

# CLIMATE CHANGE AND THE ROLE OF EMERGING ECONOMIES

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The principles of “common but differentiated responsibility” (CBDR) and sustainable development play an integral role in international environmental law.<sup>1</sup> However, these principles have come under fire in recent years, particularly from the global North, which has grown impatient over the lack of contribution on climate change from the emerging economies.<sup>2</sup> Much effort has been expended toward the establishment of greater contribution, and the shouldering of greater responsibility from these countries. From Durban to Bali, and to Paris, considerable headway has been made.<sup>3</sup>

Climate change is undeniable. The 2018 Intergovernmental Panel on Climate Change report, which utilizes calibrated language to demonstrate the level of confidence associated with each key finding, has reported that “the long-term warming trend since pre-industrial times, observed global mean surface temperature (GMST) for the decade 2006-2015 was 0.87°C (likely between 0.75°C and 0.99°C) higher than the average over the 1850-1900 period (*very high confidence*).”<sup>4</sup> Even ExxonMobil, one of the companies that has for years actively denied climate change science, has since acknowledged and accepted responsibility to “advance effective solutions to address climate change.”<sup>5</sup>

To effectively deal with this global issue, a global solution is required. A sole nation or a single continent may significantly contribute to the mitigation of climate change, but their efforts alone cannot be sufficient. The responsibility for the mitigation and adaptation of climate change is a common one. Yet the present legal and political framework hardly reflects this. The rough classification of States

in treaty annexes has resulted in an arbitrary line being drawn between the developed and developing countries.

Part I of this Comment seeks to analyze principles of CBDR and sustainable development, two central pillars upon which international climate change law and policy have developed. Part II seeks to identify the reasons for the present discontent of the global North over the obligations of emerging economies. It also highlights the shrinking basis for differential treatment between the developed world and the emerging developing nations. Finally, to assist the forward march of global climate change negotiations, Part III seeks to establish a basis for a new interpretation of the principle of CBDR. It also seeks to develop the principle of sustainable development, establishing clear substantive obligations for the developing world to comply with.

In this Comment, the term “emerging economies” refers to the developing nations that are experiencing rapid economic growth. Of these, the “BRICS” countries (Brazil, Russia, India, China, and South Africa) are the forerunners, with China and India leading their growth.<sup>6</sup> Together, these two powerhouses are home to 40% of the world’s labor force and population.<sup>7</sup> I will use the term “*differential treatment*” to refer to the different obligations undertaken by the developed and developing world under the annex-based approach, while the term “*differentiation for all states*” will refer to a more nuanced approach that seeks to create stronger obligations for the emerging economies, notwithstanding their classification as “developing.”

## I. The Principles

### A. The Principle of CBDR

#### 1. The Rationale of CBDR

The principle of CBDR constitutes two elements. The first element reflects the “common responsibility” of States for

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1. CENTRE FOR INTERNATIONAL SUSTAINABLE DEVELOPMENT LAW, THE PRINCIPLE OF COMMON BUT DIFFERENTIATED RESPONSIBILITIES: ORIGINS AND SCOPE (2002), [http://cisdl.org/public/docs/news/brief\\_common.pdf](http://cisdl.org/public/docs/news/brief_common.pdf).
2. Paul G. Harris, *China’s Paris Pledge on Climate Change: Inadequate and Irresponsible*, 7 J. ENVTL. STUD. SCI. 102, 105 (2017).
3. PIERRE-MARIE DUPUY & JORGE E. VÍÑUALES, INTERNATIONAL ENVIRONMENTAL LAW 153 (2015).
4. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC), *Summary for Policymakers*, in GLOBAL WARMING OF 1.5°C 4 (Valérie Masson-Delmotte et al. eds., IPCC 2018), [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_SPM\\_version\\_report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf).
5. ExxonMobil, *Energy and Environment: Climate Change*, <https://corporate.exxonmobil.com/Energy-and-environment/Environmental-protection/Climate-change> (last visited Dec. 10, 2019).

6. Khalid Zaman et al., *Dynamic Linkages Among Energy Consumption, Environment, Health, and Wealth in BRICS Countries: Green Growth Key to Sustainable Development*, 56 RENEWABLE & SUSTAINABLE ENERGY REV. 1263, 1263 (2016).
7. Kimberly Amadeo, *Emerging Market Countries and Their Five Defining Characteristics*, BALANCE, July 11, 2019, <https://www.thebalance.com/what-are-emerging-markets-3305927>.

the protection of the environment. Environmental issues such as climate change are of common concern because nature does not respect sovereign borders.<sup>8</sup> Indeed, this element is neither groundbreaking nor revolutionary.<sup>9</sup> Such notions of “common concern” or “common heritage of mankind” are as old as international environmental law itself.<sup>10</sup> The second element is recognition of the need to take into account differing circumstances, particularly in relation to each state’s *contribution* to the creation of a particular environmental problem and its *ability* to prevent, reduce, and control the threat.<sup>11</sup> This is the “differentiated responsibility” element.

The industrial nations have historically benefited through the industrialization process at the expense of the world at large.<sup>12</sup> Environmental problems such as climate change and ozone depletion are borne globally as a result of the actions of these nations. Building upon the polluter-pays principle, CBDR demands higher standards from the industrialized nations because of the pressure their societies place on the environment.<sup>13</sup>

Further, equity in international law is not blind to the reality that developing countries have special needs that must be taken into account in the development, application, and interpretation of rules of international environmental law.<sup>14</sup> Where issues of food security and poverty threaten the survival of local communities, the ability of the government to tackle issues of climate change is limited. Environmental concerns must give way to the overriding needs that plague such countries. Intragenerational equity demands the inequality of treatment between States.<sup>15</sup>

Indeed, various international instruments have recognized that account is to be taken of the “circumstances and particular requirements” of nations.<sup>16</sup> The 1974 Charter of Economic Rights declares that “environmental policies of all states should enhance and not adversely affect the present and future development potential of developing countries.”<sup>17</sup>

Similarly, Article 4(7) of the United Nations Framework Convention on Climate Change (UNFCCC) states that “economic and social development and eradication of pov-

erty are the first and *overriding priorities* of the developing country parties.”<sup>18</sup> This was echoed in the Rio Declaration, where the international community declared that “the *special situation of developing countries*, particularly the least developed and those most environmentally vulnerable, shall be given special priority.”<sup>19</sup>

## 2. The Leadership Role of Developed Nations

At the same time, developed nations have acknowledged their leadership role in combating climate change.<sup>20</sup> Under Article 3(1) of the UNFCCC, the developed nations (i.e., those listed in Annex I of the UNFCCC) accepted that “the *developed country Parties should take the lead* in combating climate change and the adverse effects thereof.”<sup>21</sup> While the principle was couched in rather prescriptive language, and may well be an obligation of conduct rather than an obligation of result,<sup>22</sup> experts have argued that it is nonetheless an “overall principle guiding the future of the climate change regime.”<sup>23</sup> Moreover, its apparent lack of legal force did not prevent the developing world from successfully obtaining the promise of “*new and additional financial resources*” from the developed world in 1992.<sup>24</sup>

This leadership role was more explicitly accepted in Principle 7 of the Rio Declaration: “*The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.*”<sup>25</sup>

The basis upon which the Rio Declaration establishes this principle of CBDR in Principle 7 is threefold: (1) the pollution their industries cause on the environment, (2) the financial resources they command, and (3) the technology they possess. These reasons broadly correspond to the aforementioned rationale for differentiated responsibility, namely, the state’s *contribution* to the problem, and its *ability* to contribute to the common responsibility.

## 3. The Application of CBDR

The principle of CBDR has been applied to create differential treatment between the developed and developing world.<sup>26</sup> This is seen in the differential treatment for emissions reduction targets and timetables.<sup>27</sup> Differential treat-

8. EDITH BROWN WEISS, ENVIRONMENTAL EQUITY: THE IMPERATIVE FOR THE TWENTY-FIRST CENTURY 21 (1995).

9. Lavanya Rajamani, *The Principle of Common but Differentiated Responsibility and the Balance of Commitments Under the Climate Regime*, 9 RECIEL 120, 121 (2000).

10. United Nations Convention on the Law of the Sea, pmbl., Dec. 10, 1982, 1833 U.N.T.S. 397; G.A. Res. 2749(XXV) (Dec. 17, 1970); Convention for the Establishment of an Inter-American Tropical Tuna Commission, U.S.-Costa Rica, pmbl., May 31, 1949. See generally Frank Biermann, “Common Concern of Humankind”: The Emergence of a New Concept of International Environmental Law, 34 ARCHIV DES VÖLKERRECHTS 426 (1996).

11. PHILIPPE SANDS & JACQUELINE PEEL, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 244 (4th ed. 2018).

12. Rajamani, *supra* note 9, at 123.

13. U.N. Conference on Environment and Development, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), princ. 16 (Aug. 12, 1992) [hereinafter Rio Declaration].

14. PATRICIA BIRNIE ET AL., INTERNATIONAL LAW & THE ENVIRONMENT 122 (3d ed. 2009).

15. SANDS & PEEL, *supra* note 11, at 244.

16. Vienna Convention for the Protection of the Ozone Layer, pmbl., Mar. 22, 1985, 1513 U.N.T.S. 323.

17. *Charter of Economic Rights and Duties of States*, G.A. Res. 3281(XXIX), art. 30 (Dec. 12, 1974).

18. Convention on Biological Diversity, *opened for signature* June 5, 1992, art. 20(4), 1760 U.N.T.S. 79.

19. Rio Declaration, *supra* note 13, princ. 6 (emphasis added).

20. Joyeeta Gupta, *Leadership in the Climate Regime: Inspiring the Commitment of Developing Countries in the Post-Kyoto Phase*, 7 RECIEL 180 (1998).

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

22. Benoit Mayer, *Obligations of Conduct in the International Law on Climate Change: A Defence*, 27 RECIEL 130 (2018).

23. Rajamani, *supra* note 9, at 124.

24. UNFCCC, *supra* note 21, art. 4(3).

25. Rio Declaration, *supra* note 13, princ. 7 (emphasis added).

26. Lavanya Rajamani, *Differentiation in the Emerging Climate Regime*, 14 THEORETICAL INQUIRIES L. 151, 154 (2013).

27. Kyoto Protocol to the United Nations Framework Convention on Climate Change, art. 3, Dec. 10, 1997, 2303 U.N.T.S. 148 [hereinafter Kyoto Protocol].

ment was also applied with respect to the *implementation* of obligations—the developing world enjoys delayed compliance schedules,<sup>28</sup> delayed reporting schedules,<sup>29</sup> and softer approaches in the event of noncompliance.<sup>30</sup>

There is also some State practice showing that this principle has a guiding effect in the interpretation of legal obligations.<sup>31</sup> In *Urgenda v. Government of the Netherlands*, the Hague District Court, operating in a monist system that accepts the primacy of international law, partially relied on CBDR to find that the projected Dutch climate policy for 2020 was insufficient to meet the duty of care, in light of the nation's commitment to take the lead in climate action together with other developed countries.<sup>32</sup> In doing so, the court endorsed CBDR as a principle of international environmental law that guides the interpretation of legal obligations.

So entrenched was this principle in the international environmental legal and political landscape that, despite the reservations of the developed world over the contemporary economic realities, the 2015 Paris Agreement reaffirmed the commitment at the Conference of Parties (COP) 15 to mobilize \$100 billion per year by 2020.<sup>33</sup> However, as will be seen in Part III, while the Paris Agreement affirmed the principle of CBDR, it did so in a manner that has set the stage for departure from a static interpretation of the principle.<sup>34</sup>

## B. The Principle of Sustainable Development

The leadership role of the developed countries does not automatically confer a free pass to the developing world. The principle of sustainable development, which is often invoked alongside CBDR, guides the responsibilities of developing countries.<sup>35</sup> Initially referred to in the Preamble of the 1992 European Economic Area Agreement,<sup>36</sup> the concept was brought to international prominence by Gro Harlem Brundtland in the Brundtland Commission Report entitled *Our Common Future*.<sup>37</sup> In the report, sustainable development was defined as “development that

meets the needs of the present without compromising the ability of future generations to meet their own needs.”<sup>38</sup>

Inherent in the definition is the notion of intergenerational equity.<sup>39</sup> As members of the present generation, we hold the earth in trust for future generations.<sup>40</sup> Principle 1 of the 1972 Stockholm Declaration declares that man bears “a solemn responsibility to protect and improve the environment for present and future generations.”<sup>41</sup> Similarly, in the case concerning the Gabčíkovo-Nagymaros Project, the International Court of Justice held that, “[o]wing to new scientific insights and to a growing awareness of the risks for mankind—for *present and future generations*—of pursuit of such inventions [in nature] at an unconsidered and unabated pace, new norms and standards have been developed.”<sup>42</sup>

Broadly speaking, there are two main obligations that arise. First, the present generation bears the responsibility of ensuring the sustainable use of *natural resources* for the benefit of future generations.<sup>43</sup> This was first seen in the 1946 International Convention for the Regulation of Whaling, which calls for the “safeguarding for future generations the great natural resources.”<sup>44</sup> Moreover, the 1982 World Charter for Nature states that resources that are utilized are to be managed so as to “achieve and maintain optimum sustainable productivity,” and that living resources must not be utilized “in excess for their natural capacity for regeneration.”<sup>45</sup> Subsequently, Principle 3 of the Rio Declaration declared that “the right to development must be fulfilled *so as to equitably meet developmental and environmental needs of present and future generations*.”<sup>46</sup> The reference to “developmental needs” of the future generations highlights the need for the preservation of natural resources for the benefit of future generations.<sup>47</sup>

Second, there is an obligation to ensure the integration of environmental concerns into economic and other development plans, programs, and projects.<sup>48</sup> Principle 13 of the Stockholm Declaration reads: “States should adopt an integrated and coordinated approach to their development planning *so as to ensure that development is compatible with the need to protect and improve the environment*.”<sup>49</sup> Similarly, Principle 4 of the Rio Declaration states that, “in order to achieve sustainable development, *environmental protection*

28. *Id.* art. 3(5).

29. UNFCCC, *supra* note 21, art. 2(5).

30. Report of the Conference of the Parties on Its Seventh Session, Held at Marrakesh From 29 October to 10 November 2001, addendum pt. 2, U.N. Doc. FCCC/CP/2001/13/Add.3 (Jan. 21, 2002).

31. Patrícia Galvão Ferreira, “Common but Differentiated Responsibilities” in the *National Courts: Lessons From Urgenda v. The Netherlands*, 5 TRANSNAT'L ENVTL L. 329, 334 (2016).

32. RB-Den Haag [Hague District Court] 24 June 2015, ECLI:NL:RBDHA:2015:7196 (Stichting Urgenda/Nederlanden) [Urgenda Found. v. Netherlands].

33. Mariama Williams & Manuel F. Montes, *Common but Differentiated Responsibilities: Which Way Forward?*, 59 DEVELOPMENT 114, 116 (2016).

34. Paris Agreement to the United Nations Framework Convention on Climate Change, art. 4(3), Dec. 12, 2015, T.I.A.S. No. 16-1104 [hereinafter Paris Agreement].

35. SANDS & PEEL, *supra* note 11, at 218.

36. Agreement on the European Economic Area, pmbl., May 2, 1992.

37. PIERRE-MARIE DUPUY & JORGE E. VIÑUALES, INTERNATIONAL ENVIRONMENTAL LAW 13 (2d ed. 2018).

38. WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE ¶ 49 (Oxford Univ. Press 1987).

39. DUPUY & VIÑUALES, *supra* note 3, at 77.

40. Edith Brown Weiss, *Our Rights and Obligations to Future Generations for the Environment*, 84 AM. J. INT'L L. 198, 199 (1990).

41. Report of the United Nations Conference on the Human Environment, princ. 1, U.N. Doc. A/CONF.48/14/Rev.1 (1972). See also princ. 2.

42. Gabčíkovo-Nagymaros Project (Hung. v. Slov.), 1997 I.C.J. 7, 140 (Sept. 25).

43. SANDS & PEEL, *supra* note 11, at 219; BIRNIE ET AL., *supra* note 14, at 125.

44. International Convention for the Regulation of Whaling, Dec. 2, 1946, 62 Stat. 1716, 161 U.N.T.S. 72.

45. World Charter for Nature, U.N. GAOR, 37th Sess., ¶¶ 4, 10(a), U.N. Doc. A/RES/37/7 (Oct. 28, 1982).

46. Rio Declaration, *supra* note 13, princ. 3 (emphasis added).

47. SANDS & PEEL, *supra* note 11, at 226.

48. DUPUY & VIÑUALES, *supra* note 3, at 77.

49. Report of the United Nations Conference on the Human Environment, princ. 13, U.N. Doc. A/CONF.48/14/Rev.1 (1972) (emphasis added).



shall constitute an integral part of the development process and cannot be considered in isolation from it.”<sup>50</sup>

In the *Shrimp-Turtle* case, the World Trade Organization (WTO) Appellate Body noted that the Preamble to the WTO Agreement explicitly acknowledges “the objective of sustainable development,” and characterized it as a concept that “has been generally accepted as integrating economic and social development and environmental protection.”<sup>51</sup> Similarly, the arbitral tribunal in the *Iron Rhine Arbitration* noted that “where development may cause significant harm to the environment, there is a duty to prevent, or at least mitigate, such harm.”<sup>52</sup> There is a need to ensure the conservation of the environment for the enjoyment of future generations.

Unfortunately, as Patricia Birnie notes, the conceptual elegance of the principle of sustainable development is deceptive in terms of the real obligations it imposes. The principle does not determine the optimal balance between the present and future generations in the utilization of natural resources.<sup>53</sup> It also fails to place a quantifiable value on the environment for the purposes of determining how the benefits and burdens should be shared between generations.<sup>54</sup> Sustainable development is therefore best characterized as currently a “soft” legal concept.<sup>55</sup> Therefore, I argue in Part III that the substantive component of the principle of sustainable development should be carefully developed to crystallize limited obligations for the developing world.

## II. The Growing Problem

### A. The Shrinking Basis for Differential Treatment

In light of the realities of the present world order, both the principle of CBDR and the principle of sustainable development have become unsatisfactory. At negotiations for the 2015 Paris Agreement, the developed countries were “unanimous” in their insistence that the reference to CBDR in Article 2(2) had to be immediately qualified with “in light of different national circumstances.”<sup>56</sup> This was to ensure that CBDR would be interpreted in the light of the present economic realities, a move that faced strong resistance from the developing world.<sup>57</sup> However, such a move was nothing short of necessary. The static

annex-based classification of developed and developing countries does not take into account the rise of powerful emerging economies.

In 2015, the BRICS generated almost 23% of the world’s gross domestic product (GDP) and accounted for more than one-half of global economic growth.<sup>58</sup> In particular, China achieved a national GDP of \$13.61 trillion in 2018, second only to the United States.<sup>59</sup> In 2016, Chinese outbound foreign investments reached a staggering \$196 billion.<sup>60</sup> Yet, as a non-Annex I Party, the country is treated as a developing State. It does not face the same rigorous obligations toward the mitigation of and adaptation to climate change as the developed States.

Arguments from equity in support of lesser obligations toward the mitigation of and adaptation to climate change no longer have considerable force, due to China’s strong economic standing. The need to combat “overriding concerns” or “special needs” no longer holds water. Further, the fact that China commands formidable financial resources is contrary to the basis for differential treatment under Principle 7 of the Rio Declaration.<sup>61</sup>

Moreover, China possesses advanced technology in the renewable energy sector. It is currently a major producer and exporter of renewable energy technology, with a market share of approximately two-thirds of the world’s solar panels and nearly one-half of the world’s wind turbines.<sup>62</sup> Yet, 67% of primary energy consumption in China and 73% of electricity generation are from coal.<sup>63</sup> It is inequitable to allow technologically advanced countries such as China to profit from global climate change efforts while they themselves fail to contribute significantly to global environmental protection endeavors. Allowing such countries to hide behind the label of “developing” runs contrary to Principle 7 of the Rio Declaration, which utilizes the level of technological development of a country as a basis for differential treatment.<sup>64</sup>

### B. The Emerging Economies’ Contribution to Climate Change

Discontent over the gap between the obligations of the developed and emerging worlds is further exacerbated by the fact that many of these emerging markets have become a significant cause of climate change. This is important because Principle 7 of the Rio Declaration identifies the “pressures their societies place on the global environment,” which is a state’s *contribution* to the creation of a particular

50. Rio Declaration, *supra* note 13, princ. 4 (emphasis added).

51. United States—Import Prohibition of Certain Shrimp and Shrimp Products, WT/DS58/AB/R (Oct. 12, 1998), *reprinted* in 38 I.L.M. 121 ¶ 129 (1999).

52. Iron Rhine Arbitration (“Ijzeren Rijn”) (Belg. v. Neth.), 27 R.I.A.A. 35 ¶ 59 (2005).

53. BIRNIE ET AL., *supra* note 14, at 122.

54. Robin Churchill & David Freestone, *International Law and Global Climate Change*, 1 Y.B. INT’L ENVTL. L. 392 (1990).

55. Alan Boyle & David Freestone, *International Law and Sustainable Development*, 1 Y.B. INT’L ENVTL. L. 17, 30 (1990); BIRNIE ET AL., *supra* note 14, at 127.

56. Rajamani, *supra* note 26.

57. Lavanya Rajamani & Emmanuel Guérin, *Central Concepts in the Paris Agreement and How They Evolved*, in THE PARIS AGREEMENT ON CLIMATE CHANGE: ANALYSIS AND COMMENTARY 82 (Daniel Klein et al. eds., Oxford Univ. Press 2017).

58. Jing Gu et al., *The BRICS and Africa’s Search for Green Growth, Clean Energy, and Sustainable Development*, 120 ENERGY POL’Y J. 675, 675 (2018).

59. World Bank, *GDP (Current US\$)*, <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD> (last visited Dec. 10, 2019).

60. UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, *WORLD INVESTMENT REPORT 2018: INVESTMENT AND NEW INDUSTRIAL POLICIES* (2018).

61. Rio Declaration, *supra* note 13, princ. 7.

62. Clairvoyant, *China Has Become a Major Producer and Exporter of Renewable Energy Technology*, SOHU, July 23, 2017, [http://www.sohu.com/a/159349902\\_788378](http://www.sohu.com/a/159349902_788378).

63. Xiao Jin Yang et al., *China’s Renewable Energy Goals by 2050*, 20 ENVTL. DEV. 83 (2016).

64. Rio Declaration, *supra* note 13, princ. 7.

environmental problem, as a basis for differentiated obligations.<sup>65</sup> In 2015, 29% of *global* carbon dioxide (CO<sub>2</sub>) emissions came from China—more than the European Union and the United States combined.<sup>66</sup> It is also the top energy consumer and the overall emitter of greenhouse gases, sulfur dioxide, nitrogen oxides, and particulate matter (PM).<sup>67</sup>

Admittedly, China's per capita greenhouse gas emissions seem modest when compared to other developed countries such as the United States and the European Union. However, such a comparison ignores the fact that per capita statistics include both the richest and the poorest Chinese citizens. As of 2016, the country is already home to 1.6 million Chinese millionaires and 400 billionaires.<sup>68</sup> Per capita statistics dilute their high "luxury emissions" with the low "survival emissions" of the poor. There is, in essence, a "little America" within China. As Paul Harris notes, it is inequitable—and even perverse—for these affluent Chinese to hide behind the developing China:

To use the excuse that not all Chinese citizens are affluent to justify not taking on more responsibility is a bit like arguing that wealthy members of an extended family can rightfully avoid paying taxes because other members of that family are poor. Common justice demands that affluent members of the family pay their fair share of taxes rather than hide behind their poor kin.<sup>69</sup>

As a common problem of common concern, it is impossible for the developed world to singlehandedly shoulder the common responsibility. Yet for every American who sacrificially reduces his or her emissions, there is a Chinese who freely pollutes. Further, there has been a lack of integration of environmental conservation concerns into China's developmental policies.<sup>70</sup> The actions of its governmental actors often fail to adhere to sustainable development principles.<sup>71</sup> For example, production lines continue to utilize highly energy-intensive processes, and there is little political appetite for major reform due to the large energy share of production costs.<sup>72</sup> Any increase in energy costs will, according to the government, "significantly impact" the overall cost of production.

Indeed, China has pledged to level off its CO<sub>2</sub> emissions around 2030, and to use its "best efforts" to ensure that

emissions will "peak early."<sup>73</sup> While it was a huge first for the nation and the international community celebrated the fact that China made a pledge, the substance of the commitment was conservative, lacking, and inadequate—experts note that due to the present overcapacity of the Chinese economy, the pledges are nothing more than what would naturally happen without any active intervention.<sup>74</sup>

Similarly, there has been lack of integration of environmental concerns into India's governmental policies. India is currently home to nine of the world's 10 most polluted cities in terms of air quality, according to the World Health Organization.<sup>75</sup> In 2018, pollution levels in New Delhi, India's capital, earned "severe" and "emergency" ratings, with an air quality index peaking at 450 PM<sub>2.5</sub> (concentration of tiny, poisonous PM that are less than 2.5 microns in diameter and can be carried deep into the lungs).<sup>76</sup> Much of this was due to coal-powered electricity plants and the use of dirty fuel sources near the city.<sup>77</sup> Rather worryingly, this has only been worsening. From 2017 to 2018, India saw the largest increase in CO<sub>2</sub> emissions in the world—a 6.3% increase in a span of just one year.<sup>78</sup> A lack of political will has been cited as the main cause of the inertia against the transition to cleaner energy sources.<sup>79</sup>

Further, the manner in which the present generation in emerging economies has been utilizing natural resources is, in many instances, unsustainable. For example, local shellfish farming in many coastal regions of Brazil is inconsistent with the spirit of intergenerational equity. A lack of regulation and proper planning in the siting of marine zones has resulted in the disordered use of marine waters.<sup>80</sup> This has led to poor sanitary conditions, strong pollution, and unfavorable water conditions that now threaten the continued viability of the industry.<sup>81</sup> Yet due to the lack of clear obligations under the principle of sustainable development, such actions have gone on unregulated by the international community.

65. *Id.*

66. GLOBAL CARBON PROJECT, GLOBAL CARBON BUDGET 2016 (2016), [https://www.globalcarbonproject.org/carbonbudget/archive/2016/GCP\\_Carbon-Budget\\_2016.pdf](https://www.globalcarbonproject.org/carbonbudget/archive/2016/GCP_Carbon-Budget_2016.pdf).

67. Sang-Bing Tsai et al., *Models for Forecasting Growth Trends in Renewable Energy*, 77 RENEWABLE & SUSTAINABLE ENERGY REV. 1169, 1170 (2017).

68. CREDIT SUISSE, GLOBAL WEALTH REPORT 2016 (2016), <https://www.credit-suisse.com/about-us/en/reports-research/studies-publications.html> (last visited Dec. 10, 2019).

69. Harris, *supra* note 2, at 105.

70. Christopher Tung, *Sustainable Development and Climate Policy and Law in China*, in CLIMATE CHANGE AND THE LAW 597, 598 (Erkki J. Hollo et al. eds., Springer 2013).

71. Harris, *supra* note 2, at 105.

72. Meriem Hamdi-Cherif & Henri Waisman, *Global Carbon Pricing and the "Common but Differentiated" Responsibilities: The Case of China*, 16 INT'L ENVTL. AGREEMENTS 671, 678 (2015).

73. NATIONAL DEVELOPMENT AND REFORM COMMISSION OF CHINA, ENHANCED ACTIONS ON CLIMATE CHANGE: CHINA'S INTENDED NATIONALLY DETERMINED CONTRIBUTIONS (2015), <https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/China/1/China's%20INDC%20-%20on%2030%20June%202015.pdf>.

74. Fergus Green & Nicholas Stern, *China's Changing Economy: Implications for Its Carbon Dioxide Emissions*, 17 CLIMATE POL'Y 423 (2017), <https://www.tandfonline.com/doi/full/10.1080/14693062.2016.1156515>.

75. Maria Abi-Habib & Hari Kumar, *India Finally Has Plan to Fight Air Pollution. Environmentalists Are Wary*, N.Y. TIMES, Jan. 11, 2019, <https://www.nytimes.com/2019/01/11/world/asia/india-air-pollution.html>.

76. Joanna Slater, *India's Pollution Refugees: People Are Fleeing Delhi Because of the Toxic Air*, WASH. POST, Nov. 16, 2018, [https://www.washingtonpost.com/world/asia\\_pacific/indias-pollution-refugees-people-are-fleeing-delhi-because-of-the-smoggy-air/2018/11/15/26dc1250-e1f1-11e8-a1c9-6afe99dd492\\_story.html](https://www.washingtonpost.com/world/asia_pacific/indias-pollution-refugees-people-are-fleeing-delhi-because-of-the-smoggy-air/2018/11/15/26dc1250-e1f1-11e8-a1c9-6afe99dd492_story.html).

77. *Id.*

78. Laurel Hamers, *Global Carbon Dioxide Emissions Will Hit a Record High in 2018*, SCIENCE NEWS, Dec. 6, 2018, <https://www.sciencenews.org/article/global-carbon-dioxide-emissions-will-hit-record-high-2018>.

79. *Id.*

80. Felipe M. Suplicy et al., *Planning and Management for Sustainable Coastal Aquaculture Development in Santa Catarina State, South Brazil*, 9 REV. AQUACULTURE 107, 110 (2017).

81. *Id.*

### C. *The Antipathy of the Developed World*

In light of these developments, the global North has grown weary of taking on environmental obligations without any promise of parallel obligations from the emerging economies—understandably so, because many of the emerging markets have become close competitors to the mature economies.<sup>82</sup> Taking on additional environmental obligations would prejudice the developed nations' ability to compete with the emerging markets. Without comparable obligations being imposed, the emerging economies would have an unfair advantage over the developed nations, and there would be an export of jobs and industry to the emerging nations.<sup>83</sup>

Such concerns were already seen as early as 1997, just before the Kyoto Protocol.<sup>84</sup> At the COP to the UNFCCC, the New Zealand delegation advocated for an evolution toward a new process that would involve developing country commitments.<sup>85</sup> Similarly, the United States raised concerns over the lack of “developing country participation,” and thereby refused to take on binding obligations under the UNFCCC until “key developing nations meaningfully participate.” The United States has since maintained its position that the developing nations have not been doing enough to satisfy their common responsibility, and that a fair sharing of the burden involves binding targets for the developing world.<sup>86</sup>

At the 2011 Durban Platform, the goal of ensuring the participation of emerging economies in reducing emissions took central stage.<sup>87</sup> Much effort has also been expended since the Bali Process to dilute the annex-based regime of differentiation.<sup>88</sup> More recently, in 2015, the United States mandated that any new legally binding instrument must incorporate “symmetrical mitigation commitments,” at least in form, for “all substantial emitters.”<sup>89</sup> With the increasingly heightened concerns from the developed world, the undertaking of greater responsibility by emerging economies will be essential for any significant headway to be made at future climate change summits.

### III. *The Path for the Future*

In light of the difficulties of the principle of CBDR, one might be tempted to suggest eliminating the concept altogether. However, this ignores the condition and situation of a significant proportion of developing States. A vast number of governments cannot afford to expend precious resources on climate change issues when poverty is rampant.<sup>90</sup> The

rapid erosion of differentiation will unfairly and inequitably limit their legitimate developmental aspirations.<sup>91</sup>

I therefore propose a more nuanced approach. First, I intend to argue that a dynamic approach should be taken toward interpretation of the principle of CBDR. In doing so, the annex-based approach should be done away with. Differential treatment between the developing and developed nations should be replaced with a more nuanced approach of differentiation for *all* States. This will pave the way for the emerging economies to shoulder greater responsibility for climate change, allowing the interpretation of CBDR to be more in line with the present world order. Second, the substantive component of sustainable development should be developed. Obligations for the developing States should be crystallized to better reflect and enforce intergenerational equity.

At this juncture, I clarify that by developing “obligations” for the emerging economies, I do not seek to revert to the traditional top-down extraction of commitments. Indeed, the international community has already moved toward a ground-up approach in the COP 21 in Paris in 2015 and the COP 24 in Katowice in 2018. Instead, I seek to develop the two principles to better guide the manner in which emerging economies view their own roles, and the extent of commitments that the world deems appropriate for them to undertake.

#### A. *Dynamic Interpretation of CBDR*

##### 1. *The Basis for a Dynamic Interpretation*

At the outset, I acknowledge that legal orders are generally expected to be stable and coherent. A premium is placed on legal stability.<sup>92</sup> However, that is not to say that the law does not evolve. Legal innovation, often formulated or packaged as an expression of a principle that was already in existence, is not a concept that is entirely foreign to the legal mind.<sup>93</sup>

Certain situations, however, may call for a less stable legal framework. They are those in which the agreed frames, legal or otherwise, for how we understand and act in the world are in a constant state of flux.<sup>94</sup> Such “hot situations” arise where

everything becomes controversial: the identification of intermediaries and overflows, the distribution of source and target agents, the way effects are measured. These controversies which indicate the absence of a stabilized knowledge base, usually involve a wide variety of actors. The actual list of actors, as well as their identities, will fluctuate in the course of a controversy itself and they will

82. *What Makes Emerging Markets Great Investments?*, FORBES, <https://www.forbes.com/pictures/eglg45gdjd/why-invest-in-emerging-markets-2/#77f75f6772e0> (last visited Dec. 10, 2019).

83. Rajamani, *supra* note 9, at 124.

84. Kyoto Protocol, *supra* note 27.

85. Report of the Conference of the Parties on Its Third Session, Held at Kyoto From 1 to 11 December 1997, UNFCCC, 3d Sess., U.N. Doc. FCCC/CP/1997/7 (1998).

86. Rajamani, *supra* note 9, at 129.

87. DUPUY & VÍÑUALES, *supra* note 3, at 153.

88. Rajamani & Guérin, *supra* note 57, at 82.

89. Rajamani, *supra* note 26, at 163.

90. SANDS & PEEL, *supra* note 11, at 244.

91. Rajamani, *supra* note 26, at 171.

92. BRUNO LATOUR, *THE MAKING OF LAW: AN ETHNOGRAPHY OF THE CONSEIL D'ETAT* 242-43 (2010).

93. Elizabeth Fisher et al., *The Legally Disruptive Nature of Climate Change*, 2 MOD. L. REV. 173, 176 (2017).

94. Elizabeth Fisher, *Environmental Law as “Hot” Law*, 25 J. ENVTL. L. 347, 348 (2013).



put forward mutually incompatible descriptions of future world states.<sup>95</sup>

This largely describes international environmental law, especially due to the rapid development of climate change science in recent years.<sup>96</sup>

This dynamic nature of climate change does not sit comfortably with the legal orders that value stability and legal certainty.<sup>97</sup> As Elizabeth Fisher notes, “environmental law stands in stark contrast to those areas of law where actors, interests, preferences, and thus rights and responsibilities, can be easily identified and thus workable frames of legal action can operate. Environmental law is thus a subject in which ‘reassured certainties give way to tormented complexities.’”<sup>98</sup> As a result, environmental law may become “hot” since “legal frameworks *must* evolve or new authoritative legal frames *must* be developed so as to *accommodate* the number and variety of parties and the relevant contested facts and politics.”<sup>99</sup>

Indeed, the dynamic nature of the relationship between developed and developing nations is not a static one. Finding the appropriate balance in international environmental law requires the constant evolution of legal norms. While there may currently be little appetite, particularly within the developing world, for the radical imposition of heavy mitigatory obligations onto developing States, I argue that there is presently sufficient global consensus for a more flexible approach toward differentiation. The next step for international environmental law and politics should be the shift from *differential treatment between* developed and developing countries, to *differentiation for all* States.

## 2. The Failure of the Annex-Based Differential Treatment

The failure of the annex-based approach is immediately seen from the events leading up to the Paris Agreement. Strong distaste for the lack of commitment from the emerging countries arising from the differential treatment motivated the developed world to push for greater parallelism and symmetry between developed and developing nations at the 2009 Copenhagen Accord,<sup>100</sup> as well as the 2010 Cancun Agreements.<sup>101</sup> Notably, it was not the imposition

of mitigatory obligations on *all* developing States that took center stage, but the transition from differential treatment for developing States to differentiation of *all* States.<sup>102</sup> The developed world was not as concerned with the imposition of obligations on countries such as Niger or South Sudan as they were with the imposition of obligations on key developing States such as China and India.

Similarly, in the Bali Action Plan, a central theme of the negotiations was the need to ensure that the look and feel of obligations imposed on the “major emitters and emerging economies” reflected the obligations of the developed world.<sup>103</sup> It was noted that “at least some developing countries (such as major emitters and emerging economies) should be taking the same kinds of mitigation actions as developed countries.”<sup>104</sup> At Paris, the principle of CBDR was reaffirmed with an important qualification. Article 2(2) of the Paris Agreement reads: “This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, *in the light of different national circumstances*.”<sup>105</sup>

The additional phrase “in the light of different national circumstances” highlights the difference in national circumstances within the developing world. Indeed, China implicitly acknowledged the responsibility it owed to the world by carefully undertaking certain commitments toward mitigatory efforts.<sup>106</sup> While it is said that this success was largely owed to the ingenuity of the self-differentiation approach, the fact remains that there was sufficient international consensus to pressure the emerging nation to undertake greenhouse gas reduction commitments, notwithstanding its developing status.<sup>107</sup> This, together with the additional phrase qualifying the principle of CBDR, has set the stage for a new era of differentiation for *all* States.

## 3. Areas for Greater Emerging Economy Contribution

At this point, I will take the liberty to identify two key areas in which emerging economy participation is presently lacking. First, emerging economies should be responsible for contributing toward climate change funding. Article 9(1) of the Paris Agreement requires developed countries to provide financial resources for the mitigation of and adaptation to climate change. Other countries are only “encouraged” to “voluntarily” support this fund.<sup>108</sup> As Charlotte Streck rightly points out, this is a rather weak call for financing.<sup>109</sup> In light of the formidable economies

95. THE LAWS OF THE MARKETS (Michel Callon ed. 1998); Fisher, *supra* note 94.

96. Sanja Bogojević, *Ending the Honeymoon: Deconstructing Emissions Trading Discourses*, 21 J. ENVTL. L. 443 (2009); William Howarth, *The Interpretation of “Precaution” in the European Community Common Fisheries Policy*, 20 J. ENVTL. L. 213 (2008); Vicki Waye & Christina Son, *Regulating the Australian Water Market*, 22 J. ENVTL. L. 431 (2010).

97. Fisher et al., *supra* note 93, at 181.

98. Fisher, *supra* note 94, at 348.

99. Fisher et al., *supra* note 93, at 177.

100. Report of the Conference of the Parties on Its Fifteenth Session, Held in Copenhagen From 7 to 19 December 2009, UNFCCC, 15th Sess., addendum pt. 2, Decision 2/CP.15, U.N. Doc. FCCC/CP/2009/11/Add.1 (Mar. 30, 2010).

101. Report of the Conference of the Parties on Its Sixteenth Session, Held in Cancun From 29 November to 10 December 2010, UNFCCC, 16th Sess., addendum pt. 2, Decision 1/CP.16, U.N. Doc. FCCC/CP/2010/7/Add.1 (Mar. 15, 2011).

102. Rajamani, *supra* note 26, at 153.

103. *Id.* at 161.

104. *Ideas and Proposals on the Elements Contained in Paragraph 1 of the Bali Action Plan*, UNFCCC Ad Hoc Working Group on Long-Term Cooperative Action, 4th Sess., addendum pt. 2, at 71, U.N. Doc. FCCC/AWGL-CA/2008/MISC.5/Add. (Part II) (Dec. 10, 2008).

105. Paris Agreement, *supra* note 34, art. 2(2).

106. Rajamani & Guérin, *supra* note 57, at 84.

107. Tsaia et al., *supra* note 67, at 1170.

108. Paris Agreement, *supra* note 34, art. 9(2).

109. Charlotte Streck et al., *The Paris Agreement: A New Beginning*, 13 J. FOR EUR. ENVTL. & PLAN. L. 3, 7 (2016).

that emerging economies such as China command, some contribution to this fund is only equitable.

Notably, according to paragraph 54 of the accompanying decision under the Paris Agreement, the collective mobilization goal was only extended to 2025. While it is unclear what will happen after 2025, it is clear that “other parties in a position to do so” would “participate” in setting a new goal with the floor of \$100 billion.<sup>110</sup> In this regard, the stage has been set for the emerging economies to contribute financially.

Second, in terms of emissions reduction, the emerging economies should undertake greater commitments. China’s pledge, while welcomed, must be increased. Experts have noted that even with the reduction of emissions following the Paris pledge, its net emissions will still double those of the United States.<sup>111</sup> As the nation grows affluent and sends aircraft carriers to sea and flag-waving astronauts into space, more cuts will inevitably be required of it. Similarly, India, the world’s fourth largest and fastest-growing emitter of greenhouse gases, should be required to slow down and eventually curb its increase.<sup>112</sup>

## B. Developing the Substantive Component of Sustainable Development

The principle of sustainable development should be developed to better reflect the principle of intergenerational equity and the common responsibility shared by all States for the mitigation of and adaptation to climate change. In this regard, I argue that the principle should not be limited to the confines of a “soft” concept. Instead, obligations should be crystallized to ensure that all development is, as far as possible, sustainable. One obligation that can be drawn out from the principle of sustainable development is the obligation for energy industries to *transition* toward sustainable energy. Sustainable energy refers to renewable energy sources such as hydropower, solar, wind, biomass, and, arguably, nuclear energy.<sup>113</sup>

To achieve this, laws and policies should be progressively implemented. For example, Law No. 2011/022 of Cameroon requires the electricity transmission system operator to purchase electricity generated from renewable energy sources upon request, thereby guaranteeing access to the national grid for independent power producers.<sup>114</sup> This encourages investments in the renewable energy sector by allowing independent power producers to penetrate the electricity generation market.<sup>115</sup> Also, fiscal incentives

such as tax reductions and import duty exemptions can be implemented to attract investments in the renewable energy sector. Law No. 96/12 stipulates that certain equipment used for renewable energy will benefit from a reduction of custom duty.<sup>116</sup>

Notably, different developing countries have different capacities to implement such policies, depending on the circumstances they face, and the level of development that the nation has achieved. To ensure the differentiation of all States, the rate of transition can be tailored according to the country’s socioeconomic status. In doing so, the following factors should be taken into account.

### 1. Level of Economic Development

Naturally, to access the appropriate rate of transition required of a country, the level of economic development of the country will be a crucial factor. In other words, the country’s present and future *capacity* to transition toward renewable energy should be taken into account. For example, a country with a stronger economy and more advanced technology such as China may be required to transition its energy sector toward greater reliance on renewables at a faster rate than a country like Mozambique.<sup>117</sup>

### 2. Energy Security

Another factor that should be taken into account is energy security. To achieve sustainable development, it is imperative to ensure the long-term security and viability of energy supplies. The rate at which a nation should transition to renewable sources of energy will therefore depend on the extent of the State’s non-renewable energy reserves, and its potential for renewable energy.

For China, which has less than 100 years of coal, 15 years of oil, and 30 years of natural gas remaining, the need for long-term energy security will require a fast rate of transition away from the nation’s current heavy reliance on conventional fuels for energy.<sup>118</sup> Notably, a failure to ensure the long-term security and viability of energy supplies through sufficient investments in the renewable energy sector will prejudice the energy security of future generations, thereby impeding future economic growth.<sup>119</sup> It is therefore in the country’s self-interest to ensure energy security.

For example, poor governmental planning in South Africa over the past decade has led to chronic underinvestment in the energy sector for many years.<sup>120</sup> Industrial growth and hence increased energy demand has led to escalating power prices and a shortage of capacity dur-

110. Williams & Montes, *supra* note 33, at 116.

111. Harris, *supra* note 2, at 105.

112. Subrata Chakrabarty, *By the Numbers: New Emissions Data Quantify India’s Climate Challenge*, WORLD RESOURCES INST., Aug. 8, 2018, <https://www.wri.org/blog/2018/08/numbers-new-emissions-data-quantify-indias-climate-challenge>.

113. NNAEMEKA V. EMODI, *ENERGY POLICIES FOR SUSTAINABLE DEVELOPMENT STRATEGIES: THE CASE OF NIGERIA 2.2.2* (2016).

114. Law No. 2011/022 of 14 December 2011 Governing the Electricity Sector in Cameroon, §§59(3), 66(1).

115. Terence Onang Egute et al., *Legal and Policy Framework Affecting Renewable Energy and Energy Efficiency Deployment in Cameroon*, 7 RELP 17, 26 (2017).

116. Law No. 96/12 of 5 August 1996 Relating to Environmental Management in Cameroon, art. 76(1).

117. World Bank, *supra* note 59.

118. Harris, *supra* note 2, at 105.

119. Junxia Liu, *China’s Renewable Energy Law and Policy: A Critical Review*, 99 RENEWABLE & SUSTAINABLE ENERGY REVS. 212, 212 (2019).

120. Epaminondas Bellos, *Sustainable Energy Development: How Can the Tension Between Energy Security and Energy Transition Be Measured and Managed in South Africa?*, 205 J. CLEANER PRODUCTION 738, 743 (2018).



ing peak demand periods.<sup>121</sup> Power cuts alone have been estimated to have cost the economy more than \$25 billion since 2007.<sup>122</sup>

Similarly, the prolonged insufficiency of investment in the energy sector in Nigeria has resulted in the present lack of adequate power supply.<sup>123</sup> Ironically, Nigeria is Africa's richest economy due to its enormous oil production capacity. Yet, poor planning in the past has hindered its economic growth. Interestingly, hydropower generates 40% of the country's total electricity capacity, but this only represents 14% of the country's hydropower potential. Investments in hydropower facilities in the past to realize the country's untapped renewable energy potential could have averted the current power crisis. In contrast, Cameroon, the country sharing the largest border with Nigeria, presently has a more reliable energy supply due to the government's foresight to invest in sustainable energy sources to ensure the sustainability of future development.<sup>124</sup> Today, 73% of electricity in the country is generated through hydropower plants.

Moreover, a reliance on imports for energy is generally regarded as unsustainable due to the volatility of oil prices and depleting global reserves of conventional fuels. A lack of diversification into different sources of energy in the renewables sector will result in the instability of electricity generation, and energy prices.<sup>125</sup> Such uncertainty will be detrimental toward the country's economic growth.

### 3. Other Considerations

Other relevant socioeconomic political considerations should be taken into account. This includes the presence

of any overriding needs or pressing national concerns such as food security and the eradication of poverty. For the sake of completeness, I note that while it may seem difficult for every country to be given a different standard to meet, this is not foreign to international environmental law. Following the Paris Agreement, expert groups have assessed each country's commitment, classifying them according to whether they were sufficiently ambitious or adequate.<sup>126</sup> Therefore, while I do not suggest that setting individual targets will be an easy feat, it is certainly an achievable task.

### III. Conclusion

In conclusion, I have argued that more needs to be done from the emerging economies to equitably discharge their fair share of the common responsibility. I have also proposed some ways in which a more balanced outcome can be attained. However, whether more responsibility will be undertaken depends on the willingness of these emerging economies to commit to new obligations. For the economies that currently enjoy a free pass, appetite may be lacking.<sup>127</sup> Yet, participation from the emerging economies is necessary for the continuation of effective climate change negotiations.

Perhaps, a simple illustration will demonstrate this: When kids are young, the parents pay the bills. When the kids grow up and start working, they must begin to contribute to the upkeep of the house. Contribution to the common responsibility does not begin when the kids are rich and powerful.

121. Julian David Hunt et al., *A Review of the Causes, Impacts, and Solutions for Electricity Supply Crises in Brazil*, 88 RENEWABLE & SUSTAINABLE ENERGY REVS. 208, 208 (2018).

122. Bruno G. Pollet et al., *Current Energy Landscape in the Republic of South Africa*, 40 INT'L J. HYDROGEN ENERGY 16685 (2015).

123. Ayoola T. Brimmo et al., *Sustainable Energy Development in Nigeria: Wind, Hydropower, Geothermal, and Nuclear (Vol. 1)*, 74 RENEWABLE & SUSTAINABLE ENERGY REVS. 474, 474 (2017).

124. Egute et al., *supra* note 115, at 18.

125. Hunt et al., *supra* note 121, at 217.

126. Climate Action Tracker, *2.7° Is Not Enough—We Can Get Lower: Climate Action Tracker Update* (2015), [https://climateactiontracker.org/documents/44/CAT\\_2015-12-08\\_2.7degCNotEnough\\_CATUpdate.pdf](https://climateactiontracker.org/documents/44/CAT_2015-12-08_2.7degCNotEnough_CATUpdate.pdf).

127. See generally Scott Wallace, *Brazil's New Leader Promised to Exploit the Amazon—But Can He?*, NAT'L GEOGRAPHIC, Oct. 31, 2018, <https://www.nationalgeographic.com/environment/2018/10/brazil-president-jair-bolsonaro-promises-exploit-amazon-rain-forest/>.