Development (“OECD”) while including economies in transition (“EIT”) while Annex II States are OECD member States excluding States that are EIT) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

47. *See* UNFCCC, *supra* note 33, art. 4(2) (delineating Annex I party commitments).

by limiting national anthropogenic greenhouse gas emissions and by protecting and enhancing national greenhouse gas sinks and reservoirs.<sup>48</sup> There is therefore a clear duty solely on Annex I States to mitigate climate change.<sup>49</sup>

The Kyoto Protocol further reiterates the CDDRRC principles.<sup>50</sup> The Protocol provides specific obligations for the transport sector directing Annex I States to operate through the IMO for the reduction of ship-sourced greenhouse gas emissions.<sup>51</sup> Article 10 then expressly reaffirms that these rules need to reflect the CDDRRC principle:

All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, without introducing any new commitments for Parties not included in Annex I, but reaffirming existing commitments under Article 4 paragraph 1, of the Convention, and continuing to advance the implementation of these commitments in order to achieve sustainable development, taking into account Article 4, paragraphs 3, 5 and 7 of the Convention, shall . . . .<sup>52</sup>

The CDDRRC principle is additionally contained in other international regimes, including the following that have all

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48. See *id.* art. 4(2)(a) (noting further that equitable implementation includes “taking into account the differences in these Parties’ starting points and approaches, economic structures and resource bases, the need to maintain strong and sustainable economic growth, [and] available technologies and other individual circumstances.”).

49. See *id.* art. 4(2)(a) (“These policies and measures will demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention . . .”).

50. See Kyoto Protocol, *supra* note 40, art. 10 (recognizing “common but differentiated responsibilities”).

51. See *id.* art. 2(2) (“The Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Authority and the IMO, respectively.”).

52. *Id.* art. 10.

adopted varying differential approaches to environmental responsibilities: the protection of the ozone layer,<sup>53</sup> the law of the sea,<sup>54</sup> and marine dumping.<sup>55</sup>

### *B. Evaluation of Common but Differentiated Responsibilities*

The CBDRRC principle is one of the cornerstone principles of sustainable development demonstrating that measures must differentiate between developed and developing States to reflect their economic circumstances and history.<sup>56</sup> Despite both the Stockholm and Rio Declarations being soft law instruments and not intended as legally binding, they are important in directing

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53. See Vienna Convention for the Protection of the Ozone Layer, pmbl., *opened for signature* Mar. 22, 1985, 1513 U.N.T.S. 324, 325 (“Taking into account the circumstances and particular requirements of developing countries.”); see also Montreal Protocol on Substances that Deplete the Ozone Layer, pmbl., *opened for signature* Sept. 16, 1987, 1522 U.N.T.S. 28, 33 (“Acknowledging that special provision is required to meet the needs of developing countries for these substances.”); Nina E. Bafundo, *Compliance with the Ozone Treaty: Weak States and the Principle of Common but Differentiated Responsibility*, 21 AM. U. INT’L L. REV. 461–95 (2005-2006) (“[CBDRRC] seeks to remedy global environmental problems with participation from all corners of the world. ‘Common’ suggests that global concerns, like ozone depletion, affect every country.”).

54. See United Nations Convention on the Law of the Sea, Dec 10, 1982, 1833 U.N.T.S. 397 [hereinafter LOSC] (containing numerous provisions allowing special treatment for developing States).

55. See 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, *opened for signature* Apr. 1, 1997, 36 ILM 1, 1 [hereinafter London Protocol] (recognizing the CBDRRC principle).

56. See Susan Biniaz, Remarks, *Common but Differentiated Responsibility*, 96 AM. SOC. INT’L L. PROC. 359–63 (2002) (commenting on the types of differentiation and role of CBDRRC); see also Edith Brown Weiss, Remarks, *Common but Differentiated Responsibilities in Perspective*, 96 AM. SOC. INT’L L. PROC. 366–68 (2002) (surveying the “commonness of the responsibility, the contextual differences in implementation, and the reflections of historical practices and conditions in today’s differentiated obligations.”); Charles E. Di Leva, Remarks, *Common but Differentiated Responsibility*, 96 AM. SOC. INT’L L. PROC. 363–66 (2002) (considering multiple perspectives of CBDRRC and raising questions about its implementation); Christopher Joyner, Remarks, *Common but Differentiated Responsibility*, 96 AM. SOC. INT’L L. PROC. 358-59 (2002) (discussing the “notion of differentiated responsibility and its implications for international law.”).

the future development of international environmental law.<sup>57</sup> The Rio Declaration in particular is a significant international instrument in its promotion of a new global partnership requiring new dimensions of cooperation amongst States and peoples.<sup>58</sup> In particular, the Rio Declaration encourages a new basis for relationship between wealthy industrialized States and developing States in which the benefits and risks are equitably shared by all.<sup>59</sup>

The CBDRRC principle, as found in numerous MEAs,<sup>60</sup> is based on a common threshold of responsibility upon which differentiated legal obligations are layered.<sup>61</sup> Christopher Stone notes that “[t]he environment is emerging as the most fertile field for nonuniform obligations.”<sup>62</sup> Philippe Sands and Jacqueline Peel comment:

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57. See Rebecca M. Bratspies, *Sustainability: Can Law Meet The Challenge?*, 34 SUFFOLK TRANSNAT'L L. REV. 283, 308 (2011) (“The Stockholm Declaration, [and] the Rio Declaration . . . are all soft-law documents that have significantly changed how law and legal institutions approach questions of sustainability.”); Simon SC Tay, *Southeast Asian Fires: The Challenge for International Environmental Law and Sustainable Development*, 11 GEO. INT'L ENVTL. L. REV. 241, 263 (1999) (“[S]oft’s law principles suggest the likely future direction of legal development and informally establish acceptable norms of behavior for nations.”).

58. See Marc Pallemerts, *The Future Of Environmental Regulation: International Environmental Law In The Age Of Sustainable Development: A Critical Assessment Of The Unced Process*, 15 J.L. & COM. 623, 651 (1996) (“The Rio Conference satisfied an important claim of developing countries by explicitly recognizing in Principle 7 of the Declaration, that, ‘in view of the different contributions to global environmental degradation, States have common but differentiated responsibilities.’”); *Rio Declaration*, *supra* note 30, princ. 7 (“States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem.”).

59. See *Rio Declaration*, *supra* note 30, princ. 7 (“The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.”).

60. See *supra* notes 23, 30, 35, 41 and accompanying text.

61. See Stone, *supra* note 4, at 276–77 (2004) (“‘Common’ suggests that certain risks affect and are affected by every nation . . . not all countries should contribute equally. [CBDRRC] charges some nations, ordinarily the Rich, with carrying a greater share of the burden than others, ordinarily the Poor.”).

62. *Id.* at 279.

In practical terms, the principle of common but differentiated responsibility has at least two consequences. First, it entitles, or may require, all concerned states to participate in international response measures aimed at addressing environmental problems. Secondly, it leads to environmental standards which impose differing obligations on states.<sup>63</sup>

“Differentiated” signifies a special treatment to common environmental problems through introducing notions of equity into international environmental lawmaking.<sup>64</sup> This type of equity can be reflected in various ways: exemptions from obligations,<sup>65</sup> lessened obligations,<sup>66</sup> and longer periods of time to meet set obligations.<sup>67</sup> Introducing such differentiation into international environmental law acknowledges the particular needs of developing States in creating international rules.<sup>68</sup> Differentiation within an environmental context is certainly effective in its attempt to allow these States the right to development, a right that has been more extensively enjoyed by

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63. PHILIPPE SANDS & JACQUELINE PEEL, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 235 (3rd ed. 2012).

64. *See id.* at 233 (“The principle of common but differentiated responsibility has developed from the application of equity in general international law, and the recognition that the special needs of developing countries must be taken into account in the development, application and interpretation of international environmental law.”).

65. *See id.* at 235 (commenting on the UNFCCC’s obligations extending only to developed nations).

66. *See id.* (identifying “less stringent commitments” as sometimes appropriate).

67. *See id.* (“Different techniques available to apply [different legal obligations] include ‘grace periods.’”).

68. *See id.* (finding “express[] recogni[tion]” of “special needs” in differentiated responsibility).

developed States.<sup>69</sup> Application of the CBDRRC principle thus also contributes to the attaining of intra-generational equity.<sup>70</sup>

According to Lavanya Rajamani, differential treatment is both the most effective and the most controversial of the techniques available to integrate States from divergent spaces into international environmental regimes.<sup>71</sup> And in order to attain common environmental objectives:

Differential treatment in favour of some may well be the pragmatic outcome of a negotiation process that seeks to achieve common environmental objectives in the face of divergent short-term interests and ecological and economic interdependence.<sup>72</sup>

Yet this differentiation between developing and developed States may also be over-simplistic in its central meaning. For example, not all States fit neatly into the categories of “developing” and “developed” and in some cases the distinction between developing and developed States may have become blurred through application of problematic developmental classification criteria.<sup>73</sup>

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69. See Shawkat Alam & Md. Saiful Karim, *Linkages of Development and Environment: In Search of an Integrated Approach through Sustainable Development*, 23 GEO. INT'L ENVTL. L. REV. 345, 362 (2011) (“Implicit in the [CBDRRC] Principle is the recognition that the goal of sustainable development cannot be realized through means that deny people . . . their individual and collective right to development.”).

70. See *Rio Declaration*, *supra* note 30, para. 3 (providing for generational equity such that “[t]he right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.”).

71. See LAVANYA RAJAMANI, *DIFFERENTIAL TREATMENT IN INTERNATIONAL ENVIRONMENTAL LAW*, 1 (2006).

72. *Id.* at 6.

73. See *Composition of Macro Geographical (Continental) Regions, Geographical Sub-Regions, and Selected Economic and Other Groupings*, U.N. STATISTICS DIV., (Oct. 31, 2013), <http://unstats.un.org/unsd/methods/m49/m49regin.htm> (noting that “[t]here is no established convention for the designation of ‘developed’ and ‘developing’ countries or areas in the United Nations system.”) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

The controversial nature of the CDDRRC principle is particularly prominent when examining its application within international climate change law where States have already been classified as developed or developing.<sup>74</sup> Climate change law commences by recognizing the common responsibility that all States have concerning the protection of global climate in the same way that all States have a common responsibility and shared obligations over the protection of the global commons.<sup>75</sup> It then builds on this common layer by introducing differentiated levels of environmental responsibility for developing States thereby recognising their special needs while at the same time recognizing the fact that developed States have contributed more to the demise of global climate.<sup>76</sup> It takes into account each State's contribution to climate change as well as their respective capacity to remedy the contribution<sup>77</sup> and recognises the fact that Annex I States created 80 per cent of the current problems of climatic change faced.<sup>78</sup> It further recognises that developing

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74. See Paul G. Harris, *Common but Differentiated Responsibility: The Kyoto Protocol and United States Policy*, 7 N.Y.U. ENVTL. L.J. 27, 33–34 (1999) (noting that during negotiation of the Kyoto Protocol developing countries refused to agree to limitations on GHG emissions unless developed countries adopted similar emission limitations); Sabrina Safrin, *Un-Exceptionalism of US Exceptionalism*, 41 VAND. J. TRANSNAT'L L. 1307, 1342 (highlighting several arguments advanced by developing countries advocating for differentiated responsibilities under international environmental law as between developing and developed countries); see also Christopher Joyner, *Burning Bridges, Fuelling Global Discontent: The United States and Rejection of the Kyoto Protocol*, 33 VICTORIA U. WELLINGTON L. REV. 27, 49 (2002) (criticizing the Bush administration's failure to submit the Kyoto Protocol to the United States Senate for ratification).

75. See *Rio Declaration*, *supra* note 30, princ. 2. (describing State responsibility "to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.").

76. See *id.* princ. 7 (highlighting technology, financial resources, and varying pressures placed on the environment as reasons for differing responsibilities).

77. See *id.* (outlining countries common but differentiated responsibilities).

78. See COUNCIL ON FOREIGN RELATIONS, THE GLOBAL CLIMATE CHANGE REGIME (June 19, 2013), available at <http://www.cfr.org/climate-change/global-climate-change-regime/p21831> (acknowledging the Major Economics Forum contains countries responsible for 80% of global emissions) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

States need flexibility in obligation to combat climate change thereby ensuring that their economies have the opportunity to grow without obligations that would place constraints imposed by stringent emission reduction targets.<sup>79</sup> Duncan French makes the important point that it should not be presumed that developing States do not have the potential to cause immense environmental damage<sup>80</sup> and “that differentiation cannot simply impose additional obligations on developed States *ad infinitum*.”<sup>81</sup>

The Seabed Disputes Chamber of the International Tribunal has recently considered the CBDRRC principle for the Law of the Sea (“ITLOS”) in the *Advisory Opinion on Responsibilities and Obligations in the Area* requested by the International Seabed Authority (“Seabed Disputes Chamber Advisory Opinion”).<sup>82</sup> The Chamber had to consider whether developing States should have less onerous environmental protection obligations than those for developed States.<sup>83</sup> On the question of ‘preferential treatment’ the *Seabed Disputes Chamber Advisory Opinion* handed down on 1 February 2011 concluded “the general provisions concerning the responsibilities and liability of the sponsoring State apply equally to all sponsoring States, whether developing or developed.”<sup>84</sup> According to the Seabed Disputes Chamber:

Equality of treatment between developing and developed sponsoring States is consistent with the need to prevent commercial enterprises based in

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79. See *id.* (highlighting countries like China and the United States who were looking for a more flexible option).

80. See French, *supra* note 28, at 50 (highlighting the potential of developing countries to cause environmental damage).

81. *Id.*

82. See Request for an Advisory Opinion from Nii Allotey Adunton, Secretary-General of the International Seabed Authority, to Judge Tullio Treves, President of the Seabed Disputes Chamber (May 11, 2010) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

83. See Responsibilities and Obligations of State Sponsoring Persons and Entities with Respect to Activities in the Area, Case No. 17, Advisory Opinion of Feb. 1, 2011, 6, ¶ 1, available at [http://www.itlos.org/fileadmin/itlos/documents/cases/case\\_no\\_17/adv\\_op\\_010211.pdf](http://www.itlos.org/fileadmin/itlos/documents/cases/case_no_17/adv_op_010211.pdf) (presenting the issues to be reviewed by the Seabed Disputes Chamber) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

84. *Id.* ¶ 158.

developed States from setting up companies in developing States, acquiring their nationality and obtaining their sponsorship in the hope of being subjected to less burdensome regulations and controls. The spread of sponsoring States “of convenience” would jeopardize uniform application of the highest standards of protection of the marine environment, the safe development of activities in the Area and protection of the common heritage of mankind.<sup>85</sup>

The Seabed Disputes Chamber Advisory Opinion is however disappointing for its failure to further elaborate on the CDDRRC principle. It was a missed opportunity that could have provided conceptual discourse and a further elaboration on the legal status and substantive composition of the CDDRRC principle. The Seabed Disputes Chamber Advisory Opinion left the principle’s meaning, content, legal status and application still requiring further analysis.

The CDDRRC principle is under current consideration by the International Law Association (“ILA”).<sup>86</sup> In The Legal Principles Relating to Climate Change: First Report (2010) (“ILA First Report”),<sup>87</sup> member Alan Boyle expressed the view that after Copenhagen the principle of CDDRRC is arguably “not viable.”<sup>88</sup> At the same meeting Eric Canal-Forgues expressed the view that that emphasis should be placed on the “common

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85. *Id.* ¶ 159.

86. Thus far the International Law Association Committee on the Legal Principles relating to Climate Change has completed its first two meetings: ILA, The Hague Conference (2010); and ILA, Sofia Conference (2012). The Committee expects to have completed its work on the ‘Legal Principles relating to Climate Change’ and to adopt draft articles and commentaries in its Third (and final) Report that will be submitted to the ILA Conference at Washington in 2014.

87. See ILA, The Hague Conference (2010), *Legal Principles Related to Climate Change First Report*, Aug. 15–20, 2010, at 10, [hereinafter ILA First Report], available at <http://www.ila-hq.org/en/committees/index.cfm/cid/1029> (continuing previous international efforts) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

88. See *id.* at 10 (highlighting differing views of Committee members).

responsibilities” which is that part that is “core and realistic,” whereas the “but differentiated responsibilities” has more limited scope and is more controversial.<sup>89</sup> The ILA First Report found that the core content of the CDDRRC principle and the nature of the obligation entailed to be deeply contested.<sup>90</sup> The negotiations and literature generate at least two incompatible views on the principle’s content.<sup>91</sup> One view is that the CDDRRC principle “is based on the differences that exist with regard to the level of economic development.”<sup>92</sup> Alternatively, the CDDRRC principle is based on “differing contributions to global environmental degradation and not in different levels of development.”<sup>93</sup> As to its application some view it as obligatory, while others contend a discretionary nature.<sup>94</sup> Given these divergences the ILA First Report concludes that the clear weight of opinion is that the principle of CDDRRC has not acquired customary international law status.<sup>95</sup>

The Legal Principles Relating to Climate Change: Second Report (2012) (“Sofia Conference”),<sup>96</sup> found that even though the CDDRRC principle has not yet attained customary international law status it is a principle of considerable legal weight.<sup>97</sup> The Sofia Conference Report then provides that while some elements of the CDDRRC principle may be agreed on others are subject to

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89. See *id.* (outlining Eric Canal-Forgues divergent interpretation of the CDDRRC).

90. See *id.* at 11 (noting the “deeply contested” nature of the CDDRRC principles).

91. See *id.* (describing two differing views on the content contained in CDDRRC principles).

92. *Id.* (quoting Bettina Kellersmann, Die gemeinsame, aber Differenzierte Verantwortlichkeit von Industriestaaten und Entwicklungsländern für den Schutz der globalen Umwelt 335 (2000) (English Summary)).

93. *Id.*

94. See *id.* (noting a disagreement concerning the nature of the obligations inherent in CDDRRC principles).

95. See *id.* (determining that CDDRRC principles have not gained acceptance as customary international law).

96. See Sofia Conference, *supra* note 10.

97. See *id.* at 9 (acknowledging the CDDRRC’s “considerable legal gravitas.”).

debate.<sup>98</sup> There is agreement that there is a common responsibility on all States to protect the global climate system.<sup>99</sup> There is much less agreement, however, with respect to criteria for differentiation:

Stark disagreements remain on whether or not historical and per capita emissions are appropriate criteria for differentiation. Another contested concept is the temporal element, i.e. when should major emitters have 'known' that their emissions were causing harm, and is this relevant to determining current and future responsibility and obligations? Similarly, it remains controversial whether and how commitments of developed countries to provide financial and technical assistance to developing countries relate to CDDRRC . . . Little common ground also exists with respect to the need and criteria for graduating from differentiation. Differentiation exists where relevant differences exist. It follows logically that when the relevant differences vanish, differentiation should cease, or at least that the lack of differences should be taken into account in fashioning future obligations under the regime.<sup>100</sup>

The Sofia Conference also explored complementary principles such as prevention and good faith and sought to examine how the climate change regime interacts and overlaps with other MEAs, in particular those relating ozone depletion, transboundary air pollution and biological diversity.<sup>101</sup> Additionally the Sofia Conference sought to examine the relationship of the climate change regime with international law

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98. *See id.* (noting that divergent opinions concerning CDDRRC principles have prevented those principles from becoming customary international law).

99. *See id.* at 10 ("There is agreement that the protection of the climate system is a common responsibility of all parties to the FCCC, developed and developing.").

100. *Id.* at 11.

101. *See id.* at 32–34 highlighting these as important aspects for progress in international climate change law).

more generally as it relates to trade, human rights, the law of the sea and the protection of world heritage.<sup>102</sup>

There is thus yet no clear answer on the evaluation of the CBDRRC principle as a legally binding norm of international law thereby requiring States to abide by this principle: the customary international law status of differentiated responsibilities is unsettled.<sup>103</sup> This is due largely to the lack of consistency in the principle's practice and the fact that varying uses of the principle have been adopted into MEAs. Philippe Cullet, Lavanya Rajamani and Christopher Stone and have in no uncertain terms expressed the view that custom has not yet crystallized around the CBDRRC principle.<sup>104</sup> Christopher Stone, in particular, notes that "[i]t appears that as the number and reach of multilateral treaties has increased, so, too, has the incidence of obligation-differing agreements. But that falls short of proof that a new normative 'principle' is in play."<sup>105</sup>

### *III. Application of Common but Differentiated Responsibilities to the International Shipping Sector*

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102. See *id.* at 25–44 (analysing various issues related to international law and climate change).

103. See generally, Stathis Palassis, *Beyond the Global Summits: Reflecting on the Environmental Principles of Sustainable Development*, 22 COLO. J. INT'L ENVTL. L. & POL'Y 41 (2011) (discussing the legality of the Rio Declaration's environmental principles, which were not negotiated as legally binding rules but some portions have crystallized as rules of customary international law); Daniel B. Magraw, *Legal Treatment of Developing Countries: Differential, Contextual, and Absolute Norms* 1 COLO. J. INT'L ENVTL. L. & POL'Y 69, (1990) (analyzing the treatment of differentiated responsibilities to realize effective solutions to international environmental problems).

104. See Philippe Cullet, *Differential Treatment in International Law: Towards a New Paradigm of Inter-State Relations*, 10 EURO. J. INT'L L. 549, 570 (1999) ("The expansion of the international community and the globalization often environmental and economic issues have led to the search for new legal tools to take into account existing disparities and inequalities among states and to foster a better implementation of international agreements."); Lavanya Rajamani, *The Principle of Common but Differentiated Responsibility and the Balance of Commitments under the Climate Regime*, 9 REV. EUR. COMMUNITY & INT'L ENVTL. L 120, 124 (2000) ("The legal status of the principle of common but differentiated responsibility in international environmental law and, in particular, within the climate regime is subject to dispute."); Stone, *supra* note 14, at 299 ("[T]he principle is neither universal nor self-evident.").

105. Stone, *supra* note 14, at 300.

### A. The IMO's Work on Climate Change

During the last fifteen years the IMO has been developing rules for the reduction of the international shipping sector's greenhouse gas emissions. This reduction is addressed through the three main pillars of the IMO's work: technical measures; operational measures; and, market-based measures.<sup>106</sup> Major progress has been made by the IMO on both technical and operational measures.<sup>107</sup> Market-based measures have proven more difficult however due in large to the inability of the IMO to incorporate the CBDRRC principle into its rules.<sup>108</sup>

The first of the IMO's climate change initiatives to reduce the international shipping sector's greenhouse gas emissions was a study commissioned as a result of Resolution 8 "CO<sub>2</sub> Emissions from Ships" adopted at a Diplomatic Conference on Air Pollution held in September 1997.<sup>109</sup> Resolution 8 required the IMO to undertake a study of ship-sourced greenhouse gas emissions as part of a global inventory of greenhouse gas emissions.<sup>110</sup> The Resolution invited the IMO's Marine Environment Protection Committee ("MEPC") to consider feasible greenhouse gas reduction strategies for the international shipping sector.<sup>111</sup> The result of this was the "Study of Greenhouse Gas Emissions from

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106. See Stathis Palassis, *Climate Change and Shipping*, in CLIMATE CHANGE AND THE OCEANS 200 (Robin Warner & Clive Schofield eds., 2012) (discussing the IMO's work in the reduction of the international shipping sector's greenhouse gas emissions).

107. See IMO, *Historical Background on GHG*, <http://www.imo.org/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Historic%20Background%20GHG.aspx> (last visited Dec. 14, 2014) (providing detailed background of the International Maritime Organisations work with greenhouse gases) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

108. See *id.* (stating that the consideration of market-based measures had to be postponed).

109. See *id.* (explaining that the resolution "invited the Marine Environment Protection Committee (MEPC) to consider what CO<sub>2</sub> reduction strategies might be feasible in light of the relationship between CO<sub>2</sub> and other atmospheric and marine pollutants.").

110. See *id.* (explaining that the resolution required a study of "CO<sub>2</sub> emissions from ships for the purpose of establishing the amount and relative percentage of CO<sub>2</sub> emissions from ships").

111. See *id.* (describing the need for reduction strategies in light of the relationship between CO<sub>2</sub> and other atmospheric marine pollutants).

Ships” that was presented to the 45<sup>th</sup> session of the MEPC in 2000.<sup>112</sup>

A further Resolution A.963(23) on “IMO Policies and Practices related to the Reduction of Greenhouse Gas Emissions from Ships” was adopted by the twenty-third session of the IMO Assembly in December 2003.<sup>113</sup> It recognised carbon dioxide as the main greenhouse gas emitted by ships and directed that the MEPC identify and develop technical, operational and market-based measures to reduce the greenhouse gas emissions from international shipping.<sup>114</sup> In October 2006 the MEPC adopted a work plan for the development of technical and operational measures necessary for the reduction of the greenhouse gas emissions of international shipping.<sup>115</sup> The “Second IMO GHG Study 2009” updated the first greenhouse gas study.<sup>116</sup> This second study addressed the principal greenhouse gases<sup>117</sup> and other relevant substances,<sup>118</sup> and showed that exhaust gas is the

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112. *See id.* (providing a brief history of greenhouse gas regulations by the IMO).

113. *See* IMO, *IMO Policies and Practices Related to the Reduction of Greenhouse Gas Emissions from Ships*, Res. A.963(23) (Dec. 5, 2003) (supporting further regulations to reduce greenhouse gas emissions) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

114. *See id.* at 2 (requesting the Marine Environment Protection Committee (“MEPC”) develop a greenhouse gas emission index for ships as well as guidelines for the application of that index).

115. *See* IMO, *Market-Based Measure*, <http://www.imo.org/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Market-Based-Measures.aspx> (last visited Dec. 15, 2014) (describing the history of market-based measures as part of a comprehensive measure for the regulation of greenhouse gases) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

116. *See* IMO, *Prevention of Air Pollution from Ships, Second IMO GHG Study 2009*, available at [http://www.imo.org/blast/blastDataHelper.asp?data\\_id=27795&filename=GHGStudyFINAL.pdf](http://www.imo.org/blast/blastDataHelper.asp?data_id=27795&filename=GHGStudyFINAL.pdf) [hereinafter the Second IMO GHG Study 2009] (analysing market based measures to reduce GHG emissions) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE AND THE ENVIRONMENT).

117. *See* Kyoto Protocol to the United Nations Framework Convention on Climate Change, Annex A Dec. 10, 1997 (setting out the six principal greenhouse gases as: carbon dioxide (“CO<sub>2</sub>”), methane (“CH<sub>4</sub>”), nitrous oxides (“N<sub>2</sub>O”), hydrofluorocarbons (“HFCs”), perfluorocarbons (“PFCs”) and sulphur hexafluoride (“SF<sub>6</sub>”).

118. *See* *Second IMO GHG Study*, *supra* note 116 (describing other relevant substances to include: nitrous oxide (“NO<sub>x</sub>”), non-methane volatile

major source of carbon dioxide/greenhouse gas emissions from international shipping.<sup>119</sup> The objectives of this study were to assess the present and future greenhouse gas emissions from international shipping, the potential for reduction of these emissions through technology and policy and their impacts on climate change.<sup>120</sup>

At the sixty-second meeting of the MEPC in July 2011 the necessary consensus was reached to make the use of technical and operational measures mandatory.<sup>121</sup> The rules on technical and operational measures are contained in a new Chapter 4 to Annex VI of the MARPOL Convention<sup>122</sup> that commenced operation on January 1, 2013.<sup>123</sup> Technical measures are now provided for in rules concerning the Energy Efficiency Design Index (“EEDI”) a tool that assigns specific energy efficiency to new ships.<sup>124</sup> Pursuant to Chapter 4 all new ships of 400 gross tons and above must be certified with an International Energy Efficiency Certificate (“IEE Certificate”) and have an “Attained EEDI” (actual verifiable values) which is equal or less to the

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organic compounds (“NMVOC”), carbon monoxide (“CO”), particulate matter (“PM”) and oxides of sulphur (“SOx”).

119. See *id.* at 21 (concluding that carbon dioxide is the most important GHG emitted by ships).

120. See *id.* at 9 (describing the main objectives of the study).

121. See *Breakthrough in IMO: Legally Binding Agreement to Reduce CO<sub>2</sub> Emissions from International Shipping*, INT’L MARITIME ORG. <http://www.imo.org/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Breakthrough-at-MEPC-62.aspx> (last visited Dec. 15, 2014) (describing the adoption, through resolution, MEPC.203 (62) that mandates EEDI and SEEMP) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE AND THE ENVIRONMENT).

122. See MARPOL Convention, *supra* note 9, at 9 (detailing regulations on energy efficiency for ships).

123. See IMO, *supra* note 121, para. 11 (noting that chapter four, however, does allow States to waive compliance with the EEDI requirements for a period of up to four years).

124. See Lloyd’s Register LR MEPC 62 Agenda Preview, *Annex 1 Prevention of Air Pollution, Including Control of Green House Gas (GHG) Emission*, (2011) (“[The] EEDI reflects the amount of [CO<sub>2</sub>] generated per tonne/mile . It constitutes a uniform approach to calculation of a ship’s energy efficiency during the design and build of new ships and will be used to control [CO<sub>2</sub>] levels emitted for future ships by encouraging improvements in ship design.”).

“Required EEDI” a base-line calculated per ship category.<sup>125</sup> Operational measures are provided for in rules concerning the Energy Efficiency Operational Indicator (“EEOI”) as measured through the Ship Energy Efficiency Management Plan (“SEEMP”) for ongoing operational management.<sup>126</sup> Further, all ships are required to be provided with a SEEMP providing for procedures necessary to improve the energy efficiency of ships’ operations.<sup>127</sup> Each ship must keep on board the ship specific SEEMP which may form part of the ship’s Safety Management System.<sup>128</sup> The international shipping sector has now become the first international industry sector to adopt a mandatory greenhouse gas reduction scheme combating its carbon dioxide/greenhouse gas emissions.<sup>129</sup>

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125. See IMO, *Mandatory Energy Efficiency Measures for International Shipping Adopted at IMO Environment Meeting*, <http://www.imo.org/MediaCentre/PressBriefings/Pages/42-mepc-ghg.aspx#.VG44PmctCJB> (last visited Dec. 15, 2014) (stating that the new regulations apply to seven classes of ships: bulk carriers; gas tankers; oil, chemical and noxious liquid substances tankers; container ships; cargo ships; refrigerated cargo carriers; and combination carriers) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

126. See *id.* (explaining that the adoption and implementation of energy efficiency standards through technical and operational measures is critical as it establishes the standards for ship design and building, emissions measurement, emissions management, operating procedures, and monitoring and evaluating mechanisms).

127. See *Technical and Operational Measures*, INT’L MARITIME ORG., <http://www.imo.org/OurWork/Environment/PollutionPrevention/AirPollution/Pages/Technical-and-Operational-Measures.aspx> (last visited Dec. 15, 2014) (listing in detail the SEEMP for all ships) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

128. See *id.* (outlining potential portions of ships individual safety management system).

129. See Fiona Harvey, *Airlines Agree to Curb Their Greenhouse Gas Emissions by 2020*, THE GUARDIAN, <http://www.guardian.co.uk/environment/2013/jun/04/airlines-agree-to-curb-greenhouse-gas-emissions> (last visited Dec. 15, 2014) (indicating that it is worth noting that on Monday June 3, 2013, the International Air Transport Association adopted a resolution calling on States to agree to measures regulating the carbon dioxide emissions from air travel to commence operation in 2020) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

*B. The IMO and Market-Based Measures*

Discussions by the MEPC on market-based measures and the adoption of economic instruments have been ongoing since 2008. Despite the considerable overall progress that has been made within the MEPC, consensus on market-based measures and the adoption of appropriate economic instruments combating the sector's carbon-dioxide emissions is yet to be reached.<sup>130</sup> The major difficulty experienced by the MEPC has been the role of the CBDRRC principle and its accommodation within the rules of the international shipping sector.<sup>131</sup>

At the fifty-eighth meeting of the MEPC in 2008, there was discussion concerning an emissions trading scheme, a global levy on fuel, and other hybrid market-based schemes for ships engaged in international trade.<sup>132</sup> The majority of delegations, however, opposed the development of any market-based measures until all the issues surrounding the application of differentiated responsibilities had been resolved in the UNFCCC context and in full recognition of Article 2(2) of the Kyoto Protocol.<sup>133</sup> Other delegations expressed the view that as market-based measures are a highly complex matter and still at a preliminary stage in

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130. See Sophia Conference, *supra* note 10, at 6 (describing the hurdles faced in implementing "clear and binding obligations" to reducing greenhouse gasses).

131. See *infra* note 160 (describing the problems the IMO has in implementing).

132. See Marine Env't Prot. Comm., *Marine Environmental Protection Committee (MEPC), 58th Session: 6-10 October 2008*, INTERNATIONAL MARITIME ORGANIZATION, <http://www.imo.org/MediaCentre/MeetingSummaries/MEPC/Archives/Pages/default.aspx> (last visited Dec. 15, 2014) ("Major progress was made on reducing emissions from ships, in achieving safer and more environmentally safer recycling of ships, and in facilitating ballast water management.") (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

133. See *id.* ("[S]everal other delegations expressed the opinion that, given the global mandate of IMO as regards the safety of ships and the protection of the marine environment from ship emissions, the IMO regulatory framework on the GHG issue should be applicable to all ships, irrespective of the flags they fly.").

their development further information and studies were needed.<sup>134</sup>

The Committee therefore decided to defer a focused debate on the matter to its fifty-ninth meeting.<sup>135</sup> At the Committee's fifty-ninth meeting in 2009 there was debate as to: first, an offset for the growing greenhouse gas emissions from ships and incentive for industry investment in fuel and energy efficient shipping; and second, the funds generated through market-based measures to be utilized for related purposes such as mitigation and adaptation activities in developing States.<sup>136</sup>

At the sixtieth meeting of the MEPC in 2010, an agreement was reached on how to proceed in regards to market-based measures in which the MEPC Expert Group on Feasibility Study and Impact Assessment of Possible Market-based Measures ("Expert Group") would consider submitted documents and report back to the Committee's sixty-first meeting.<sup>137</sup> The Committee noted that it had to develop a methodology of feasibility studies and impact assessments to assess the proposed mechanisms.<sup>138</sup>

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134. See *id.* ("Further work on the limitation and reduction of GHGs from ships will continue at an intersessional meeting early in 2009, for presentation to MEPC 59 in July, which will benefit from the findings of the second and final part of the update of the 2000 IMO study.").

135. See *id.* ("The MEPC also held a discussion on market-based measures, and agreed to further discuss such measures at MEPC 59.").

136. See Marine Env't Prot. Comm., *Marine Environmental Protection Committee (MEPC), 59th Session: 13-17 July 2009*, INT'L MARITIME ORG.

<http://www.imo.org/MediaCentre/MeetingSummaries/MEPC/Archives/Pages/default.aspx> (last visited Dec. 15, 2014) (reporting debates and solutions on agreements reached and proposals for future debates) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

137. See *id.* ("With regard to market-based measures, the Committee agreed to establish an Expert Group on the subject to undertake a feasibility study and impact assessment of the various proposals submitted for a market-based instrument for international maritime transport – again, reporting back to MEPC 61.") (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

138. See *id.* ("[The committee] agreed a work plan for further consideration, at future meetings, of proposed market-based instruments to provide incentives for the shipping industry.").

The Expert Group organized its work within a structure of four specialist groups.<sup>139</sup> Again, however, some developing States, in this instance Brazil, China, Cuba, India and Saudi Arabia, advocated for a postponement of any further work on market-based measures until after the 16<sup>th</sup> meeting of the conference of the parties to the UNFCCC.<sup>140</sup> The sixtieth meeting also agreed on a methodology that is contained in the Terms of Reference for the Expert Group.<sup>141</sup>

The sixty-first meeting of the MEPC held extensive debate on how to progress on the development of suitable market-based measures for international shipping.<sup>142</sup> Substantial progress on such measures was not, however, expected at this meeting.<sup>143</sup> The Committee instead discussed the way forward in the adoption of market-based measures as well as the comprehensive Report of the Expert Group on feasibility and impact assessment of the several market-based measures that included eight identified proposals.<sup>144</sup> The proposed market-based measures considered by the Report utilized eight mechanisms for the reduction of greenhouse gas emissions, comprising both in-sector and out-of-sector mechanisms.<sup>145</sup> The Expert Group, however, found that the proposals to varying degrees lacked sufficient detail and that the

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139. See REDUCTION OF GHG EMISSIONS, *supra* note 4, at 6. (establishing four task groups: environment; shipping and maritime; administrative and legal; and trade, development and developing States).

140. See *id.* at 16 (outlining the differing opinions related to the application of market-base measures).

141. See *id.* at 20 (stating that the Terms of Reference include three tasks, including scope of feasibility, identification of reduction potential of GHG, and third, the study of difference in socioeconomic capabilities between developing and developed States).

142. See Marine Env't Prot. Comm., *Marine Environmental Protection Committee (MEPC), 61st Session: 27 September to 1 October 2010*, INT'L MARITIME ORG. <http://www.imo.org/MediaCentre/MeetingSummaries/MEPC/Pages/MEPC-61st-Session.aspx> (last visited Dec. 15, 2014) (stating the lengthy debate focused around the Expert Group's findings) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

143. See *id.* (discussing the scope of the Expert Group's work).

144. See *id.* (“[F]ollowing the submission of a comprehensive report by an Expert Group, which had carried a feasibility study and impact assessment of several possible market-based measures submitted by governments and observer organizations.”).

145. See REDUCTION OF GHG EMISSIONS, *supra* note 4, at 9–10 (listing mechanisms both in and out of sector).

different levels of maturity of the proposals complicated their evaluation.<sup>146</sup> It concluded that it needed more information on all the possible measures that required further elaboration and development before being able to make any definitive policy assessment.<sup>147</sup>

At the sixty-second meeting of the MEPC from July 11 to 15, 2011, discussion was on the Expert Group's report and there were no major developments regarding the adoption of market-based measures.<sup>148</sup> The MEPC held its sixty-third meeting from February 27 to March 2, 2012 and debated at length issues arising from the proposed market-based measures.<sup>149</sup> The Committee also discussed the nine current proposals before the MEPC.<sup>150</sup> The Committee, however, could not reach consensus on a suitable analysis method and thus deferred the establishment of terms of reference for the analysis of proposals to MEPC 64.<sup>151</sup> Conclusion also could not be reached on the draft Resolution for Technical Co-operation and Transfer of Technology to developing countries following on the MEPC 62 Annex VI amendments and

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146. See *id.* at 19 (“The evaluation was complicated by the different levels of maturity of the proposals. Proposals with a high level of maturity generated more discussion compared to those that were less developed.”).

147. See *id.* at 19 (“These issues require further policy considerations before in order to be more properly addressed.”).

148. Marine Env't Prot. Comm., *Marine Environmental Protection Committee (MEPC), 63rd Session: 27 February to 2 March 2012*, INT'L MARITIME ORG. <http://www.imo.org/MediaCentre/MeetingSummaries/MEPC/Pages/MEPC-63rd-session.aspx> (last visited Dec. 15, 2014) (“The MEPC continued its intensive consideration of proposed market-based measures (“MBMs”), which would complement the technical and operational measures already adopted.”) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

149. See *id.* (adopting additional guidelines: Methods of Calculation of the Attained Energy Efficiency Design Index (“EEDI”) for new ships; Development of a Ship Energy Efficiency Management Plan (“SEEMP”); Survey and Certification of the Energy Efficiency Design Index (“EEDI”); and calculation of reference lines for use with Energy Efficiency Design Index).

150. See *id.* (“An important series of guidelines to support the uniform implementation of mandatory measures to increase energy efficiency and reduce emissions of greenhouse gases (GHGs) from international shipping was adopted . . . paving the way for the regulations to be smoothly and uniformly implemented by Administrations and industry.”).

151. See *id.* (“Further debate will continue at the next session (MEPC 64, 1 to 5 October 2012).”).

this would be further discussed at MEPC 64.<sup>152</sup> At the sixty-fourth meeting of the MEPC from October 1 to 5, 2012, the Committee primarily considered additional documentation by delegates to the various proposals currently before the Committee.<sup>153</sup> Due to other pressing matters, however, the Committee decided to keep the documents under abeyance and postpone further debate on market-based measures to the sixty-fifth meeting to be held from May 13 to 17, 2013.<sup>154</sup>

### *C. The Way Forward on Market-Based Measures*

The Expert Group has now provided its comprehensive report containing opinion on the compelling need and purpose of market-based measures as well as the feasibility and impact assessment of the various market-based or carbon price measures.<sup>155</sup> The scope of the work of the Expert Group was to evaluate the current proposals with the aim of assessing the extent to which they could reduce the greenhouse gas emissions from international shipping while giving priority to the maritime sectors of developing States, least-developed States and small-island developing States.<sup>156</sup>

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152. See *id.* (“Linked to the implementation of energy efficiency measures was the draft MEPC resolution on the Promotion of technical cooperation and transfer of technology relating to the improvement of energy efficiency of ships, where it was agreed to further discuss the draft at the next session.”).

153. See Marine Env’t Prot. Comm., *Marine Environmental Protection Committee (MEPC), 64th Session: 1 to 5 October 2012*, INTERNATIONAL MARITIME ORGANIZATION <http://www.imo.org/MediaCentre/MeetingSummaries/MEPC/Pages/MEPC-64th-session.aspx> (last visited Dec. 15, 2014) (“The MEPC received updates to several of the proposed market-based measures (MBMs) to reduce GHG emissions, which would complement the technical and operational measures already adopted.”) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

154. See *id.* (“However, in view of time constraints at the current session, the MEPC agreed to postpone detailed debate on MBMs to MEPC 65.”).

155. See REDUCTION OF GHG EMISSIONS, *supra* note 4, at 1 (stating the purpose of the research and providing background information).

156. See *id.* at 5 (“Consistent with the terms of reference given by the Committee, the experts were to evaluate the various proposals with the aim of assessing the extent to which they could assist in reducing GHG emissions from international shipping.”).

There are several proposals on market-based measures currently being considered by the Expert Group.<sup>157</sup> Whatever economic instruments are adopted, such as emissions trading schemes or levies, the pricing of carbon will be difficult as the IMO needs to incorporate the CDDRRC principle into economic instruments combatting its carbon dioxide emissions.<sup>158</sup> The UNFCCC, the Kyoto Protocol and the Copenhagen Accord advocate the interests of developing States and the rationalization of the CDDRRC principle thereby placing a greater share of greenhouse gas reduction responsibility on developed States for current and projected climate effects.<sup>159</sup>

This means that the IMO must synthesise into its rules the work of the UNFCCC.<sup>160</sup> This is an extremely onerous task for the IMO for three reasons: first, the IMO needs to integrate differential treatment with uniform international standards;<sup>161</sup> secondly, the international climate change regime represents a substantial void in international environmental law making;<sup>162</sup> and thirdly the legal content of the CDDRRC principle is yet to be identified.<sup>163</sup> These difficulties have resulted in a clear inability for the IMO to effectively consider the CDDRRC principle.

On the other hand, uniformity of international shipping standards is crucial for the effective management of international shipping, which takes a global approach to all matters, including

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157. *See id.* at 6 (stating there are ten proposals describing programs with the purpose of lowering GHG emissions from ships).

158. *See id.* at 16 (noting the success of the administrative and legal task group in explaining the necessary issues in compatibility with certain proposals and existing treaty regimes).

159. *See id.* at 16 (agreeing that CDDRRC principle exists, but disagreeing on its application).

160. *See id.* at 37 (stating difficulties in the opposite goals of the CDDRRC principles and the IMO's policy).

161. *See id.* at 37 ("One view is that the UNFCCC provides the central policy infrastructure for global climate change action and the proposed market-based measures must take into account the principle of common but differentiated responsibilities and respective capabilities.").

162. *See* ILA First Report, *supra* note 87, at 3 ("Although these instruments are important first steps towards addressing climate change and its impacts, they are widely regarded as inadequate and inadequately implemented.").

163. *See id.* at 10 (outlining different theories on how the CDDRRC principle applies to international law).

pollution regulation.<sup>164</sup> Uniformity of international standards is supported by the LOSC.<sup>165</sup> Part 12 of the LOSC deals with pollution and sets out the competence of States over six sources of marine pollution including ships-sourced.<sup>166</sup>

The LOSC defers details for the technical rules that are to be formulated.<sup>167</sup> The treaty directs States to operate through the competent international organization in reducing all forms of ship-sourced marine pollution.<sup>168</sup> Even though the IMO is not explicitly named, it is beyond doubt that the IMO is such an organization.<sup>169</sup>

Developing States have challenged the appropriateness of the IMO as the competent international organization.<sup>170</sup> Developed States, on the other hand, view the IMO as the forum within which to promulgate rules for the reduction of greenhouse gas emissions.<sup>171</sup> The IMO is generally viewed as the competent international organization within which to develop rules for international shipping to reduce its greenhouse gas emissions: this is supported by the LOSC, the Kyoto Protocol, the Copenhagen Accord and Agenda 21.

Developing States have also questioned whether Annex VI of the MARPOL Convention is the correct regulatory strategy,

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164. See *An Introduction to the IMO*, INT'L MARITIME ORG., <http://www.imo.org/About/Pages/Default.aspx> (last visited Dec. 15, 2014) ("Shipping is a truly international industry, and it can only operate effectively if the regulations and standards are themselves agreed, adopted and implemented on an international basis. And IMO is the forum at which this process takes place.") (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

165. See LOSC, *supra* note 54, at pmb1. (declaring that the purpose of the treaty is to settle issues relating to the law of the sea).

166. See *id.* at art. 211 (listing six requirements for states to reduce pollution from vessels).

167. See *id.* at art. 211 ("States, acting through the competent international organization or general diplomatic conference, shall establish international rules.").

168. See *id.* (directing first that states act through international organizations).

169. See *An Introduction to the IMO*, *supra* note 164 ("[The IMO's] main role is to create a regulatory framework for the shipping industry that is fair and effective, universally adopted and universally implemented.").

170. See Palassis, *supra* note 106, at 14 (questioning current strategy and chosen forum).

171. See *id.* at 14–15 (utilizing uniform standards).

preferring instead to operate through the auspices of the UNFCCC and its conference of the parties mechanism. Developed States support the position of the adoption of uniform standards within Annex VI of the MARPOL Convention.<sup>172</sup> As the IMO is the appropriate forum within which to create rules for the reduction of ship-sourced greenhouse gas emissions, it follows that Annex VI of the MARPOL Convention is the correct regulatory instrument.

As differentiation and uniformity do not sit comfortably together, there are significant compatibility issues between the work of the IMO in creating market-based measures and the work of the UNFCCC that now need to be reconciled.<sup>173</sup> The application of the CDDRRC principle to a regime based on uniformity of international standards will require accommodating the interests of both developed and developing States.<sup>174</sup>

In creating market-based measures, can developed and developing States accommodate each other's interests or is the CDDRRC principle and uniformity of international standards mutually exclusive?<sup>175</sup> Further, there is no precedent in any of the IMO's 52 multilateral instruments whereby measures have been selectively applied to certain ships.<sup>176</sup> Quite to the contrary, the IMO's regulatory measures apply to all ships regardless of their place of registration, their flag and nationality.<sup>177</sup>

Further, a strict application of the CDDRRC principle to the international shipping sector would mean that as long as ships are registered in developing States and flying a 'flag of convenience' they would be exempt resulting in considerable

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172. See *supra* note 171 and accompanying text.

173. See REDUCTION OF GHG EMISSIONS, *supra* note 4, at 37 (describing differing views on how to incorporate the CDDRRC framework).

174. See *id.* at 37 (stating that this issue is still being discussed among the States).

175. See *id.* at 36 ("Issues related to compatibility of the proposed market-based measures and the United Nations Framework Convention on Climate Change ("UNFCCC") are politically difficult and complicated by the ongoing negotiations under the UNFCCC.").

176. See *id.* at 36 (stating that the IMO framework is for no preferential treatment).

177. See *id.* at 36 (noting that the IMO convention provides for non-discrimination in IMO instruments).

'carbon leakage'.<sup>178</sup> The importance of uniform international standards is encapsulated in the IMO's mission statement:

The mission statement of the IMO as a United Nations specialized agency is to promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation. This will be accomplished by adopting the highest practicable standards of maritime safety and security, efficiency of navigation and prevention and control of pollution from ships, as well as through consideration of the related legal matters and effective implementation of [the] IMO's instruments with a view to their universal and uniform application.<sup>179</sup>

While there is no precedent in the IMO's multilateral instruments whereby measures are selectively applied to certain ships, the UNFCCC Secretariat repeatedly notes that even though the IMO has contributed to developing rules in the area, it must synthesise its capabilities and expertise along with the UNFCCC and be cognisant of the progress under both processes.<sup>180</sup> Such a synthesis of interests can only occur upon and after the identifying of the elements of the CBDRRC principle. Only then can the IMO members effectively negotiate a legal framework for market-based measures for the international shipping sector's carbon dioxide reduction measures.<sup>181</sup> However, the accommodation of common but differentiated responsibilities within a regime that maintains uniform international shipping

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178. Allison Crimmins, *Carbon Leakage*, MIT NEWS ON CAMPUS AND AROUND THE WORLD (March 18, 2011), <http://newsoffice.mit.edu/2011/carbon-leakage> (defining carbon leakage as the situation that emerges when one carbon reduction initiative may result in an increase in emissions elsewhere with an overall effect of no real reduction in greenhouse gas emissions) (on file with the WASHINGTON AND LEE JOURNAL OF ENERGY, CLIMATE, AND THE ENVIRONMENT).

179. See *An Introduction to the IMO*, *supra* note 164 ("[The IMO's] main role is to create a regulatory framework for the shipping industry that is fair and effective, universally adopted and universally implemented.").

180. See *supra* notes 188-192 and accompanying text.

181. See *An Introduction to the IMO*, *supra* note 164 (describing the IMO as the organization to regulate the international shipping industry).

standards can be viewed as a watering-down of the principle.<sup>182</sup> According to Christopher Stone:

The ideal would be to have one set of institutions focused on optimal substantive policies and another group focused on poverty and development. Coupling the ambitions threatens to produce suboptimal outcomes for each.<sup>183</sup>

At the present stage, however, it remains unclear to what extent, if any, the CDDRRC principle can be incorporated into the IMO's market-based measures and any economic instruments that may be adopted.<sup>184</sup>

#### *IV. Conclusion*

It is imperative that action combatting climatic change not be delayed and that measures are taken to reduce greenhouse gas emissions.<sup>185</sup> This includes action to combat the carbon dioxide emissions of the international shipping sector.<sup>186</sup> As has been demonstrated, however, there are complex legal issues involved concerning the application of the CDDRRC principle whose content and status are still uncertain as a norm of customary international law.

Commentators suggest that the CDDRRC principle is not yet a legally binding norm of customary international law and thus its status, content and application remain unsettled.<sup>187</sup> Despite this commentary, the CDDRRC is a principle of

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182. See REDUCTION OF GHG EMISSIONS, *supra* note 4, at 36 (“The proposal could be viewed to be against the principles and provisions of the UNFCCC because its Article 4.3 could be viewed as mandating only developed country parties to provide funding to mitigation action by developing countries.”).

183. Stone, *supra* note 14, at 301.

184. See Sophia Conference, *supra* note 10, at 13 (calling the implementation of CDDRRCs a “work in progress”).

185. See *supra* Part I (giving an introduction to shipping in relation to emissions).

186. See *supra* Part II (discussing the imperative nature of reduction of greenhouse gasses).

187. See *supra* Part II.B (describing the theory of the CDDRRC principles).

significant gravitas and thus pivotal within international environmental law making, particularly as it relates to the global commons.<sup>188</sup>

Regarding the compatibility of the CDDRRC principle with any economic instruments proposed for adoption to the IMO, it is concluded that the twin goals of differentiation and uniformity do not sit comfortably together.<sup>189</sup> These twin goals are not merely two conflicting principles of international law; they are two central tenets of two distinct multilateral regimes, those of the UNFCCC and the IMO respectively.<sup>190</sup>

Issues of compatibility are significant and underlie the choice of any economic instrument either by way of an emissions trading or a carbon levy.<sup>191</sup> The issues will not be easy to resolve and economic instruments should not hastily be adopted. Further work is required before an appropriate model can be adopted. The member States of the IMO need to systematically work through all compatibility issues and incorporate all relevant rules of international law into any proposal on economic instruments that is under consideration before any real progress forward can be made.

It is concluded that the IMO focus on the “common responsibilities” component and defer further debate on the “differentiated responsibilities” component of the principle until the ILA has concluded its work and published draft articles and commentaries on the components of this difficult and controversial international law principle. It is imperative the IMO reconciles the two regimes through negotiation of the legal elements of the CDDRRC principle; it is critical that the IMO gets this right.

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188. *See id.*

189. *See supra* notes 177–180 and accompanying text (describing the different goals of developing and developed states and how they must compromise within a treaty regime).

190. *See supra* notes 188–200 (noting the difficulty in reconciling the goals of the IMO with the UNFCCC).

191. *See supra* Part III.C (describing the conflicting nature of the UNFCCC and the IMO, and how States cannot come to an agreement).